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Victor C. Linder

Economics, Values, and Health Care Reform[†]

By VICTOR R. FUCHS *

Interest in health economics has soared over the past three decades, stimulated by intellectual innovations, greater availability of data, and, most importantly, a surge in health care spending from 6 to 14 percent of GDP.¹ An 11-fold increase² in the number of Ph.D.s has enabled many professional schools, government agencies,³ and research institutes to add health economists to their staffs. Nevertheless, the health care debate of 1993–1994 benefited much less than it could have from the results of their research.

In this lecture I identify the primary sources of modern health economics and describe interactions between the discipline and the field of health, drawing heavily on my personal experience. I then turn to the question of why economists did not have more impact on health care reform. I report and analyze the

answers of health economists, economic theorists, and practicing physicians to a survey I conducted in 1995. My principal conclusion is that value differences among economists, as well as among all Americans, are a major barrier to effective policy-making. I discuss the implications of the importance of values for economics and conclude the lecture with my recommendations for health care reform—recommendations based on my values as well as my understanding of health economics.

I. The Past

In 1963 a seminal paper by Kenneth Arrow discussed risk aversion, moral hazard, asymmetrical information, philanthropic externalities, and numerous other topics that have since played major roles in health economics research.⁴ He saw that *uncertainty* about health status and about the consequences of care was the key to understanding the health sector from both positive and normative perspectives. As Arrow wrote, “Recovery from disease is as unpredictable as its incidence” (1963 p. 951).

At the same time that Arrow was depicting the theoretical landscape, Martin Feldstein was pioneering in the application of quantitative methods such as 2-stage least squares, principal component analysis, and linear programming to the estimation of production functions and other important economic aspects of medical care. His numerous papers analyzing the British National Health Service formed the basis for his Ph.D. thesis at Oxford University (Feldstein, 1967).

A third line of work that has had a significant influence on health economics also began in the early 1960’s with the National Bureau of Economic Research Conference on Investment in Human Beings (1962) and Gary S. Becker’s treatise on human capital

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¹ For a short introduction to the field of health economics, see Fuchs (1987). For a thorough review of the health economics literature prior to 1963, see Herbert Klamman (1965).

² There were 132 dissertations completed in 1990–1994, compared with only 12 in 1960–1964. The number of dissertations in all fields of economics increased by 2.5 times during that 30-year interval.

³ Examples include the Congressional Budget Office, the General Accounting Office, the Office of Management and Budget, and the Office of Technology Assessment.

⁴ This is Arrow’s most frequently cited single-authored paper (Michael D. Intriligator, 1987 p. 687).

(1964). The NBER conference volume included Selma Mushkin's (1962) paper, "Health As an Investment," and a few years later the application of the human capital model to health was given its fullest development by Michael Grossman (1972).

Predating and postdating the theoretical and econometric innovations of the 1960's is a stream of research that focuses on health care institutions, technology, and policy. As early as 1932, Michael M. Davis and C. Rufus Rorem (1932) were writing about the crisis in hospital finance. Significant contributions to this genre have been made by Henry Aaron, Alain Enthoven, Rashi Fein, Eli Ginzberg, Herbert Klarman, Dorothy Rice, Anne Scitovsky, Anne and Herman Somers, Burton Weisbrod, and many others. Although they are all economists, much of their work does not appear in economics journals, but rather in books and in publications such as the *New England Journal of Medicine*, *Journal of the American Medical Association*, *Milbank Memorial Fund Quarterly*, and *Health Affairs*.

In recent decades several leading health economists have addressed theoretical, empirical, and policy questions in various aspects of their research (e.g., Joseph Newhouse, Mark Pauly). Health economics has also been enlivened and enriched by contributions from economists who are primarily specialists in other fields such as industrial organization, labor, finance, and public economics (e.g., Sherwin Rosen, Richard Zeckhauser). There has also been a welcome infusion from another direction, namely physicians who have earned Ph.D.s in economics and who now contribute to the economics literature (e.g., Alan Garber, Mark McClellan).

Parenthetically, all this name-dropping has a point. I want to underscore the varied intellectual, methodological, and ideological sources that have contributed to the health economics enterprise. Research has often been described as lonely work, and in one sense it is. But in another sense it is the most collective of all human activities. The philosopher Susan Haack (1995) sees scientific research as analogous to an attempt by many participants to fill out a huge crossword puzzle. We have clues; we try out possible answers; we check to see whether they fit together. Occasionally, an Arrow or a

Becker comes up with one of the really big answers that runs across the puzzle and makes it easier to discover the smaller words that intersect it. If several of the small answers don't fit, however, we may have to modify or even reject the larger one. It is good to remember that all answers are provisional until the puzzle is completed—and it never will be.⁵

Although I have mentioned only American economists, note should be taken of many fine health economists in England, Canada, and other high-income countries. There is, however, less of a global intellectual community in this field than in some other branches of economics⁶—or in other fields of health⁷—because most health economics research is applied and is (or is perceived to be) country specific. More than 60 years ago Walton Hamilton (1932) noted that "The organization of medicine is not a thing apart which can be subjected to study in isolation. It is an aspect of culture whose arrangements are inseparable from the general organization of society" (p. 190). On the whole I agree with Hamilton; there are, however, important economic questions concerning technology assessment and disease prevention that are common to all high-income countries. This type of research does not receive support commensurate with its importance because funding sources, both public and private, tend to focus on national problems.

My involvement in health economics grew out of my research on the service industries (Fuchs, 1968, 1969). It was motivated in part by a desire to gain a better understanding of the postindustrial society that was emerging in the United States and other developed coun-

⁵ In an extension of the crossword puzzle analogy suggested by Richard J. Zeckhauser in a 1995 personal communication, it seems that economics might make more progress if theorists didn't tend to concentrate on the lower left-hand corner of the puzzle while empiricists work the upper right-hand corner.

⁶ The relatively new International Health Economics Association will hold its inaugural conference in Vancouver in May 1996.

⁷ The *Journal of the American Medical Association* has twenty international editions published weekly in eleven languages, with 40 percent more recipients than the regular U.S.-based edition (George D. Lundberg and Annette Flanagin, 1995).

tries (Fuchs, 1966, 1978a). The growth of the service economy and improved methods of contraception were bringing women into paid employment and dramatically changing gender roles and relationships. Lower fertility and longer life expectancy were transforming the age distribution of the population, and this transformation, along with the fragmentation of the family and the declining influence of traditional religion, were creating new social and economic conditions. The health sector, with its nonprofit institutions, professional dominance, sharply skewed distribution of demand, and the critical importance of the consumer in the production process, seemed like a fruitful area for investigation. I was particularly interested in trying to understand the determinants of health and the determinants of health care expenditures.

With regard to health, my research has led me to emphasize the importance of nonmedical factors such as genetic endowment, the physical and psychosocial environment, and personal behaviors such as cigarette smoking, diet, and exercise. Over time, advances in medical science contribute significantly to reductions in morbidity and mortality; at any given point in time, however, differences in health levels within or between developed countries are not primarily related to differences in the quantity or quality of medical care.⁸

With respect to expenditures on medical care, my research has led me to emphasize the importance of supply factors, especially technology and the number and specialty mix of physicians.⁹ To be sure, conventional demand factors such as price, income, and insurance play significant roles, but in my judgment concentration on them to the exclusion of (partly exogenous) supply factors misses a big part of the expenditures story. Despite many attempts

to discredit it,¹⁰ the hypothesis that fee-for-service physicians can and do induce demand for their services is alive and well.¹¹

My views about health and health care expenditures have been formed not only through research but also through close interaction with medical scientists, practicing physicians, and other health professionals. Since 1968 I have maintained a regular medical school faculty appointment in addition to my appointment in economics, and have participated every year in a wide variety of health-related activities. This dual life would have gained approval from John Stuart Mill who, in *The Principles of Political Economy* (1848, reprinted 1987), wrote, "It is hardly possible to overrate the value ... of placing human beings in contact with persons dissimilar to themselves, and with modes of thought and action unlike those with which they are familiar ... Such communication has always been ... one of the primary sources of progress" (p. 581).

The proposition that the discipline of economics has a great deal to contribute to health and medical care is not one likely to require elaborate defense before this audience. (I have had audiences that were less receptive to this notion.) It might, however, be useful to report briefly just what it was in economics that I found to be most relevant in the invasion of alien turf. (To avoid undue suspense, let me say at once that it was *not* game theory.)

