

Berkeley Center for the Development of Peace & Well-being  
Institute for Human Development, UC Berkeley  
Second Annual Symposium – May 9-10, 2003 – Clark Kerr Conference Center  
**Equality, Hierarchy, and Social Class:  
Across species, in the classroom, and in health.**

The Second Annual Symposium of the Berkeley Center for the Development of Peace and Well-being was held May 9-10 at the Clark Kerr Conference Center on the campus of the University of California at Berkeley. The symposium included presentations by top scholars, commentary and questions, small-group breakout sessions to enable more in-depth discussion of specific aspects of equality, and poster presentations by the Hornaday Fellows. Over 150 members of the academic, professional, and lay community were in attendance. Participants engaged in an intriguing conversation regarding the notions of equality, inequality, egalitarianism, and hierarchy across time, space, and species.

**Dacher Keltner, University of California, Berkeley**  
**Introduction & Welcome**

In his welcome, Center co-director Dacher Keltner related the history and purpose of the Center for Development of Peace and Well-being and acknowledged the donors who make the center possible. “The mission of our center,” Keltner explained, “is to promote the scientific study of peace and well-being, and to encourage peace in individuals, relationships, and communities.” Keltner also reviewed the activities of the Center over the previous year, including supporting the research of graduate and undergraduate fellows, developing a biannual publication, organizing symposia, and hosting a series of public conversations aimed at reaching out to the community with topics such as destigmatizing mental illness, peaceful living in times of conflict, and equality in public education. Keltner concluded by stressing the particular importance of the the symposium and of the Center’s mission in light of the rising stratification in contemporary global society.

**Frans de Waal, Emory University**  
**“Dominance Style and the First Hints of Democracy in Primates”**

Franz de Waal, C. H. Candler Professor of Primate Behavior in the Department of Psychology at Emory University, opened the symposium with a discussion of his research on hierarchy and democracy in primate societies. de Waal argued that hierarchy is an “intensely social” organizing principle that occurs in all animals, and that hierarchy formation among the higher primates is not significantly different than that in human societies.

In his talk, de Waal outlined the social and political structures of rhesus monkeys, stumptail monkeys, and chimpanzees. Like human societies, primate societies vary culturally. “There are 200 primate species,” de Waal noted, “and there’s an enormous variability in how hierarchical each species is.”

### Hierarchy in Monkeys

Rhesus monkeys are the most hierarchical of all primates. In fact, de Waal noted that psychologist Abraham Maslow referred to rhesus monkeys as “little fascists.” Rhesus society is matrilineal; high ranking females pass down their social position to their children. Studies show that this pattern remains in place even when babies are switched at birth, proving that this is a social, as opposed to genetic, hierarchy. Dominance among rhesus monkeys is communicated through teeth baring and other facial threats. Dominant positions “are very rigorously reinforced among the rhesus monkeys” with biting and other fierce behavior.

In contrast to rhesus monkeys, stumptail monkeys have a more conciliatory society in which reconciliation figures much more prominently. “The stumptail monkey belongs to the same genus, has basically the same social structure, is, in terms of intelligence, very similar to the rhesus monkey, but has a totally different temperament...and as a result they have a much more tolerant type of society.” Stumptail monkeys engage in an enormous amount of “friendly contact” and spend up to 25% of the day grooming one another. Stumptail monkeys are also experts at reconciliation. de Waal noted that their reconciliation ritual is particularly interesting in that it has “built into it a communication about who is dominant and who is subordinate.” “Without that kind of communication,” de Waal argued, “the reunion would probably not be possible.” In other words, reconciliation is necessary if societies are to function properly, and formal hierarchies provide a structure in which formal reconciliation can take place. “That is a very important part of my story,” de Waal argued, “in the sense that I think hierarchies unite groups and make for more effective cooperative social organization.”

