

**PROVOST'S TASK FORCE
ON THE FUTURE OF THE
SOCIAL SCIENCES AT CORNELL**

Cornell University

January 8, 1999

Commissioned by:

**Provost Don M. Randel
and Vice President Ron Ehrenberg**

Appointed by:

Provost Don M. Randel and the Faculty Senate

EXECUTIVE SUMMARY
PROVOST'S TASK FORCE ON THE FUTURE OF THE
SOCIAL SCIENCES AT CORNELL

1/8/99

I. GOALS

The goals of the Social Sciences Task Force have been to identify existing research strengths in the social sciences at Cornell, identify areas of a multidisciplinary nature where Cornell can become a preeminent center of research excellence and identify any infrastructure or other support that can serve to foster excellence in social science research at Cornell.

II. PROMISING INTERDISCIPLINARY AREAS

Task Force members concurred that excellence in the social sciences requires excellence in the social science disciplines. Given our interdisciplinary charge, our strategy was to look to the faculty as a whole to generate proposals for promising interdisciplinary initiatives. The Task Force members agreed that each of the areas selected had to: (1) have multiple faculty involvement along with a multidisciplinary focus, (2) address some of the most important scientific questions with potential benefits to society, (3) build on existing and potential capability at Cornell, and (4) represent a window of opportunity for achieving a leadership position of excellence within a particular domain. We have identified three areas:

1. Social Adaptation and Decision Research
2. Life Course Transitions and Social Policy
3. Wealth, Poverty, and International Development

III. RESEARCH CHALLENGES AND INCENTIVES

1. Promoting Faculty Quality Within and Across Disciplines

To help in achieving our goal of strengthening the basic disciplines while building multidisciplinary programs we propose the establishment of a university wide *social science coordinating committee*. We also recommend that *at least three endowed chairs be established in each of the first two interdisciplinary areas that we have identified*.

2. Promoting Collaborative, Externally Funded Research

To provide incentives for both proposal writing and collaborative scholarship, we propose the establishment of an *innovative grants program*, providing seed money support for faculty launching or building programs of research. We also believe that the university should investigate more generally the *incentives for social science faculty to pursue external funding*.

3. Building a Coterie of Skilled Research Personnel

To establish any program of excellence requires a *critical mass* of both senior and junior faculty. We also propose the recruitment of full-time *research scientists* and *post docs*, and substantial support for the recruitment, support and training of the best *graduate students* across colleges and divisions.

4. Promoting Collaboration and Communication across Departments, Disciplines, Colleges

This issue is how to promote and sustain ongoing communication and collaboration in the social sciences at Cornell. We propose support for: (a) *interdisciplinary seminar series, visiting distinguished speakers and more long term visitors*; (b) *institutionalized programs or centers*; and, (c) *internal fellowships* for faculty members to spend time developing expertise in a discipline outside of their major field.

5. Supporting Research Infrastructure

Support for research computing in the Social Sciences is seriously deficient at Cornell. The Social Science Task Force supports the "*master plan for computing*".

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I. INTRODUCTION

The Social Sciences Task Force was commissioned in the spring of 1998 by Provost Don M. Randel and Ronald G. Ehrenberg, then Vice President for Academic Programs, Planning and Budgeting. The Task Force members, half of whom were selected by the Faculty Senate and the other half by the Provost (see Table 1), were requested to address important intellectual and policy areas in the social sciences at Cornell that span disciplines and colleges. The Task Force was specifically charged to answer two questions:

1. What are the "cutting edge" areas of research in which Cornell must have strength if it is to be at the forefront of social science research in the years ahead? Any conclusions reached should take into account the unique missions of the statutory colleges and Cornell's strengths in other disciplines. Are there "enabling areas," akin to those described in the recent physical science Task Force report, in which Cornell similarly must have strength?
2. What Research Infrastructure and what set of research incentives are required for Cornell to be at the forefront of social science research? The Task Force should consider the recent report done by CISER that relates to these issues in its deliberations.

Because the membership of the Task Force did not represent all social sciences disciplines, the members actively sought input from various groups of social scientists across campus. Concretely, this meant: (1) reading materials provided by faculty, (2) inviting various constituent groups to make a presentation before the Task Force and/or to meet with co-chairs Easley and Moen, and (3) issuing an open invitation to all social scientists to present their response to the Task Force's charge and its interim report.

Along with reading a vast number of documents provided as background, the Task Force met regularly from April through December 1998. The Task Force also sought to keep lines of communication open by: (1) conducting an e-mail survey in the summer of '98 to all faculty members in social sciences related departments on campus as well as any other Cornell faculty member whose highest degree is in a social sciences discipline (approximately 500 faculty); (2) reporting to departments and colleges when invited to do so; and (3) submitting an interim report and inviting feedback in October.

The Task Force met weekly throughout the fall 1998 semester. It collected data on social sciences more broadly and social sciences at Cornell in particular through:

1. Digesting a number of documents, including prior reports on disciplines/departments,
2. Analyzing the responses to the e-mail survey,
3. Inviting a number of administrators (Deans Firebaugh, Lawler, Lewis and Lund) to provide their perspectives on the strengths and potentials of the social sciences,
4. Inviting several senior social scientists (although more were invited, we heard from David Featherman, Director, Institute for Social Research, Professor of Psychology and of Sociology, University of Michigan, former head of the Social Science Research Council, and Bennett

Bertenthal, Assistant Director, National Science Foundation and head of its Social and Behavioral Sciences), and

5. Considering the written and oral communications from faculty who chose to provide them.

Given our mission, and in light of the guidance provided by the discussions with David Featherman, Bennett Bertenthal and others, these questions framed our deliberations:

- What are important abiding problems of civilization to which social science scholarship can contribute?
- What will be the leading issues in the social and behavioral sciences in the coming years that transcend disciplinary borders?
- How do these social and scientific challenges map onto sources of funding?
- What is Cornell's comparative advantage in multidisciplinary research in the social sciences?
- What incentives and infrastructures are necessary to make Cornell a center of excellence in multidisciplinary scholarship in the social sciences?

In sum, while recognizing areas of excellence in current social science scholarship at Cornell, we deliberated about what would be interesting and possible to do across disciplinary boundaries, and what it would take to make it happen.

II. BACKGROUND

The social sciences flourished following the Second World War, as tools to address societal challenges. Unfortunately, this "social problem" focus promised ready solutions to what proved to be intractable difficulties, from subgroup inequities to international conflicts. Accordingly, the social problem focus was quickly supplemented with a focus on advancing new knowledge and understanding of basic social and behavioral processes. However, public funding agencies as well as private foundations continued to view social science research as a mechanism to promote greater understanding of contemporary social issues. Funding for both basic and mission oriented social science research was threatened in the 1980's, but has continued to grow over the years, and promises to expand in the future. Unfortunately, few of Cornell's social scientists regularly obtain significant external support for their research. We address the reasons for this problem and potential solutions in section VII below.

II.1 Institutional/ Locational Issues

Two immutable factors--our founding structure as both an elite private university and the land grant institution for New York State with its multiplicity of applied missions, and our centrally-isolated location--afford both opportunities and unique challenges for the pursuit of excellence in the social sciences at Cornell. Our public/private construction permits many applied social sciences initiatives to emerge easily in our highly decentralized system of governance, but because the scope of each of the spawning units is limited (many times by statute) and because resources and authority flow, to a large degree, through those schools and colleges, it is difficult to organize and sustain coherent broader initiatives that span many units. Recently, we witnessed the difficulties that this structure creates through the agonies of the biological sciences; the problems created by Cornell's institutional structure are far greater for the social sciences since, as an example, the dominant missions of both the School of Industrial and Labor Relations and the College of Human Ecology are social sciences oriented, and the social sciences play a key role (and have many activities duplicated) in three other colleges (College of

Arts and Sciences, College of Agriculture and Life Sciences and College of Architecture, Art and Planning).

While Cornell's rural location affords us some comparative advantage in studying rural communities and development, for many social scientists, easy access to urban centers of power and influence are a major attraction. Perhaps enhanced electronic communication can reduce this perceived professional detraction to faculty recruitment. But our rural location also inhibits recruitment because of the paucity of job opportunities for professional spouses, and there are limited opportunities nearby for graduate students and spousal employment in ancillary social-science-related research activities that would be highly complementary to academic work on campus. Again, community size matters, but there are institutional steps that Cornell could take to moderate these inhibitors.

The social sciences at Cornell have been and will continue to be shaped by the reality of its unique status as both a private and a land grant, public university. As a consequence, social scientists can be found across the campus, but there is little cohesiveness in either structure or substance. This configuration produces obvious difficulties as to mission and identity; we believe it can also be a source of strategic advantage if institutional mechanisms are devised to sustain collaboration.

II.2 Prior Assessments of the Social Sciences

There has been a long history of evaluation of the social sciences at Cornell, from as early as the 1950s (Robin M. Williams, Jr., personal communication). In 1965 an ad hoc committee of distinguished scholars were asked to report on the social sciences in the College of Arts and Sciences (William C. Dilger – Psychology; Frank Golay and Chandler Morse – Economics; Donald Kagan – History; Theodore Lowi and Andrew Hacker – Government; William Skinner – Anthropology; and chaired by Robin M. Williams, Jr. – Sociology).

The 1965 ad hoc committee concluded that the basic issue was one of *attracting and keeping people of the highest caliber*, which would necessitate creating an environment which capable scholars would find attractive. They operationalized “favorable” as including “adequate salaries, first-rate colleagues, proper work space and equipment for teaching and research, adequate supporting personnel, funds for research, and sufficient faculty to permit each to fulfill growing responsibilities both within and outside the university (Dean's Ad Hoc Committee, 1965, p. 1). The issue of faculty quality continues to be salient; in this current Task Force report we also underscore the importance of an environment and a set of policies and practices that facilitate recruitment and retention of outstanding faculty.

A second observation also appears in both our report and that of the Ad Hoc Report of more than 30 years ago: that “the social science departments at Cornell are *characterized by diversity rather than unity*, and . . . there are nearly as many images of the needs of and problems of the social sciences at Cornell as there are staff members” (Ad Hoc Report, 1965, p. 26). It is noteworthy that the first and highest priority recommendation of this 1965 College of Arts and Sciences Ad Hoc Report – “to build a new centrally located building to house at least a major part of the social science departments of the college” was in fact implemented, resulting in Uris Hall.

A second major analysis of the social sciences at Cornell occurred in the early 1980s. While the 1965 report mentioned in passing an existing “Social Science Research Center” at Cornell (Ad Hoc Report, 1965, p. 29), it apparently simply faded away over time (Williams, personal communication). But in 1980, a group of social scientists across campus proposed a new organizational arrangement, what became the Cornell Institute for Social and Economic Research (CISER). Its goal was

“to place Cornell in a position of leadership in both basic and policy-oriented research on social, economic and technological systems . . . by facilitating, encouraging, and coordinating researchers in the development and conduct of such studies and by acquiring and managing research resources for their use” (Preliminary Report, 1980). The goal was to organize CISER around contemporary problem areas.

While this recommendation was also implemented (CISER was subsequently created—see Summary Description, 1981), the proposed research programs organized around interest groups have not been sustained. Nevertheless, the CISER Research Programs and Projects Committee Report (Elder, 1981) describes a mechanism for the fostering of collaborative, multidisciplinary research.

CISER has proved a valuable resource for a segment of the social science community through assistance in grant writing, data archives, and statistical consulting. *The Task Force sees CISER as important component of the infrastructure for the social sciences*, one we recommend broadening and strengthening, as we discuss below.

III. GOALS

The goals of the Social Sciences Task Force have been to:

- Identify existing research strengths in the social sciences at Cornell
- Identify areas of a multidisciplinary nature where Cornell can become a preeminent center of research excellence
- Identify any infrastructure or other supports that can serve to foster excellence in social science research at Cornell

We discuss these in the sections that follow.

IV. EXISTING RESEARCH STRENGTHS

The Task Force recognized several areas of strength in the social sciences that position Cornell to move forward in leading social science scholarship.

- Cornell's strong *disciplinary core* contributes to its visibility and reputation as a leading research university. Task Force members were unanimous in endorsing support for disciplinary research and training as the core around which Cornell can build its stature in the social sciences. The prerequisite for successful multidisciplinary scholarship is exemplary disciplinary skills and knowledge.
- Several existing interdisciplinary departments and programs have established international reputations. These include the Science and Technology Studies program and Area Studies Programs.
- Cornell is uniquely positioned, as both a land grant and a private institution, to address mission-oriented basic research. We believe that the distinction between "basic" and "applied" scholarship creates a false dichotomy. As Urie Bronfenbrenner points out (recalling Kurt Lewin), there is nothing more useful than a good theory and nothing better for theory testing than a concrete intervention.
- Cutting edge areas of research in the new century will frequently require multi-level methodologies and multi-method analysis. Cornell is equipped with a broad range of methodological expertise in the social sciences, from simulation to ethnographies, from event history analysis to biographical narratives. Further Cornell has complementary research strengths in computer science, the biological sciences and engineering disciplines. All these methods and levels of analysis can potentially be brought to bear on addressing the compelling social issues of the next century.

In sum, *the strength of Cornell in the social sciences, as in other areas, lies in its diversity*. The challenge is to marshal the existing latent potential in ways that foster creative, faculty-driven integration rather than fragmentation.

V. TASK FORCE OPERATING PRINCIPLES

For the past several months, the Task Force has been asking people both within and outside the Cornell social science community for their advice about promising intellectual investment strategies for the social sciences. Many of the experts consulted by the Task Force—in particular, several Cornell deans, a NSF administrator, and the director of the Institute for Social Research at the University of Michigan—represent broad-based communities of social scientists. We looked especially to these sources for dispassionate advice about setting investment priorities for the social sciences. Several consistent themes emerged from the Task Force’s conversations with these experts:

1. Support Interdisciplinary Work

Virtually every expert with whom the Task Force consulted voiced some version of this theme. Progress on many of the most interesting and exciting problems confronting social scientists, they advised, will result only from coordinated attack by the practitioners of more than a single discipline. The NSF has explicitly put its money behind this belief, earmarking a large portion of future budget increases for interdisciplinary efforts. Recent faculty hires by the Institute for Social Research have also explicitly recognized the value of appointments of scholars who can collaborate across disciplines.

The Task Force was cautioned, however, that interdisciplinary work can’t really be counted a success until it begins to seep back into the respective cores of the separate disciplines. And the Task Force was also warned about the frustrations that await Ph.D. students trained for cross-disciplinary positions that do not yet exist in the academy.

2. Support Policy-Relevant and Problem-Driven Work

Public support for research, according to several experts, will face increasingly intense critical scrutiny in the years to come. Accordingly, proposals that are problem oriented, or that have clear policy implications, are likely to be favored over competing proposals that lack these attributes.

3. Build to Growth Areas

In choosing among alternative investment strategies, experts urged the Task Force to focus on the future rather than the past. In the realm of methods, for example, the Task Force was told that dynamic analysis is likely to continue to crowd out traditional forms of static analysis; that evolutionary models of behavior—both genetic and cultural—will continue to grow in importance; and that enrichments and qualifications of traditional rational-choice models will continue to become more influential, especially those that emphasize interdependencies in choice and judgment.

4. Build to Strength

Many experts stressed that it is a poor strategy to try to be good at everything. An intelligent investment strategy will thus focus not only on problems of growing importance, but also on problems for which existing faculty and other institutional resources constitute genuine sources of comparative advantage for Cornell. No matter how important a specific problem area might be

additional investment holds little promise unless a nucleus of faculty competent to attack that problem is already in place.

VI. PROMISING INTERDISCIPLINARY AREAS

While many disciplines at Cornell are outstanding, the charge to the Task Force was to identify potential areas of excellence in the social sciences that transcend disciplines, departments, and colleges. Accordingly, the Task Force sought to identify Cornell's comparative advantage in addressing issues at the forefront of social science research that can best be approached in a multidisciplinary frame. Our strategy was to look to the faculty as a whole to generate proposals for interdisciplinary areas. The Task Force members agreed that each of the areas selected had to: (1) have multiple faculty involvement along with a multidisciplinary focus, (2) address some of the most important scientific questions with potential benefits to society, (3) build on existing and potential capability at Cornell, and (4) represent a window of opportunity for achieving a leadership position of excellence within a particular domain. We decided not to recommend those areas in which the potential seemed considerable to us but in which there was little evidence of the level of faculty collaboration essential to success. Thus a number of potential areas were considered but not selected because either they lacked a critical mass of scholars with ongoing related research programs or because no proposals arose from the faculty.

As per our charge, the Task Force identified the following three areas as both: (1) building on the challenges and opportunities in social science research that transcends disciplinary boundaries, and (2) drawing on Cornell's existing strengths and comparative advantage. Although these interdisciplinary areas have diverse foci, they also have a common theme in their use of dynamic analysis. We believe that this type of analysis is crucial to the future of social science research. More detailed proposals for each of these areas are included in the appendices to this report.

VI.1 Social Adaptation and Decision Research

One of the most promising areas of basic social science research is the study of judgment and decisionmaking at both the individual and group levels when social, cultural, and cognitive constraints are taken into account. Cornell is well positioned to become a leader in this area. Three existing interdisciplinary programs, the Center for Behavioral Economics and Decision Research (BEDR), Cognitive Studies, and the Multi-Disciplinary Research Program on Organizations and Institutions (MRPOI), already provide strength in the area. In addition, individual departments house scholars unaffiliated with these three programs whose research contributes to our understanding of these problems. We propose the creation of a new *Center for Social Adaptation and Decision Research (SADR)*. The teaching and research activities of BEDR and MRPOI will be subsumed in this center, and Center activities will include social and behavioral scientists from Cognitive Studies and others with cognate interests. A major role for the Center would be to serve as a bridge between the social sciences and Cognitive Studies.

Work on Social Adaptation and Decision Research at Cornell and elsewhere represents both a challenge to and elaboration of the traditional rational-actor model widely used in economics and political science. This elaboration has proceeded on two fronts: 1) on the micro level, in decision theory, which enriches the descriptive accuracy of the rational-actor model, and 2) on the macro level, in the study of adaptive social systems, which focuses on the evolution of institutions and organizations that constrain individual choice.

The easiest way to introduce the research program of social adaptation and decision research is to describe how it contrasts with one of the most successful and familiar research programs in the social

sciences over the past four decades. That program has been the export of conventional rational-choice methods from economics into sociology, political science, anthropology, biology, and law. Among its founders and leading practitioners have been Milton Friedman, Gary Becker, Richard Posner, and the late James Coleman, all of the University of Chicago. Research in the Chicago School tradition has scored important gains. But it has long been clear to people outside this tradition (and even to many within it) that the classical rational-actor model provides an incomplete account of the way people actually behave in many important practical settings.

Decision research departs from the traditional rational-actor model in two important ways. The first involves explicit acknowledgment that because human cognitive abilities are limited, people often evaluate alternatives in ways very different from those assumed in the rational-actor model. The intuition and judgmental rules of thumb on which people rely function reasonably well in many settings, yet also give rise to systematic departures from the behaviors predicted by the rational-actor model.

The second way in which the decision research program departs from the traditional rational-actor model is by incorporating a richer account of human motivation. In its most widely applied form, the rational-actor model assumes that individuals are motivated only by narrowly selfish concerns. The *HOMO ECONOMICUS* stereotype, for example, will not vote in presidential elections, nor tip in restaurants away from home--stereotypes that are clearly at variance with behavior commonly observed in voting booths and restaurants around the world. As the Social Adaptation and Decision Research program has repeatedly demonstrated, an enriched conception of human motivation can expand the predictive and explanatory power of traditional rational-actor models in dramatic ways, and with significant social policy implications.

On the macro level, the implications of models of decisionmaking that take social context seriously are explored in the study of adaptive social systems. This research program investigates the dynamics of social systems, focusing on the emergence and stability of norms and institutions, social learning and cognition, and cultural evolution and diffusion.

Macro-level elaborations of the rational actor model, such as the market theory of neoclassical economics, studies the equilibrium determination of social outcomes such as prices and the distribution of income, and the organization of market institutions. The adaptive approach replaces equilibrium analysis with process models of the evolution of social states. The evolutionary approach introduces three important advances. First, the adaptive processes are partly external to the individual. In addition to adaptation of individuals' behavior, processes that select across individuals (such as social learning, cultural diffusion, organizational replication and mortality, economic natural selection, etc) are at work. Consequently models of social adaptation can be applied to the emergence of behaviors lacking an instrumental motive. Second, the social adaptation approach responds to the observation that decisionmakers are embedded in a social network that both constrains and facilitates their interaction. Third, the evolutionary approach offers a dynamical analysis of how norms and institutions might emerge out of repeated social interactions. Social adaptation models facilitate the study of the coevolution of individual behaviors and social institutions.

The social adaptation research program is policy-relevant and problem-driven. In questioning some of the fundamental normative claims of rational-actor models and in offering concrete alternatives, it suggests novel and specific public policy interventions with the potential to yield large increases in social welfare.

The social adaptation research program cuts across all disciplines of the social and behavioral sciences, and increasingly it is attracting the attention of scholars in computer science concerned with the global coordination of distributed decisionmaking. Cornell's strength in computer science and interest in this kind of computer science research will benefit the proposed Center. In addition, Center research will also

draw upon a variety of methodological approaches taken by social scientists here at Cornell, including experimentation, theoretical analysis, simulation, survey and archival analyses and ethnography.