In my experience, the most important contribution we make is the economic point of view, which may be summed up in three words: scarcity, substitutability, and heterogeneity. This economic point of view stands in stark contrast to the romantic and mono-technic points of view that I found prevalent among health professionals and health policymakers. The romantic point of view refuses to accept the notion that resources are inherently scarce; any apparent scarcity is attributed to some manmade problem, such as capitalism or socialism, market failure or excessive government interference. In the 1960's and 1970's, many physicians said that there was no need to limit expenditures for medical care if only

⁸ For an explanation, see Fuchs (1994 pp. 108-10); also see Fuchs (1974a Ch. 2, 1974b, 1993); Robert H. Brook et al. (1983); Johan Calltorp (1989); Leslie L. Roos et al. (1990); Peter Townsend and N. Davidson (1982); and Richard G. Wilkinson (1986).

⁹ See Fuchs and Marcia Kramer (1973), Fuchs (1978b, 1990), Alan M. Garber, Fuchs and James F. Silverman (1984), Fuchs and James S. Hahn (1990), Donald A. Redelmeier and Fuchs (1993).

¹⁰ See David Dranove and Paul Wehner (1994).

¹¹ See Jonathan Gruber and Maria Owings (1996).

we would cut defense spending. In 1996, when health care expenditures are almost four times as large as the defense budget, this argument is not heard as often. Because it denies the inevitability of choice, the romantic point of view is increasingly seen as impotent to deal with the problems of health care.¹²

To be sure, it is not clear whether economic research or the force of circumstances is bringing about the change in point of view. I suspect that there is a synergistic relationship in which the former provides the language to give expression to the latter. Or, as Max Weber (1915; reprinted 1946) wrote, material and ideal interests are the tracks on which society rides, but ideas throw the switches (p. 280).

The monotechnic point of view, found frequently among physicians, engineers, and others trained in the application of a particular technology fails to recognize the diversity of human wants, or acknowledge the difference between what is technically best and what is socially desirable.¹³ "Optimal" care is defined as the point where the marginal benefit is zero, ignoring the fact that resources used for health care have alternative uses that might yield greater benefit. The "production" of health is viewed narrowly as a function of inputs of medical care, and the appropriate input mix is assumed to be determined by technology without regard to relative prices, explicit or implicit. For example, Feldstein found that average lengths of stay in British hospitals were uniform across regions despite large regional differences in the pressures for admission.¹⁴

The monotechnic view often fails to consider the heterogeneity of preferences, even though for many health problems there are alternative interventions: one drug versus another, drugs versus surgery, or even "watchful waiting" versus any intervention. Under the influence of economists and other behavioral scientists, physicians are now making such

choices with more attention to patient differences in time preference, attitudes toward risk, tolerance of pain, functional needs, and other characteristics.

Among our specific tools, one of the most useful is the idea of the margin. The key to gaining acceptance for this principle is to have people realize that most decisions involve a little more or a little less, and that they will make better decisions if they look at the costs and benefits associated with having a little more or a little less. This formulation is more effective than postulating "maximization," which economists find useful for classroom or research purposes, but sounds unreal to most noneconomists.

David M. Eddy's research on the frequency with which women should get Pap smears provides a fine example of the use of marginal (or incremental) analysis to assist in medical decision-making. This screening test for cervical cancer is of proven safety and effectiveness, and before Eddy's work appeared most experts recommended that women obtain this test annually. Using mathematical models and clinical studies of the natural history of the disease, Eddy (a physician with extensive training in operations research and economics) calculated the incremental cost of 1 additional year of life expectancy with screening regimes ranging from once every 6 months to once every 5 years. The results were striking. *Some* screening has a high yield at low incremental cost, but as the frequency of screening is increased from once every 2 years to once a year the incremental cost rises to close to \$1 million per additional year of life expectancy (Eddy, 1980, 1987, 1990).¹⁵

The impact of Eddy's research on health policy is worth noting. The American Cancer Society accepted his conclusions and the Society's recommendation to screen once every 3 years made the front page of the *New York*

¹² As a sign of the times, Sweden, Norway, Finland, and the World Health Organization are sponsoring the first international conference on priorities in health care in October 1996.

¹³ Economists fall into their own monotechnic trap when they offer policy advice under the assumption that efficiency is society's only goal.

¹⁴ See Feldstein (1967).

¹⁵ To put this in perspective, consider the choice between tissue plasminogen activator (TPA) and its cheaper alternative, streptokinase, as the treatment to dissolve a clot during a heart attack. The latest studies suggest that the incremental cost of TPA rather than streptokinase is \$33,000 per year of life extended (D. B. Mark et al., 1995). In the United States TPA is usually the treatment of choice, but Canadians use streptokinase.

Times. The U.S. Surgeon General, the U.S. Preventive Services Task Force, and the American College of Physicians supported this position, and many individual physicians changed their practice accordingly. Intense opposition came from the American College of Obstetricians and Gynecologists and the American Society of Cytology. The contending groups finally negotiated a compromise along the following lines: "Pap smears should be done annually; after two or more negative examinations the frequency can be decreased."¹⁶

The economist's distinction between movement along a function and a shift in the function is a very useful one. It is particularly applicable in discussing the relationship between medical care and health. At any given time in developed countries the effects of additional medical care on health are usually small, but over time advances in medical science have had significant effects on health.¹⁷ Or consider the relationship between infant mortality and per capita income. At any given time income is a good predictor of infant mortality, especially post-neonatal mortality (28 days to one year). In log-log regressions across the 48 states in 1937 and 1965, the income elasticity of post-neonatal mortality was -0.53 (0.11) and -0.49 (0.12) respectively.¹⁸ The decline in post-neonatal mortality between 1937 and 1965, however, was consistent with an elasticity of -2.00 . There was undoubtedly a shift in the function associated with the introduction of antibiotics and other advances in medical science (Fuchs, 1974b). In 1991 the elasticity was -0.73 (0.12) but the change from 1965 to 1991 was consistent with an elasticity of -1.08 , suggesting a further shift in the function, but not nearly so large as the shift between 1937 and 1965.

¹⁶ Eddy's analysis focuses on the incremental benefit and cost of more services to all the patients in a population. Another important example of margin is the cost and benefit of extending a (usually) once-in-a-lifetime service such as coronary bypass surgery to more and more patients.

¹⁷ Antibiotics, drugs for hypertension, surgery for trauma, and care of infants born prematurely are examples of outstanding successes.

¹⁸ Standard errors of the regression coefficients shown in parentheses. Mortality rates are 3-year averages centered on the years shown. Regressions are weighted by state population.

Economists have much to contribute to the health field. What can they expect in exchange? The most immediate benefit to me was the pressure to make my lectures and research results accessible, relevant, and credible to intelligent but untutored and often unsympathetic audiences. I was obliged to write clearly and simply and to reconsider assumptions and conclusions in economics that I might otherwise have accepted too readily. My experience was in accord with that of Thomas Henry Huxley (1863) who wrote, "Some experience with popular lecturing has convinced me that the necessity of making things plain to uninstructed people was one of the very best means of clearing up the obscure corners in one's own mind."

For example, one of the questions that troubled me for a long time is why there is such a strong correlation between health and years of schooling. I originally believed that this was another manifestation of the productivity-enhancing effect of education. Schooling could increase an individual's knowledge about the health effects of personal behavior and medical care options or could enable a person to better process and act upon information about health (Grossman, 1975). Or schooling could increase an individual's ability to develop strategies of self control (Richard A. Thaler and H. M. Shefrin, 1981). I began to doubt the schooling-causes-health hypothesis, however, when it was observed that the favorable effect of an additional year of schooling on health does not diminish with increased years of schooling. It is just as strong for those with more than a high school education as for those with less and continues right through graduate school on up to the doctoral level (Grossman, 1975).¹⁹ I began to suspect that perhaps the correlation was the result of some underlying difference among individuals that affects both schooling and health.