### Double-layered Dominance

In his studies, de Waal has found that adult, non-kin stumptail monkeys reconcile three times for often than adult, non-kin rhesus monkeys, and that stumptail monkeys are more tolerant than rhesus monkeys. “So there are enormous contrasts to be seen between these kinds of societies.” de Waal argued that this illustrates the theory of “double-layered dominance” which holds that dominance consists of two distinct layers: formal dominance and dominance style. “Both species have a clear-cut social hierarchy, but the dominance style of the stumptail monkey is quite different than that of the rhesus monkey.” This pattern of double-layered dominance is consistent when comparing across the twenty species found in the macaque genus (including rhesus and stumptail monkeys); formal dominance is similar across species, while dominance style is variable. de Waal attributed the differences in dominance style to “contrasting priorities.” Rhesus monkeys maintain strict hierarchies and fierce dominance because their main priority is access over resources. Stumptail monkeys also have social hierarchies, but their main priority is to unite against aggressors, so they focus more on group cohesion and cooperative relationships.

### Nature vs. Nurture

de Waal argued that, as with humans, some aspects of hierarchical behavior in primates are in-born and others are culturally varied. de Waal illustrated his point with a study he conducted that brought rhesus and stumptail juveniles together to examine whether

reconciling behavior is strictly instinctual or if it varies with environmental manipulation. The study consisted of three phases: First, the monkeys lived as separate groups, then they lived together day and night for five months, and finally they were divided and lived as separate groups once again. At the beginning of the co-housing phase the monkeys completely self-segregated themselves, but at the conclusion of that phase “they were absolutely fully integrated; they always played together, groomed together, they did everything together.” The study found that the rhesus monkeys that co-housed with the stumptail monkeys reconciled at the same rates as the stumptail monkeys at the end of the five month co-housing period. Moreover, this group of rhesus monkeys maintained this high level of reconciliation even after they were once again segregated from the stumptails. Therefore, de Waal concluded that reconciliation is “a learned social skill” that is “subject to environmental manipulations” and that these kinds of social skills could most likely also be manipulated in human society.

### Hierarchy in Chimpanzees

While chimpanzee culture is indeed hierarchical, it is also very egalitarian. de Waal hypothesized that the egalitarian nature of chimp society results from the need to unite against the danger of a common enemy, mirroring some human societies. Hierarchy formation in chimpanzee society is democratic in that dominance is determined by who has been the most successful in forming coalitions. Confrontations among chimpanzees are mediated by coalitions, and are followed by a somewhat human-like reconciliation process. After a fight, one opponent will reach out to the other as an invitation to reconcile. The invitation is usually accepted with friendly contact, such as a hug, a kiss, and mutual grooming. De Waal stressed that these reconciliations are “very remarkable given the enormous amount of tensions” in chimpanzee society.

Chimpanzee hierarchies, de Waal posited, are “much more human-like” than those of monkeys, because the formal hierarchy and the actual power structure can be somewhat disconnected, leaving room for “behind-the-scenes influences.” Chimpanzees form coalitions that only support the dominant members of society about 50% of the time. This makes for a completely different society than those of the rhesus and stumptail monkeys because low-ranking individuals in chimpanzee societies can gain enormous power through coalitions. This also affects gender relations. For example, although females are subordinate in formal signals of dominance, they are often dominant in informal competitions for resources. “Since the male hierarchy is so dependent on...who supports you,” de Waal concluded, “[the males] have to be nice to these females.” This illustrates the “flexible power relationships” behind the formal hierarchy.

### Dominance Styles across Species

de Waal concluded that there are three types of dominance styles:

- Despotic (rhesus monkeys): Subordinates are severely punished and exploited, and reconciliation rarely occurs.
- Tolerant (stumptail monkeys): Clear formal dominance hierarchy, but there is room for subordinate protest and reconciliation is common.
- Egalitarian (human hunter-gatherer): Same as tolerant societies, but also have “active leveling mechanisms.”

- Chimpanzees fall somewhere in between “tolerant” and “egalitarian”.

### Hierarchy and Reciprocity

de Waal defined reciprocity as “reciprocal altruism,” which is distinct from bartering or mutualism. The two requisite components of reciprocal altruism are a time delay between giving and receiving and a contingency between giving and receiving. de Waal and one of his graduate students, Jessica Flack, are working on the interplay between hierarchy and reciprocity from a systems perspective. “As hierarchy decreases in the system,” de Waal observed, “regulatory mechanisms increase to compensate for the loss of order.” Reciprocity can serve as an “alternative ordering mechanism” for more egalitarian societies in which strict policing is rare. In a study of 7,000 food transactions and grooming among chimpanzees, de Waal and his colleagues found that if, for example, chimp A grooms chimp B in the morning, chimp B is more likely to share food with chimp A in the afternoon. Thus, “reciprocal altruism” invokes both memory and gratitude. de Waal stressed that this very elaborate system of reciprocity exemplifies a leveling mechanism. Therefore “being high-ranking doesn’t necessarily mean you will get the resources.”

