The Historical and Conceptual Foundations of the Rochester Biopsychosocial Model

by Theodore M. Brown

In 1993 a group of geographically dispersed clinical faculty, largely based in two of the University of Rochester's affiliated teaching hospitals, drew up a "Mission Statement" for a "Program in Biopsychosocial Studies." Led by Dr. Timothy Quill of the Genesee Hospital and Dr. Anthony Suchman of Highland Hospital, the group stated that the goal of the new program was "to make health care more humane and effective by teaching, studying and promoting a comprehensive clinical method that integrates biological, psychological, and social perspectives." In support of this mission, the BPS faculty would create "a collaborative, interdisciplinary organization that fosters enhanced research and educational productivity." Moreover, the BPS faculty declared that they would be "actively engaged in qualitative and quantitative research, theoretical and philosophical explorations, and experiential descriptions that further humane and effective health care, promote learner-centered education, and enhance knowledge, skills and self-awareness among providers and patients."

Members of the Program came to Biopsychosocial Studies via several different routes. Some were general internists dissatisfied with impersonal and “reductionist” biomedical practice. Others were family medicine faculty strongly committed to the goal of comprehensive and family-centered care. A few were social scientists, psychologists, and nurses drawn to alternative approaches to caring or fascinated with the psychosocial dimensions of patient-provider relationships. All were strongly attracted to the "Biopsychosocial Model" articulated by Rochester's Dr. George Engel, and they frequently discussed that model and its implications with Dr. Engel himself.

The Program in Biopsychosocial Studies is, in fact, the latest version of an educational and research endeavour in Rochester going back to Dr. Engel's arrival in the community more than half a century ago. Its roots can be traced to Engel's appointment as a member of the University of Rochester Medical School's Department of Psychiatry, newly created in 1946. Although Engel was trained as a physiologist and as an internist, he had strong interests in what at the time of his appointment was enthusiastically called "psychosomatic medicine." With the full backing of his strong and charismatic Psychiatry chairman Dr. John Romano and with support from Department of Medicine chairman Dr. William McCann, Engel developed an ambitious teaching program for Rochester medical students and post-residency Medical-Psychiatric Liaison Fellows. He designed, led, and experimented with these programs for more than thirty years, until his retirement in 1979. In the 1980s several of Engel's former colleagues and fellows struggled to preserve

Engel's legacy. But the medical school, biomedical science, and practice environments had changed dramatically in the four decades since Engel had begun his work. His successors could therefore continue what Engel had started only in modified fashion and in part, and their efforts took new shape as they responded to new circumstances and challenges. Eventually, their initiatives coalesced in the early nineties in the Program in Biopsychosocial Studies.

This chapter will trace in detail the history just sketched in outline. It will begin with Dr. Engel and his early development and then follow his intellectual and professional evolution as well as his curricular and training innovations. It will look at the circumstances preceding and immediately following his retirement and consider efforts in the eighties, not always successful or fully supported by the Medical School, to continue Engel's work. The chapter, finally, will recount the ad hoc arrangements in the mid-eighties through early nineties that represented the best hope for survival of what remained of Engel's fellowship program and that, within a few years, took shape as the Program in Biopsychosocial Studies.

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George Engel was raised in a family environment that made a career in medicine "almost inescapable."[1[1]] The dominant influence in the household in which he grew up was his uncle, Dr. Emanuel Libman, a world-famous, New York City-based, elite, Jewish medical scientist and clinician affiliated for most of his career with Mount Sinai hospital and renowned for several widely heralded discoveries. William Henry Welch, the Johns Hopkins Medical School's founding dean and professor of pathology, called him "an exemplar and promoter of scientific research" and claimed that "Libman's special studies are of almost equal importance to pathology, to bacteriology and to clinical medicine."[2[2]]

1[1] Biographical details about George Engel and the members of his family, unless otherwise specified, are derived from the following sources: Robert Ader and Arthur H. Schmale, "George Libman Engel: On the Occasion of His Retirement," Psychosomatic Medicine, 42 (Supplement, 1980): 79-101; "George L. Engel and the Development of the Biopsychosocial Model," Families, Systems & Health, 14 (1996):413-452 [which includes a selective bibliography of Engel's publications, an interview of Engel by Diane Morse, and two autobiographical essays by Engel]; interviews of Engel conducted by Theodore M. Brown in 1983 and 1984; an interview of Engel in the National Medical Audiovisual Center's series "Leaders in Medicine," filmed on January 29, 1974. The phrase "almost inescapable" is used by Engel in the filmed interview.

2[2] William H. Welch, "Introduction," Contributions to the Medical Sciences in Honor of Dr. Emanuel Libman by his Pupils, Friends and Colleagues (New York: The International Press, 1932), Vol. 1, pp. xvii, xxi. For brief biographies of Libman, see Jeffrey A. Kahn, "Libman, Emanuel," Dictionary of American Biography, Supplement Four, James A. Garraty and Edward T. James, eds. (New York: Charles Scribner's Sons, 1974), pp. 494-495 and Stuart Galishoff, "Libman, Emanuel," Dictionary of American Medical Biography, Vol. 1, Martin Kaufman,

Libman was particularly respected for his remarkable diagnostic prowess and for his ability to combine laboratory-based investigation with brilliantly developed clinical clues. He was most famous for his pioneering work on the blood-culturing of bacteria and for identifying the condition of subacute bacterial endocarditis, an insidious and complex infection of the membrane lining the cavities of the heart, usually localized in a heart valve. Unsurprisingly, George's older brother Lewis decided early on a career in biomedical science, later earning a Ph.D. in biochemistry at Columbia University and eventually becoming chair of the Department of Biological Chemistry at Harvard Medical School. George and his twin brother Frank chose medicine with the intention of pursuing their profession in a decidedly scientific and Libmanesque spirit.