Investment in Social Adaptation and Decision Research would build upon well-established faculty and institutional resources at Cornell. Cornell's strength in Social Adaptation and Decision Research is reflected in the intellectual excitement of the BEDR and MRPOI programs, and in the presence of distinguished scholars with these interests across campus--in the business school, the law school, the hotel school, the departments of psychology, sociology, economics, and government, and the department of agricultural, resource, and managerial economics.

Beyond the social sciences, analytical and computational methods used in research on adaptive systems draw from areas of theoretical biology, computer science, and applied mathematics in which Cornell is particularly strong. Moreover, by focusing on the structural, environmental, and cultural determinants of behavior and cognition, the proposed multidisciplinary Center would strengthen the bridge between the social sciences and Cognitive Studies. Thus, it is important for the success of this initiative not only that funding be obtained for the new Center, but also that funding for Cognitive Studies also be put on a more permanent basis. Cornell's strength in Social Adaptation and Decision Research constitutes a unique comparative advantage in the social sciences. External conditions are ripe for exploiting this advantage. (*Appendix 1*)

VI.2 Life Course Transitions and Social Policy

1. The Issue

Another promising area of multidisciplinary research in the social sciences is the study of changing individual life course transitions and their relationship to global and regional social change and changes in public policy. The changing economy, increasing longevity, the gender role revolution and organizational transformations in fundamental institutions (such as school and work) are producing both diversity and uncertainty about life course decisions. And yet the timing and sequencing of transitions (e.g., moving from school to work, getting married or divorced, having a child, changing careers, becoming unemployed or retiring from the workforce) are key to subsequent life chances and life quality. For example, educational, labor force and family entries and exits can have broad repercussions for an individual's economic status, social network, and health. Changes in the incidence and timing of these entries and exits by particular subgroups (such as women's entry into the workforce) can also have wide-ranging and frequently unanticipated impacts on organizations, governments, and society more generally.

As we move into the next century, established institutional practices are frequently out of step with contemporary realities. For example, government and private sector policies related to the labor force and retirement are geared to life patterns of the middle of the 20th century, not the 21st. Internationally, what were previously uniform, "lock step" transitions into and out of school, marriage, parenting and work are becoming more contingent and more varied. Along with the aging of the population, this increasing diversity of life experience has widespread implications for individuals, organizations, communities, governments and society.

Neither scholars nor policy makers fully understand the nature of the changing life course and its impacts on individuals, families, the workplace, or other institutions. Moreover, we know little about the lags between contemporary experience and existing policies, or about possible solutions to them. A number of Cornell faculty and research units are well positioned to move Cornell into the front rank of international centers for the study of individual life course transitions, social change and social policy.

2. The Challenge

What is needed are new research questions about the human experience, along with new ways of addressing them. Particularly exciting in contemporary social research is an emerging focus on *time*. Both theoretically and methodologically, scholars are moving from considering *states at one point in time* (such as being poor, employed, or married) to *transitions over time* (such as moving in and out of poverty, employment, or marriage). The Life Course Transitions and Social Policy Initiative aims to use a variety of research techniques and data to investigate the dynamic intersections between changing institutional structures, changing state policies and practices, and changing lives, both within and across societies. It will draw on a wide range of disciplinary concepts and methods of inquiry to examine the long- and short-term consequences of transitions in work, family, welfare, and schooling, as well as their interface with contemporary and emerging private and public social policies.

The kinds of questions this program of research would address include:

- *What are national (or regional) life course solutions to contemporary social transformations?* (For example, longevity is making retirement at 62-65 increasingly expensive for the state, but at least in the United States public- and private-sector policies seem to be encouraging an even *earlier*, rather than later, age of retirement.)
- *What are the direct and indirect consequences of certain policies and practices, and how do they vary across nations?*
(For example, policies encouraging gender equity often are countervailed by the absence of policies addressing the work/family interface. Germany's "solution" is vastly different from Sweden's or China's. And all three are different from the situation in the United States.)
- *What strategies do individuals in different national or cultural environments adopt in confronting the insecurity, uncertainty, and unpredictability of their future life course?*
(For example, increases in cohabitation, delayed or declining fertility, contract work, educational reentry, self-employment can all be seen as strategic choices given an uncertain future.)
- *What are the long-term consequences of national policies and practices on individual life chances?*
(For example, divorce, disability, unemployment, aging have vastly different implications for individuals and families across nations.)
- *What are the consequences of particular transitions and their timing for an individual's or household's social networks, economic security, occupational attainment and/or well-being?* (For example, going from school to work immediately after graduation from high school versus going to college shapes opportunities and risks throughout adulthood.)

Transitions over the life course provide strategic points of entry leading to an understanding of the relationship between individual choice, institutional conditions and constraints, and large-scale social changes. However, the study of such transitions requires by their very nature a multidisciplinary approach. Individuals make decisions as to whether and when to marry, divorce, change jobs, or return to school. But they do so in a cultural, structural and policy environment whose conditions can facilitate or impede such transitions. This is an environment that is shaped to a large extent by both the market and the state.

The principal goal of the Life Course Transitions and Social Policy Initiative is to develop new knowledge about: (1) the complex dynamisms linking individual lives, social structures, and large-scale

social transformations, as well as (2) the long term impacts of various transitions and their timing on individuals' resources and relationships. This would entail the use of multilevel modeling, both primary and secondary data sources, and both qualitative and quantitative research methodology as well as a cross-societal and cross-disciplinary expertise. Comparative analysis across societies can unravel the role of the state and of socioeconomic transformations in structuring or constraining life transitions. A second important objective will be to prepare the next generation of scholars to examine temporal processes. The focus on the interface between transitions and policies will equip students for both traditional academic jobs as well as policy positions in government, not-for-profit and private sectors.

3. Cornell's Strategic Advantage

Cornell University is ideally positioned to launch a systematic program to analyze the three-way link between social changes, policies, and individual life course transitions. First, the university has strength across the campus and across disciplines in the study of choice and decision-making. Second, Cornell is widely recognized for its work on the new institutionalism and organizational change. Third, it has established strength in life course and social network research. Moreover, the study of various labor force, economic, residential, and demographic transitions is fundamental to the research programs of a number of Cornell faculty.

Equally important, the Cornell faculty has considerable experience and expertise in the use of large data sets, in the analysis of temporal processes (such as state dependence and duration), in multilevel modeling, and in qualitative, cultural analysis, as well as in experimental research on choice and decision-making. This initiative will be closely aligned with the master plan for the computing environment at Cornell under the auspices of CISER, including the provision of access to confidential data (described below).

What is distinctive about the study of life course transitions and social policies is the utility of a variety of theoretical and methodological "frames," from institutional and cultural analysis to the modeling of transition probabilities to biographical narratives. While the focus of much funded research will be on quantitative analyses of individual transitions and corresponding shifts in social networks and resources, a fuller understanding of such life course changes can only be achieved through analyses of institutions and cultural norms as well as biographical understandings of such transitions.

The proposed program of research and training builds on and will serve to facilitate lines of communication among several established program strengths at Cornell. The Bronfenbrenner Life Course Center and its affiliated institutes -- the Cornell Employment and Family Careers Institute (funded by the Alfred P. Sloan Foundation) and the Cornell Gerontology Research Institute (funded by the National Institute on Aging) -- already has a core base of faculty from a range of disciplines across campus pursuing research on life course transitions. We propose building on and expanding upon this base to develop a *life course center* incorporating both policy and cross-national perspectives.

Other important strengths include: the Mario Einaudi Center for International Studies; the Comparative Societal Analysis Program in the Einaudi Center; the Population and Development Program, the Cornell Institute for Social and Economic Research; the Center for Advanced Human Resource Studies; the Institute for Labor Market Policies; the Institute for Women and Work, and the Cornell Higher Education Research Institute, as well as the proposed School of Public Affairs. Thus this initiative will enlist the active participation of faculty and students representing a range of disciplines: sociology, government, economics, organizational behavior, psychology, and education. (*Appendix 2*)

VI.3 Wealth, Poverty, and International Development

1. Urgency of the Question

Adam Smith's great tome inquired into causes of differential "wealth of nations;" today we ask more urgently about persistent poverty in a world of wealthy and not so wealthy nations. Understanding these dynamics is the objective of the comprehensive study of change now termed development studies. On the latest estimates of the World Bank, approximately 1.3 billion people in the developing world survive on less than a dollar a day. This deep poverty is manifested in poor health and nutrition, high infant mortality and abysmally low levels of education and life expectancy. Women and children are disproportionately represented in the poverty population. According to UNDP estimates, 70% of the world's poor are female. Not only is the situation of the world's poor bad, it is precarious as well. Indonesia's poor have just lost the equivalent of a decade's progress in consumption gains, as the result of the East Asian economic crisis. And, in response to poor prospects and periodic crises, the poor are forced to over exploit natural resources, thereby creating future problems for themselves and their children while threatening global values of climate stabilization and biodiversity.

There is clearly no more important policy problem facing the international development community than poverty alleviation. But how to do it? The "growth optimism" of mid-century has now been replaced by a more nuanced, perhaps chastened, view. Economic growth is recognized as necessary but not sufficient for poverty reduction. What is needed is a package of policies that tackle economic, social, cultural and political impediments to improving the prospects of the most deprived, and which protect them from reversals that can come from a multitude of risks ranging from weather patterns to volatile international capital flows. While the contours of this package are slowly being discerned, in silhouette so to speak, the details are not yet clear and sharp, and much work is needed to specify them in the context of each society's circumstances -- cultural, historical, institutional and natural.

2. Intellectual Excitement

The study of what works and what does not work in poverty reduction leads immediately to questions which cut across a range of disciplines. Attempts to answer these questions have led to fundamental contributions to the disciplines themselves. To take the example of economics, the observation of severe inequalities within poor households contributed to the development of intrahousehold analysis. The study of famines led to a formulation of a theory of distribution of the gains from economic activity. And asking hard questions about how poverty is to be quantified led to fundamental questioning of the ethical basis of policy prescription. For these and other contributions, Amartya Sen, a former Andrew D. White Professor at Large at Cornell, was awarded the Nobel Prize in Economic Science in 1998.

This intellectual excitement extends beyond contributions to core disciplines because the problematic itself self-evidently can be addressed only in a multidisciplinary framework. Gender matters fundamentally, for example. Studies show that the single most important determinant of a child's health is the level of the mother's education. Education of girls is associated with declining fertility and lower population growth. And yet girls' enrollment in schools lags far behind that of boys. Yet increasing girls' enrollment is no easy task. It requires taking into account economic conditions but, as important, the social and cultural barriers to girls being sent to school. It is not enough to design a scheme of special scholarships for girls—these work only in conjunction with social and cultural changes among parents. How do parents understand and evaluate the value of girls' education? What exactly is the right policy package given capacities of particular governments and local understandings of state authority? Is mandatory education an option? Is it ethical, given contributions of child labor to poor family income?

What is the balance between economic and non-economic components of a successful policy? It should be clear that an attempt to answer such questions will succeed only through an intellectually exciting coming together of several disciplines.

Interdisciplinary excitement is not limited to the social-science domain, nor can social scientists interested in poverty ignore harder and softer disciplines around them, or the real world. Revolutions in information and biotechnology, for example, are redefining the terrain for poverty reduction. How do institutional choices about the handling of intellectual property rights in biotic materials or informatics affect poverty? Rapid changes in technology and in trade and capital flows are creating unprecedented opportunity for improving the material basis for poverty reduction. Does this mean that technology will do it all, and social scientists are redundant? Hardly. These very same changes bring with them significant risks of increasing inequality, within and between nations, of marginalization of large groups of people, and of social explosions. It is, in fact, not clear whether the next century will see the eradication of mass poverty or simply a more unequal world, however richer in the aggregate. The central policy dilemma for those who desire the former is how to access the opportunities provided by trade and technology while managing the risks which these very same trends present. This management is not simply a technical or a technological matter. At its heart it concerns political, legal, social and economic arrangements for production and distribution. These choices will be made: either willy-nilly, by default, or on the basis of careful research. The insights of social science are vital in achieving an improvement in the lives of the 1.3 billion people who survive on less than a dollar a day.

3. Existing Programs at Cornell

Study of international development is done widely and well at Cornell, particularly in five colleges: CALS, A&S, ILR, HE and AAP. We cannot here provide an exhaustive account, but will mention some organized efforts to indicate breadth of interdisciplinary, inter-college work and opportunities for going forward. Development is too comprehensive a field to provide focus, however; for the reasons above and below, we suggest a focused effort in Poverty Studies.

The **Program on Comparative Economic Development (PCED)** and the Development Economics Seminar provide an important center of activity. They have mounted a seminar series this academic year (1998-99) entirely devoted to poverty; this effort and the personnel involved could serve as a seed for the Institute for Poverty Studies we propose below. PCED has been centered on economics in a disciplinary sense, but the current seminar on poverty provides the compelling theoretical and practical stimuli for much broader involvement of other social sciences.

The **Cornell International Institute for Food, Agriculture and Development (CIIFAD)** adds to economics the study of participation, local institutions and institutional development. In addition, social scientists in CIIFAD research programs collaborate effectively with natural scientists in plant genetics, soils, ecology and various others as problems in the field require. Work on "participation" during the 1970's and 1980's made Cornell a leader in signaling the importance of appropriate local institutions in poverty alleviation. Current fascination with these questions has come under the rubric of "social capital," currently in favor in lead development institutions at the international level. Under the auspices of CIIFAD, multi-disciplinary projects in many poor nations are currently underway, attracting in the last year some \$1.4 million in external support. CIIFAD grew to its present international status from a small grant and institutional space within the Mario Einaudi Center for International Studies, illustrating the value of incubation functions and seed monies.

The World Bank's World Development Report for 1997 focused on the institutions that create state capacity: without capable states, economic development narrowly conceived will not go forward. Markets are not enough. The importance of appropriate institutions and institutional development intersect poverty

studies and disciplinary development in a number of fields. Institutional analysis at various levels is widespread on campus, varying from poverty studies in China, to political economy studies of development in the Government Department to issues of domestic poverty in the **Community and Rural Development Institute** (CALSC/CRP). "New institutionalism" has been a focus of the **Comparative Societal Analysis Program** and pervades new developments in the discipline of political science, where institutionalism is deeply embedded. Institutional normative theory increasingly stresses devolution, decentralization, and participation. This work engages core theoretical problematics in the social sciences: structure and agency, ideational and material motivations, micro-macro resolutions and integration.

Over the last ten years, the **Cornell Food and Nutrition Policy Program (CFNPP)** has maintained an especially active and productive research program on poverty and income distribution. This program has been almost entirely externally funded, receiving more than 25 external research grants totaling over \$16 million in the last 10 years. Most prominent of CFNPP's efforts has been a research project on the impact of structural adjustment on poverty in subSaharan Africa. The African Economic Research Consortium brings together the activities of PCED and CFNPP. A key question explored in many of the country case studies is the relationship between poverty and health and education.

CFNPP researchers are also studying gender issues as they relate to poverty. The **Gender and Global Change Program**, a joint venture of Womens Studies and the Einaudi Center, reflects Cornell's early lead in studying gendered development, but currently needs infusions of University support. Crucial issues of rural to urban migration, population pressures and demographic change figure heavily in poverty analysis; the **Population and Development Program**, founded in 1961, provides an institutional base. The **International Political Economy Program**, **International Studies in Planning** and **Peace Studies** have sponsored public education and cross-disciplinary discussion and research on higher order institutions and dynamics as these intersect development. The necessity of linking analysis of international dynamics to quite local poverties is tragically illustrated in the contemporary Asian crisis.

Relationships between poverty and environmental degradation are complex and reciprocal, of both local and global importance. Practices which characterized historic development of the currently rich are not sustainable in fragile systems or on the same destructive scale; growth alone again cannot be the sole answer to poverty. Cornell is well situated to provide leadership in questions of environmental stewardship that must inform sensible development. These activities are more scattered than those of the programs listed above. The Einaudi Center is trying to nurture better synergy through its **Governance and Nature** initiative, working with the **Center for the Environment** and the **Protected Area Management** program of CIIFAD.

Virtually all of the programs and institutes above have some affiliation with the **Einaudi Center for International Studies**, which funds some programs and encourages interaction with the area studies programs -- one of which, the **Institute for African Development**, is explicitly developmental. Nevertheless, fragmentation hampers work in this field; there are multiple clusters of strong researchers, but no effective mechanisms to provide synergy and focus. Development as a field is broad, interdisciplinary and unwieldy; poverty studies provides a concrete focus intellectually and stimulates us to get the institutions right.

4. The Institute for Poverty Studies

Only a handful of universities compare with Cornell in strengths and distinction in development broadly conceived. This area requires no new faculty (but a watchful eye for reproduction over time and for catalytic hires as opportunities arise). Instead, we propose a new overarching Institute for Poverty Studies with reallocated space and modest funding. It would serve as umbrella (sponsor, catalyst, and support) for faculty and programs. Common physical space would allow scholars from different disciplines and world

areas to work under the same roof and interact on joint research undertakings. Internal fellowships would allow Cornell researchers to gather every year on a rotating basis; short-term “folding chairs” would allow us to bring international expertise to teach and work with Cornell scholars. The Institute itself would bring justly deserved attention to Cornell as a world center for the study of poverty and international development. (Appendix 3)

VII. RESEARCH CHALLENGES AND INCENTIVES

VII.1 Promoting Faculty Quality Within and Across Disciplines

There are many areas of strength in the social sciences that should continue to be supported. In particular, it is vital to continue our focus on strength in the basic social science disciplines by hiring, retaining, promoting and supporting high quality faculty. Faculty quality is the key to excellence both within disciplines and in multidisciplinary programs.

To achieve our goal of strengthening the basic disciplines while building multidisciplinary programs we propose the establishment of a *social science coordinating committee* to be chaired by a Vice Provost representing the social sciences. This committee is to be modeled on the successful economics coordinating committee. The committee is not intended to have power to reallocate positions or resources. Rather its purposes are to insure continued efforts in building the social sciences, to act as an advocate within the administration for the social sciences, to provide a source of advice to the Provost and Deans and to provide a forum for information sharing and coordination of efforts in hiring and retention of high quality faculty.

Building outstanding multidisciplinary programs will require hiring of faculty into joint positions or at least hiring of faculty whose contributions span departments. This cannot be done with junior faculty. Accordingly we recommend that *at least three endowed chairs be established in each of the first two interdisciplinary areas that we have identified.* (There are already a sufficient number of faculty members at Cornell in the Wealth, Poverty and International Development area.) These chairs should not be allocated to specific departments or colleges. Instead departments, or groups of departments, should be allowed to offer competing proposals for the use of the chairs. The coordinating committee will provide a mechanism to help in the allocation and recruiting process.

VII.2 Promoting Collaborative, Externally Funded Research

Individual scholars without external support conduct much important social science research at Cornell. However, one key to advancing the visibility and productivity of social science scholarship is to foster synergistic collaboration as well as the submission of proposals for the funding of individual and joint research projects. Government and Foundation funding permits the implementation of large and complex studies that could not be undertaken without such support. They also subject projects to the peer review process, presumably resulting in stronger programs of research.

To provide incentives for both proposal writing and collaborative scholarship, we propose the establishment of *an innovative grants program*, providing seed money support for faculty launching or building programs of research. What would be unique about the innovative grants program would be the timing of the awards. Individuals or groups would be eligible to apply to the program only after they have actually submitted a proposal to an external funding agency. The assumption is that the first time around a proposal is usually rejected; this program would provide support for doing the hard work to make an existing proposal even more competitive. This program will increase the incentives for faculty

members to submit proposals for external funding and will lead to more external funding of higher quality research.

We also believe that the university should investigate more generally *the incentives for social science faculty to pursue external funding*. (Appendix 4) Faculty members in colleges that provide eleven-month salaries currently have too little incentive to apply for external support. A move to nine-month salaries for all social science faculty should be considered. Financial incentives such as return to the investigator of some portion of the overhead generated on grants should be considered. Finally, there is the problem that existing teaching and administrative duties leave some of the faculty little time to write proposals for external funding of their research. Selective reductions in teaching loads or other incentives should be considered.

VII.3 Building a Coterie of Skilled Research Personnel

To establish any program of excellence requires a *critical mass* of both senior and junior faculty. Recognized scholars, without doubt, are essential to build and sustain a viable, visible program of interdisciplinary research. This suggests the importance of hiring, where needed, senior scholars with a history of collaborative, cross-disciplinary work, possibly having their appointments bridge departmental boundaries.

But much existing and future research in the social sciences requires a team of investigators with a range of expertise. Accordingly, we also propose the recruitment of full-time *research scientists* and *post docs* in the three interdisciplinary areas selected by the Task Force. While such scientists could be supported by funded research, to recruit and retain the necessary talent pool would require a commitment from the university for initial support and for bridging support between grants.