### Conclusion

“Chimpanzee society,” de Waal concluded, “...has some of the tendencies, I think, that we have elaborated on when we designed our [human] democracies.” He noted that we, like chimpanzees, also engage in hierarchies and power structures that have “leveling mechanisms,” which maintain egalitarian society by checking any individuals who become too powerful. Hierarchies and power structures, then, can serve to promote cooperation and unite societies.

### **Robert Slavin, Johns Hopkins University**

#### **“Achieving Equality in Education: A Road Map”**

Dr. Robert Slavin, co-director for the Center of Research and Education for Students Placed at Risk at Johns Hopkins University and chairman of the Success for All Foundation, began the second day of the symposium by presenting his research on working toward equality in education. Dr. Slavin posited that the problem of inequality is not unique to the United States, but is more pronounced here than in many other parts of the world. This inequality, then, leads to alienation and underlies many of America’s social problems. Slavin used his talk to address the question: “What would we do if we decided that [addressing inequality] was an important goal?” He argued that understanding the problem as solvable is critical because “it’s far more likely that people will take action if they feel as though there are practical steps that they could take that would actually have an effect on this larger problem.”

Throughout his presentation, Slavin focused on factors that would be likely to make a difference in terms of equalizing outcomes in education for children by raising the achievement of children who are most at risk, including “children who live in the most impoverished communities, children who are not speakers of English, children who come from individual homes where they do not have two parents, and so on.” In order to

highlight successful strategies for implementing long-term change, Slavin outlined several existing local programs.

#### Existing Programs Addressing Inequality in Education

The Elmira Nurse Visitor Program focused on isolated young mothers-to-be in Elmira, New York. Studies had shown that “an extraordinary number” of “children who get into really serious difficulty” had upbringings with “single mothers in the very worst of circumstances.” The Elmira Nurse Visitor program attempted to preempt these problems by assigning a nurses to visit expectant mothers “to check in with them from time to time, to build a relationship, to help them gain access to prenatal care, to try to connect them to their own families or to other community members so that there will be people who will support them.” These visits continued after the child was born until such time when the nurse determined that the young family was faring relatively well. A longitudinal study of the children of these mothers through 15 years of age showed that the arrest rate for children of these mothers was half that of the children of mothers who did not receive these visits and the conviction rate was one-third that of the children whose mothers were not part of the visitation program. Similarly, the children of the mothers who participated in the Elmira Nurse Visitor Program had fewer incidences of drug use, fewer sexual partners, and did better in school. This program was “a very simple time-limited kind of treatment that had profound impacts in the long-term for some of the most at-risk children.”

The Syracuse University Family Development Research Program also conducted home visits to single mothers, but it also ensured that the children of these mothers received high-quality daycare, “and helped the mothers to reenter or enter the workforce, knowing that their children would be receiving good-quality daycare.” A longitudinal study of these families showed that, at ages 13-16, the children of these mothers had an arrest rate that was one-quarter that of the children in a control group. Furthermore, while 40% of the children in the control group had been labeled by local law enforcement as “chronic offenders,” zero percent of the children in the Family Development Research Program were labeled as such.

One of the most famous early-intervention programs was the Perry Preschool program, in Ypsilanti, Michigan, which provided two years of “intensive pre-school services and parent-involvement services to children ages 3 to 4.” A longitudinal study of the children who received this early-childhood intervention “and *only* this early childhood intervention at ages 3 and 4” showed that, at age 27, 71% had graduated from high school, versus 54% of those in a control group. The young people who participated in the Perry Preschool program were less likely to be assigned to special education and their literacy rates were higher. As adults, a significantly larger percentage of the Perry Preschool participants owned a home and were earning a living wage than those in the control group.