To explore this question I examined survey data on smoking behavior collected by colleagues in the Stanford Heart Disease Prevention Program as part of a health

¹⁹ This is in sharp contrast to the effects of income and medical care on health—their marginal products diminish rapidly over the ranges usually found in high-income countries.

education experiment designed to alter smoking and other risks for heart disease (Nathan Maccoby and Douglas S. Solomon, 1981). Identical regressions of smoking on schooling were estimated at age 17 and at age 24, with schooling measured in both cases as the number of years the individual would eventually complete. The most striking result was the absence of any increase in the size of the schooling coefficient between the ages of 17 and 24. The additional schooling could not be the cause of the differential smoking behavior (and by extension the differential health associated with smoking) at age 24 because the differences in smoking were already evident at age 17, before the differences in schooling had emerged (Philip Farrell and Fuchs, 1982).²⁰

In my judgment, the most likely explanation for the high correlation between health and schooling is that both reflect differences in time preference (Fuchs, 1982). Both health and schooling are aspects of investment in human capital; differences among individuals in time preference that are established at an early age could result in different amounts of investment in health and education.²¹

Although I believe there have been many fruitful interactions between economics and health, the political debate over health care reform in 1993–1994 benefited much less than it could have from the insights of economists. Possible explanations for the failure of health economics research to have more impact on policy are explored in the next section.

II. The Present

George Stigler's Presidential Address to the American Economic Association in December

²⁰ It is worth noting that the negative relation between schooling and smoking is only evident for cohorts that reached age 17 after the information about the effects of smoking on health became available. It is also of interest that the relationship has not diminished for more recent cohorts even though the information about the negative consequences of smoking has become more widely available.

²¹ There are alternative or complementary "third variable" explanations possible; compare Albert Bandura's (1991) concept of self-efficacy.

1964 was distinctive in its emphasis on prophecy over preaching. To be specific, Stigler predicted that economics was "at the threshold of its golden age" (Stigler, 1965 p. 17) because "the age of quantification is now full upon us" (p. 16). The growth of empirical estimation was, for Stigler, "a scientific revolution of the very first magnitude" (p. 17). He believed that empirical research would have an impact on policy far beyond anything possible from theory alone because "a theory can usually be made to support diverse policy positions. Theories present general relationships, and which part of a theory is decisive in a particular context is a matter of empirical evidence" (p. 13).

With regard to health care, Stigler's prediction of a vast expansion in empirical research has been amply fulfilled. During the past 30 years economists have published thousands of empirical articles on various aspects of health and medical care. But the shallow and inconclusive debate over health policy in 1993–1994 contradicts his expectation that this research would narrow the range of partisan disputes and make a significant contribution to the reconciliation of policy differences.²² What went wrong?

One possibility is that the research was inconclusive. If health economists cannot agree among themselves, why should their research have a salutary effect on public policy? Second, even if the research were conclusive, it would not be of much help to policy if the results were not adequately disseminated to a wider audience. A third possible explanation is that the policy debate foundered on differences in values, differences which could not be reconciled by empirical research, however conclusive and however well disseminated.

To gain some insight into these matters, I prepared a 20-question survey concerning health economics and health policy and sent it to health economists, economic theorists, and practicing physicians. The health economists were those whom I considered to be the lead-

²² Stigler's optimism regarding the impact of empirical research on policy may have had more vindication in other fields, but my research into family issues (Fuchs, 1983) and gender issues (Fuchs, 1988a) do not lead me to such a conclusion.

ing people in the field, plus some of the more promising recent Ph.D.s. There were 46 respondents (response rate 88 percent). The theorists were also leaders in the field; I was assisted in selecting them by two eminent theorists.²³ There were 44 respondents (response rate 63 percent). The practicing physicians were reached through my personal contacts, and include colleagues and friends of those contacts. Nearly all are in private practice, not teaching, research, or administration. They are located on both the east and west coasts in small towns and large cities. The practice settings vary from solo to a group of over 100 physicians, and in organizational form from traditional fee-for-service to capitation. They include generalists, surgical specialists, and nonsurgical specialists. There were 42 physician respondents (response rate 89 percent).

The participants were asked to indicate whether they agree or disagree with each of 20 relatively short statements; they were also given the option of answering "no opinion." Ten percent of the health economists' replies were "no opinion"; the theorists used that option 19 percent of the time, and the physicians 11 percent. Participants were also invited to qualify any of their replies by jotting comments on the back of the survey. The percentage of replies that were qualified was 8, 5, and 3 for the health economists, theorists, and physicians, respectively. Participants were told to assume that the statements refer to the United States in 1995, other things held constant. For statements with more than one part, "agree" would indicate that the respondent agreed with all parts of the statement. The order of the questions was determined randomly, and respondents were guaranteed anonymity.

Three experts²⁴ from three different universities who were not participants in the survey were asked to identify which of the 20 questions were relatively value-free ("positive"

questions) and which had substantial value aspects ("policy-value" questions). Their independent replies were almost unanimous in identifying seven of the questions as "positive," and thirteen as "policy-value." Table 1 shows the percent agreeing for each question, with the two types of questions grouped separately. Question numbers refer to the ordering of the questions in the survey. The policy-value questions are presented in three groups: four that pertain directly to national health insurance, three that pertain directly to health insurance company underwriting, and all others. Questions for which the percentage agreeing differs significantly from a 50-50 split (by a chi-square test) are identified with asterisks.

We see in Table 1 that the degree of consensus on positive questions among health economists is extremely high.²⁵ In six of the seven cases the hypothesis that the observed split differs from a 50-50 split simply by chance is rejected with $p < 0.01$ and the seventh with $p < 0.05$. There is also a high degree of consensus among economic theorists, but for two of the questions (12 and 13) the majority of theorists gave replies opposite to the majority of health economists. Consensus among the physicians on the positive questions was more rare. In no case did the split differ from 50-50 with $p < 0.01$, and in only three cases was the split significant at $p < 0.05$. For one question (4) the majority of physicians gave replies opposite to the majority of health economists.²⁶

When we turn to the policy-value questions, agreement among the health economists drops sharply. For example, in replies to the four questions dealing with support for national health insurance, the health economists never depart significantly from a 50-50 split. On question 8,

²³ In order to keep a clear distinction between health economists and theorists, I excluded any theorist who had done a substantial amount of work on health care.

²⁴ An empirical researcher who specializes in public economics, a law professor who teaches a course in health-policy and who has read widely in philosophy, and a theorist who specializes in law and economics.

²⁵ The fact that there is perfect unanimity for only one of the seven positive questions should not be a cause for surprise. Even physics has its dissenters. Steven Weinberg (1995), winner of the Nobel Prize in physics, has noted "If you had a law suit that hinged on the validity of the unified weak and electromagnetic theory, you could probably find an expert witness who was a Ph.D. physicist with a good academic position who would testify that he didn't believe in the theory" (p. 12).

²⁶ I believe the health economists' majority responses are correct for all seven questions.

TABLE 1—PERCENTAGE AGREEING WITH POSITIVE AND POLICY-VALUE QUESTIONS^a

| Survey question number ^b | Question | Health economists (n = 46) | Economic theorists (n = 44) | Practicing physicians (n = 42) |
|---|--|----------------------------|-----------------------------|--------------------------------|
| <i>A. Positive Questions:</i> | | | | |
| 4 | The high cost of health care in the United States makes U.S. firms substantially less competitive in the global economy. | 9** | 17** | 64 |
| 9 | Third-party payment results in patients using services whose costs exceed their benefits, and this excess of costs over benefits amounts to at least 5 percent of total health care expenditures. | 84** | 93** | 73* |
| 10 | Physicians have the power to influence their patients' utilization of services (i.e., shift the demand curve), and their propensity to induce utilization varies inversely with the level of demand. | 68* | 77** | 67 |
| 12 | Widespread use of currently available screening and other diagnostic techniques would result in a significant (more than 3%) reduction in health care expenditures (from what they would otherwise be) 5 years from now. | 11** | 83** | 37 |
| 13 | The primary reason for the increase in the health sector's share of GDP over the past 30 years is technological change in medicine. | 81** | 37 | 68* |
| 18 | Differential access to medical care across socioeconomic groups is the primary reason for differential health status among these groups. | 0** | 17** | 34* |
| 19 | In the long run employers bear the primary burden of their contributions to employees' health insurance. | 13** | 8** | 43 |
| <i>B. Policy-Value Questions:</i> | | | | |
| National health insurance questions: | | | | |
| 3 | The U.S. should now enact some plan that covers the entire population. | 62 | 65* | 68* |
| 7 | The U.S. should seek universal coverage through a broad-based tax with implicit subsidies for the poor and the sick. | 54 | 56 | 56 |
| 14 | The U.S. should seek universal coverage through mandates, with explicit subsidies for the poor and the sick. | 38 | 29* | 46 |
| 15 | Given a choice between the Clinton health care plan or no federal health care legislation for at least 5 years, the Clinton plan should be approved. | 36 | 33* | 28** |
| Insurance company underwriting questions: | | | | |
| 8 | Insurance companies should be required to cover all applicants regardless of health condition and not allowed to charge sicker individuals higher premiums. | 51 | 29** | 69* |
| 17 | Health insurance premiums should be higher for smokers than for nonsmokers. | 71** | 90** | 85** |
| 20 | Health insurance premiums charged to individuals born with genetic defects (that result in above average use of medical care) should be higher than those charged to individuals without such defects. | 14** | 20** | 13** |
| All other policy-value questions: | | | | |
| 1 | It is inequitable for the government to vary subsidies for health insurance by size of firm. | 62 | 36 | 86** |
| 2 | "Any willing provider" legislation (that requires health plans to include any physician who wants to be included) is desirable for society as a whole. | 12** | 12** | 39 |
| 5 | National standardized health insurance benefit packages should be established. | 42 | 51 | 63 |
| 6 | It is inefficient for the government to vary subsidies for health insurance by size of firm. | 66* | 42 | 73* |
| 11 | Expenditures on medical R&D are greater than is socially optimal. | 27* | 29* | 16** |
| 16 | All health insurance plans should be required to offer "point of service" options (that allow patients to obtain care outside the basic plan at additional cost). | 30** | 55 | 83** |