There is another important talent pool as well: the need to *attract and train first-rate graduate students* who are well equipped to function as teaching assistants and research assistants both within disciplines and in our interdisciplinary areas. This will require substantial support for the recruitment of the best students as well as a commitment across colleges and divisions to recruit, support and train them. Robin M. Williams, Jr. has pointed out that the difficulties in merging interests across campus are not new. In the 1950s the Social Science Research Center at Cornell established a university wide, multidisciplinary graduate course in research methodologies in the social sciences. It was widely acclaimed by students and faculty alike and was offered for several years. However, it “died” because various deans refused to provide teaching assistance support for graduate assistants who were not in departments in “their” administrative units.

VII.4 Promoting Collaboration and Communication across Departments, Disciplines, Colleges

The big interdisciplinary issues we have identified require multiple types of expertise. Informally at the National Science Foundation program officers used to refer to the scientific enterprise as a “body contact sport,” requiring ongoing dialog and debate among scientists. The issue is how to promote and sustain ongoing communication and collaboration in the social sciences at Cornell.

Several strategies appear to have worked and should be expanded and strengthened. First, *interdisciplinary seminar series, visiting distinguished speakers and more long term visiting scholars* are useful because they transcend the bureaucratic and disciplinary divides on campus. The MRPOI Seminar

Series, already funded by the Provost, is an example of what “works”. Second, some types of *institutionalized programs or centers* can bring scholars with common interests together across such boundaries. Examples of such successful “border crossing” include the Cognitive Studies program, the Mario Einaudi Center for International Studies, CIIFAD, the Bronfenbrenner Life Course Center, and the BEDR workshop. Further, the area studies programs, housed in the Mario Einaudi Center, are examples of interdisciplinary programs that have succeeded in generating collaboration both within the social sciences and between social scientists and humanists. Third, support for faculty members to spend time developing expertise in a discipline outside of their major field should be considered. Internal fellowships for faculty to work in any of the three interdisciplinary areas are one attractive possibility.

Parallel discussions that are ongoing with the work of the Social Sciences Task Force involve an effort to formulate a School of Public Affairs at Cornell. While the emphasis of the school is on professional education for potential innovators in the public area, its formal establishment would institutionalize collaboration of social scientists both across social science disciplines and many academic units at Cornell.

VIII. RESEARCH INFRASTRUCTURE

It is now widely recognized that support for research computing in the social sciences is seriously deficient at Cornell University. Cornell does not provide to social scientists the computing infrastructure that is available at other universities with strong social sciences. In addition, the physical science orientation of the major computing facilities at Cornell limits the interactions between social scientists and other researchers who specialize in applied computer science. The unfortunate consequence of these two facts is that social science researchers have generally chosen to work on problems amenable to their limited computing resources, or have partnered with other universities or government agencies to develop research programs using the computing resources available at those other institutions.

Research support for scientific computing in the social sciences is currently provided in three forms: (1) Schools and Colleges provide support for desktop and local networking, often working in conjunction with network services at CIT; (2) CISER provides support for a small-scale unix-based network of computers for data archiving and statistical consulting; and, (3) Departments, groups of individuals, and sponsored projects have their own computing environments, with support coming from separately funded sources, Schools, Departments, and CISER. There is no large-scale computing facility with dedicated social science support although the Theory Center has been used by some social sciences for specific projects.

The master plan for improving social science computing at Cornell consists of three parts:

- (1) Integrate the CISER unix computing environment into the CIT/Theory Center complex and permit computing projects to grow from desktop to unix server to SP/2 with complete software and data structure compatibility;
- (2) Establish a team of research computing professionals from CISER, the Theory Center, and three additional full-time equivalents that is charged with developing and supporting large-scale and innovative social science computing;
- (3) Provide formal support for a variety of confidential data access modalities (U.S. Census Bureau, U.S. Bureau of Labor Statistics, U.S. Social Security Administration, other national statistical agencies, etc.) in order to promote the use of confidential data for nonproprietary scientific research.

CISER, CIT and the Theory Center have already begun to implement parts of this plan. The main CISER servers are located in Rhodes Hall in the CIT machine complex, where the Theory Center's computers are also housed. CISER has proposed, and its Board of Governors has accepted, the creation of a dedicated, secure server (using existing hardware with some modifications) to provide the initial platform for a confidential data access site within the CISER cluster in support of a project involving the Social Security Administration. Additional office space in Caldwell Hall has been allocated and is being prepared to serve as CISER's secure data access center. The Theory Center has participated in a proposal, accepted by the French National Statistical Institute (INSEE), to provide integrated secure access to confidential French administrative data from the CISER server on the Theory Center SP/2. This system will be implemented in the Spring 1999 semester.

Continued progress towards implementing this master plan is vital to the social sciences at Cornell and to the specific research areas this Task Force has identified. For the implementation to continue, we must now address the critical personnel shortage that part (2) identifies. As a practical matter, large-scale computing at Cornell is conducted using RS/6000 hardware and an AIX-based network unix operating environment. Much of the technical expertise for using such a network fled the campus when the NSF national supercomputer facility funding for the Theory Center was phased-out. The social scientists are now in a position to substantially replace the NSF national supercomputer facility as a major supporter of Cornell's large-scale computing facility, through large proposals in the NSF's infrastructure initiative and the NIH's continuing research support of aging and life-course phenomena. These, and other agencies, are prepared to bear the personnel costs associated with part (2) of the master plan, as well as the other direct costs associated with the specific research programs. In order to improve Cornell's ability to attract this external research support, the core personnel must be hired and the integration of the existing projects, mentioned above, completed. This will permit Cornell to propose other major social science research projects that use the secure-access large-scale computing environment that we have begun to create.

There is an urgency to the continued implementation of the master plan. The NSF's new data infrastructure initiative is \$10-15 million/year 5-year plan with proposals due March 1, 1999. The NIH's National Institute for Aging has identified data infrastructure as one of its key programmatic areas for the upcoming competitive cycles. Other national agencies, including the Social Security Administration and the U.S. Census Bureau have recently begun awarding large grants to universities prepared to create and support the computing environment identified in our master plan in support of social science research. For Cornell to successfully compete for the externally supported research programs that these agencies promote, we must address the core of our master computing plan, including the personnel and Theory Center integration issues, immediately.

**Table 1
TASK FORCE MEMBERSHIP**

PROVOST APPOINTED	FACULTY SENATE APPOINTED
David Easley, Co-chair Professor, Economics 446 Uris Hall 5-6283 dae3@cornell.edu	Phyllis Moen, Co-chair Professor, Human Development & Sociology G58 MVR 5-0838 pem3@cornell.edu
Michael Macy Professor, Sociology 358 Uris Hall 5-4187 mwm14@cornell.edu	Sandra Greene (resigned Nov. '98) Associate Professor, History 303A McGraw Hall 5-4124 seg6@cornell.edu
Ron Herring Professor, Government 170 Uris Hall 5-6370 rjh5@cornell.edu	Davydd Greenwood (resigned Oct. '98) Professor, Anthropology 206 McGraw Hall 4-5130 djg6@cornell.edu
Stephen Ceci Professor, Human Development & Psychology NG07 MVR 5-0828 sjc9@cornell.edu	David Monk Professor, Education 435 Kennedy Hall 5-2207 dhm1@cornell.edu
Richard Schuler Professor, Civil & Environmental Engineering & Economics 442 Hollister Hall 5-7579 res1@cornell.edu	Andrew Novakovic Professor and Chair, Agricultural, Resource, & Managerial Economics 102 Warren Hall 5-7602 amn3@cornell.edu
William Schulze Professor, Agricultural, Resource, & Managerial Economics 103 Warren Hall 5-9611 wds3@cornell.edu	Robert Frank Professor, Johnson Graduate School of Management & Economics 528 Malott Hall 5-4019 rhf3@cornell.edu
John Abowd Professor, Industrial & Labor Relations 259 Ives 5-8024 jma7@cornell.edu	Elaine Wethington Associate Professor, Human Development & Sociology G52 MVR 5-2918 ew20@cornell.edu
Thomas Gilovich Professor, Psychology 220 Uris Hall 5-6432 tdg1@cornell.edu	

LIAISONS WITH THE ADMINISTRATION:

Walter Cohen (appointed Sept. '98) Vice Provost and Dean, Graduate School 384 Caldwell Hall 5-5810 wic1@cornell.edu	Maureen Updike Manager, Academic Support Services 436 Day Hall 5-4395 mou1@cornell.edu	Ronald Ehrenberg (Chair, April '98 - Sept. '98) Vice President Academic Programs, Planning and Budgeting 256 Ives Hall 5-3026 rge2@cornell.edu
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Appendix 1

AN INITIATIVE IN SOCIAL ADAPTATION AND DECISION RESEARCH

I. Introduction

For the past several months, the Committee has been asking people both within and outside the Cornell social science community for their advice about promising intellectual investment strategies for the social sciences. This document is a response to the Committee's request for specific proposals that appear promising on the basis of what the Committee has learned.

The proposal is organized as follows. We begin by describing the research activities of faculty associated with the Center for Behavioral Economics and Decision Research (BEDR Center) in the Johnson Graduate School of Management and the Multi-Disciplinary Research Program on Organizations and Institutions (MDRPOI), and describe how these activities relate to the general recommendations for improving the social sciences that were offered to the Committee. We then summarize evidence of the rapidly increasing stature of behavioral decision research in the social science community. Finally, we outline a specific proposal for additional investment in the research and teaching activities of both the MDRPOI and the BEDR Center which would be given a broader mission and renamed the Center for Social Adaptation and Decision Research (CSADR).

II. The Center for Behavioral Economics and Decision Research and the Multi-Disciplinary Research Program on Organizations and Institutions

The BEDR Center is one of the oldest and most active interdisciplinary research units on the Cornell University campus. Its core faculty coalesced around common interests at the intersection of psychology and economics in the late 1970s. The Center itself was formally constituted under the leadership of Richard Thaler in the mid-1980's with the support of a small grant provided by Concord Capital Management. The Center's current faculty affiliates include:

Coordinators

Bob Frank, Economics & JGSM
Tom Gilovich, Psychology
Jay Russo, JGSM
Bill Schulze, ARME

Active Members

Rob Bloomfield, JGSM
David Dunning, Psychology
Ben Hermalin, JGSM
Alice Isen, JGSM & Psychology
Bob Libby, JGSM
Mike Lynn, Hotel Administration
Mark Nelson, JGSM
Rose McDermott, Government
Ted O'Donoghue, Economics
Jeff Rachlenski, Law
Dennis Regan, Psychology
Dave Sally, JGSM
Michael Waldman, JGSM

Mailing List — Occasional Attendees

Kaushik Basu, Economics	Steve Ceci, Human Development
Tom Dyckman, JGSM	Hamish Gow, ARME
Ron Hilton, JGSM	Kathleen O'Connor, JGSM
Ed Lawler, ILR	Charles Lee, JGSM
Michael Macy, Sociology	Fred McChesney, Law
Victor Nee, Sociology	Randall Peterson, JGSM
Gordon Potter, Hotel Adm.	Vithala Rao, JGSM
Doug Stayman, JGSM	Sarah Tasker, JGSM
Liz Peters, PAM	

The MDRPOI was initiated through a proposal prepared by Bob Gibbons, which has been funded by the Provost. The seminar series was first directed by Bob Gibbons and then by a number of sociologists and economists, and is currently under the direction of Michael Macy and Robert Frank. The program's affiliated faculty includes:

John Abowd, ILR	Stephen Coate, Economics
John Cowden, Government	David Easley, Economics
Ron Ehrenberg, ILR	Bob Frank, Economics
Tom Gilovich, Psychology	Shin-Kap Han, Sociology
Heather Haveman, JGSM	Benjamin Hermalin, JGSM
Ravi Kanbur, ARME	Kaushik Basu, Economics
Rosemary Batt, ILR	Penny Becker, Sociology
Ted Bestor, Anthropology	Larry Blume, Economics
George Boyer, ILR	Mary Brinton, Sociology
Robert Bullock, Government	Val Bunce, Government
Peter Katzenstein, Government	Jonathan Kirshner, Government
Ed Lawler, ILR	Jon Macey, Law School
Michael Macy, Sociology	Fred McChesney, Law School
Walter Mebane, Government	Phyllis Moen, Human Development
Victor Nee, Sociology	Bonnie Nelsen, JGSM
Kathleen O'Connor, JGSM	Ted O'Donoghue, Economics
Randell Peterson, JGSM	Christopher Way, Government
Trevor Pinch, Sci.&Tech.Studies	Jonas Pontusson, Government
Andy Rutten	Dave Sally, JGSM
Dick Schuler, Economics	William Schulze, ARME
Robert Stern, Plant Biology	Robert Swieringa, JGSM
Sidney Tarrow, Government	Pam Tolbert, ILR
Michael Waldman, JGSM	

As noted above, we propose to merge these activities in a Center for Social Adaptation and Decision Research. The mission of the center is based on the belief that a more realistic and comprehensive understanding of individual and group decision-making will yield enormous scientific and applied gains. To develop such a broader understanding will require not only the interaction of all of the social sciences, but also help from biologists, computer scientists, and from the entire cognitive science community.

III. The SADR Research Program

The easiest way to introduce the research program of social adaptation and decision research is to describe how it contrasts with one of the most successful and familiar research programs in the social sciences over the past four decades. That program has been the export of conventional rational-choice methods from economics into sociology, political science, anthropology, biology, and law. Among its founders and leading practitioners have been Milton Friedman, Gary Becker,

Richard Posner, and the late James Coleman, all of the University of Chicago. Research in the Chicago School tradition has scored important gains. But it has long been clear to people outside this tradition (and even too many within it) that the classical rational-actor model provides an impoverished account of the way people actually behave in many important practical settings.

Social adaptation and decision research is an umbrella term used to describe a program that many view as a challenge to the traditional rational-actor model, but that we prefer to view as a friendly elaboration of it. But the pattern along which research on individual and social decision-making has evolved is indeed precisely the opposite, in one sense, of the pattern for the Chicago school. Whereas the Chicago school has applied the narrow rational-actor model almost without modification to problems in other behavioral science disciplines, the field of behavioral decision making has employed insights from other behavioral sciences to broaden and enrich the traditional rational-actor model.

The field of behavioral decision making can be said to have begun in the late 1970s at the intersection of psychology and economics, stimulated by the path breaking work of two cognitive psychologists, Daniel Kahneman and the late Amos Tversky, and the economist Richard Thaler. Its research program has since evolved to embrace, and in turn to influence, research findings and strategies in sociology, law, biology, game theory, political science, anthropology, and other disciplines.

This research program departs from the traditional rational-actor model in two important ways. The first involves the explicit acknowledgment that because human cognitive abilities are limited, we often evaluate alternatives in ways very different from those assumed in the rational-actor model. The judgmental rules of thumb or intuition on which we rely function reasonably well in many settings, yet also give rise to systematic departures from the behaviors predicted by the rational-actor model. We describe such departures as "irrational behavior with regret," on the grounds that when subjects are shown why their behavior departs from the predictions of the rational-actor model in these ways, many feel motivated to behave differently. For example, whereas the traditional rational-actor model predicts that decision makers will ignore sunk costs (i.e., that they won't "throw good money after bad"), most people in fact seem to be strongly influenced by them, and there is evidence that explicit knowledge of that fact motivates people to try to overcome this influence.

The second way in which this research program departs from the traditional rational-actor model is by incorporating a richer account of human motivation. In its most widely applied form, the rational-actor model assumes that individuals are motivated only by narrowly selfish concerns. Such persons are predicted to behave in a variety of ways that are inconsistent with commonly observed behaviors. The *homo economicus* stereotype, for example, will not vote in presidential elections, nor will he tip in restaurants away from home. To be sure, many people do not vote, and some people do not leave tips when dining in out-town-restaurants. Yet millions of others routinely do vote, and most people leave tips when dining out of town. When it is explained to these people that they could have advanced their narrow interests by not behaving in these ways, few seem motivated to change their behavior. We call instances like these, that arise from an enriched set of motivations "seemingly irrational behavior without regret."

The macro-level elaborations of the model of individual behavior arising from decision research are not simply aggregates of individuals with arbitrarily specified decision rules. Instead, the macro phenomena feed back to the microenvironment to co-determine the composition of the population and the macro-social outcomes.

The coevolution of micro characteristics and macro structures is evident in many social systems. One easy place to visualize this process is in a securities market. Traders come to the market with all kinds of beliefs about the behavior of asset prices. The actual behavior of prices is determined by the joint distribution of traders' assets and beliefs. But of course some traders do better than others, and so the joint distribution of assets and beliefs evolves. The traditional wisdom in economics, often attributed to Milton Friedman, is that traders whose beliefs are more nearly correct will get rich at the expense of those with less correct beliefs. As this wealth transfer occurs, speculative opportunities begin to disappear. Consequently, in the long run efficient markets emerge.

Recent research has shown Friedman's argument is wrong. Nonetheless, there are regularities in the behavior of asset prices.

Milton Friedman and others of the Chicago School were in fact early proponents of the coevolutionary research paradigm. Analytical advances allow us to see today that their claims made in the 1950s in defense of the rational actor model are wrong. But while their conclusions turn out to be incorrect, their view of social process is fruitful and is only now being exploited. This view of dynamic social systems as consisting of individuals whose behavior is evolving and who are themselves being selected for or against has the potential to reshape both social science theory and its application.

This field has been characterized as the study of "adaptive social systems," a field that includes dynamical approaches to the emergence and stability of norms and institutions. "Adaptive social systems" and "emergent institutions" capture the idea that very simple local interaction patterns can generate highly complex, and often surprising, global solutions. The process can be modeled using evolutionary game theory, a method that assumes a population of rule-based (and often myopic) adaptive agents.

The defining problem centers on what happens when decision-makers are strategically interdependent, such that the consequences of each agent's choices depend in part on the choices of others, yet they lack formal institutional mechanisms for global coordination. Will such institutions emerge, and if so, how? Or will informal norms evolve that make centralized control unnecessary? How does information diffuse among these decision-makers? What are the effects of the structure of social networks? How do meanings and interpretations of events get coordinated? Will agents learn to trust one another, or will trust even be necessary for agents to work together effectively? Under what conditions can they learn to effectively communicate (and to do so with or without deception)? How do decision-makers know what to believe? What are their cognitive biases and how and why do these biases occur?

These questions have attracted increasing attention from game theorists. Game theoretical analysis begins by specifying the rules of the game that include relevant formal institutional rules and organizational features, such as the ability or inability to enter into formal, legally binding contracts and the existence of social networks. It enables restricting the set of social norms that can emerge endogenously among the players in this game to constrain their behavior in a self-enforcing manner. Furthermore, it enables one to examine the behavioral implications of different institutional and organizational features. Hence it provides a theoretical framework that links exogenous features of the situation, the constraints implied through strategic interactions, and behavior.

As the examples described below make clear, both types of departure from rational choice, with and without regret, as well as the macro consequences of social adaptation, are widespread and important. We describe these examples in some detail in the belief that the same issues that originally drew us to this research agenda will persuade others that it merits the increasing attention and support it has begun to attract.

A. Systematic Cognitive Errors: Departures from Rational Choice With Regret

Proponents of the traditional rational-actor model do not insist that people never make mistakes. But they often do claim that the mistakes people make are unsystematic. Thus, if some people buy too much of something, others buy too little, so that, on average, decision errors tend to cancel one another. One of the principle claims of the SADR research program is that people depart from the predictions of the traditional rational-actor model in ways that are systematic, not random.

Example 1: Imagine that you are about to buy a new clock radio for \$20 at the nearby campus store when a friend tells you that the same radio is on sale at a store downtown for only \$10. Do you drive downtown or do you buy the radio from the campus store? Next, imagine that you are about to buy a laptop computer for \$1,050 from the nearby campus store when a friend tells you that the store downtown has the same computer on sale for only \$1,040. Do you drive downtown this time?

Note that in each instance, the benefit of making the purchase downtown is exactly \$10. And since the effort necessary to obtain these savings is the same in both cases—namely, having to drive downtown—traditional rational-actor models predict that people will decide in exactly the same way in both situations. Yet when these questions are posed to individuals, invariably most respond that they would drive downtown to buy the clock radio, but not to buy the laptop computer.

Since different people assign different implicit costs to driving downtown, there is of course no uniquely correct response to either question. Those for whom the implicit cost of the extra travel is more than \$10 should buy from the campus store, and those for whom it is less than \$10 should buy downtown. What the traditional rational-choice model insists, however, is that because the relevant costs and benefits are exactly the same in each instance, people should buy both products in the same location. Yet, in literally hundreds of experiments, people say they would not. What seems to account for the observed pattern is that many people estimate the benefit in each case by focusing on the *percentage* reduction in the purchase price they will achieve by driving downtown. Once it is explained clearly why the *absolute* savings is the more sensible magnitude on which to focus, people tend to revise one of their choices to attain consistency.

Example 2: Imagine that the country is preparing for the outbreak of an unusual disease that is expected to kill 600 people. Two programs to combat the disease have been proposed. If program A is adopted, exactly 200 people will be saved. If program B is adopted, there is a 1/3 probability that 600 people will be saved, and a 2/3 probability that no one will be saved.

When Kahneman and Tversky confronted experimental subjects with this choice, 72 percent opted for program A, the remaining 28 percent for program B. This pattern of choices, by itself, is not problematic. But now suppose the choice people face is characterized in the following way:

Imagine that the country is preparing for the outbreak of an unusual disease that is expected to kill 600 people. Two programs to combat the disease have been proposed. If program C is adopted, exactly 400 people will die. If program D is adopted, there is a 1/3 probability that nobody will die, and a 2/3 probability that 600 will die.