Slavin called the Carolina Abecedarian Project “the most intensive early intervention” program of which he is aware. Children “from very impoverished homes in North Carolina” were identified at six months of age. The parents received intensive home

visits and the children were placed in outstanding daycare and then preschool programs. A longitudinal study of the children who participated in this program showed that, at age 21, they were “two-and-a-half times as likely as the control group to have enrolled in college, 40% less likely to have a criminal record,” 50% less likely to use marijuana, and had fewer convictions. The program also continued into elementary school for a sample of participants. Researchers subsequently found that “to get academic outcomes... interventions during the academic years are critical.” In other words, all of these early intervention programs resulted in positive life outcomes for the children, but specific academic interventions were required to improve reading, math, and other academic skills.

The Milwaukee Project targeted children of very impoverished, mentally retarded mothers. The program included educational and vocational services for the parents and high-quality preschool programs for the children. At age 14, a longitudinal study showed that these children had higher IQs and were assigned to special education at a much lower rate than children in a control group.

The Parent-Child Centers program involved more than 1,000 children in Chicago. “The children were provided educational enrichment, high quality preschool programs and then intensified programs in the early elementary grades.” A follow-up study of these children in the 8<sup>th</sup> grade found that “those who had been in the program for at least three years were scoring significantly better in reading and math and other kinds of school outcomes.” Similarly, a longitudinal study of these children at age 20 revealed higher rates of high school completion and lower rates of criminal involvement.

Slavin argued that this list of programs and their coordinating longitudinal studies should give scholars “confidence that early intervention can have long-term impacts,” and that “intensive investment in young children has substantial payoff later on.” Therefore, we as a society cannot argue that inequality is inevitable.

Moving into the elementary school years, Slavin noted that there are several intervention strategies that return tangible results. Full-day kindergarten, smaller class sizes, and one-on-one tutoring all greatly impact academic outcomes. Early attention to sight and vision problems also positively affects academic outcomes. Slavin also emphasized the importance of “accommodations for English language learners,” although he stressed that “the language of instruction turns out to be way less important than the quality of instruction.”

### Success for All

The “Success for All” program at Johns Hopkins University asks, “How could you take everything we know from research about how children develop and how children learn and about effective programs for children in different developmental stages and put them all together into a consistent program that could be used on a large enough scale to matter at the policy level?” The programs discussed above were all implemented at local levels, but the people involved in Success for All are working to design a program that can be replicated on a national level. Success for All is research-based and designed to be an

early and intensive intervention. The strategies involved include “a focus on building children’s language and phonemic awareness” in preschool, kindergarten, and first grade, “direct teaching of cognitive strategies,” cooperative learning, frequent assessment of instruction and learning, one-to-one tutoring, and family support and involvement. “The concept of Success for All is to try to identify every way in which kids could possibly succeed and prevent every way in which kids could possibly fail.”

Over 46 research studies have been conducted on the Success for All program, “and the impact has really been quite consistent in terms on improving students’ reading achievement [and] keeping kids out of special education.” In a follow-up study of Success for All participants who were then in the 8<sup>th</sup> grade, those who had participated in the program were half as likely to have been in special education, were better readers, and were less likely to have been held-back than the students in the control group. Thus, students who had participated in Success for All were performing much better in the three main areas that predict high school completion.

Perhaps the most important aspect of Success for All is that it is designed to be easily replicated. Slavin reported that Success for All “currently is operating in about 1,500 schools in 48 states and serving about a million children across the country.” These are “typically very high-poverty schools, averaging about 80% free lunch across all schools.” Slavin argued that the smaller studies discussed above “demonstrate that children’s outcomes can be systematically changed if we choose to do so. What Success for All demonstrates is one step further, which is that this need not be limited to a laboratory situation; this can be done on a substantial scale in real live schools in all kinds of different circumstances across the country.”

### Conclusion

Slavin concluded that, “It is not a dream to say that we can have much less inequality in our society.... We could have much less inequality in *outcomes*, not merely in opportunities, in our society if we chose to do so. The research that I’m talking to you about today demonstrates that, should we make that choice, there are ways we could actually have the effect that we desire.”

### **Rhona Weinstein, University of California, Berkeley Commentary & Discussion**

In her response to Slavin’s presentation, Weinstein noted that Slavin’s work with Success for All is “atypically innovative in its topic matter, its scope, and most importantly its systematic development.” This work is unique in that it involves rigorous research reviews, it applies research findings to preventive interventions, it addresses the neediest children, it focuses on whole-school reforms, it is continuously reevaluated, and it is national in scope.