^a Of those who agree or disagree.^b Question numbers refer to order of questions in original survey.* Significantly different from 50 percent at $p < 0.05$.** Significantly different from 50 percent at $p < 0.01$.

TABLE 2—AVERAGE ABSOLUTE DIFFERENCE BETWEEN PERCENTAGE AGREEING AND PERCENTAGE DISAGREEING BY TYPE OF QUESTION

| | Health economists | Economic theorists | Practicing physicians |
|---|-------------------|--------------------|-----------------------|
| Mean absolute difference: | | | |
| 7 positive questions | 71.6 | 64.3 | 30.9 |
| 13 policy-value questions | 33.8 | 36.5 | 45.0 |
| Difference in means | 37.8 | 27.8 | -14.1 |
| Median absolute difference: | | | |
| 7 positive questions | 73.9 | 66.7 | 31.7 |
| 13 policy-value questions | 27.3 | 33.3 | 45.0 |
| Difference in medians | 46.6 | 33.3 | -13.3 |
| Standard error of the mean: | | | |
| 7 positive questions | 6.8 | 7.1 | 3.5 |
| 13 policy-value questions | 5.9 | 6.5 | 6.4 |
| Standard error of the difference in means | 9.0 | 9.6 | 7.3 |
| Difference in means divided by standard error of the difference | 4.2 | 2.9 | -1.9 |
| Chi-square of the difference between type of question | 5.5 | 5.5 | 2.0 |

which would require insurance companies to cover all applicants regardless of health condition with no premium surcharge for the sick, the health economists are evenly divided: 51 percent agree and 49 percent disagree. Among economic theorists there is slightly more agreement on policy, but not as much as among practicing physicians who, contrary to both groups of economists, show more agreement on policy-value than on positive questions.

The contrasts between the replies by group and type of question are brought more sharply into focus in Table 2, which shows the average absolute difference between the percentage agreeing and the percentage disagreeing. Among health economists the extent of consensus for the positive questions is significantly larger than for the policy-value questions regardless of whether the comparison is between means or medians. Although the sample sizes are very small (7 and 13), the differences by type of question are so large we can reject the null hypothesis with considerable confidence.²⁷

²⁷ This was confirmed by Byron Wm. Brown, who examined the data using the bootstrap method (Bradley Efron, 1993).

It is also worth noting that the extent of agreement among health economists on the positive questions is much higher than is usually found in surveys of economists covering a wide variety of fields. For example, in a survey conducted by Richard M. Alston et al. (1992) the authors identify ten questions as "micro-positive" and seven as "micro-normative."²⁸ In order to achieve comparability between their survey and mine, I combined their "agree, with provisos" with their "agree," and then calculated the mean absolute difference between percentage agreeing and percentage disagreeing.²⁹ This difference (22 percentage points) was much smaller (and less statistically significant) than the difference I found for the health economists.³⁰

²⁸ The identification is in a longer, unpublished version of their paper.

²⁹ I also tried treating "agree, with provisos" as "no opinion"; this reduced the difference between the positive and normative questions with respect to consensus.

³⁰ Comparisons based on the entropy index used by Alston et al. (1992) are even more striking. The mean entropy (a measure of lack of consensus) was 0.70 for their micro-positive questions, but only 0.52 for the health economists' answers to our positive questions. The mean for their micro-normative questions (0.80) was just about

Why is there so little agreement among economists regarding policy-value questions when there is so much agreement on the positive questions? One possible explanation is differences in values. Most health policy decisions have significant implications for freedom, efficiency, justice, and security. Health economists (like other Americans) probably desire all these goals, but (again like other Americans) they probably differ in the values they attach to them, or in the way they define them,³¹ and these differences could lead to sharply different views about policy.

Another possible explanation is that there are positive questions embedded in the policy-value questions and that health economists disagree with respect to those positive questions. This is the view taken by Milton Friedman in 1953³² although he subsequently modified his position in 1966 and 1995.³³ In order to gain some insights concerning the roles of values and embedded positive issues in policy differences I take a closer look at the policy-value questions bearing on national health insurance (3, 7, 14, 15) and on insurance company underwriting (8, 17, 20).

Consider, for instance, question 3 which calls for some national plan to cover the entire population. The 62-38 percent split among health economists may well reflect differences in values, with those who agree placing a high value on providing all Americans with the right to have access to health care. On the other hand, it is readily apparent that there are many positive questions embedded in this policy-value question. For instance, most economists see a loss in efficiency from requiring everyone to have the same health insurance, but they probably differ in their estimates of the extent of the loss. Some may even believe there is a

net gain in efficiency because of imperfections in the private market for health insurance. Strongly held differences about this positive question could produce different answers to question 3 even among respondents with similar values.

Some of the positive questions embedded in question 3 may be beyond the scope of conventional economics. For instance, Professor A may favor national health insurance in part because she believes it will contribute to a more stable and harmonious society.³⁴ Professor B may disagree with that prediction, and is therefore less inclined to support national health insurance.

The role of embedded positive questions can also be easily discerned in the three questions (8, 17, 20) dealing with insurance company underwriting. Health economists strongly support charging higher premiums for smokers than for nonsmokers, but are strongly opposed to charging higher premiums to individuals born with genetic defects. On question 8, dealing with requiring insurance companies to insure the sick with no premium surcharge, the health economists are evenly split. One of the positive questions embedded in question 8 is the reason for people's illness. If a respondent thought that most illness was the result of genetic differences, the reply would presumably be consistent with the answer to question 20. On the other hand, if most illness was assumed to be the result of personal behaviors like cigarette smoking, the reply would probably be consistent with the one given to question 17. Inasmuch as leading medical scientists have strongly divergent views about the importance of genetic factors in disease, it is hardly surprising that health economists are unable to reach agreement. The state of knowledge about the links between genes and disease is

the same as for the health economists' policy-value questions (0.77).

³¹ For a discussion of alternative conceptions of justice, see Amartya Sen (1987).

³² In *Essays in Positive Economics*, Friedman (1953) wrote "Differences about economic policy among disinterested citizens derive predominantly from different predictions about the economic consequences of taking action ... " (p. 5).

³³ See *Dollars and Deficits* (1966 p. 6); personal communication in 1995.

³⁴ In 1974 I recommended universal comprehensive insurance for several reasons, one of which was the speculation that "a national health insurance plan to which all (or nearly all) Americans belong could have considerable symbolic value as one step in an effort to forge a link between classes, regions, races, and age groups." I also thought it important to add "It will be more likely to serve that function well if not too much is expected of it—if it is not oversold—particularly with respect to its probable impact on health" (Fuchs, 1974a p. 150).

constantly changing. Thus, if cigarette smoking were found to be determined primarily by genetic factors, the answers to question 17 would probably change even in the absence of any change in values.

Positive economic questions are also embedded in the insurance company underwriting issues. Most economists realize that requiring health insurance companies to charge healthy people the same premium as those with a genetic disease will deter healthy individuals from purchasing insurance. But economists may well differ as to how large that effect will be and how large a welfare loss it implies.