Note that the second description offers a choice between precisely the same two alternatives subjects confronted in the first description. For example, a measure that guarantees exactly 200 lives saved (program A) is exactly the same as one that guarantees 400 lives lost (program C). But under the second wording, only 22 percent of subjects opted for program C, the remaining 78 percent for program D. When the choice is between different options characterized according to the number of lives that will be saved (programs A and B), most subjects choose the sure thing (A). Yet when the choice is between options characterized according to the number of lives that will be lost, people are drawn overwhelmingly to the riskier option (D).

As Example 2 illustrates, even the most careful judgments are prone to framing effects—a violation of the “descriptive invariance axiom,” one of core axioms of traditional rational-choice theory. Violations of this axiom are not confined to subjects in psychology experiments called upon to make choices between hypothetical options. Oncologists who must recommend either surgery or radiation for their patients are influenced, alarmingly, by whether the outcome statistics for each procedure are expressed in terms of the number of people who survive a given period or the number who die during that period. These examples make it clear that people do not convert the “surface structure” of such problems into canonical, “neutral” representations the way they do in comprehending language (indeed, there often is no neutral representation).

Example 2 also illustrates the principle of “loss aversion,” one of the most important behavioral regularities in the CIO program. The principle of loss aversion states that losses bring more pain than equivalent gains bring pleasure, making people hypersensitive to the prospect of sustaining a loss. This leads to, among other things, bargaining intransigence (the concessions offered to the other side look more substantial to the one giving them up—who experiences them as losses—than to the one to whom they are offered) and a strong adherence to the status quo.

New Jersey motorists are offered—as the default option—an inexpensive insurance policy that restricts their right to sue. They can acquire an unrestricted right to sue by paying a higher price. Motorists in neighboring Pennsylvania have the same two options, only the higher-priced, unrestricted option is the default. In both cases, a decision to switch from the default option entails possibilities for both gains and losses. The fact that large majorities of motorists in both states stuck with their respective default options is more plausibly explained by loss aversion than by the alternative hypothesis that Pennsylvania motorists assign far higher value to an unrestricted right to sue.

Example 3: Linda is 31 years old, single, outspoken and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in anti-nuclear demonstrations. Rate, on a 9-point scale, the likelihood that Linda is a bank teller. Then, on the same 9-point scale, rate the likelihood that Linda is a bank teller *and* is active in the feminist movement.

The mean response for subjects given the first rating assignment was 3.3, and the mean response for subjects given the second assignment was 4.5. This response pattern violates the laws of simple logic, since the set of people who are both tellers *and* feminists is necessarily smaller than the set of people who are bank tellers.

Example 3 illustrates the principle that people's judgments of likelihood are often based on little more than an assessment of similarity—a bias to believe that "like goes with like." This bias has been implicated in widespread initial scientific resistance to the germ theory of disease (because of the difficulty of associating a big outcome like a serious illness with a small cause like an invisible microbe) and in the popularity and durability of various conspiracy theories (because of the difficulty of associating a big effect like the loss of a charismatic President with a small cause like a lone gunman). Similarity-based judgment also underlies a variety of other invalid beliefs and superstitions—among them that "you are what you eat;" that handwriting analysis provides accurate cues to personality; and that the signs of the zodiac predict character and temperament.

The fact that people miscalculate in ways that are systematic rather than random has important implications for public policy. Consider, for example, the implications of loss aversion for the relationship between environmental pollution and economic growth. Among environmental activists, the received wisdom is that economic growth is inimical to the environment. Yet, as the experience of the Former Soviet Union showed, even modest levels of industrial activity are capable of causing great environmental damage. Pollution levels depend less on the total amount of economic activity than on whether societies are willing to bear the higher costs of cleaner production technologies. Loss aversion suggests that higher economic growth rates make it easier for societies to absorb these costs. In a society whose income is static, paying these costs necessarily entails having to cut back on other things. But a society whose income is growing rapidly can use some of its extra income to pay for cleaner technologies. It need not abandon the material comforts to which it has grown accustomed.

The study of the systematic biases of human judgment and decision making has already helped to illuminate, for example, why rival countries frequently misjudge each other's intentions, why clinical psychologists can so disastrously misread their clients' symptoms, why investors are inclined to hold on to their losing stocks while selling their winners, why fearful residents living near hazardous waste sites fail to sell their homes and move away, and why public works projects are so frequently late and over budget.

B. Enriched Models of Motivation

The motivation-action sequence in conventional rational-choice theory envisions an individual whose only goal is to maximize a utility function based on self-interest narrowly defined. The advantage of this approach (apart from the analytical tractability to which its simplicity gives rise) is that it helps generate clear predictions about behavior that can be refuted by empirical testing. Traditional rational-choice theorists are often critical of attempts to introduce broader conceptions

of human motivation on the grounds that if investigators are free to assume whatever they wish about tastes, then it becomes almost impossible to generate empirically refutable hypotheses. Almost any behavior—no matter how bizarre—can be “explained” after the fact by simply assuming that the individual had a taste for engaging in it.

This criticism is well taken. Yet, as an important strand in the SBDR research program has demonstrated, an enriched conception of human motivation can expand the predictive and explanatory power of traditional rational-actor models in dramatic ways. Some examples:

i. Evaluating Future Costs and Benefits

Any realistic theory of human choice must account for how people evaluate costs and benefits that occur at various points in the future. The traditional rational-actor model assumes that people discount future costs and benefits at a constant exponential rate—the market rate of interest in the case of future monetary costs and benefits, and an implicit personal discount rate in the case of non-monetary costs and benefits. Yet the predictions of this theory are systematically at variance with observed behavior. Consider, for example, the following two scenarios in which a person can choose between receiving \$100 at one point in time or \$110 a week later:

A: \$100 in 52 weeks vs. \$110 in 53 weeks,
and
B: \$100 now vs. \$110 in one week.

If people discount exponentially, anyone who prefers \$110 in choice A must also prefer \$110 in choice B. Yet many of those who choose \$110 in A go on to voice a clear preference for \$100 in B. Asked to account for this pattern, they typically respond with something like “I want the \$100 right away, but if I have to wait a year for it anyway, I might as well wait the extra week and get \$110.”

From the perspective of the traditional rational-actor model, this pattern is problematic in at least two ways. First, it gives rise to inconsistent choices and behavior. Thus, in the pair of choices posed above, an investigator attempting to determine whether someone is willing to wait an extra week to get an additional \$10 would reach one conclusion in scenario A, but the opposite conclusion in scenario B.

The second difficulty is that the observed choice pattern suggests that people often fail to choose the alternative that best promotes their interests. For example, it will be “worth it” to wait an extra week to get the extra \$10 as long as the interest rate is less than 10 percent per week. Failure to wait the extra week in a world in which interest rates are more like 5 percent *per year* is simply a bad decision.

As the late Richard Herrnstein, George Ainslie, and others have shown, the motivational structures of both human and animal nervous systems predispose individuals to choose poorer but imminently available rewards over better but delayed alternatives. These same investigators have shown that observed intertemporal choice patterns can be predicted with great accuracy and consistency on the basis of models in which individuals discount future costs and benefits not exponentially but hyperbolically (that is, by models in which the psychological attractiveness of a future reward doubles when the delay until receiving it falls by half).

The policy implications of the narrow rational-actor model are often very different from those of behavioral models that incorporate hyperbolic discounting. Yet writers in the Chicago School tradition urge policy makers to adopt the rational-actor model when formulating policies for dealing with virtually every important social and economic problem. Richard Posner, for example, suggests that the rational-actor model provides the best available basis for formulating policies for dealing with the AIDS epidemic. As evidence for this assertion, he observes that homosexuals were more likely to adopt safe-sex practices once they became well informed about how the AIDS virus is transmitted. From this Posner infers that if someone who understands the risks exposes himself to infection, he must be viewed as having made a rational choice, in the same way that we view it as rational to engage in other risky behaviors—such as crossing a street or driving a car.

The hyperbolic discounting model, by contrast, makes clear that individuals will often choose powerful short-term rewards even when they *know* that these choices run deeply contrary to their interests. It is difficult to conceive of an intelligent policy for dealing with the AIDS epidemic that failed to incorporate this fundamental insight. Many of the policy recommendations that stem from the traditional rational-actor model are indeed deeply flawed. Yet the influence of these recommendations is nonetheless substantial.

The contrast between the rational-actor model and the hyperbolic-discounting model also has implications for policy questions regarding savings. For example, many proponents of the rational-actor model oppose collective efforts to increase savings, even in the face of compelling evidence that the American savings rate is pathologically low. ("People know their own interests, and if they wanted to save more they would.") The hyperbolic-discounting model, by contrast, encourages us to take seriously the problems confronting people who are overwhelmed by credit-card debt, and the expressions of regret made by people who enter retirement with little or no savings. The rational-actor model in its most narrow form is similarly ill suited as the sole foundation for attempts to understand and deal with problems arising from illicit drugs.

The hyperbolic-discounting model, a staple of the SADR research program, does not abandon the fundamental insight of the rational-actor model that incentives affect behavior. It merely stresses the need to incorporate the best available theoretical and empirical evidence on the question of *how incentives* affect behavior.

ii. Beyond Narrow Self-Interest: Seemingly Irrational Behavior Without Regret

a. Sympathy and cooperation in social dilemmas

Consider the owner of a business who perceives an opportunity to open a branch in a distant city. She knows that if she can hire an honest manager, the branch will be highly profitable. But she also knows that she cannot monitor the manager, and that if the manager cheats, the branch will be unprofitable. By cheating, the manager can earn three times as much as he could by being honest. Will the owner open the branch in the distant city? The narrow rational-actor model suggests that she will not. She will predict, using that model, that the manager will cheat (since he knows that the owner cannot monitor and punish him). Armed with that prediction, the owner's best option is not to open the branch.

But suppose we relax the assumption that all potential managers are narrowly self-interested. If the owner could somehow identify an honest manager, the venture could then go forward. And in that case, both the owner and the manager would come out ahead relative to the outcome predicted by the rational-actor model.

Can we identify people who can be trusted even though their material incentives favor cheating? Consider the following thought experiment: Imagine you have just gotten home from a crowded concert and discover you have lost \$1000 in cash. The cash had been in your coat pocket in a plain envelope with your name written on it. Do you know anyone, not related to you by blood or marriage, who you feel certain would return it to you if he or she found it?

In response to this question, most of us report confidently that we know many such people. There is also experimental evidence that people can make statistically accurate predictions about who will defect in one-shot social dilemma games.

One of the firmest predictions of the traditional rational-actor model is that individuals will not cooperate in one-shot social dilemmas. Yet, although cooperation in such dilemmas is far from universal, it is also not uncommon. People return unwanted pesticides to inconveniently located disposal centers, for example, even though they could pour them down their basement drains without detection or penalty.

Cooperation in social dilemmas appears to be motivated not by rational calculations about self-interest but by various moral sentiments—in some cases, sympathy for the interests of specific

others, in other cases, a more general sense of duty to the community. An important strand in the SADR research program rests on the observation that the ability to identify the presence of such moral sentiments in potential trading partners creates opportunities to exploit mutual gains from cooperation.

This observation has implications for a variety of issues of concern to social scientists. In the realm of organizational design, for example, it emphasizes the possibility of creating environmental conditions that foster voluntary cooperation on the part of employees. By contrast, the traditional rational-actor model, which emphasizes the impossibility of voluntary cooperation, has focused on attempts to bribe and punish employees. Evidence suggests, however, that mechanisms such as piece rates, surveillance cameras, drug testing, e-mail monitoring, and the like may actually stimulate opportunistic attitudes and behavior in the workplace. There is also evidence that single-minded focus on material incentives will fail to exploit important opportunities for gain in the realm of environmental policy.

b. Justice and Fairness

Authors in the Chicago School tradition often write with thinly-veiled contempt about woolly notions like justice and fairness, describing them as “terms which have no content.” The field of behavioral economics and decision research, however, has produced a rich experimental literature that defines these concepts in operational terms and facilitates quantitative assessment of importance that many people assign to them.

One of the most familiar strands in this literature is the so-called “Ultimatum Bargaining Game,” a simple game that is played only once by two persons. The first person (who is often called “the allocator”) is given a sum of money—say, \$100—by the experimenter, and then asked to propose a division of that sum between himself and the second player (who is often called “the receiver”). Thus the allocator might propose \$50 for himself and \$50 for the receiver; or \$60 for himself and \$40 for the receiver; or, more generally, $\$X$ for himself and $\$(100-X)$ for the receiver. (Only integer values of X are allowed.) If the receiver accepts this offer, each gets the proposed amount and the game is over. But if the receiver refuses the proposal, the \$100 reverts to the experimenter and both the allocator and receiver get nothing.

The traditional rational-actor model predicts that the allocator will propose \$99 for himself and \$1 for the receiver, and that the receiver will then accept this offer (on the grounds that getting even \$1 is better than getting nothing). Experimental evidence, however, suggests that one-sided offers are in fact extremely uncommon, and that when such offers are made, they are likely to be refused. In one study, for example, a 50-50 split was the most frequent offer made by proposers. And when the receivers in this same study were asked to report the smallest amount they would have been willing to accept, their average response was 26 percent of the total. Further experiments support the interpretation that it is the receiver’s perception that a one-sided offer is unfair that leads them to reject it. Thus one study found that the typical receiver is willing to accept even a very small percentage of the total if that percentage is determined by a random number generator (rather than being an intentional offer by the proposer).

Concerns about fairness to the model of human motivation have far-reaching implications for issues of concern to many social scientists. A long-standing puzzle in labor economics, for example, is why workers earn persistently higher wages in high-profit industries than in industries with low profit rates. (Traditional economic theory states that even though employers in the former industries can afford to pay more, they have no incentive to pay more than the going rate, since paying even a little more would result in hordes of new applicants from low-profit industries.)

Suppose, however, that workers care not only about the absolute level of their pay, but also about whether their contracts seem fair in the light of their perceptions about employers’ abilities to pay. In labor markets populated by such workers, the equilibrium wage will be a positive function of the employer’s ability to pay, and hence the observed relationship between wage and profit rates.

Concerns about fairness also appear to explain why union members will go on strike even in the face of overwhelming evidence that doing so will cost them jobs that pay more than they will be able to earn elsewhere (consider, for example, the fabled Eastern Airlines strike). In the field of

foreign relations, concerns about fairness also appear to explain why nations often take actions that conflict with the predictions of the standard rational-actor model.

Concerns about fairness even appear to explain the reluctance of firms to exploit excess demand by raising prices in the manner predicted by traditional theories. An ongoing challenge to these theories has been to explain why we observe persistent excess demand for Rolling Stones concerts, premium sporting events like Wimbledon finals and the Super Bowl, reservations at popular restaurants on Saturday nights, and air tickets during peak holiday periods. Why don't sellers simply raise their prices? The most parsimonious answer is that sellers are wary of triggering negative consumer perceptions of "unfair" pricing. As one ski area operator put it, "if customers think you've gouged them during Christmas week, they'll go somewhere else in March."

c. Positional Concerns

Which world would you choose to live in: one in which you earn \$100,000 per year and everyone else earns \$200,000; or one in which you earn \$90,000 and everyone else earns \$75,000? In the standard rational-actor model, in which individual utility depends on absolute consumption, the first world is the clearly preferred choice, because its higher income level will support a higher material standard of living. Many people, however, say they would choose the second world. And there is indeed powerful evidence that, once a threshold level of affluence is achieved, human well-being is far better predicted by relative consumption than by absolute consumption.

A long-standing component of the SADR research program explores the many ways in which the positive and normative conclusions of the rational-actor model are altered by the introduction of concerns about relative position. Standard labor market models, for example, predict that differences in pay among co-workers within firms will mirror differences in the dollar values of what they contribute to their employer's bottom line. But consider the following thought experiment:

Among your co-workers of roughly similar rank, job title, and seniority, try to envision the two most productive individuals and also the three who are least productive. Now suppose that either the top two workers or the bottom three were to suddenly disappear. Which group's disappearance would most reduce the total value of what gets produced in your group?

Most people answer without hesitation that the disappearance of the top two would hurt most. On the basis of this answer, conventional models predict that the combined salaries of the top two individuals would be greater than the combined salaries of the bottom three. Yet in most groups the reverse is in fact the case. Indeed, for every firm for which the relevant salary and productivity data are available, the distribution of wages is highly compressed relative to the corresponding distribution of productivity. And this is precisely the pattern predicted by models in which each worker cares not only about her salary but also about how it compares to the salaries earned by her co-workers.

If, as evidence suggests, relative consumption matters more for some goods than for others, then concerns about relative position will also affect how people allocate their incomes across different categories of goods. Compared to the consumption mix that would maximize overall welfare, people will spend too much on cars, houses, and many other material goods, and too little on less conspicuous forms of consumption, such as time spent with family and friends.

The resulting waste is *very large*. Consider the representative sample of sports cars sold today shown in the right column of the table below. The left column of this table extrapolates how the entries in the right column will evolve if current spending trends continue to play out over the coming decade. Given the importance of context for evaluation, our best conjecture is that each collection of cars will generate almost precisely the same levels of satisfaction for their respective owners. Entry for entry, the cars in the left column are faster and more luxurious than their counterparts in the right column, but by the standards of the year 2010 the established norms for these qualities will be higher as well.

The Unconstrained Sports-Car Hierarchy in 2010 (price, market share)	The Current Sports-Car Hierarchy (price, market share)
1. Tomorrow's Supercar, \$414,000, 1%	1. Ferrari 456 GT, \$207,000, 1%
2. Ferrari 456 GT, \$207,000, 4%	2. Porsche 911 Turbo, \$105,000, 4%
3. Porsche 911 Turbo, \$105,000, 15%	3. Porsche 911 Carrera, \$72,000, 15%
4. Porsche 911 Carrera, \$72,000, 20%	4. Porsche Boxster, \$45,000, 20%
5. Porsche Boxster, \$45,000, 25%	5. BMW Z3, \$30,000, 25%
6. BMW Z3, \$30,000, 35%	6. Mazda Miata, \$23,000, 35%
Average price = \$64,320	Average price = \$41,620

The collection of cars in the left column costs more than 50 percent more than the collection in the right column. If the relationship between absolute spending and satisfaction is the same for other goods as for cars, the conclusion is that we could spend roughly one-third less on consumption—roughly \$2 trillion per year—and suffer no significant reduction in satisfaction. Savings of that magnitude could help pay for restoring our crumbling public infrastructure, for cleaner air and water, and for a variety of other things that would confer lasting improvements in human well being.

Incorporation of concerns about relative position also helps shed light on many simmering disputes about the efficacy of the market system. The Chicago School has long insisted that labor and product markets are highly competitive, and attempts to regulate them in any way are likely to do more harm than good. Opponents of the Chicago School invariably counter that large corporations have enormous market power, and that the state must therefore intervene to protect workers from exploitation. On the best available evidence, labor and product markets do, in fact, appear highly competitive. Yet the trend in industrialized countries has been the adoption of ever more comprehensive state regulation of private labor contracts. If these regulations make people worse off, why don't voters oppose them?

The apparent contradiction can be resolved by noting that if workers care about relative position, private labor contracts simply cannot be expected to yield the optimal levels of workplace safety and other amenities. Each worker's incentive is to exchange reductions in safety for higher pay, thereby to move higher in the consumption distribution. In the aggregate, however, these moves go largely for naught, since it is impossible for everyone to move higher in relative terms. It follows that collective action to increase safety will be attractive even in highly competitive labor markets.

The incorporation of concerns about relative position into standard rational-actor models also poses a challenge to conventional beliefs about conflict between equity and economic efficiency. On the conventional view, progressive taxation is thought to compromise efficiency by weakening the incentives of top producers to expend effort and take risks. If concerns about relative position are important, however, then progressive taxes—especially if levied on consumption rather than income—will result not only in a more equitable distribution of living standards but also higher levels of economic growth.

b. Other Interdependencies in Preferences

Interdependencies in preferences and behavior are not confined to concerns about relative income and consumption. The traditional rational-actor model, which denies the existence of such interdependencies, has considerable difficulty accounting for important waves of economic and social behavior. Some examples:

Female Labor Force Participation. One of the most striking economic and social changes of the past three decades has been the more than two-fold increase in labor force participation of married females. The Chicago School tradition attempts to explain this change by reliance on the usual suspects—in particular, the economic rewards from paid employment relative to those available from not working outside the home. Yet labor force participation of married women has increased for virtually every category—irrespective of movements in the real economic value of labor market opportunities. There is now good evidence that the recent participation changes cannot be adequately explained without taking into explicit account that the attractiveness to any one woman of working outside the home increases with the fraction of other women in the population who do so—irrespective of the direct economic rewards.