However, Weinstein noted that, “despite desegregation, despite special education and mainstreaming, despite gender equity laws, there is an insidious and unspoken process of

differential expectations and differential and inferior education pathways in place.” Therefore, Weinstein argued that programs like Success for All will not be enough to address inequality on our society because they fail to address differential expectations in education. Weinstein’s own research shows that children do in fact recognize differential expectations in the classroom. “The gaps in achievement become wider in...highly differentiated treatment environments, and self-views and children’s own expectations also become wider.”

In addition to the prescribed curriculum of programs like Success for All, Weinstein argued that we must find a way to “train teachers in a community of scholars among themselves...to pick and choose among effective strategies to better match the needs of the children they are working with in the context of their schools, to better use their own creativity that they can bring to the table in actualizing these effective practices.” In addition, Weinstein asserted that intensive studies of the implementation of nationalized or “scaled-up” programs like Success for All must be conducted to consider *where* most useful, *how* they are implemented, *why* they are or are not implemented well, and *what* outcome measures should be used to assess the success of such programs. Weinstein added that children’s own voices and experiences must figure prominently in this evaluative research.

Therefore, Weinstein posited, there are two models of approaches: the Success for All model is program-driven, while the model she presents is “school district- and community-driven, taking into account the ecology of the children...” Weinstein concluded that both models are critical in thinking about ways in which to address the current inequities in education.

### **Ichiro Kawachi, Harvard University**

#### **“Economic Development, Economic Inequality, and Population Health”**

Kawachi, a professor of epidemiology and Director of Harvard Center for Society and Health at the Harvard School of Public Health, delivered a compelling presentation on economic development and economic inequality in relationship to health within the United States and throughout the world. First, Kawachi argued that life expectancy is not directly related to economic development. For example, Kawachi noted that, although the United States is the second richest country in the world (after Luxemburg), it has nowhere near the highest life expectancy. Indeed, Kawachi made it clear that “Prosperity does not purchase better health.” Kawachi compared the Dow Jones Industrial Index to the Index of Social Health, a composite based on 16 indicators of public health, including rates of homicide, infant mortality, child abuse, and teen pregnancy. “Very interestingly, the Index of Social Health tracked the Dow Jones Index until about the mid-1970s,” Kawachi noted, “and then there was a dramatic deterioration in the index and a stagnation for a long period after that.” Since the late 1970s, the Dow Jones Index is up overall, but the Index of Social Health is down overall. Thus, there has been “a progressive disconnect between economic performance and social performance, raising questions about what is it that we citizens have reason to care about when we monitor economic developments and progress.”

Similarly, Kawachi cited data that shows that personal income in the United States has doubled in real terms since World War II, but that there has been stagnation in self-reported “happiness” during the same time period, with only about 30% of Americans describing themselves as happy with their lives. Kawachi added that “this really raises questions about the ends of economic development.”

Kawachi then turned to income inequality, noting that economic stratification has increased exponentially in the United States since 1979. During this time period, the bottom fifth of American households saw a net annual income loss of \$100, while the middle fifth saw a modest annual income gain of \$3,400, and the top 1% of households saw an extraordinary annual income gain of \$414,200 in real terms.

“Why is a public health professional talking about income inequality?” Kawachi asked, “What do we care?” Kawachi provided several reasons why society must concern itself with the unequal distribution of income. First, economic inequality leads to economic residential segregation, which directly affects life opportunities, “because where you live and who your neighbors are has a tremendous influence on your ability to find jobs, your access to local labor markets, access to good schools, and even access to things like supermarkets where you have a choice of eating fresh fruits and vegetables, and so forth.” Second there, is “a very robust association” between income inequality and crime, because as inequality rises, “people find it hard to keep up with the prevailing standards of living by legitimate means [and] they are forced to resort to illegitimate means to make ends meet.” Third, inequality leads to a drag on economic growth at all levels. Kawachi notes that reliable empirical data shows that “firms which maintain a very high level of inequality in compensation are more likely to suffer from absenteeism, low morale, and even things like sabotage.” Fourth, Kawachi argued that economic inequality leads to social tensions and “the erosion of our social bonds.” Finally, economic inequality is bad for our health due to “the concave relationship between income and life expectancy.” This concave relationship means that, “if you are very poor, small increments in income will produce large changes in life expectancy, but at a constantly diminishing rate.” This, then, “has some very important implications for redistribution,” because if we were to lessen the gap between the highest and lowest incomes in the United States, while still holding the mean income constant, life expectancy would raise significantly.