It is easy to see that there are positive questions embedded in the policy-value questions, but it is more difficult to believe that disagreement over them, rather than differences in values, explains the low level of consensus among health economists with respect to the policy-value questions. Note that the physicians have a higher level of consensus about the policy-value questions than do the health economists. This probably reflects more homogeneous values among physicians rather than agreement about the embedded positive questions. (Note the low level of agreement among physicians on the explicit positive questions.)

It may be that it is not so much *disagreement* among health economists about the embedded positive questions as it is *uncertainty* about them that make differences in values the driving force in replies to the policy-value questions. Many psychologists and economists have observed that uncertainty about a datum causes most individuals to give it less weight when making choices.³⁵

Uncertainty among health economists concerning the positive questions that are embedded in the policy-value questions is suggested by their use of the "no opinion" option. Unlike the theorists, who chose "no opinion" twice as often for the positive questions as for the policy-value questions (28 percent versus 15 percent), the health economists chose "no opinion" less often for the positive questions

than for the policy-value questions (8 percent versus 11 percent).³⁶ The role of uncertainty was mentioned by Milton Friedman in 1966 as a reason for qualifying his position about the relative importance of scientific judgment and value differences (Friedman, 1966 p. 6).

In order to investigate further the relationship between policy-value and positive questions, I developed two indexes based on the answers to the national health insurance and insurance underwriting questions. The first index measures each respondent's support for national health insurance. It is constructed by assigning a value of 1 to agreement with each of questions 3, 7, 14, and 15, a value of 0 for disagreement with those questions, and a value of 0.5 for no opinion. The sum of the values was divided by 4, giving a range for the index of 1 (indicating agreement with all four questions) to 0 (indicating disagreement with all four questions). The "actuarial"³⁷ model index was based on answers to questions 8, 17, and 20. In the case of question 8, "disagree" was given a value of 1, and for questions 17 and 20 "agree" was given a value of 1. The total score for each individual is divided by 3, again yielding a range for the index from 1 to 0 (indicating complete support or complete rejection of the actuarial approach).

The results are presented in Table 3. We see that with respect to national health insurance the support among the three groups is virtually identical. There is considerable variation around the mean for each group, and the amount of variation is similar across the groups. Thirteen percent of all respondents had an index value of 1, while 15 percent completely rejected the notion of national health insurance with an index value of 0. Not surprisingly, there is a negative correlation between the national health insurance index and the actuarial model index. But there

³⁶ The physicians also differed from the health economists, choosing "no opinion" more often for the positive than for the policy-value questions (15 percent versus 9 percent).

³⁷ In actuarially-based insurance it is presumed that premiums will be determined (to the extent feasible) by expected loss. Health insurance did not begin with that assumption; the early Blue Cross/Blue Shield premiums were typically "community rated," with healthy individuals paying the same premiums as those who were ill.

³⁵ For a comprehensive review of the role of uncertainty in decision-making see C. F. Camerer and M. Weber (1992).

TABLE 3—INDEXES OF SUPPORT FOR NATIONAL HEALTH INSURANCE^a AND FOR AN ACTUARIAL MODEL OF PRIVATE INSURANCE UNDERWRITING^b

| | Health economists | Economic theorists | Practicing physicians | All |
|--|--------------------|--------------------|-----------------------|---------------------|
| <i>National health insurance index:</i> | | | | |
| Mean | 0.48 | 0.48 | 0.49 | 0.48 |
| Standard error of the mean | 0.05 | 0.05 | 0.05 | 0.03 |
| Coefficient of variation (percent) | 71 | 70 | 67 | 69 |
| Percentage with index = 1 | 15 | 9 | 14 | 13 |
| Percentage with index = 0 | 13 | 18 | 14 | 15 |
| <i>Actuarial model index:</i> | | | | |
| Mean | 0.46 | 0.61 | 0.44 | 0.50 |
| Standard error of the mean | 0.05 | 0.04 | 0.04 | 0.03 |
| Coefficient of variation (percent) | 71 | 42 | 64 | 60 |
| Percentage with index = 1 | 7 | 16 | 7 | 10 |
| Percentage with index = 0 | 22 | 5 | 14 | 14 |
| Coefficient of correlation between the two indexes | -0.37 [†] | -0.34 [†] | -0.37 [†] | -0.35 ^{**} |

^a National health insurance index is based on answers to survey questions 3, 7, 14 and 15.

^b Actuarial model index is based on answers to survey questions 8, 17 and 20.

[†] Significant at $p < 0.02$.

** Significant at $p < 0.01$.

is a significant difference between the groups in the extent of support for the actuarial model index. The economic theorists have a value of 0.61, compared with 0.46 for the health economists and 0.44 for the practicing physicians. The theorists are as supportive of national health insurance as are the other groups, but if insurance is to be provided through the private market, the theorists are more inclined than the other two groups to have premiums reflect expected loss. One reasonable interpretation of this result is that the theorists give more weight to the efficiency aspects of the actuarial model, whereas the health economists and the practicing physicians give more weight to the distributional aspects.

Is there a close relationship between the respondents' scores on the indexes and their responses to the positive questions? The correlation coefficients presented in Table 4 show that the answer is overwhelmingly in the negative. For the national health insurance index there is only one positive question (10) for one group (the health economists) that reaches statistical significance with $p < 0.05$. For the actuarial model index, only questions 9 and 10 show a significant relationship for the health economists, and questions 10 and 12 for all

groups taken together. Whatever it is that is determining the respondents' positions with regard to national health insurance or the actuarial approach, it is not their views on the seven positive questions.

Correlations between the indexes and the six policy-value questions not utilized in their construction also are typically low, with one striking exception. Respondents agreeing with question 5, which calls for national standardized health insurance benefit packages, also support national health insurance and just as clearly reject the actuarial approach for private insurance underwriting. The actuarial model index is also negatively correlated with agreement with question 1.

The weak relationship between the positive questions and the two indexes is also revealed in Table 5, which presents the results of regressing the indexes on the positive questions.³⁸ In the national health insurance

³⁸ The reliability of the OLS regressions was checked in several ways: values for each respondent were predicted from each regression and found to be always between 0 and 1; regressions run with the dependent variable trans-

TABLE 4—COEFFICIENTS OF CORRELATION BETWEEN THE TWO INDEXES AND THE POSITIVE QUESTIONS AND THE OTHER POLICY-VALUE QUESTIONS

| Survey question number | National health insurance index | | | | Actuarial model index | | | |
|--|---------------------------------|--------------------|-----------------------|--------|-----------------------|--------------------|-----------------------|---------|
| | Health economists | Economic theorists | Practicing physicians | All | Health economists | Economic theorists | Practicing physicians | All |
| 7 positive questions: | | | | | | | | |
| 4 | 0.17 | 0.00 | 0.12 | 0.09 | -0.08 | 0.03 | -0.09 | -0.09 |
| 9 | 0.10 | 0.17 | 0.02 | 0.09 | 0.40** | 0.01 | -0.20 | 0.11 |
| 10 | 0.31* | 0.11 | -0.07 | 0.12 | -0.34* | -0.20 | -0.10 | -0.20* |
| 12 | -0.11 | 0.21 | -0.14 | -0.03 | 0.06 | 0.19 | 0.14 | 0.20* |
| 13 | -0.27 | -0.01 | -0.19 | -0.14 | 0.11 | 0.17 | 0.20 | 0.06 |
| 18 | -0.21 | 0.04 | 0.09 | 0.04 | -0.06 | 0.13 | 0.15 | 0.09 |
| 19 | 0.24 | 0.06 | 0.10 | 0.13 | -0.02 | -0.00 | -0.13 | -0.11 |
| 6 other policy-value questions: ^a | | | | | | | | |
| 1 | 0.11 | 0.01 | 0.02 | 0.06 | -0.34* | -0.13 | -0.06 | -0.27** |
| 2 | 0.12 | 0.24 | -0.27 | 0.01 | -0.09 | -0.29 | 0.17 | -0.06 |
| 5 | 0.62** | 0.49** | 0.47** | 0.52** | -0.54** | -0.17 | -0.31* | -0.35** |
| 6 | -0.04 | -0.16 | -0.28 | -0.14 | -0.06 | -0.05 | 0.12 | -0.07 |
| 11 | 0.14 | 0.05 | 0.13 | 0.10 | -0.02 | 0.03 | 0.26 | 0.11 |
| 16 | 0.19 | 0.13 | -0.01 | 0.11 | -0.24 | -0.13 | 0.02 | -0.14 |

^a Policy-value questions not included as part of national health insurance index or actuarial model index.