The Sexual Revolution. Traditional accounts of the dramatic increase in the frequency of premarital sex in the years since the mid-1960s emphasize the role of the birth-control pill, which for the first time freed women from the fear of unwanted pregnancy. But alleviation of this fear, by itself, cannot be a satisfactory explanation, since the frequency of premarital sex among women who do not use birth control pills is currently not significantly different from the corresponding frequency for those who do. The dramatic change in observed behavior is unlikely to be explained without taking explicit account that the costs and benefits of engaging in premarital sex depend importantly on the frequency with which others in the population also do so. The appearance of the birth-control pill may have helped launch the observed changes, but its direct effect was surely very small.

The Sport-Utility Craze. In 1990, annual sales of sport-utility vehicles in the United States totaled only 750,000 units. By 1997, however, annual sales of these vehicles were more than 4,000,000 units—a more than five-fold increase. A fall in the real price of gasoline has made ownership of these fuel-inefficient vehicles more attractive than in the past, but this effect is far too small to account for the observed increase in sales. And it is unlikely that any existing social-science models can account for it without taking explicit account that the attractiveness of owning such vehicles is an increasing function of the proportion of others who also own them. Social scientists who continue to deny this influence will someday be lumped together in the public mind with physicians who argued against the germ theory of disease.

C. Adaptive Social Systems: Emergent Norms and Institutions

The research agenda of social adaptations has three major threads which are described below:

i. Rational Choice and Evolutionary Adaptation

As with decision theory, game theory embodies the tension between the economic approach, centered on the model of rational choice, and behavioral approaches that depart from or even abandon altogether the conventional cost-benefit calculus in favor of evolutionary selection. Much of the excitement in game theory in the past two decades has been in the area of evolutionary games that model the emergence and stability of distributions of strategies, with clear implications for the dynamical analysis of norms and institutions.

Economic game theory assumes strategic foresight based on complete information and a perfect grasp of the logical structure of a well-defined problem. Simply put, economic game theorists explain self-interested interactions between people like themselves. However, in everyday life, most games are played by lay contestants, not mathematicians. These games are often highly routinized, played according to internalized rules or instructions, with little conscious deliberation. The players rarely calculate the strategic consequences of alternative courses of action but simply look ahead by holding a mirror to the past. From this standpoint, the importance of the iterated game centers not on the incentives created by the prospect of future interaction but on the habits of association distilled from prior exposure to a recurring problem. In this respect, “everyday” strategic interaction resembles language. We sometimes choose to interact deliberately, just as we sometimes “choose our words carefully.” But mostly we do not think before we speak, we just talk. Similarly, we do not

choose to interact, we simply know to take turns, stand in line, go to the polls, speak softly, show courtesy, defer to others, reply promptly, tell the truth, and so on.

In sum, evolutionary models of emergent institutions represent an important advance in the effort to explain the creation and recreation of social order in everyday life. Because repetition, not foresight, links game payoffs back to the choices that produce them, these models need not assume that the payoffs are the intended consequences of action. Thus, the models can be applied to expressive and righteous behavior that lacks a deliberate or instrumental motive. For example, Bob Frank's evolutionary model of trust and commitment explains the robustness of emotions like vengeance and sympathy. An angry or frightened actor may not be capable of deliberate and sober optimization, yet the response to the stimulus has consequences for the individual, and these in turn can modify the probability that the behavior will be repeated, through reinforcement, imitation, or some combination of learning and reproduction.

ii. The Embeddedness of Decision

The proposed Center's approach to institutional analysis differs from the traditional economic approach in a second way: the embeddedness of decision-making in social networks and institutions that both constrain and facilitate interaction. A main conclusion of neoclassical economics has been that for given endowments, preferences, and technology, the anonymous market will lead to a unique and optimal outcome. In sharp contrast, game theory indicates that in many real-life economic situations there is the possibility of multiple Pareto-ranked outcomes, and the ultimate selection of one of them depends critically on the social environment--norms, culture, identity, and networks. The embeddedness of decision in social networks contrasts with the conventional economic assumption of an anonymous market in which each agent can exchange with any other. Network analysis is one of the core strengths of the Sociology department at Cornell, but this field, in the past, has focused mainly on networks as a source of static constraint and not as an evolving structure. An important component of SADR's mission is to promote intellectual trade across disciplinary boundaries among network theorists, evolutionists, and decision researchers, with the aim of developing dynamical models in which networks and institutions both reflect and constrain individual choices.

Informal constraints embedded in norms and networks, operating in the shadows of formal organizational rules, can both obstruct and facilitate economic and organizational performance. Informal constraints can give rise to inefficient allocation of resources when private entrepreneurial networks collude, as Mancur Olson shows, to secure resources from government for their group, resulting in structural rigidities and economic stagnation. They can also facilitate high organizational performance by providing a framework for trust and collective action as seen in Victor Nee's study of Cornell's CLEO collaboration. In CLEO, the formal rule requires that all 230 participating physicists from 23 universities be listed as co-authors in alphabetical order in all research report published by the CLEO collaboration. This is necessitated by the need to recognize the contribution of physicists who contribute to building and maintaining the machine that produces B and Charm quarks. Only a small group of analysts directly contribute to the research and writing, but all 230 physicists receive credit for it. Clearly publication does not provide the recognition that is crucial for career advancement for the participating physicists, a concern especially for graduate students, post-docs and junior faculty. The key to CLEO's success in sustaining high performance over the two decades of its existence is that contributions to the collaboration are validated and metered by building a reputation for meritorious and innovative work within a network of physicists who collectively control job opportunities in high energy physics.

iii. Dynamical Models of Institutional Change

The evolutionary approach also differs from conventional economics in the ability to model social change. Despite its strengths in describing and predicting outcomes in strategic situations that both arise from and influence the institutional environment, economic game theory has demonstrated only limited ability to advance the study of the *origins and dynamics* of institutions

and organizations. Even in relatively simple game theoretic situations, it is likely that multiple outcomes (or, more broadly, equilibria) are possible. As noted above, this is a great strength of game theory. And yet it creates a dilemma, for economic game theory provides little predictive power *vis a vis* equilibrium selection. In other words, economic game theory is extremely useful in revealing the set of possible implications of particular rules imposed by the state or an organization on its members, taking into account the strategic interactions among members. Yet economic theory alone cannot indicate which implication will prevail. This inadequacy is based on the difficulty that a static approach faces in understanding how the institutional solutions it predicts as possible ones will actually emerge through social processes. Indeed, while economic game theory can show that institutional constraints on choice can actually be Pareto-improving, it has little to say about how such institutions are generated over time or how the population might move from one equilibrium to another.

Evolutionary game theory offers a dynamical analysis of how norms and institutions might emerge out of repeated social interactions. We refer here not simply to the identification of evolutionarily stable strategies but rather to "bottom up" multi-agent models. In these studies, agents adapt to a changing landscape by building on and mutating partial solutions. The result may be a punctuated equilibrium, characterized by the sudden collapse of seemingly stable regimes. For example, mutant strategies can "quietly" drift into a population "unnoticed" by cultural selection pressures and then suddenly emerge into the open when sufficiently numerous.

This approach has been applied to the study of the sudden collapse of stock markets and political regimes or the rapid change in fashions and fads. An interesting example is the surprising stability of seemingly unpopular norms, followed by unexpected outbreaks of nonconformity ("crime waves"). The paradigmatic case is the parable of "The Emperor's New Clothes." Each citizen privately knows that he cannot see the clothes but assumes that others can, given their public demonstration of enthusiastic approval. Not wanting to appear "unworthy," these public doubts are suppressed, thereby reinforcing the illusion. Thus, each citizen helps to enforce conformity to a norm that each privately questions. Although this "pluralistic ignorance" tends to be highly fragile, the regime can be stabilized by strategies that use public enforcement to assure others of the agent's intent to comply.

Consider, for example, excessive alcohol consumption by college students. Recently, a Cornell student with a blood alcohol level of 2.5 fell into the gorge while walking home from a party. The student died. Fortunately, such cases are rare. However, even the heavy-drinking survivors pay a substantial price in academic performance. Campus attitude surveys reveal two curious findings: 1) most students believe that drinking is widely accepted, and 2) most students privately do not approve of drinking. A possible explanation is the "Emperor's new brew." In this story, non-drinking students publicly express approval of drinking (as "cool") as a way to project compliance with drinking norms without having to actually drink. They conform to the norm not by drinking but by increasing social pressures on one another to conform. Obviously, the more "rational" strategy would be to pressure one another not to drink. Why don't they?

Another example may be found among teenage boys who emasculate peers who do their homework but privately worry that they may end up like their older brothers. More generally, people can get caught in "social traps" in which non-compliant individuals enforce unpopular norms to protect themselves from sanctions against deviants. The evolution of self-enforcing illusions, and the process by which these illusions can be made to collapse, is a problem that is highly compelling—both theoretically and practically. In searching for answers, computational models of emergent norms and institutions, based on an "evolutionary epistemology," provide a promising alternative to an older generation of static models.

The game-theoretic study of norms and institutions cuts across all the disciplines of the social and behavioral sciences. In addition, the use of analytical and computational methods in this research area draws from areas of theoretical biology and applied mathematics in which Cornell is particularly strong. Increasingly, these studies are also attracting the attention of scholars in computer science, a development that has special importance at Cornell. Despite the success of Cognitive Studies at Cornell, and the prominence of Computer Science within that program, there is surprisingly little

intellectual trade between Cognitive Studies and many of the social sciences at Cornell. One of the objectives of the SADR would be to encourage such interaction.

III. The SADR Research Program Is a Proven Growth Area

The Provost's Committee was advised by several of the experts that it consulted to build in growth areas. Twenty-five years ago, social behavior and decision research did not exist as a field, and at that time no one would have predicted that a paper written by two psychologists (Tversky and Kahneman) would become the most widely cited paper published in *Econometrica* over the next two decades. Nor would anyone have predicted that Richard Thaler, then a little-known assistant professor, would become one of the most widely cited Cornell social scientists of the late twentieth century. Yet today, the most knowledgeable players in private foundations and government funding agencies are placing strong bets on the continued prospects for success in social behavior and decision research.

The Sloan Foundation recognized the potential of behavioral economics with a series of small grants in the early 1980s. This program was taken over, and significantly expanded, by the Russell Sage Foundation in the late 1980s. For the past four years, the Russell Sage foundation has assembled a group of senior scholars it calls the "Behavioral Economics Roundtable" to oversee its program of small grants in behavioral economics. During that time, the Roundtable has also organized an intensive three-week training session in behavioral economics held each summer at the University of California at Berkeley. This program, which involves intensive seminars and discussions led by a group of distinguished senior scholars, assembles a group of some 30 highly recommended graduate students and assistant professors who have demonstrated an interest in pursuing research in behavioral economics.

The National Science Foundation recently launched its Program in Decision, Risk, and Management Science, a significant portion of whose grant money has gone to fund proposals in behavioral economics and decision research. The National Bureau of Economic Research, a private non-profit organization, has recently sponsored conferences in behavioral finance, behavioral labor economics, and behavioral macroeconomics.

Ideas from behavioral decision research have already had direct influence on the cores of several separate disciplines. In psychology, judgment and decision making has become a leading research topic in both cognitive and social psychology. For a period of several years, the *Journal of Economic Perspectives*—the most widely circulated journal in economics—ran a quarterly column devoted to accounts of various "anomalies" from a behavioral economics perspective. A leading intermediate microeconomics textbook published in 1990 contains two chapters that introduce students to the contributions of behavioral economics. New Ph.D.s specializing in behavioral economics have recently been appointed as assistant professors in several leading business schools and economics departments. And two of the most highly recruited prospects in the 1998 graduating class of Ph.D. economists wrote dissertations in behavioral economics.

Findings from the behavioral economics, and social behavior and decision research program have also begun to filter beyond the academy. They are often cited in the popular press, and BEDR and MRPOI faculty are frequently invited to present their work at professional meetings of accountants, investment bankers, physicians, and business executives.

The rise of behavioral economics and has occurred in tandem with the recent rise in experimental economics. Many separate strands in the research program in SADR rely intensively on laboratory experiments to test hypotheses. Although experimental economics was virtually non-existent as a field twenty-five years ago, papers in experimental economics have become commonplace in leading journals in economics and other social sciences. Growing interest in, and acceptance of, laboratory experiments should continue to fuel growth and progress in behavioral decision research.

The growing area risk analysis with two relatively new interdisciplinary journals has as its core the SADR paradigm. Research in risk communication has led to many practical insights for agencies dealing with safety and the environment. Funding for this area of research is plentiful and growing.

IV. There Is Already a Strong Nucleus in SADR at Cornell

As noted earlier, the judgment and decision literature was launched by the cognitive psychologists Amos Tversky and Daniel Kahneman. Neither of these scholars has ever had an affiliation with Cornell. (Tversky taught at Stanford University until his untimely death in 1996, while Kahneman's initial North American appointment was at the University of British Columbia, where he taught before moves first to UC Berkeley and now Princeton.) But Cornell may legitimately claim to be the birthplace of behavioral economics, for it was Richard Thaler, who began his career as an assistant professor in the Johnson School in 1979, who did more than any other to launch behavioral economics as an independent field of study.

Despite Thaler's recent departure for the University of Chicago Business School, Cornell has continued to attract and retain distinguished scholars in behavioral economics, and social behavior and decision research. These appointments span numerous administrative units, including the law school, the business school, the psychology department, the sociology department the hotel school, the department of economics, and the department of agricultural, resource, and managerial economics. (For details, see the rosters of BEDR and MRPOI members in the appendix). In addition, the university houses prominent behavioral laboratories in the Johnson School, in the department of psychology, and in the department of agricultural, resource, and managerial economics. The Johnson School's new multimillion-dollar Parker Center for Investment Research was launched by two faculty in behavioral finance.

For the past decade, the BEDR Center has sponsored a twice-monthly faculty and graduate student seminar that has brought many of the most interesting and highly respected contributors in the field to the Cornell campus. More than 30 faculty and graduate students regularly attend these meetings and participants wanting a seat have learned to show up early. The MRPOI seminar series attracts faculty from economics, government, organizational behavior and sociology that has invited speakers over the past three years on a variety of topics related to the emergent behavior of adaptive social systems. (This seminar series is currently slated to expire at the end of this academic year.)

V. In Sum

For the reasons stated above, we believe that individual and organizational decision making qualifies as an exceptionally profitable social science investment opportunity for Cornell. Virtually all of the experts consulted by the Provost's Committee stressed the importance of supporting interdisciplinary work. Unlike much purported interdisciplinary work in the social sciences, which is more accurately described as parallel disciplinary research on common issues, the behavioral economics and decision research program is interdisciplinary in the truest sense, involving work at the intellectual intersections and boundaries of several disciplines. It is research with a proven capacity to influence the cores of the respective disciplines, and it is an area in which newly trained Ph.D.s have a realistic expectation of being able to find jobs in the academy.

Research on the emergence and diffusion of norms and institutions, social learning and cognition, cultural evolution, and more broadly, the social psychology of decision, evolutionary game theory, and economics is on the cutting edge of the social and behavioral sciences.

The SADR program is also policy-relevant and problem-driven. By questioning some of the most fundamental normative claims of the rational-actor model, it suggests novel and specific public-policy interventions with the potential to yield large increases in social welfare. In addition, investment in social behavior and decision research would build upon well-established faculty and institutional resources at Cornell. If the university has a unique comparative advantage in the social sciences, it is surely in the field of behavioral economics and decision research. In short, the characteristics of the SADR program coincide in great detail with the characteristics listed by the Committee's experts when describing promising opportunities for investing in the social sciences.

Cornell's achievements in social behavior and decision research thus far have resulted from only minimal financial support from the institution. Several of the BEDR and MRPOI faculty fellows have brought in a steady flow of financial support from outside granting agencies. The Johnson School has provided \$3,000 per year in support of the BEDR Center's seminar series, plus administrative support to help organize the speaker visits. And although the Johnson School increased the seminar's budget this year to \$6,000, a substantial budget shortfall would exist were it not for the fact that six faculty have made additional contributions to the seminar's budgets from research funds they personally control. The MDRPOI seminar series has been funded by a grant from the Provost, which runs out at the end of this year.

In addition to enhancing Cornell's prominence as an intellectual center for individual and organizational decision making, additional support for this area would help meet critical teaching needs in several units across campus. There has never been a regular undergraduate course offered by Cornell's psychology department on the subject of judgment and decision making—a yawning gap in a university that aspires to shape the minds of the best and brightest of the next generation of decision makers. A popular course on behavioral economics was offered in the economics department in the late 80s and early 90s but it has gone untaught for several years as faculty resources have shifted elsewhere. Both graduate and undergraduate courses in behavioral and experimental economics should be a part of the curriculum in the economics department if Cornell is to stake a claim to being an institution on the cutting edge in the social sciences. Finally, behavioral economics will surely be a popular selection by executives in the Johnson School's new executive education program, creating a need for additional teaching resources in this area.

Appendix 2

Life Course Transitions and Social Policy Initiative

I. Goals and Objectives

Cornell University proposes to undertake a collaborative, multidisciplinary research initiative (Life Course Transitions and Social Policy Initiative) focusing on the dynamic intersections between changing institutions and changing lives as these are played out within and across nation-states. Particular emphasis is centered on how the changing life course is associated with contemporary transformations in five fundamental institutions, their interplay and their impacts: education, family, work, the community, and the state.

The principal goal of the Life Course Transitions and Social Policy Initiative is to develop new knowledge about: (1) the complex dynamisms linking individual lives, social structures, and large-scale social transformations as well as (2) the impacts of events (especially entries into and exits from social positions) on life chances and life quality over the life course. This would entail the use of multilevel modeling, both primary and secondary data sources, and both qualitative and quantitative research methodology as well as a cross-societal and cross-disciplinary expertise. The strength of the Cornell program would be its use of both national and international data to model the dynamics of events and their associated risks as they are shaped by social policies and institutional arrangements.

II. Rationale

Role entries and exits at different points in the life course are undergoing fundamental transformations. These changes in the chronologization of the life course reflect: (1) demographic changes in marriage, fertility, and longevity; (2) organizational changes in fundamental institutions (such as school and work); (3) the changing economy; and (4) new initiatives in governmental policies and practices affecting entry and exit portals, timing, and incentives. The timing, sequencing, duration and density of educational, labor force and family entries and exits can have broad repercussions for economic status, social networks, and health.

As we enter a new century and a new millennium, established institutional practices and contemporary, individual biographical patterns are in considerable flux. Internationally, both in developed and developing nations, previously institutionalized transitions into and out of school, marriage, parenting and work are becoming more contingent and more varied, with widespread implications for individuals, organizations, communities, and society. Traditionally, each of these institutions has been studied largely in isolation (and frequently only in the cross-section). Almost invariably they are considered in but one societal context, with little attention to cross-national similarities and differences. The Cornell Life Course Transitions and Social Policy Initiative aims to use a variety of research techniques and data to investigate changing institutional structures, changing state policies and practices, and changing lives in in the United States, but also in other nations throughout the world.

As we move into the next century, established institutional practices are frequently out of

step with contemporary realities. For example, government and private sector policies related to the labor force and retirement are geared to life patterns of the middle of the 20th century, not the 21st. Internationally, what were previously uniform, "lock step" transitions into and out of school, marriage, parenting and work are becoming more contingent and more varied. Along with the aging of the population, this increasing diversity of life experience has widespread implications for individuals, organizations, communities, governments and society.

Neither scholars nor policy makers fully understand the nature of the changing life course and its impacts on individuals, families, the workplace, or other institutions. Moreover, we know little about the lags between contemporary experience and existing policies, or about possible solutions to them.

III. Multidisciplinary Theme

What is needed are new research questions about the human experience, along with new ways of addressing them. Particularly exciting in contemporary social research is an emerging focus on *time*. Both theoretically and methodologically, scholars are moving from considering *states at one point in time* (such as being poor, employed, or married) to *transitions over time* (such as moving in and out of poverty, employment, marriage). The Life Course Transitions and Social Policy Initiative aims to use a variety of research techniques and data to investigate the dynamic intersections between changing institutional structures, changing state policies and practices, and changing lives, both within and across societies. It will draw on a wide range of disciplinary concepts and methods of inquiry to examine the long- and short-term consequences of transitions in work, family, welfare, and schooling, as well as their interface with contemporary and emerging private and public social policies.

Status transitions over the life course provide strategic points of entry leading to an understanding of the relationship between individual choice, institutional conditions and constraints, and large-scale social changes. However, the study of such transitions requires by their very nature a multidisciplinary approach. Individuals make decisions as to whether and when to marry, divorce, change jobs, return to school. But they do so in a cultural, structural and policy environment whose conditions can facilitate or impede such transitions. This is an environment that is shaped to a large extent by both the market and the state. Thus this initiative will enlist the active participation of faculty and students representing a range of disciplines: sociology, economics, education, psychology, and political science.

The proposed program of multidisciplinary comparative analysis will require the conceptual and methodological tools necessary to study the incidence, timing, sequence, frequency and impacts of one or more of the following status transitions in particular policy and societal contexts (see Exhibit A).