Kawachi outlined the existing hypotheses regarding how income relates to health. The “absolute income” hypothesis is the most common, and it holds that “one’s health is determined by one’s own income and nobody else’s.” The “relative income” hypothesis says that one’s health is also affected by how one’s income compares to the income of others. Finally, the “relative rank” hypothesis argues that “dominance in hierarchy has tremendous influence on your health status.” Thus, while income leveling tools such as progressive income taxes may address income inequalities, they nevertheless preserve social rank. In order to test these hypotheses, Kawachi and his students measured both individual income and income inequality and conducted multi-level analyses on a state-by-state basis using the National Health Interview survey. They found that absolute income does affect health outcomes, in that low personal income is “a major risk factor for premature death.” However, even when controlling for the risk associated with

absolute income, “there was a gradient in terms of mortality risk” depending upon the level of inequality in the state in which an individual lives. Therefore, people living in more egalitarian states have a lower mortality rate than their counterparts in states where the level of income inequality is higher. These effects are independent of individual income, and are present in other health outcome measures, such as post-partum depression. “So,” Kawachi concluded, “both personal income and relative income matter for health outcomes.”

Kawachi noted that the former slave-holding states tend to have the most unequal income distribution in the present day, while the Midwestern states tend to be the most egalitarian. Kawachi argued that it was not coincidental that the states with high income inequality are also those states with higher concentrations of African Americans. However, even when controlling for race, income inequality is still a significant predictor of poor self-reported health, and when controlling for class, race is still a significant predictor of poor self-reported health. Therefore, Kawachi argued, race and class are not simply proxies for one another, but rather “racial inequalities *and* economic inequalities are both independent threats to public health. Together they contribute to the poor health achievement of Americans.”

Furthermore, while “there is a striking correlation between the extent of income inequality and life expectancy” at the state level in America, this trend also holds at a global level. Thus, the few studies that have found that income distribution does not significantly affect health outcomes were conducted in the most egalitarian societies, including Japan, Denmark, Sweden, and New Zealand. In contrast to these nations, the United States is the most unequal of the developed countries in terms of income distribution.

Kawachi outlined some reasons why income inequality may be so influential in health outcomes. First, Kawachi posited the mechanism might be psychosocial, such that when income disparity rises, the “stress and frustration of trying to keep up” is harmful to health. Kawachi also pointed to the erosion of social cohesion that results from increased income inequality. This decrease in social cohesion has “implications for the ability of states to engage in social spending” related to health and well-being. Indeed, Kawachi showed that “in American states, the extent of income inequality is related to public opinion measures of trust and cohesion between citizens.”

Even with all of this evidence suggesting that income redistribution would benefit the health of everyone in the United States, Kawachi noted that there are two major barriers to wealth redistribution. First, the rich do not feel rich, and this perception is higher in the states that have the greatest income disparities. Second, the poor want to be rich and hold hope that they may eventually achieve that goal. However, economic studies show that the United States is no more socially mobile than other industrialized countries. However, Kawachi argued, “I want to suggest that the public discussion might be a little different if the facts of current policies were more openly discussed in the public domain.” Kawachi cited a report by the non-partisan Center on Budget and Policy Priorities, which stated that “in order to retain fiscal balance over the next decade,

Congress will need to reduce programs for the elderly, veterans, and the poor totally \$265 billion over the next decade. Another \$210 billion would need to be cut from discretionary programs.” “Very interestingly,” Kawachi added, “the total amount that has to be cut – \$435 billion – is about equal to the tax reduction requested for the top 1% of American earners.”