* Significant at $p < 0.05$.

** Significant at $p < 0.01$.

regression the only statistically significant coefficient is for question 10 for health economists. Other things being equal, those who agree with the induced-demand hypothesis are more supportive of national health insurance than those who disagree, but the effect on the index (0.239) is less than changing one of the four answers from disagree to agree. The actuarial model regressions result in a few additional significant coefficients but, in general, the respondents' replies to the explicit positive questions do not explain their position with respect to such major policy issues as national health insurance or insurance company underwriting changes. It seems unlikely, then, that their position on these policy issues can be explained by differences in the embedded positive questions.

Although I believe that differences in values lie at the heart of the disagreement about policy-value questions, I recognize that there is scope for work on the embedded positive

questions and this work could contribute to a narrowing of policy differences. One indication of where research is needed is the percent of health economists answering "no opinion" on the individual policy-value questions. This option was chosen most frequently (35 percent of the time) for question 11 concerning the optimality of expenditures on medical R&D.³⁹ Given the importance of technologic change in medicine both from the point of view of health outcomes and of expenditures, this is clearly a high-priority area for research. Two other questions elicited a "no opinion" response from one fifth of the health economists. They are question 1 concerning the subsidies for health insurance by size of firm (a key part of the Clinton plan) and question 20 (about differential premiums for persons born with genetic defects). In the latter case the high percentage responding "no opinion" may reflect uncertainty regarding the magnitudes of the efficiency and distributional implications of

formed to the odds ratio or to a dichotomous variable estimated with a logistic specification that showed even less predictive value than the OLS regressions.

³⁹ This one question accounted for one fourth of the health economists' "no opinion" replies to the 13 policy-value questions.

TABLE 5—RESULTS OF ORDINARY LEAST SQUARES REGRESSIONS OF THE NATIONAL HEALTH INSURANCE INDEX AND THE ACTUARIAL MODEL INDEX ON SEVEN POSITIVE QUESTIONS

| Survey question number | Health economists | Economic theorists | Practicing physicians | All groups | |
|----------------------------------|--------------------|--------------------|-----------------------|---------------------|---------------------|
| National health insurance index: | | | | | |
| 4 | 0.206 (0.165) | -0.007 (0.163) | 0.048 (0.158) | 0.022 (0.079) | 0.029 (0.088) |
| 9 | 0.053 (0.139) | 0.138 (0.195) | 0.046 (0.162) | 0.056 (0.084) | 0.052 (0.086) |
| 10 | 0.239* (0.112) | 0.032 (0.157) | -0.104 (0.151) | 0.079 (0.074) | 0.077 (0.075) |
| 12 | -0.167 (0.154) | 0.221 (0.196) | -0.100 (0.128) | -0.053 (0.076) | -0.043 (0.084) |
| 13 | -0.169 (0.124) | 0.027 (0.133) | -0.121 (0.123) | -0.088 (0.066) | -0.093 (0.071) |
| 18 | -0.776 (0.699) | -0.031 (0.162) | 0.087 (0.133) | 0.007 (0.093) | 0.012 (0.094) |
| 19 | 0.231 (0.141) | 0.049 (0.198) | -0.016 (0.145) | 0.087 (0.080) | 0.089 (0.083) |
| ET dummy ^a | | | | | -0.026 (0.086) |
| PP dummy ^a | | | | | -0.024 (0.089) |
| Constant | 0.402 (0.189) | 0.201 (0.198) | 0.598 (0.178) | 0.438 (0.099) | 0.454 (0.112) |
| R ² | 0.287 | 0.066 | 0.080 | 0.052 | 0.053 |
| Adjusted R ² | 0.156 | -0.116 | -0.110 | -0.001 | -0.017 |
| F | 2.18 | 0.36 | 0.42 | 0.98 | 0.76 |
| Actuarial model index: | | | | | |
| 4 | -0.102 (0.160) | 0.079 (0.119) | -0.029 (0.131) | -0.069 (0.068) | -0.029 (0.073) |
| 9 | 0.373** (0.135) | 0.027 (0.142) | -0.102 (0.135) | 0.146* (0.072) | 0.142* (0.072) |
| 10 | -0.224* (0.108) | -0.211 (0.115) | -0.013 (0.125) | -0.187** (0.063) | -0.190** (0.062) |
| 12 | 0.026 (0.149) | 0.216 (0.143) | 0.023 (0.106) | 0.146* (0.065) | 0.091 (0.070) |
| 13 | 0.094 (0.120) | 0.149 (0.097) | 0.090 (0.102) | 0.041 (0.056) | 0.090 (0.059) |
| 18 | 0.432 (0.678) | 0.068 (0.118) | 0.113 (0.111) | 0.114 (0.079) | 0.109 (0.079) |
| 19 | -0.010 (0.137) | 0.080 (0.145) | -0.075 (0.120) | -0.062 (0.068) | -0.028 (0.070) |
| ET dummy ^a | | | | | 0.130 (0.071) |
| PP dummy ^a | | | | | -0.033 (0.074) |
| Constant | 0.234 (0.184) | 0.491 (0.144) | 0.454 (0.148) | 0.446 (0.085) | 0.391 (0.093) |
| R ² | 0.279 | 0.166 | 0.114 | 0.145 | 0.182 |
| Adjusted R ² | 0.146 | 0.004 | -0.068 | 0.096 | 0.122 |
| F | 2.10 | 1.02 | 0.63 | 3.00 | 3.02* |

Notes: Standard error in parentheses.

^a Health economist is the excluded class (ET = economic theorists and PP = practicing physicians).

* Significant at $p < 0.05$.

** Significant at $p < 0.01$.

eliminating premium differentials. Or, it may reflect a reluctance to choose between conflicting values.

Before leaving the survey it is worth considering what it reveals about the ability of health economists to disseminate their conclusions about the positive questions to a wider audience. Overall, one must conclude that they have not been very successful, as revealed by the political debate of 1993–1994 and the media coverage of policy issues. Consider, for example, question 19 concerning whether in the long run employers bear the primary burden of their contributions to their employees' health insurance. Although 87 percent of the health economists disagreed with that statement, politicians on both sides of the debate assumed, erroneously, that it was correct. Moreover, nearly all of the media made the same error. Most of the politicians and most of the media also showed little understanding of questions 4, 12, 13, and 18.

I am as ready as the next economist to criticize politicians and journalists, but the survey results suggest that their poor understanding of health economics is not entirely their fault. First, the economic theorists and the practicing physicians, two groups with above-average ability and opportunity to absorb the conclusions of the health economists, did not show good command of the positive questions. In my judgment the health economists answered 80 percent correctly, but the average theorist answered only 52 percent correctly and the mean score for the physicians was only 53 percent. The differences in the distributions of scores is striking: 45 of the 46 health economists had more correct answers than the average theorist or the average physician.

A second possible reason for the poor understanding of health economics displayed by the politicians and the media in 1993–1994 is the wide disagreement among health economists over the policy-value questions. When health economists interact with politicians and journalists, their discussions probably focus on the policy-value questions; in the absence of a professional consensus on many of these questions, it is not surprising that politicians and journalists fall back on their own values to shape their positions.

Returning to the question posed at the beginning of this section about why economic research failed to result in a more informed and productive health care policy debate, the survey results provide some provisional answers. First, although health economists are in substantial agreement about the positive questions, they have major disagreements about policy-value questions. Second, health economists were not successful in getting their conclusions on positive questions accepted by the politicians or the media, and even had difficulty in communicating their results to economic theorists and practicing physicians. Third, the health economists' disagreements over policy probably reflect differences in values, although it is clear that there are many positive questions embedded in the policy-value questions. In my judgment the problem is not so much that the health economists disagree about the embedded questions as that they are uncertain about them. In the face of such uncertainty, they tend to let their values drive their policy recommendations.

III. The Future

If values play such an important role in policy disputes, what are the implications for economics and economists? First, we should endeavor to make explicit the differences in values, and seek ways to resolve them. Value differences can take many different forms. Economists are most familiar with the distinction between efficiency and distributional issues, especially greater equality of income versus greater total income.⁴⁰ But comprehensive changes in health policy can have other important distributional effects. Even for individuals at the same income level, the costs and the benefits of care could change along many dimensions: rural areas versus central cities, the elderly versus the young, smokers versus nonsmokers, savers versus nonsavers, men versus women, and so on. Health economists who are unanimous in approving gains in efficiency might have very different views

⁴⁰ See Arthur Okun (1975).

regarding the desirability of the distributional changes and might also differ in the weights they give to the changes in efficiency versus the distributional consequences.