EXHIBIT A: KEY LIFE COURSE TRANSITIONS

Educational Transitions

- The School to Work Transition
- Entry into and Exits from Higher Education
- Return to Schooling
- Adult Training and Life Long Learning

Family Transitions

- Transitions into and out of Cohabitation
- Transitions into and out of Marriage
- Parenting and Adult Children Leaving (and Returning) Home
- Caregiving of Aging and Infirm Parents, Spouses, and Other Kin
- Transitions into/ out of Poverty, Public Assistance, Economic Self-Sufficiency

Work Transitions

- Transitions into the Labor Force, Including Entry and Reentry during Adulthood
- Job Shifts, Firm Shifts, and/or Career Shifts
- Transitions into and out of Contract and Contingent Work
- Downsizing, Unemployment, and Disability transitions
- Downshifting in Conjunction with Child Bearing and Aging
- Retirement and Reentry

Community Transitions

- Geographical and Residential Mobility
- Transitions into and out of Volunteer Service
- Social Network Transitions
- Religious and Other Forms of Social Participation

A fifth institution, the state, like the macro-economy is equally salient, shaping the options, incentives and constraints affecting all of the above life course transitions. A key focus of this initiative will be to promote understanding of the role of the state in the shaping of life transitions.

To investigate the links between life experiences, social policies, and large scale social changes requires both a cross-disciplinary and cross-societal focus. Therefore, the Life Course Transitions and Social Policy Initiative will draw on a wide range of disciplinary concepts and methods of inquiry to examine the long- and short-term consequences of status passages in work, family, welfare, and schooling, as well as their interface with contemporary and emerging private and public social policies. Such a program of comparative analysis across societies can unravel the role of the state and of socioeconomic transformations in structuring or constraining life transitions. Accordingly, this initiative will exploit international as well as national data archives and faculty expertise to both develop new knowledge about the changing life course and its implications for individuals and institutions.

What is needed are new research questions about the human experience, along with new ways of addressing them. Particularly exciting in contemporary social research is an emerging focus on *time*. Both theoretically and methodologically, scholars are moving from considering *states at one point in time* (such as being poor, employed, or married) to *transitions over time* (such as moving in and out of poverty, employment, marriage). The Life Course Transitions and Social Policy Initiative aims to use a variety of research techniques and data to investigate the dynamic intersections between changing institutional structures, changing state policies and practices, and changing lives, both within and across societies. It will draw on a wide range of disciplinary concepts and methods of inquiry to examine the long- and short-term consequences of transitions in work, family, welfare, and schooling, as well as their interface with contemporary and emerging private and public social policies.

The kinds of questions this program of research would address include:

- *What are national (or regional) life course solutions to contemporary social transformations?* (For example, longevity is making retirement at 62-65 increasingly expensive for the state, but at least in the United States public- and private-sector policies seem to be encouraging an even *earlier*, rather than later, age of retirement.)
- *What are the direct and indirect consequences of certain policies and practices, and how do they vary across nations?* (For example, policies encouraging gender equity often are countervailed by the absence of policies addressing the work/family interface. Germany's "solution" is vastly different from Sweden's or China's. And all three are different from the situation in the United States.
- *What strategies do individuals in different national or cultural environments adopt in confronting the insecurity, uncertainty, and unpredictability of their future life course?* (For example, increases in cohabitation, delayed or declining fertility, contract work, educational reentry, self-employment can all be seen as strategic choices given an uncertain future.)
- *What are the long-term consequences of national policies and practices on individual life*

chances?

(For example, divorce, disability, unemployment, aging have vastly different implications for individuals and families across nations.)

- *What are the consequences of particular transitions and their timing for an individual's or household's social networks, economic security, occupational attainment and/or well-being?* (For example, going from school to work immediately after graduation from high school versus going to college shapes opportunities and risks throughout adulthood.)

III. Graduate Training Component

A related goal of this initiative is to prepare the next generation of scholars to advance the scientific understanding of the changing life course and its policy implications. Such a program of training will equip students for both traditional academic jobs as well as policy positions in government, not-for-profit and private sectors.

The relationship between status transitions and well-being (financial, physical and emotional) has long been a focus of social research, but without locating transitions in their institutional contexts. A number of complex historical, economic and political transformations have coalesced to render contemporary status transitions both less age-graded and more interdependent than was true in the post World War II years when most educational and work transitions were institutionalized. Most scholars and most programs of graduate education are ill equipped to address these complexities. The strategy of the proposed program of research and training is both disciplinary and interdisciplinary. That is, while the topics require a cross-disciplinary approach, we are committed to provide graduate students with a strong grounding in at least one body of disciplinary work in addition to their training in cross-disciplinary analysis and collaboration. To do so we will create two multidisciplinary "core" classes that are co-taught by faculty from at least two different disciplines and/or departments, and by offering a fifth year of support in which students can undertake a minor in either policy analysis and/or another discipline. We also will prepare students for nonacademic as well as academic jobs by offering the possibility of a fifth year in which to become grounded in either policy analysis or to be spent in an international or non-academic internship. Each trainee will have two mentors (from different disciplines); each will be expected to undertake research on and present papers on life transitions in ways that incorporate a dynamic cross-societal and cross-disciplinary focus. Participating in Cornell's training program will providing trainees with skills in:

- Dynamic analysis of trajectories and transitions
- Comparative cross-national analysis
- Dynamic modeling of transitions (events)
- Demonstrated expertise in research in one discipline, but experience and working knowledge of at least one other discipline
- Familiarity with multilevel and/or multimethod analysis of the impacts of social policies and/or social change

In addition, graduate trainees in the proposed program will be well prepared to make significant theoretical, methodological and empirical contributions to:

- Conceptualizing and measuring status transitions, both objectively (in terms of entrances and exits) and subjectively (in terms of self-concept and social cognition),
- Specifying relationships between choice and constraint,
- Specifying relationships between status transitions, their timing and their impacts at

- societal, community, organizational and individual levels,
- Documenting the distinctive transition patterns of particular subgroups (e.g. gender, ethnic subgroups) of the population and particular cohorts, both within and across nations,
 - Modeling contingent transitions of both individuals across domains (e.g., work and family) and/or of two or more actors (e.g., husbands and wives),
 - Specifying relationships between macro-level changes (e.g. policy actions and economic shifts) as well as between macro-level events and micro-level transition patterns of actors.

IV. Cornell's Strategic Advantage

Cornell University is ideally positioned to launch a systematic program to analyze the three-way link between social changes, state policies, and individual life transitions. First, the university has strength across the campus and across disciplines in the study of choice and decision-making. Second, Cornell is widely recognized for its work on the new institutionalism and organizational change. Third, it has established strength in life course research. Moreover, the comparative analysis of social change is fundamental to the research programs of a number of Cornell faculty.

Equally important, the Cornell faculty has considerable experience and expertise in the use of large data sets, in the analysis of state dependence and duration, in multilevel modeling, and in qualitative, cultural analysis, as well as in experimental research on choice and decision-making. This initiative will be closely aligned with the master plan for the computing environment at Cornell under the auspices of CISER, including the provision of access to confidential data.

The proposed program of research and training builds on and will serve to integrate several established program strengths at Cornell, including: the Mario Einaudi Center for International Studies; the Comparative Societal Analysis Program in the Einaudi Center; the Cornell Employment and Family Careers Institute (funded by the Alfred P. Sloan Foundation); the Cornell Gerontology Research Institute (funded by the National Institute on Aging); the Bronfenbrenner Life Course Center; the Population and Development Program, the Cornell Institute for Social and Economic Research; the Center for Advanced Human Resource Studies; the Institute for Labor Market Policies; the Institute for Women and Work, and the Cornell Higher Education Research Institute, as well as the proposed School of Public Affairs.

Several of these are discussed in Exhibit B.

EXHIBIT B: RESEARCH PROJECTS RELATED TO RESEARCH INITIATIVE/TRAINING PROGRAM

1. The Well-Being of the Elderly in a Comparative Context

R. V. Burkhauser, PI (1991-1996, 1996-1999)

This NIA program project ran from 1991 through 1996 and was renewed for 1996 through 1999. Its major data achievements are:

a) The creation of an English language Public Use Version of the German Socio-Economic Panel. This is a growing longitudinal data set (1984 through the present) of the Federal Republic of Germany including a random sample of the western states of Germany since 1984 and the eastern states of Germany since 1990.

b) The linking of these data to three other major longitudinal data sets -- The United States Panel Study of Income Dynamics; The British Household Panel Study; and the Canadian Survey of Labor and Income Dynamics. These data are now housed at CISER and are part of a larger collection of restricted use international data that are being made available to Cornell faculty and students as well as outside researchers. These data will continue to be maintained and extended after the end of the NIA program project in 1999.

The substantive research in this project uses these and other multi-period data to look at how economic threatening events: e.g. the onset of a disability; death of a spouse, retirement -- effect the economic well-being of older workers and their families from a cross-national perspective. It also focuses on how government policies aimed at mitigating the economic consequences of these events effect both economic well-being and behavior.

2) Cornell Rehabilitation Research and Training Center on Employment and Disability Policy

R. V. Burkhauser, Co-PI (1998-2003)

S. Bruyere, Co-PI (1998-2003)

This Department of Education funded Center will run from 1998 through 2003. Its major data objectives are: To establish a data center for both cross-sectional and longitudinal data related to the employment and economic well-being of people with disabilities. In addition to public use data we expect to receive permission to store and use restricted access Social Security administrative record data linked to public use data. Such data are currently available only to Social Security funded researchers who access it within Social Security Administration offices.

The Center's substantive research goals include the use of life-cycle option value and dynamic programming models, as well as, less structural models to determine the importance of environmental factors -- e.g. job environment, accommodation, compensation, government policies -- on the decision of workers to continue working or apply for social security benefits following the onset of a disability. We will also model the decision of employers to provide accommodation and how government policies influence that decision.

Exhibit B (continued)

3. The Cornell Employment and Family Careers Institute

P. Moen, PI (1997-99)

Located in the Bronfenbrenner Life Course Center, this institute has been funded by the Alfred P. Sloan Foundation, from 1997-1999 and has good prospects of being renewed for a least another three years (2000-2002).

The Cornell Careers Institute highlights the simultaneous and shifting relationships among work organizations, community institutions, occupational careers, and family "careers." The institute's life course orientation underscores the importance of the social organization of work and occupational career ladders for American families.

Faculty associates from across the campus examine how social and economic forces shape the long- and short-term adaptive strategies of families, including the career paths and transitions of husbands and wives. They also assess the economic, social, and psychological consequences of various career trajectories and family strategies in light of the existing policies and practices of work organizations and communities.

The graduate and postdoctoral program associated with the institute builds on Cornell's well-established strengths in pedagogy, research methodology, and substantive expertise in career, family, and life course studies across the campus.

4. The Cornell Gerontology Research Institute

K. Pillemer, Co-PI (1993-2003)

P. Moen, Co-PI (1993-2003)

Located in the Bronfenbrenner Life Course Center, this institute was funded by the National Institute on Aging from 1993 to 1998, and was just renewed for another five years (1998-2003).

It supports fundamental research with practical implications for enhancing the health and social integration of older Americans.

A Life course theme underscores the importance of key transitions in later adulthood. Studies have investigated transitions in and out of late life employment (including retirement), engaging in community service, caregiving for an Alzheimer's relative, residential changes, driving changes, and changing social networks. Several concrete interventions to facilitate these transitions have also been investigated.

5. The Cornell Youth and Work Program

S.F. Hamilton & M.A. Hamilton, Co-PIs (1997-2000)

The Cornell Youth and Work Program aims to foster the education and development of young people and improve the quality of the American workforce through the generation, synthesis, dissemination, and application of research-based knowledge about young people's career paths in the United States and abroad. The Program began as the sponsor of a four-year demonstration project adapting elements of German apprenticeship to the United States. This demonstration helped to shape the School-to-Work Opportunities Act of 1994. Its products include findings from research

Exhibit B, Item 5 (continued)

following apprentices and comparison students for two years after graduation from high school and program materials developed for and based on the demonstration project.

Two current projects are supported by the National School-to-Work Opportunities Office (a joint entity of the U.S. Departments of Education and Labor). One (1997-98), now being completed, is a series of case studies of school-to-work system building designed to help practitioners and policy makers understand what it means to build a coherent and comprehensive system that fosters the transition from education to employment. The second (1998-2000) investigates how adults teach youth informally as workplace coaches and mentors. This project is rooted in the belief that the mentoring relationship is fundamental to work-based learning and that "ordinary" adults can learn to be expert teachers, both of technical work skills and of the personal and social competencies young people need to succeed as workers, citizens, and family members.

Appendix 3

Social and Economic Development: An Institute for Poverty Studies

Cornell is extremely strong in the broad interdisciplinary area of social and economic development. A very promising initiative to propose to the Social Science Task Force would be to give more institutional support and visibility to this strength, with a particular focus within this important area on poverty analysis and alleviation within the Third World. (Potentially this focus could include poverty issues in the more developed countries, but for now we would propose a less inclusive scope for the initiative.) This focus on poverty would be interactive with and reinforced by several other selected focuses within this area where Cornell has capability and the world has need for advancement of knowledge: local institutional capacity and participation; social implications of technological change; population dynamics; gender issues; and social dimensions of natural resource management. We propose the initiation of an Institute for Poverty Studies

We see this as a thoroughly interdisciplinary endeavor within the social sciences at Cornell. Poverty analysis and alleviation must go beyond pure economics, as success in this area is very much conditioned by opportunities for people's initiative and participation, the impacts of technology and investment, the changing composition and distribution of populations, reducing gender disparities, and a productive and sustainable natural resource base.

Thus we propose to bring together a number of integrally related research areas that are crucial to a better understanding of the various dimensions of poverty and how to improve the standard of living and welfare of the poor. The main purpose of the initiative would be to: a) foster greater interaction and synergy among researchers operating in different disciplinary areas; and b) to enhance the coherence and visibility of the research output in these areas by providing a common focus. The timing for this initiative appears right in the light of the most recent (October 1998) Nobel Prize granted to Amartya Sen for his major interdisciplinary contributions to poverty analysis.

Poverty is a highly multidimensional concept. To understand poverty and design interventions, institutions and policies to combat it successfully requires an encompassing analysis of the various social and political dimensions of poverty (such as marginalization and social exclusion) in addition to the more economic dimensions based on the minimum income required to satisfy the basic fundamental needs of individuals in terms of nutrition, health, shelter, education, etc.

A number of major research areas related to poverty are briefly outlined below and indications of Cornell's strength and reputation is given.

Economic Development and Poverty Analysis

Historically, economic development has been one of the strongest and most popular fields of specialization within the Economics Department. In a ranking of Economics Departments by areas of expertise based on quality-adjusted articles in the 1980s, Cornell ranked No. 1 in "Economic Growth, Development and Planning Theory".

Erik Thorbecke (Economics Department and Division of Nutritional Sciences), Ravi Kanbur (ARME and Economics), Gary Fields (I&LR), Kaushik Basu (Economics) and David

Sahn (Division of Nutritional Sciences) have all made fundamental contributions to a better understanding of the economic dimensions of poverty. Thorbecke is the co-author of the poverty measure which is most used in the widespread empirical literature. Kanbur (the new T.H. Lee Professor of World Affairs) has made some significant contribution to the poverty analysis methodology. He has been asked by the World Bank to direct the research and writing for the World Development Report for the year 2000 which is to be devoted entirely to the topic of poverty. Fields has made important contributions to the relationship between poverty and inequality and the impact of labor markets and employment on poverty alleviation. He was a member of the core team that prepared the World Bank's 1990 World Development Report on poverty. Basu has analyzed the implications of literacy and child labor on poverty and its alleviation. Sahn's work particularly on the implications of economic reform and his work on human capital development have likewise made important contributions to understanding the causes and consequences of poverty.

In terms of institutional strengths, over the last ten years, the Cornell Food and Nutrition Policy Program (CFNPP) has maintained an extremely active and productive research program on poverty and income distribution. (Note, the name of CFNPP does not adequately reflect the scope of its work, but for historical and present institutional reasons, a change of name has proven difficult.) This program has been almost entirely externally funded, receiving more than 25 external research grants totaling over \$16 million in the last 10 years. Most prominent of CFNPP's efforts has been a research project on the impact of structural adjustment on poverty in subSaharan Africa (SSA) under a large USAID grant. This research program has generated half a dozen books and about 50 journal articles and is considered the best economic research program on SSA after Oxford University, worldwide. The CFNPP director, Sahn, is a professor within the Division of Nutritional Sciences in the College of Human Ecology.

Under the guidance of Erik Thorbecke, the Program on Comparative Economic Development and the Development Economics Seminar have made major contributions to the University community in the past decade. Kanbur and Thorbecke jointly organized a seminar series under the auspices of PCED during this academic year (1998-99) that is entirely devoted to the common theme of poverty. Seminars are held practically every Friday afternoon and over the course of the academic year, approximately 20-25 seminars are held (see appendix for list of speakers and titles of seminars in the Fall of 1998). Attendance at these seminars has been high averaging over 30 individuals.

Another institutional effort at Cornell which deserves special mention, which in fact brings together the activities of PCED and CFNPP is the research and training grant from the African Economics Research Consortium. Since 1995, Thorbecke, has been the co-coordinator of a large-scale research and training program under the auspices of the African Economic Research Consortium (AERC) on "Poverty, Labor Markets and Income Distribution and Human Resources in subSaharan Africa." Under this project as many as 12 country case studies are presently underway by African research teams on the above research nexus. About six of these teams (i.e., South Africa, Kenya, Ghana, Madagascar, Nigeria and one more to be determined) are twinning with Cornell, spending up to 3-4 months at Cornell working with CFNPP faculty members Fields and Thorbecke. A key question explored in many of the country case studies is the relationship between poverty and health and education.

Participation, Social Capital, Local Institutions and Institutional Development

The great majority of the poor live in rural areas and depend on agriculture for their incomes. Over the last twenty-five years, Norman Uphoff (CALs, Government Department, and Director of CIIFAD, based in CALs) and many collaborators have made critical contributions to a better understanding of the process of rural development at the community

level. Cornell's work on "participation" during the 1970's and 1980's under various grants and contracts from USAID made this institution one of the two or three leading places in the world where this subject was illuminated analytically and empirically. The key importance of popular participation, group membership, and appropriate local institutions as contributors to poverty alleviation has been clearly demonstrated on the basis of a large number of case studies at the grass roots level. Under the auspices of CIIFAD, multi-disciplinary projects in many parts of the Third World are currently underway.

A key concept which donor institutions (particularly the World Bank) have recently focused on, in addition to physical and human capital, is that of *social capital*. A tentative finding is that social capital (defined in part as membership in different private and public groups) tends to be correlated with poverty alleviation. Social capital, in turn, entails greater democratization and improved governments, needing to bring in the disciplines of political science, sociology, and also anthropology. Uphoff is currently finishing, with his colleague in the Government Department, Anirudh Krishna, a major empirical study and specification of social capital funded by the World Bank.

In a more general sense, the importance of appropriate institutions and the right type of institutional development are crucial to the struggle against poverty. Victor Nee (Sociology) has made significant contributions to this area particularly within the context of China.

Environmental and Natural Resource Management

There is increasing evidence that poor rural dwellers do not necessarily overuse their common resources by engaging in such activities as overgrazing on common land, overfishing in common ponds or along the seashore, or destroying the forest land, but rather are able and willing to develop cooperative and collaborative rules of conduct to manage their resources in an environmentally friendly and sustainable fashion. In other words, the "Tragedy of the Commons" outcome is avoidable.

In a number of instances appropriate incentives have to be implemented at the community level. Whereas economists analyze this setting in terms of repeated cooperative games, rural sociologists provide the necessary stylized facts prevailing at the community level to enrich the informational basis used by economists. Among rural sociologists at Cornell dealing with these issues are Charles Geisler, who is interested in land use and land reform questions, and Max Pfeffer, who within the context of Latin America (Honduras and Costa Rica) studies the impact of community participation on natural resource management.

Other scholars at Cornell who have a very active program in this general area are: David Lee (ARME) particularly within the context of Latin America, and Ronald Herring (Director of the Einaudi Center for International Studies, and Professor of Government) within the context of South Asia. Increasingly the natural resources present in tropical forest land have multiple potential uses in a variety of industries--such as the pharmaceutical industry. Issues related to the types of international patents that could reduce the depletion of these resources and return some of the rents to the indigenous poor are becoming crucial.

Social Implications of Technological Change

Technological change, particularly through the Green Revolution (e.g., the "miracle" high-yielding varieties of rice, wheat and corn) has had a major impact on improving production and food security in many parts of the Third World. Given the enormous strength of the College of Agriculture and Life Sciences (CAL S) and such disciplines as Agronomy, Plant Pathology, and Biotechnology, the scope for fruitful research among groups of scientists from the above areas working with social scientists on increasing

production benefiting the poor is very high. This would be particularly true if the Green Revolution technology could be extended to other than the major staple food crops listed above, i.e., to domestic food crops grown by poor subsistence farmers such as sorghum, millet and cassava and to rainfed areas. There are also essential issues related to improving the changing technology and hence its sustainability.

A number of key researchers outside the social sciences who are already cooperating with social science colleagues at Cornell on such issues can be identified: Erick Fernandez who works on agronomic and biophysical systems to increase production among the rural poor; Ronnie Coffman who is involved in plant genetic improvements to increase food production and enhance food security; Robert Blake who works on agro-sylvo-pastoral systems; and John Duxbury who is principal investigator for a large-scale project dealing with the rice and wheat systems of South Asia. On the social science front, David Lee has worked closely with the above researchers and could be instrumental in providing even more synergy between social scientists and physical scientists.