Kawachi closed by providing global perspective, noting that that inequality is increasing at an alarming rate throughout the world. In 1820, the wealth ratio of the richest to the poorest country was 3:1, while in 1997 this ratio had increased to 70:1. “The global concentration of wealth now is such that the assets of the three richest individuals in the world are worth more than the combined GNP of the poorest 35 countries.” Similarly, the assets of the 200 richest people in the world are worth more than the combined income of 41% of the world’s people. “An annual contribution of just 1% of the wealth of the wealth of the richest 200 people would be sufficient to provide universal access to primary education for everyone.” Kawachi ended on an optimistic note, suggesting that major changes could be made to the global structure of inequality “with relatively little pain and cost.”

**Nancy Adler, University of California, San Francisco  
Commentary & Discussion**

Adler opened her discussion by noting that, up until about ten years ago, all of the studies on health and income followed a threshold model, meaning that they defined a poverty threshold and then compared the health of groups above and below that level. Adler revealed that she was drawn into this area of study because of the Whitehall study, which was conducted in the United Kingdom and which “called into question the threshold model.” The Whitehall study found that “not only was there a marked difference [in health and life expectancy] between those at the top and those at the bottom, but there was a gradient effect.” Even though the study only included people whose income placed them above the poverty line, the results still showed that health markers deteriorated “at each step [down the] occupational grade”. When Adler and her colleagues searched for equivalent studies to test for a gradient effect in the United States, they found that “people weren’t collecting data that would allow you to test a gradient effect” because “everything was cut at the poverty level.” When sufficient data was eventually collected, Adler and her colleagues found the same type of concave relationship between income and health to which Kawachi earlier referred. At the higher incomes, Adler reported, “there is a flattening out, but it is *not flat*. The rate of increase is less, but it does not disappear. At higher levels of income, there are still benefits of even higher income.” Adler praised Kawachi for “raising the importance of relative rank, and whether that relative rank is close together or spread out.”

Next, Adler addressed her own work on understanding the processes by which socioeconomic status enters into the body and affects health. Adler argued that socioeconomic status affects the physical and social environments in which people live and work. These environments control such factors as exposure to carcinogens and pathogens, education, and support of “the performance of health-relevant behaviors.”

Adler noted that “tobacco, sedentary lifestyle, high-fat diets, firearms, unsafe sexual tactics: all of these contribute to premature mortality; all of these show the same gradient with SES. The prevalence of these behaviors is higher the lower you are in socioeconomic status.” Adler cautioned scholars against engaging a culture of poverty thesis that would “blame the victim” for these “health relevant behaviors.” Scholars must understand, Adler asserted, that “these behaviors are very much shaped by the environments in which people are living and working. Exposure to information, the ability to engage in healthy behaviors, is not randomly distributed.” Adler pointed out that when comparing poorer neighborhoods to wealthier neighborhoods, studies have shown that poorer neighborhoods lack safe recreation areas, lack access to healthy foods, have fewer stores and pharmacies, have more fast food restaurants, have a much higher concentration of liquor stores, are more targeted for cigarette advertising, and residents are charged more for produce and healthy foods than are their counterparts in wealthier neighborhoods.

“So performance of health related behaviors,” Adler stated, “is very much shaped by socioeconomic status, by the environments in which people live, which in turn shape cognitive and psychological factors.” Adler advocated for the notion of “behavioral justice” to parallel the concept of environmental justice. While the environmental justice movement works against the disproportional burden of unhealthy physical environments faced by poor people and people of color in the United States, Adler’s “behavioral justice” would address the inequity in psychological and social environments. Adler asserted that “we need to give people the means to engage in healthy behaviors,” and that “this is an issue of social justice, it’s not just individual choice.”

Finally, Adler pointed out that “the lower you are on the SES hierarchy, the more stress you’re exposed to. You’re exposed to more stressors, you have fewer resources to deal with them, there are more acute events and more chronic events.” These loads lead to a “cumulative wear and tear on the body” which can make one “vulnerable to a range of diseases, particularly to cardiovascular disease.” Adler noted that that there is an additional stress associated with being in a lower socioeconomic group that is independent from “the absolute resources that SES gives you.” Adler referenced animal research on hierarchies in primates, which shows that animals who are lower on the social hierarchy have more health problems and die sooner than those who are higher in social status.

Adler concluded by noting that research on the relationship between socioeconomic status and health continues to grow, but that there is no single solution. Adler encouraged scholars to conduct “interdisciplinary, multi-level work” that moves toward understanding the interactions between socioeconomic status and health at both the individual and social levels.