Second, greater openness about value differences should force economists to make explicit the positive questions that are embedded in most policy-value questions. This would point the way to productive research. If the embedded questions are identified and studied, it should be possible to reduce the uncertainty about them and thus provide a basis for narrowing differences on policy-value questions.

A third agenda item for economists is to undertake research on the formation of values, especially insofar as they are the consequences of policy. Economists are understandably reluctant to prescribe values or to make normative judgments about them. But when economic policies affect values and preferences, and these in turn affect behavior, it is incumbent on economists to analyze the links between policies and values, and to examine the economic and social consequences of alternative value systems. I believe there is an analogy between the economics of values and the economics of technology. Over the past several decades some economists have begun to treat technology as at least partly endogenous.⁴¹ Now, a similar effort must be undertaken for values (Henry J. Aaron, 1994; Becker, 1996; Albert O. Hirschman, 1986; Assar Lindbeck, 1994).

Finally, economists must develop more self-awareness of how our values color our judgment about policy, and more candor in making clear to others the respective roles of positive research and of values in our policy recommendations. Alice M. Rivlin, in her AEA presidential address in December 1986, warned economists against letting "their ideological position cloud their judgment about the likely effects of particular policies" (p. 4). She urged us "... to be more careful to sort out, for ourselves and others, what we really know from our ideological biases" (p. 9). In my view, there is a vast difference between a re-

searcher and a reformer, between an analyst and a player in the policy arena. They are all socially valuable occupations, and the same individual may successfully wear different hats at different times. What is not likely to work well, either for economics or for policy, is trying to wear two hats at the same time.

In the remainder of this paper I present a summary of my policy recommendations for health system reform. The use of the bully pulpit by an AEA president to push personal policy choices has ample precedent, but I also want to use this opportunity to show how those choices are shaped by the interaction between my values and my understanding of health economics. Finally, I identify aspects of my policy recommendations that are problematic and which would clearly benefit from additional research.

My three major recommendations are:

- (i) a broad-based tax earmarked for health care to provide every American with a voucher for participation in a basic plan;
- (ii) provision of care through integrated health systems that include hospitals, physician services, and prescription drugs. These systems would be led by physicians, would be reimbursed by capitation plus modest co-payment from patients at the time of use, and would be required to offer a wide variety of point-of-service options to be paid for by patients with after-tax dollars;
- (iii) a large private center for technology assessment financed by a small industry-wide levy on all health care spending.

My desire to see all Americans insured for a basic health plan is clearly driven in part by values. Although medical care is often not a crucial factor in health outcomes, it is nearly always a source of utility through its caring and validation functions. In my judgment, it fully meets Adam Smith's 1776 definition of a *necessary*: "By necessities I understand not only the commodities which are indispensably necessary for the support of life but whatever the custom of the country renders it indecent for creditable people, even of the lowest order, to be without" (1776; republished 1937 p. 821). To achieve universal coverage there must be subsidization for those who are too

⁴¹ For example, Kenneth Arrow, Zvi Griliches, Ed Mansfield, Richard Nelson, Nathan Rosenberg, and Jacob Schmookler.

poor or too sick to acquire insurance, and there must be compulsion for the "free riders"⁴² to pay their share.

There are only two ways to achieve systematic universal coverage: a broad-based general tax with implicit subsidies for the poor and the sick, or a system of mandates with explicit subsidies based on income. I prefer the former because the latter are extremely expensive to administer and seriously distort incentives; they result in the near-poor facing marginal tax rates that would be regarded as confiscatory if levied on the affluent.⁴³

Both theory and experience show that integrated health care systems are usually the best way to deliver cost-effective care. The primary reason is the physician's central role in medical decision-making. Under any approach to care, it is the physician who admits patients to hospitals, orders tests and other procedures, and decides when to discharge. It is the physician who prescribes drugs and who refers patients to other physicians for consultation and treatment. Thus physicians' decisions are the major determinant of the cost of care. Only in an integrated system, however, do physicians have the *incentive*, the *information*, and the *infrastructure* needed to make these decisions in a cost-effective way. Integrated systems also have an advantage in avoiding excess capacity of high-cost equipment and personnel.

Given the central importance of physicians to medical care, I believe the integrated systems should be led by them and other health care professionals. At a minimum, health care professionals should have a prominent place in the governance of the systems. One of the

⁴² It is true that most of the uninsured currently receive some care, but it is financed through a haphazard hodge-podge of self-pay, cost shifting, government subsidies, and philanthropy.

⁴³ The choice of the tax base is primarily a problem of public finance, not health economics. I prefer a value-added tax because it is more efficient than a payroll tax (it does not tax labor while ignoring capital), and I prefer it to an income tax because it encourages saving and discourages consumption (a value judgment). The VAT appeals to my sense of fairness because it is more difficult to escape its impact through tax loopholes or tax evasion, and, when taken in conjunction with the benefit that it provides, is clearly progressive.

greatest errors of health policy-makers today is their assumption that market competition or government regulation are the only instruments available to control health care. There is room for, indeed need for, a revitalization of professional norms as a third instrument of control.⁴⁴ The patient-physician relationship often is highly personal and intimate, similar in many ways to relationships within families or between teachers and pupils or ministers and congregants. This relationship is, in part, what economist Kenneth Boulding (1968) called an integrative system, one that depends on mutual recognition and acceptance of rights and responsibilities, enforced by traditional norms as well as market pressures and government regulations. As long as physicians control the use of complex technology in life and death situations, and as long as we expect them to perform priestly functions, they must be endowed with certain privileges and held to certain standards of behavior different from those assumed by models of market competition or government regulation.⁴⁵

Comprehensive government control of medical care has not worked well in any setting. The essence of good care is an informed patient working cooperatively with a health professional who provides personalized attention and concern. The rules, regulations, and bureaucratic controls that almost always accompany governmental activities are inimical to high-quality cost-effective care. It is revealing that countries such as England and Sweden with deep government involvement in the financing of medical care have bent over backwards to leave physicians with a great deal of professional autonomy—indeed more autonomy than is possessed by many American physicians working in a "private" system.

Market competition also has its problems. It assumes a preoccupation with the bottom line and governance by a corporate mentality that judges the success of each division by its profit growth. Physician-led systems will also have

⁴⁴ See Arrow (1963) for a discussion of professional control in medicine.

⁴⁵ The patient-physician relationship presents an extreme case of the principal-agent problem; research by specialists on that topic is badly needed.

to pay attention to costs, and physicians will also be interested in making a good income, but there is a vast difference between a profit-maximizing corporation and physicians who strive to balance their obligations to patients, the organization, and themselves.⁴⁶

Reimbursement of these integrated systems should be primarily by capitation, adjusted for patient characteristics. In addition, patients should be required to make modest co-payments at the time of use (e.g., \$15 for each visit and \$5 for each prescription). Such payments will generate some income but, more important, will help to discourage wasteful use of health care. The payments could be waived for patients living below the poverty level, and for essential preventive services such as vaccination.

The earmarked tax would provide every American with a voucher for a basic health care plan. Each integrated system would be required to offer the basic plan, plus a variety of options. These options are not alternative insurance plans; they are services to be paid for at time of use with after-tax dollars.⁴⁷ The options could take many forms: a private room in the hospital; a wider choice of physicians and hospitals than is available through the basic plan; or access to new experimental technologies or older technologies not included in the basic plan because they have a low benefit-to-cost ratio.⁴⁸

⁴⁶ The effects on television network news departments of the subordination of professional norms to the pursuit of profits shows what could happen in medical care.

⁴⁷ Readers whose values lead them to prefer a more egalitarian system might consider how individuals now have options to use their income to live in safer neighborhoods, drive safer cars, avoid unhealthy occupations, and make other choices that have larger and more predictable effects on health than the options available in my recommendation for health care.