Gender and Demographic Issues Relating to Poverty Alleviation

In certain parts of the Third World, such as subSaharan Africa, the bulk of the physical work on small farm is done by women who often do not share proportionately in the proceeds of the agricultural output. There is some evidence that the incidence of poverty is greater among women than among men. Furthermore, there is significant evidence of gender discrimination in terms of such indicators as lower educational enrollment ratios among females than males, provision of public services such as agricultural extension, and, in some settings, of intra-household food allocation favoring boys over girls. Lourdes Beneria (CRP) and Shelley Feldman (Rural Sociology) as well as CFNPP researchers are studying gender issues as they relate to poverty.

Most of the developing world is facing a process of massive rural to urban migration fueled, among others, by population pressures. In many cases urban poverty rises while rural poverty falls. Cornell is endowed with a world renowned program on demography including interest in migration issues, studied by Joseph Stycos, David Brown, Linda Williams and others in Rural Sociology.

Appraisal of Cornell's Strengths in Social and Economic Development Compared to Other Universities

Only a handful of universities compare with Cornell in terms of their strengths and distinction in economic development. Yale possesses an excellent Economic Growth Center. Harvard relies on its Harvard Institute for International Development. Berkeley has distinguished development economists in both their economics and agricultural economics departments. Sussex has a well-known Institute for Development Studies, and the London School of Economics has a critical mass of development economists. However, none of these universities comes close to Cornell in terms of the breadth and depth of faculty in the broader social and technological dimensions of development as they relate to poverty alleviation.

The presence of CALS at Cornell provides a major scope for interaction between social and physical scientists interested in development issues. CIIFAD has already paved the way for a series of synergistic development research programs at the community and regional level, combining social scientists and agronomists, biotechnologists and natural resource specialists. None of the peer institutions mentioned above possesses a college of agriculture, though Berkeley has a small college of natural resources (the main of college of agriculture in California is on the UC Davis campus).

If Cornell is Already among the very Best--if not the Best--in the Area of Social and Economic Development, What is the Rationale for the Present Initiative?

The present situation at Cornell is characterized by a great deal of decentralization of research in the area of social and economic development. There are many small clusters of very strong researchers, but relatively few institutional mechanisms to bring these groups together and reap the fruits of increased synergy. In a number of instances, the disciplinary--if not departmental walls--reduce the potential relevance and policy usefulness of the research. This is clearly apparent in the case of CFNPP. It has long ago outgrown its original mandate as a relatively narrowly defined program concerned with food and nutrition policy in developing countries. Furthermore, it has historically relied almost entirely on external funding. As a result, CFNPP's main constituency, and contributions, are outside the university community. Thus, it remains relatively isolated institutionally at Cornell within the Division of Nutritional Sciences, while in fact the content of its work and the interests of its researchers are far broader. While the international reputation of its staff has been strong enough to maintain an active externally funded research agenda, the synergism with the university has been limited. Lost opportunities are apparent.

In contrast, with its substantial financial and institutional support within the university, CIIFAD has proven to be a major force across the campus. CIIFAD provides an institutional mechanism that at the micro, community and grass-root level has brought together researchers from a variety of disciplines to tackle issues dealing with poverty alleviation within sustainable agricultural and rural development. At the more macro level, the Program on Comparative Economic Development (PCED) has over the years provided a forum for faculty members and graduate students interested in development through an active seminar series and the organization of major international conferences.

Because of the previously described breadth, depth and range in economic and social development, Cornell has the potential to be absolutely outstanding and way ahead of the rest in the scope and originality of its social and economic development contributions. So the rationale for the initiative is to take Cornell from the first rank into the absolute leader for the first decades of the next century.

The nature of the initiative derives from the overarching need to build on and to integrate the different strengths, generate synergy, and to greatly increase the coherence and the visibility of this university-wide activity.

The ultimate rationale for the proposed initiative is that the relevance and the policy and operational usefulness of the research presently undertaken by a number of relatively self-contained groups of researchers, often confined to disciplinary domains, would be greatly enhanced by greater interaction and synergy around a common theme. It would also enhance the coherence and visibility of the research findings and signal both to the Cornell community and the outside world that the Cornell administration recognizes, supports and stands behind this area of research. This is the strategy being proposed to catapult Cornell into absolute global leadership in this area.

What Do We Need to Do to Achieve the Above Goals and Succeed in the Launching of the Proposed Initiative? An Institute for Poverty Studies

The key instrument that is going to be needed is an institutional setting—space, activities and research support—which will make it easier, almost natural, for the different activities on campus to work closely together. We propose the initiation of an Institute for Poverty Studies.

The Program on Comparative Economic Development (PCED) could be upgraded with institutional support, both with physical space and some funding, to serve as an umbrella (sponsor, catalyst, support) for faculty and programs under this rubric of social and economic development. To signal the broadening of the research focus, the program could be renamed Program on Comparative Social and Economic Development and Institute for Poverty Studies. This new program (center or institute) would relate to various programs, centers, departments, such as CFNPP, CIIFAD, Comparative Societal Analysis Program, the Political Economy Program, the Population and Development Program, the Lee Chair for World Affairs, the Einaudi Center for International Studies, etc.

In particular, the availability of common physical space where scholars from a variety of disciplines could come and work under the same roof and interact on joint research undertakings appears crucial to the success of this initiative. One possible model would be to gather within the center's space a dozen or so researchers every year on a rotating basis. In other words, the Institute for Poverty Studies would provide contiguous office and seminar space to key researchers who would be detached to the center for a given period.

In addition to physical space, funds for research assistants, conferences and administrative and secretarial support would be needed. There is a large number of faculty who would contribute to and benefit from such an initiative. Below we list a core group that could collaborate on behalf of the larger community of faculty in the social sciences at Cornell with these interests, to expand opportunities for research and teaching in this area and gain wider recognition. This is already a fairly large number listed below, so it might be advisable to have a smaller steering committee from among such a set and then also a larger "constituency" of additional faculty who would like to be associated with such an initiative.

Core Faculty

Economics	Basu, (Kanbur), Thorbecke, Wan
Government	Herring, Uphoff
Sociology	Nee
ARME	Barrett, Kanbur, Kyle, Lee
Rural Sociology	Brown, Feldman, Geisler, Pfeffer, Stycos, Williams
ILR	Fields
DNS	Sahn, (Thorbecke), Younger
CRP	Beneria, Lewis

**Program in Comparative Economic Development/Economics Department
Development Seminar Series
Fridays 4.00—5.30, 498 Uris Hall**

Theme for 1998-1999: Poverty, Inequality and Development

The theme for academic year 1998-99 has been chosen to coincide with start of work on the World Bank's millennial World Development Report, on Poverty and Development, in the preparation of which there will be major Cornell involvement. Our approach will be multidisciplinary, and we will combine analytical and policy perspectives. The speakers for Fall 1998 are as follows (the titles at this stage are only approximate).

- 9/11 Ranjan Ray, University of Tasmania, Visiting Cornell, "A Cross Country Study of Equivalence Scales, Inequality and Poverty on Unit Record Data."
- 9/18 Monica Das Gupta, World Bank and Harvard, "Libert☺, Egalit☺, Fratemit☺: Exploring the Role of Governance in Fertility Decline."
- 9/25 Ronald Jones, University of Rochester, "A Framework for Fragmentation."
- 10/2 Christiaan Grootaert, World Bank, "Social Capital, Household Welfare and Poverty in Indonesia."
- 10/9 Ethan Kapstein, University of Minnesota, "Distributive Justice and the Global Economy."
- 10/16 Kwan Choi, Iowa State University, "Trade and the Adoption of a Universal Language."
- 10/23 Grzegorz Kolodko, World Bank and Yale, Former Finance Minister of Poland, "Equity Issues in Policy Making in Transition Economics."
- 10/30 Ilaria Ossella, Cornell University, "Identifying Leading Sectors that Accelerate the Optimal Growth Rate: A Computational Approach."
- 11/6 Paul Collier, World Bank and Oxford, "Aid Allocation and Poverty Reduction."
- 11/13 Nora Lustig, Inter-American Development Bank, "Returns to Rising Inequality in Mexico: Household Characteristics and the "Chiapas Effect"."
- 11/20 Jim Robinson, USC, "Political Economy and Inequality."
- 11/27 Thanksgiving
- 12/4 TBA

Appendix 4

**IMPROVING INCENTIVES FOR SPONSORED RESEARCH
IN THE SOCIAL SCIENCES AT CORNELL**

Prepared by
Timothy Mount, Director of CISER

for
Ronald Ehrenberg
Vice President for Academic Programs,
Planning and Budgeting

Date: 6/2/97

The following faculty should be thanked for reviewing a draft of this report:

John Abowd, Industrial and Labor Relations
Steven Caldwell, Sociology
Karl Pillemer, Human Development and Family Studies
William Schulze, Agricultural, Resource, and Managerial Economics

A number of improvements to the report were suggested by the review panel and incorporated into the report. The author, however, is responsible for the conclusions, and they do not necessarily represent the views of the reviewers.

IMPROVING INCENTIVES FOR SPONSORED RESEARCH IN THE SOCIAL SCIENCES AT CORNELL

1. BACKGROUND

The Mission

For this discussion, it is convenient to consider three different types of client that represent distinctly different goals served by the university. The first is the **Academic** community and the goal of creating knowledge through basic research and scholarship. The second is the **Public** and the goal of educating students both on and off campus. The third is **Government and Industry** and the goal of solving problems through strategic research and outreach.

Faculty allocate their time in a variety of different ways to meet the mission of the university, but the first two goals, the creation of knowledge and teaching, are generally considered to be the most important. Students come to the university as apprentices to learn about the latest developments in the sciences, the social sciences and the humanities, and many of them also make valuable contributions to research. The academic prestige associated with the third goal, solving problems and outreach, is generally lower on the scale of prestige than the other two. The predicament faced by the university is that the greatest potential for increased financial support in the social sciences is to put more faculty effort into the third goal by encouraging strategic research.

Sources of Support

The three types of client provide financial support for the university in different ways. The Academic community provides grants to faculty through the National Science Foundation, private foundations and similar organizations. In addition, endowment funds support some faculty positions and programs. The Public provides support mainly through tuition and donations. Finally, Government and Industry support strategic research and outreach through cooperative agreements and contracts of various types, and in many cases, these sources cover tuition and living costs for graduate research assistants. In the statutory colleges, the state government pays faculty salaries for teaching and extension as well as for research.

The Ideal Structure of Support

Given the central importance of creating knowledge at a research university, the ideal structure of financial support would be to have enough endowment and grants to cover all of the associated costs of serving the Academic community. This would avoid problems of cross subsidies from one type of client to another (cross subsidies are difficult to sustain in any open market). Tuition would cover the appropriate proportion of faculty effort devoted to teaching. Contracts for strategic research would pay for diverting faculty from basic research to solving problems of interest to the sponsors. In the ideal structure of support, most faculty would be involved in basic research and scholarship, and specialists in either teaching or strategic research would be the exceptions.

An implicit assumption in the ideal structure is that the interests of the Academic community are consistent with the interests of the Public and of Government and Industry. Hence, there would be

harmony in meeting the three goals of the university. In practice, neither the ideal structure of support nor the desired harmony among goals exists. The main reason is that the level of support from Academic sources for the Academic goal is too small to cover all costs. Consequently, some form of cross subsidization is necessary, and this in turn creates a potential for conflict among goals. In most situations, the person who pays the piper calls the tune, and in this respect, universities are no different from other organizations.

The Reality: Endowed Colleges

In the endowed colleges, most of the salaries for faculty are covered by tuition from undergraduates and students taking professional degrees. Doctoral students are generally supported by the university in some way, and it is more realistic to view these students as an expense of doing research or as a source of teaching assistants. A tradition has evolved towards a "one-size-fits-all" standard for allocating the effort of faculty between teaching and research. All faculty are expected to gain national recognition for high quality research, and promotions are based on reviews by academic peers and on research publications. Faculty are required to teach a minimum number of courses each year. The main tension in this system is that many faculty would like to reduce their effort on teaching and to spend more effort building their academic credentials through research. For most junior faculty, limiting their effort on research to summers and intersessions would be equivalent to not getting tenure.

Most undergraduates do not follow careers in academia. Many students go on to graduate or professional schools, but only a few end up with positions in research universities. As a result, most students look on their expenditures for tuition as an investment in future careers outside academia, and they expect to receive an appropriate set of course offerings. President Rawlings is correct in putting greater emphasis on undergraduate education. Students deserve to get good value for the money they spend. However, it is not a simple matter to establish true harmony between the Public goal of seeking education and the Academic goal of creating new knowledge, or for that matter, to involve undergraduates in the excitement of doing research.

A reasonable explanation of why the Public and Academic goals may diverge is that the needs of a typical student headed towards a non-academic career are relatively broad. In contrast, the scope of basic research for an individual faculty member is relatively narrow and specialized. Specialization is often the most effective way to establish an identity within the Academic community, particularly for junior faculty. Hence, there is a potential source of tension between the broad needs of students heading for careers in business, for example, and the practical needs of faculty protecting their time for specialized research. Fortunately, many faculty members are able to establish excellent records in both teaching and research. Nevertheless, the surest way to generate interest from faculty in any plan to redirect their effort toward sponsored research is to offer the possibility of lower teaching loads.

The Reality: Statutory Colleges

A major (but declining) proportion of total support in the statutory colleges is from the state government, primarily for faculty positions. In comparison to the endowed colleges, tuition and fees is a relatively small (but growing) proportion of revenue. Faculty lines are provided by the state for teaching students on campus and for extension programs off campus. Both of these activities are directed to meeting the Public goal of education. State appropriations for research have traditionally

been directed to solving problems rather than to basic research. This has also been the case for Federal appropriations from the US Department of Agriculture. A justification for this emphasis on strategic research is that it is appropriate for the mission of a Land Grant university. Given this tradition of solving problems, the statutory colleges have met increasing costs and shrinking state support by expanding the role of sponsored programs in research and extension.

Faculty in the statutory colleges make an overt declaration of how their effort is allocated to teaching, research and extension. Although individuals may change their allocations over time, there is always an implicit understanding that the total allocation of all faculty effort should be consistent with the mission of each college and the state's willingness to pay the bill. This information is also important in determining the type of faculty needed for new hires, and in this respect, the procedures in the statutory colleges are quite different from the procedures used in the endowed colleges for hiring faculty.

There are advantages to the statutory system compared to the endowed system. All faculty members are paid for what they do, and there is much less tension between teaching and research. If a faculty member wants to do more research, she must make a case for it with the chair of her department. Under this system, there tends to be less standardization in how faculty allocate their time, and some faculty may consider teaching, for example, as the primary role of their position.

There are dangers with the statutory system, particularly for the type of sponsored programs that are conducted for the Land Grant mission. Since the statutory colleges encourage faculty to be responsive to their clients, it is possible to be very successful in meeting the needs of clients in Government and Industry, for example, without contributing much to the goals of the Academic community. This creates another source of tension that manifests itself most clearly in the criteria used for decisions about tenure. If you are paid for what you do, it is a logical step to argue that you should be promoted for what you do. A simple characterization of the different ways of judging faculty in the endowed and statutory systems can be stated as follows. The tradition in the endowed colleges is that "you are what you publish". The tradition in the statutory colleges is that "you are what you do".

Comparing Sources of Support

The reality of support for the endowed and statutory colleges is summarized in Table 1 for the current fiscal year and the two previous fiscal years. The sources of support are grouped into Public, Academic, Government and Industry, and Other. The first three categories correspond to the three different types of client for the university's services discussed above. The fourth category, Other, includes primarily enterprise units, and it is dominated by the living expenses of students--Campus Life. (Expenditures on housing and dining by all students are considered as a source of income for the endowed units.) Total support from Academic sources and from Government and Industry have been relatively level over the last three years. At the same time, support from the Public and Other (i.e., students) has increased.

The primary purpose of Table 1 is to illustrate the relative importance of different sources of support in the endowed and statutory units. For Cornell in total, the three types of client (ignoring Other because it is largely revenue paid for living expenses) contribute roughly equal shares. In 1995-1996, for example, the shares were 38%, 29% and 33% for Public, Academic, and Government and Industry, respectively. These allocations are taken directly from the publication "1996/1997 Financial

Plan In-Year Forecast". No modifications have been made by, for example, assigning a proportion of faculty salaries in the statutory units to the Public source to reflect payments by the state for teaching and extension. The most important implication of Table 1 is that Academic sources of support for the university are less than a third of the total (without Other). Public sources, primarily tuition, and Government and Industry provide over two thirds of the income for the university's mission.

Comparing sources of support in the endowed and statutory units provides an explanation for the differences in goals that exist between them. Academic sources of support are much more important in the endowed units than they are in the statutory units. Academic sources in 1995-1996 account for 41% of the total (without Other) in the endowed units, but only 10% of the total in the statutory units. (The percentages would be 43% and 17%, respectively, if the National Institute of Health was included in Academic sources, but for this report, NIH is considered as a sponsor of strategic research.) Public sources are also much larger in the endowed units, and they make up 49% of the total compared to only 21% for the statutory units. For Government and Industry, the opposite is true. Nearly 70% of total support comes from Government and Industry in the statutory units, but only 10% of total support comes from this source in the endowed units. The main implication of the comparison is to emphasize the importance of support from Government and Industry in the statutory units. A third of this amount comes from sponsored programs and the remaining two thirds come from state and federal appropriations.

To provide additional evidence about the difference between the endowed and statutory units, the relative importance of National Science Foundation support for sponsored programs can be considered. In 1995-1996, National Science Foundation grants (\$98K) were twice as large as the support from other sponsors (\$46K) in the endowed units. In contrast, National Science Foundation grants (\$9K) in the statutory units were only an eighth of the amount obtained from other sponsors (\$70K). Hence, Government and Industry dominate the support of sponsored programs in the statutory units. In addition, part of the state appropriations for faculty salaries cover effort on research, and most of the federal appropriation goes to research.

Realigning the Goals

There is no logical reason why there should be a dividing line between basic and strategic research. In fact, having a continuum between the two is probably the soundest strategy for the university to follow. One complication is that the sponsors as well as the university must agree on the subject areas and activities in sponsored programs. Historically, federal agencies, such as the National Institutes of Health and the Departments of Defense and Energy, have recognized the importance of basic research and have been willing to support it. It is possible that similar understanding can be fostered for economic and environmental research. A problem for the statutory colleges, however, is that the state government has a tradition of only supporting strategic research and extension programs. Hence, a challenge for the university is to persuade people in Albany that there is value in supporting the research goals of the Academic community as well as strategic research and extension. One promising approach would be to promote the concept of training grants for students in a general area of research related to the mission of an agency. At the present time, there are programs supported by the state that contribute little to meeting Academic goals. Nevertheless, programs of this type may be essential for building the political support for other programs that have a greater academic focus.

In the endowed colleges, the main imbalance between goals and support manifests itself in the desire of faculty for less teaching so that they can do more basic research. This is generally not a major issue in the statutory colleges. The challenge there is to establish better incentives for faculty to direct more effort to Academic goals. It is not sufficient for success, however, to simply make changes in procedures within the university. If the sponsoring organizations do not support such changes, faculty are placed in the classical predicament between a rock and a hard place. Enforcing narrow academic standards, for example, can put sponsored programs in jeopardy. Currently, this is a potential problem with programs sponsored by state agencies. It is not politically advisable for the university to treat research on state problems in the same way as the traditional view of interdisciplinary research. "Don't do it until you have tenure." It would be far better to work methodically toward a system that meets both the academic goals of the university and the problem solving goals of the state. For many federal programs, this type of symbiosis has already been established.

2. PROSPECTS FOR THE SOCIAL SCIENCES

The Current Situation

The general problems discussed in Section 1 are severe for the social sciences in both the endowed and statutory colleges. Most income comes from tuition in the endowed departments, and the level of support from sponsored programs is relatively small compared to the natural sciences and to the statutory colleges. External support for doctoral students is limited, and there are various schemes for avoiding endowed tuition. The tension between teaching and research is relatively high, particularly when it comes to offering required courses for statutory students. As a result, there is always an ongoing debate in the statutory departments about whether they are getting good value for the accessory tuition paid to the endowed colleges. These transfers, however, are important sources of revenue for the endowed colleges.

In the statutory colleges, the size of the faculty and the allocation of effort among teaching, research and extension are determined, to a large extent, by how much the state government is willing to pay. The statutory departments have been relatively successful in establishing sponsored programs with state, federal and industry sources. Most of this support is for strategic research and extension programs.

Table 2 provides some additional evidence about the support for sponsored programs in the social sciences for Fiscal Year 1995-1996. The objective is to provide a comparison across colleges. Human Ecology, Industrial and Labor Relations, and the Johnson School are treated as all social science. For Arts and Sciences and Agriculture and Life Sciences, the information is limited to social science departments only. The values in Table 2 for sponsored programs were obtained directly from the Office of Sponsored Programs, and they are not directly comparable with the values reported in Table 1 (e.g., the values in Table 2 do not include overhead). For the statutory colleges, total levels of support, with and without federal and the state allocations, are reported. The total without allocations includes predominantly faculty initiated projects, and it is a better comparison with sponsored programs in the endowed units than the total with allocations. However, Table 2 does show how important government allocations are for the social sciences in the statutory units--effectively doubling the total level of support.

The first implication from Table 2 is that the proportion of funding for the social sciences from the National Science Foundation is relatively small in all colleges. Most support from the National Science Foundation at Cornell goes to the physical sciences. A second implication is that the total level of funding is small in the endowed colleges relative to the statutory colleges, even if government allocations are excluded. For this comparison, expenditures on salaries for social science faculty are reported in Table 2. The level of funding (without allocations) for sponsored programs in the three statutory colleges (Agriculture and Life Sciences, Human Ecology, and Industrial and Labor Relations) is roughly half the magnitude of faculty salaries. In the two endowed colleges (Arts and Sciences and the Johnson School), however, sponsored programs are only one fifth of the magnitude of faculty salaries. For comparison, the equivalent ratio for all endowed units is 2.0 (\$132 million/66 million) compared to 0.2 in the social sciences. The ratios for all statutory units are 1.1 (\$56 million/49 million) without allocations compared to 0.5 in the social sciences, and 2.1 (\$102 million/49 million) with allocations (budgeted research) compared to 1.0 in the social sciences. Although the ratios for all units are high in comparison to the corresponding ratios for the social sciences, it should be remembered that the costs of the infrastructure for research in the social sciences are also relatively low.

Over the past two decades, the statutory colleges have responded to shrinking support from the state by generating additional support from sponsored programs. At the same time, they have responded to a shrinking political base in agriculture and home economics, for example, by expanding the scope of course offerings and the areas addressed by research. It is reasonable to conclude that the success in generating support through sponsored programs would not have happened if the mission of the colleges had remained static. The lesson is that it is possible to find external support for strategic research and extension programs in the social sciences, but in most cases, these programs do not necessarily provide grants for faculty to do basic research.

The Immediate Future

Looking ahead, it seems unlikely that a great deal of additional support can be generated from tuition (masters programs, distance learning and executive courses are possible exceptions). Tuition rates in the endowed colleges are high already, and in the statutory colleges, tuition rates have been a non-positive-sum game with state support for faculty lines. Efforts are definitely needed to improve the current procedures used to determine the level of state support. The ideal source of support in an ideal research university would be to get more grants from the National Science Foundation, but this is unlikely to be a major source of growth given the current political drive towards a balanced federal budget. This leaves strategic research as the best pathway for acquiring additional financial support in the future.

There are two primary requirements for developing a successful university strategy of expanding programs funded by Government and Industry. The first is to find areas of research that the sponsors are willing to support. The second is to ensure that the programs also contribute to the Academic goals of the university. This strategy may be difficult to follow because it is easier for most faculty to identify projects that meet one requirement but not the other. Fortunately, changes that are going on within the National Science Foundation may help the university build a viable financial structure for meeting Academic goals.

A new policy has been adopted by the National Science Foundation to allocate a substantial portion of expenditures to "group research." This policy is a departure from the traditional approach of funding individual investigators in the social sciences. Group research implies that a group of investigators from different disciplines works on a relatively broad topic. This approach is more consistent with strategic research than the old approach based on the relatively narrow topics selected by individual investigators. As a result, it is reasonable to expect that research areas will be identified which provide leverage for the limited financial resources of the National Science Foundation by combining basic research with strategic research supported by other government agencies and industry. In a world of limited financial resources, both types of research are likely to benefit from this structure.

The implications for the endowed departments are that the scope of research should be broadened, and that more faculty with the skills to generate external support for research should be hired. The economics profession in the USA, in particular, has received widespread criticism for the narrowness of formal theory from within the profession (Krueger Commission on Graduate Education in Economics) and in the popular press (John Cassidy in the New Yorker, December 2, 1996).

The implications for the statutory colleges are quite different. Although there is never enough money to do everything, faculty in the statutory colleges do understand how to generate external support for research and extension programs. The challenge is to strengthen the links of these programs to the Academic goals of the university, particularly for programs supported by state agencies. Fortunately, there are some excellent examples at Cornell that can be used to illustrate the principle of combining basic and strategic research together under a single banner.

Three research programs from three different statutory colleges can be identified as examples. These are the Center for Applied Gerontology in Human Ecology, The Smithers Institute for Alcohol Related Workplace Studies in Industrial and Labor Relations, and the Experimental Economics Laboratory in Agriculture and Life Sciences. All three of these programs possess the two characteristics that are necessary for success. First, the mission of each program is relatively broad and encompasses a wide range of potential research topics. Within this range, projects in both basic and strategic research can be accommodated quite easily. Second, the subject area of each program is relevant to current interests of the public, and therefore, to potential sponsors in Government and Industry. It should be noted, however, that seed money for these programs was provided by the university. Some concerted effort is required to get research programs started and there is no guarantee of financial success.

In the social sciences, sponsored research is often related to specific policies that are being developed by government agencies. It may be helpful to distinguish between "policy research" and "policy analysis." Policy research is a form of strategic research that produces insight and new empirical knowledge about a specific topic. Policy analysis tends to be heavily empirical, and it is probably better suited to consulting companies than to universities. It would be difficult to meet Academic goals through policy analysis under these definitions. However, all three of the research programs discussed above involve policy research as a central component, and they all can contribute to meeting Academic goals as well. Many papers in policy research have influenced the future direction of academic research.

There is one final characteristic of sponsored research in the social sciences that should be discussed. In most cases, the infrastructure needed to support social scientists is modest in comparison

to other sciences. As a result, the investments required to initiate new research programs in the social sciences are also modest compared to the physical and biological sciences. Since the university uses common overhead rates for all disciplines, projects in the social sciences pay the same rates as projects in the physical and biological sciences. Bringing in more money to support graduate students in the social sciences, for example, would be a financial benefit for the university. Hence, it makes sense financially for the university administration to remove existing impediments and add new incentives to encourage more sponsored research in the social sciences. Furthermore, having a list of successful programs in policy research would go a long way to explaining to the public what faculty do at Cornell when they are not teaching students.

3. INCENTIVES FOR SPONSORED RESEARCH

Existing Incentives

Given the objective of developing new programs in policy research that are supported by external funds, the focus now turns to how this objective should be accomplished. The primary problem in the endowed departments is that too few faculty are involved in sponsored projects. The primary problem in the statutory colleges is that too many sponsored programs contribute little to meeting Academic goals. An added complication in the statutory colleges is that changing the focus of existing programs requires tacit agreement from the sponsors. State agencies, in particular, may be reluctant to support major changes in the goals of sponsored research.

One point of clarification should be made. Putting an emphasis on policy research does not diminish the importance of traditional research projects for individual investigators funded by the National Science Foundation, for example. The expectation is that better incentives for generating external support for policy research will also help faculty seeking support from Academic sources.

Faculty who have the ability to generate external support for policy research are likely to have other options competing for their time. Doing research off campus and consulting are the most important. For some fields, such as management, consulting with leading companies is a valuable way to establish relationships with potential employers of Cornell students. (Most undergraduates and professional students do expect to get good jobs when they leave the university.) For faculty doing policy research, however, the opportunities for consulting off campus should be considered as the standard against which any incentives for sponsored research on campus should be judged. Unlike the physical and biological sciences, there are virtually no research facilities for social scientists on campus that can not be matched by research organizations off campus.

Since this is Cornell, it should be no surprise that the procedures for encouraging sponsored research vary substantially among colleges. Industrial and Labor Relations has the best developed policy for faculty. A small proportion of overhead and half of salary recovery for research time is returned to the faculty. In addition, various policies have been considered for encouraging faculty to write research proposals. Procedures in the other statutory colleges are more implicit, but most of the faculty have received the message that it is a good idea to bring in money for research.

In contrast, existing procedures in Arts and Sciences are viewed by many faculty as disincentives. The main problem is that all overhead goes to the Provost, and a perception exists that sponsored programs require more administrative work in departments with no additional resources. In

addition, it is generally difficult for faculty to get reduced teaching loads when they bring in money for salary recovery (above summer salary). One can conclude that there is room for improving existing incentives.

4. RECOMMENDATIONS

As a prelude to making specific recommendations for improving incentives for sponsored research in the social sciences, it is appropriate to summarize the discussion in the previous sections in the following set of premises:

1. Increasing sponsored research in the social sciences will be a financial benefit to the university because the needed infrastructure for research is modest.
2. There are opportunities for growth in external support of group research and policy research in the social sciences.
3. There is a need to realign the academic objectives of research with the objectives of the sponsors of research.
4. An effective approach to policy research is to create small research programs involving faculty in different disciplines with interests in a common research topic.
5. Incentives for faculty must compete effectively with options for consulting with research organizations off campus.
6. Better incentives for policy research will also help to improve the incentives for basic research by individuals.
7. Successful research programs that focus on topics of general interest to the public are likely to provide opportunities for undergraduates, as well as graduate students, to get involved in research.

Given these premises, the following recommendations are proposed as incentives for sponsored research in the social sciences.

1. Cooperation between endowed and statutory departments: Establish virtual Faculties of Economics and Sociology.

An obvious way to develop research programs that combine basic and strategic research is to get faculty in the endowed departments working on common topics with faculty in the statutory departments. At the moment, a major barrier to increased collaboration among economists and sociologists on campus is that many faculty are excluded from the graduate fields of Economics and Sociology. While there are justifications for the current situation, there are hard feelings among many of the excluded faculty. A solution to this impasse would be to establish virtual "Faculties" of Economics and Sociology that would be inclusive. Such a policy could be implemented within the existing administrative structure of departments. Members of the graduate fields would be subsets of these Faculties, but all members, and their areas of specialization, would be listed in publications

describing the social sciences at Cornell. The result would be to publicize an accurate picture of the scope of activities in economics and sociology at Cornell. Establishing virtual Faculties would complement current efforts that are being made to increase the size of the graduate fields, and it would help to bridge the current division that exists between faculty doing basic research and faculty doing policy research.

2. Criteria for promotion: Recognize success in generating external support for research.

In successful research programs that combine basic and strategic research, it is inevitable that some faculty will contribute more to meeting the needs of the sponsors and others to meeting traditional academic objectives. Many potential sponsors will be reluctant to support basic research. Hence, it is essential to recognize these realities in decisions about promotions and salaries. Being a major contributor to a successful research program should count, and collaborating with others should make it easier for individuals to meet academic standards. The difficult task for the administration is to define, in operational terms, the characteristics of projects that could be funded but still do not meet the mission of the university. For the statutory colleges, an added challenge is to get the state government to agree to these criteria. One way to promote academic goals would be to encourage state agencies to support training grants for students.

3. Salary levels for faculty: Reward success in generating external support for research.

The same arguments raised above in the discussion of promotion can be applied to salary levels. There is, however, more flexibility in setting salaries compared to decisions about promotion. For example, bonuses can be paid as an alternative to increases in base pay. With the prospects of shrinking the total size of the faculty and increased flexibility over the age of retirement, it is important to recognize that the financial viability of the university depends on teaching students and on sponsored programs. Rewards for generating income for the university are needed in addition to rewards for excellence in the traditional academic pursuits. In fact, making faculty salaries reflect productivity in a dynamic way may be essential for the future financial viability of the university.

4. Incentives for summer salary. Give more faculty the option of nine month appointments.

Nine month appointments provide a large potential incentive for sponsored research since investigators can earn up to three months of extra income through the university. In some cases, limitations are placed on the period over which the investigator can be paid. This is a mistake because it limits the incentives for the faculty (and the overhead generated for the university). Twelve month appointments reduce incentives for sponsored research in the statutory colleges but reflects the political reality of meeting the land grant mission. In selective cases, moving a twelve month salary to a nine month salary may be appropriate. In general, summer salary for faculty on twelve month appointments should be treated as salary recovery (see the next recommendation).

5. Incentives for salary recovery: Establish mechanisms for reducing teaching loads.

Policies about teaching loads vary widely across universities and departments. Top physical scientists often teach only two courses per year, but there is a presumption that they will bring in large grants. Since external money is a requirement for conducting research in the physical sciences, incentives are quite different from the social sciences and buyouts of courses are relatively rare. Although some social scientists share this situation (e.g., those who generate primary data), most do not. Thus, an inability to reduce teaching loads can discourage sponsored research because, even with a grant for summer salary, grants cause year-round hassles. If teaching loads are effectively fixed, it may be better to teach, have no grants and do consulting in the summer. Universities that are largely self-funded generally allow course buyouts using, for example, one eighth of a nine month salary as an incentive (based on a standard teaching load of four regular courses per year). This may still be profitable because the cost of finding a replacement instructor is often less than the investigator's salary, and the policy encourages faculty to get grants. Another strategy is to charge the cost of a replacement instructor to the researcher.

Policies on course buyouts vary in different universities. UCLA has adopted a policy of encouraging grants by allowing buyouts as part of its effort to compete with UC Berkeley, which does not allow buyouts. Princeton also limits buyouts, but has a low course load relative to Cornell. As a uniform policy, Cornell should allow faculty in the social sciences to reduce teaching loads to two courses as a standard, and to allow further buyouts under exceptional circumstances. An important qualification for this policy is that high standards of instruction must be maintained, and reductions of teaching should be approved by the appropriate chairperson or dean.

If an investigator chooses not to use salary recovery to reduce teaching (e.g., summer salary for faculty on twelve month appointments), a high proportion of salary recovery (e.g., 90%) should be made available to the investigator for other research expenses. There are always gaps in any research program that no one will support. If the university sets a high tax rate on salary recovery, it is generally easy for an investigator to get direct compensation through consulting as an alternative. Consequently, the university would not see any salary recovery or the associated overhead.

6. The use of overhead. Allocate a proportion of overhead from sponsored programs to departments.

Unless departments receive some return on overhead, grants can be viewed as an administrative cost with little or no reward. Getting grants can be actively discouraged if this is the case, as it is perceived to be by some faculty in Arts and Sciences. It is a simple matter to use a uniform formula to cover administrative support by returning a share of overhead to departments. Some universities return a higher proportion than is required for administration alone as a direct incentive. Similarly, research programs can be given some proportion of the overhead generated to support their own administrative costs, equipment, and time spent preparing grants. Note that rewards for grant preparation are non-existent if an investigator has opportunities for conducting unfunded research and consulting. In the endowed colleges, indirect costs measure actual expenditures on research. Hence, accounts for administrative costs for departments and research programs would be needed, and the level of support allocated to a department or a research program would reflect the level of research activity. The links

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between department budgets and research activity have been established in a variety of ways in the statutory colleges.

7. Rates of overhead for research: Increase the overhead rates for projects with state agencies.

State appropriations to Cornell cover slightly more than one third of the total cost of the statutory colleges. This is a much smaller proportion than it was twenty years ago. The established policy is that research projects funded by state agencies (and the U. S. Department of Agriculture) are charged much lower overhead rates than projects with other sponsors. The justification for this policy is that these agencies have already paid for the research infrastructure. While this used to be the case, it is not true now. A new strategy for setting overhead rates is needed. For principal investigators, overhead charges on research projects are viewed as a tax. Hence, it is unlikely that the faculty will advocate increasing overhead rates. This is a matter for the university administration and the appropriate political representatives in Albany to resolve. As a point of reference, the overhead rates charged on state projects at Cornell are substantially lower than the rates charged on equivalent projects by the SUNY Research Foundation.

8. Research services: Increase the options for direct charges for services.

The standard overhead rates charged by the university on research proposals are relatively high. This practice has been established because federal agencies supporting the physical sciences have traditionally been willing to pay the bills. Public attitudes toward research universities are changing, however, and this is probably a good time to develop ways to lower overhead rates by charging more costs of research directly to projects. As a point of reference, homeowners would be surprised to have to contribute payments to a mortgage for one of their neighbors who happened to have built a big new house. Nevertheless, this is the logic of how overhead rates are set at most research universities.

The practice governing research services at CISER is that everyone is eligible for a modest level of service free. Additional services must be paid through contracts with researchers. This same approach could be used for services offered by other units on campus. There is an important qualification. Faculty will not be as tolerant as students have been about paying fees for services that used to be free. Hence, imposing new fees on services must be accompanied by offsetting increases in incentives for faculty. Lower overhead rates would be one incentive, but better compensation for faculty (Recommendation #3) would be best. If faculty can be encouraged to generate more external support for research in the social sciences, it is relatively easy to find legitimate ways to spend it.

9. Infrastructure for research: Improve existing research facilities.

The need for quality facilities for the physical and biological sciences, including laboratory space and contiguous graduate student accommodations, has long been recognized by the administration. Unfortunately, the space requirements for the social sciences are often viewed as an office for each faculty member, non-contiguous space for graduate students, and a few department seminar rooms. For those faculty who have large grants, these facilities are inadequate because

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sponsored research requires direct access to research assistants as well as control over space for meetings. In conclusion, many social scientists at Cornell are faced with a choice of putting a grant through Cornell, where one gets a small office, limited space for meetings, and research assistants that are hard to find, or to put the grant through an off-campus consulting firm, a spacious office, contiguous space for meetings and research staff, and finally, a much higher daily salary. Most faculty are properly altruistic about Cornell, but the overall impact of the current situation is to discourage sponsored research. Solutions are possible for some of these problems. For example, space is traditionally hoarded by programs that have lost funding and by departments that can no longer justify its use. It is probably unnecessary to build new facilities for the social sciences, but space should be allocated to programs that have students and external support, and space should be taken away from programs that do not. Air conditioning should be provided where needed to researchers who have to do research in the summer months, using some of the overhead generated by their grants.

10. Parking fees: Award complementary parking permits to faculty who generate sponsored research.

Parking is always a contentious issue on campus for the faculty. Faculty who bring in more than a minimum amount of revenue (e.g., \$200k per year for research on campus) should get a free parking permit. This would be a very inexpensive way for the administration to send a signal to the faculty that sponsored research matters. Handled correctly, earning a "research permit" could become a coveted status symbol.

Table 1. Sources of Support (Ithaca Campus)
(Dollars in thousands)

	1994-1995	1995-1996	1996-1997 (Forecast)
Public (Tuition & Fees)			
Endowed	289,994	309,414	320,744
Statutory	227,090	244,307	252,841
	62,904	65,107	67,903
Academic	231,469	234,121	228,889
Endowed	200,996	202,753	199,749
Statutory	30,473	31,368	29,140
- NSF Grants	117,285	106,606	108,738
Endowed	106,406	98,088	100,050
Statutory	10,879	8,518	8,688
- Investments & Gifts	114,184	127,515	120,151
Endowed	94,590	104,665	99,699
Statutory	19,594	22,850	20,452
Government & Industry	270,179	264,040	274,375
Endowed	51,638	47,444	53,700
Statutory	218,541	216,596	220,675
- State Appropriations	129,882	128,778	128,346
Endowed	1,919	1,837	1,880
Statutory	127,963	126,941	126,466
- Federal Appropriations	19,698	19,193	19,462
Endowed	-	-	-
Statutory	19,698	19,193	19,462
- Sponsored Programs - NSF	120,599	116,069	126,567
Endowed	49,719	45,607	51,820
Statutory	70,880	70,462	74,747
Other	148,801	148,723	159,426
Endowed	120,892	119,766	128,163
State	27,909	28,957	31,263
TOTAL	940,443	956,298	983,434
Endowed	600,616	614,270	634,453
Statutory	339,827	342,028	348,981

Source: 1996/1997 Financial Plan In-Year Forecast (Fall Report) January 1997

Table 2. Revenue from Sponsored Programs in the Social Sciences 1995-1996
(Dollars in thousands)

	A&S*		CALS**		HUM EC		ILR		JGSM		TOTAL
	Endowed	Statutory	Statutory	Statutory	Statutory	Statutory	Statutory	Statutory	Endowed	Statutory	
SPONSORS											
NATIONAL SCIENCE FOUNDATION	193	332	198								896
OTHER FEDERAL AGENCIES	665	915	1,483						67		3,329
STATE/LOCAL	0	407	33						0		864
OTHER	33	478	893						49		1,721
TOTAL WITHOUT ALLOCATIONS	891	2,132	2,608						116		6,810
FEDERAL ALLOCATION	0	567	293						0		865
STATE/LOCAL ALLOCATION	0	2,412	1,986						0		5,600
TOTAL WITH ALLOCATIONS	891	5,111	4,887						116		13,275
FACULTY SALARIES	5,011	5,564	4,513						517		17,711
RATIO WITHOUT ALLOCATIONS	0.18	0.38	0.58						0.22		0.38
RATIO WITH ALLOCATIONS	0.18	0.92	1.08						0.22		0.75

"Other Federal" includes: DOE, USDA, AID, ARMY, AIR FORCE, NAVY, ARPA, PHIS/NIH, NASA, and ED
 "State/Local" includes: New York State agencies

"Other" includes: Corporation/Trade, Foundations, Non-Profits and other miscellaneous agencies
 Hatch and Smith-Lever

"Federal allocations": Research and extension staff on state lines and other research expenses

"State allocations": Departmental Research, Organized Research, Public Service and Cooperative Extension.

* Economics, Government, Psychology and Sociology only

** ARME, Communication, Education and Rural Sociology only

Information regarding sponsored programs was obtained from Cornell's Office of Sponsored Programs
 Information regarding salaries was obtained from Cornell's Office of the Controller