⁴⁸ Many advances in medicine do not spring full-blown from the test tube. They require long periods of development through trial and error and incremental improvements. In my judgment it is desirable to have a system in which technologic opportunities can be explored on a reasonably large scale with the costs borne by those patients who are most willing and able to pay for a chance at unproven benefits. Government- or industry-financed randomized clinical trials with small samples of selected patients treated in selected environments are not always a satisfactory substitute for larger scale efforts to establish

These options would accommodate the demands of patients with higher incomes or those who choose to spend more of their income on medical care. The options would not constitute establishment of different plans. Everyone would be in the same plan and most persons would stick to the basic plan most of the time. An option would be exercised only when the patient desired and was willing to pay for it. This is the quintessential American approach to balancing equality and freedom. On the one hand, this approach avoids the egalitarianism of the English and Canadian systems in which only a small elite have an escape valve. On the other hand, it does not create a separate plan for the poor while the great majority of Americans obtain care from a different system. The experience with Medicaid shows that a separate system limited to the poor is not likely to function well.

Where feasible, the integrated health care system would engage in managed competition.⁴⁹ Having advocated policies similar to such an approach to health care for more than 20 years (Fuchs, 1974a), I am not unmindful of its virtues. We cannot, however, rely on managed competition alone to contain costs. In most rural areas, population density is too low to support several health care systems. Even in some urban areas, competition is impossible or undesirable because of economies of scale. For instance, only one hospital is needed to serve a population of 100,000 efficiently. Similar constraints apply to competition in physician specialty care, especially if the physicians work full time at their specialties. A population of 1 million would probably not justify enough independent maternity services or open-heart surgery teams to create competitive conditions. Moreover, the public interest is not best served by insisting that health professionals always maintain rigorous arm's-length competition with one another. Patients can benefit from cooperation among physicians and hospitals, both in reduced costs and better service. Managed competition alone will not be enough to contain costs; it must be

the effectiveness, and especially the cost-effectiveness of a medical technology.

⁴⁹ See Alain Enthoven (1986, 1988).

supplemented by constraints on the supply side, especially with respect to technology and the specialty mix of physicians.

In 1995 Americans spent about \$1 trillion for health care, broadly defined. If, during the past 30 years, health care spending had grown at the rate of the rest of the economy, the health care bill in 1995 would have been only a little more than \$400 billion. What accounts for this extraordinary excess of almost \$600 billion in annual spending? There has been a small increase in physician visits per capita, but use of acute care hospitals has decreased sharply. Patient-days per 1000 population are less than three fifths the level of 30 years ago. By far the most important factor accounting for the increase in health care's share of the GDP is the change in technology.⁵⁰ Physician visits and hospital-days cost more than they used to because the content has changed—the technologies used for diagnosis and treatment are more expensive than in the past. Much of this technological change is welcome; it contributes to enhancing the length and quality of life. Some of the change is less desirable because it adds more to cost than to patient benefit. Unfortunately, there is great uncertainty regarding the merits of many technologies. Moreover, even when the advantages and disadvantages are known, there are often significant barriers facing physicians who would like to practice in a cost-effective manner.

To deal with this problem, I propose the creation of a large, private center for technology assessment. Financing for this center would come from a small levy (less than one tenth of 1 percent) on all health care spending. A centralized approach is necessary, because health care is highly fragmented. Individual physicians and health plans lack the incentive and ability to commit the resources needed to assess new technologies. Even the largest insurance companies individually account for only a small percentage of the health care market; they are, therefore, understandably reluctant to

pay for large-scale assessments that would benefit all.⁵¹ Government agencies try to fill the void, but the scale of effort is too small, and a private center would be able to avoid the political interference that often intrudes on government-run agencies.⁵² Health care providers would fund and set the agenda for the center, much as the electric power companies do for the Electric Power Research Institute. This institute is financed by a small levy on every public utility bill.

A health care technology assessment center would have two primary functions. First, it would help to develop and disseminate systematic knowledge about the cost-effectiveness of medical technology through support of research and through a comprehensive program of publications and conferences. The center would have some intramural research capability, but most of the research would be conducted extramurally at medical schools, hospitals, and research institutes throughout the country. It would provide health professionals with essential information to evaluate and improve their clinical practices and offer a rational basis for deciding what services should be included in the basic plan.

The second important function would be to provide legitimacy for the cost-effective practice of medicine. Currently, many directors of health plans and many individual physicians know they could be practicing in a more cost-effective way, but they are inhibited from doing so because they do not practice in a vacuum. Physicians are influenced by peers who have been trained in settings that emphasized the use of the latest technologies regardless of cost. Patients come with particular sets of expectations based on what they read or hear in the media and what their relatives and friends tell them has been their experience. The threat of malpractice suits lurks in the background. A major function of the center

⁵¹ See Paul M. Romer (1993).

⁵⁰ For general discussions, see Joseph P. Newhouse (1992), William B. Schwartz (1987), and Burton A. Weisbrod (1991). For a detailed examination of the role of technology in increasing expenditures on heart attack patients, see David M. Cutler and Mark McClellan (1995).

⁵² The federal government's Agency for Health Care Policy and Research has shown that even a modest budget can produce valuable information about medical technologies, but the agency now faces extinction because of the opposition from politically influential medical and surgical specialists who expect to be adversely affected by its findings. See Neil A. Lewis (1995).

would be to give legitimacy and a stamp of authority to physicians who practice in a more cost-effective way.

My policy recommendations seek to achieve a balance among the diverse values of efficiency, justice, freedom, and security. The link between the earmarked tax and the basic plan would create a healthy tension between the desire to increase benefits and the need to pay for the increase in a responsible and equitable manner. Competition among health care systems in highly populated areas would widen choice and foster cost-effective practice. The private technology assessment center would help to contain costs without the imposition of controls or caps that might stifle innovation and progress.

Are these recommendations politically saleable? In the short run, certainly not. But neither are any other proposals for comprehensive reform. Indeed, for more than 20 years it has been my view that the United States would not enact comprehensive health care reform except in the wake of a major war, a depression, large-scale civil unrest, or some other event that completely changed the political climate. Why is the United States the only major industrialized nation without national health insurance? Many observers focus on the opposition of "special interests," and that certainly is a factor, but I do not find it a completely satisfactory explanation. After all, special interests are not unknown in Sweden, England, Canada, and other countries that do have national health insurance.

In 1976 I suggested four reasons for its absence in the United States: distrust of government, heterogeneity of the population, a weak sense of noblesse oblige, and strong private voluntary organizations such as nonprofit hospitals and Blue Cross and Blue Shield plans that carry out quasi-governmental functions with respect to the financing and delivery of health care (Fuchs, 1976). Upon revisiting this question (Fuchs, 1991), I concluded that the first three reasons were stronger than ever, but the fourth had weakened considerably. It is ironic that "the competition revolution" (Fuchs, 1988b), which erodes the ability of not-for-profit health care institutions to provide a modicum of social insurance through community rating and cost shifting, may in the

long run push the country toward national health insurance.

My plan is certainly not a panacea; it would be difficult to implement and others might seek a different balance of values. Several aspects require additional research. For example, what should be the content of the basic plans? How should the content change over time? How should the plans be reimbursed from the funds raised by the earmarked tax, and especially how should reimbursement be risk adjusted to take account of differences in plan populations? Another problem is how to encourage competition among plans where it is feasible, while recognizing that a competitive approach will not be desirable or possible in areas of low population density. Considerable research is needed on how the out-of-plan options should be priced⁵³ and how the providers of such care should be reimbursed. Finally, much thought should be given to how to reinvigorate professional norms as a third instrument of control, along with market competition and government regulation.⁵⁴

I conclude this tour of health economics—past, present, and future—on a mildly optimistic note. In the past three decades economics has made a positive contribution to health and medical care, and I believe that future contributions will be even greater. Now that the basic ideas of economics are gaining acceptance, it will be more important than ever for economists to master many of the intricacies of health care institutions and technologies. We will also have to consider the problems of dissemination in order to insure that when we agree on research results, these results are understood and accepted by all relevant audiences including the media, politicians, and health professionals. Moreover, we must pay more attention to values than we have in the past. Through skillful analysis of the interactions between values and the conclusions of positive research, we will be able to contribute more effectively to public policy debates. And,

⁵³ For an interesting discussion of the "topping off" problem, see Robert H. Frank (1996).

⁵⁴ This would undoubtedly require research to uncover the reasons for the erosion of professional control. See, for example, Steven Brint (1994).

if health economists are successful in this demanding assignment, we can lead the way toward progress in areas such as child care and education that face similar problems of reconciling multiple goals and heterogeneity in values. To be useful to our society while deriving pleasure from our work—in the words of the old Gershwin tune, “Who could ask for anything more?”

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