Frank and George entered Dartmouth College in 1930, George majoring in chemistry. They were both very committed to the ideas of Jacques Loeb, the famous "apostle of mechanistic conceptions in biology."[3][3] They obtained permission from the Dartmouth biology department to set up a small laboratory in which they worked with amoebae and paramecia, trying to duplicate Loeb's experiments on mechanistically-produced animal tropisms. In the same materialist and "anti-mystical" spirit, George wrote his first college paper as an assault on intuitive and introspective psychology, "Thought as a Product of Brain Metabolism." In the summer between his junior and senior year, he had what was then a very rare experience for a college undergraduate: a research position at the Woods Hole Marine Biological Laboratory. Here he worked closely with Ralph Gerard, professor of physiology at the University of Chicago and one of the pioneers of neurochemistry. George's first major project, which led to his first publication, was a study of the distribution of organic phosphorus compounds in the muscles of marine invertebrates. He formally submitted this study for publication in October, 1934, by which time he and Frank were first year medical students at Johns Hopkins.[4][4]

The Engel brothers attended Hopkins as a result of Libman's "counsel" and perhaps direct assistance in the admissions process. It was an obvious place to go for two aspiring biomedical scientists with clearcut reductionist tendencies. Although it had slipped a bit from its peak of influence and prestige at the turn of the century when Welch was dean, Johns Hopkins was still one of America's handful of preeminent, research-oriented medical institutions[5][5]. Hopkins was, in fact, probably the most scientifically-oriented

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Stuart Galishoff, Todd L. Savitt, eds. (Westport, CN: Greenwood Press, 1984), pp. 446-447.

3[3] Donald Fleming, "Loeb, Jacques," Dictionary of Scientific Biography, Vol. 8, Charles C. Gillispie, ed. (New York: Charles Scribner's Sons, 1973), pp. 445-447.

4[4] George L. Engel and Iping Chao, "Comparative Distribution of Organic Phosphates in the Skeletal and Cardiac Muscles of Limulus Polyphemus," The Journal of Biological Chemistry, 108 (1935): 389-393.

5[5] Thomas B. Turner, Heritage of Excellence: The Johns Hopkins Medical Institutions, 1914-1947 (Baltimore: Johns Hopkins University Press, 1974).

medical school and -- despite the long-term efforts of professor of psychiatry Adolf Meyer to move the school in a more "psychobiological" direction -- certainly the most relentlessly reductionist. The Rockefeller philanthropies, which had done so much to nurture and sustain the original Hopkins, now tried to reform the institution by supporting the work of sociologically-minded historian Henry E. Sigerist, promoting a new department of Preventive Medicine, and funding the educational efforts of psychosomatically-sensitized internist George Canby Robinson.[6][6] "The Hopkins," however, maintained its own deeply entrenched biomedical traditions and both resisted and sabotaged the Rockefeller efforts. The Engel twins, in any case, paid little attention to these newer initiatives, in spite of identifying politically with the liberal Meyer and left wing Sigerist, and being required to participate in Robinson's third-year outpatient teaching.

During their pre-clinical years, George and his brother were, in fact, scientific celebrities. As a result of his continuing association with Ralph Gerard, George was asked by the Rockefeller Foundation to spend two months during the summer of 1935 in the Leningrad laboratory of Alexander Gurwitsch, a Russian physiologist who was creating an international sensation with his theories of "mitogenetic radiation." After George got permission to bring brother Frank, the twins spent an exciting summer at the All-[Soviet]Union Institute of Experimental Medicine (where Pavlov also worked) in Gurwitsch's laboratory and arranging the translation of "Mitogenetic Analysis of the Excitation of the Nervous System."[7][7] Since, by coincidence, the XV International Physiological Congress took place that summer in Moscow and Leningrad, Congress participants -- including several Hopkins physiology instructors -- were treated to tours of the Gurwitsch lab conducted by the Engel brothers. Their Hopkins scientific reputation thus assured, George and Frank were also acknowledged in their clinical years for their ferociously Libman-like diagnostic prowess. Moreover, during the summer of 1936 uncle Emanuel arranged a special fellowship for his nephews with Harrison Martland, a noted forensic pathologist, and in the summer of 1937 the twins worked at Boston City Hospital where they met the brilliant clinical investigator Soma Weiss, soon to be Harvard's Hersey Professor of the Theory and Practice of Physic and physician-in-chief of the Peter Bent Brigham Hospital.

6[6] Theodore M. Brown, "Friendship and Philanthropy: Henry Sigerist, Alan Gregg, and the Rockefeller Foundation," Making Medical History: The Life and Times of Henry E. Sigerist, eds. Elizabeth Fee and Theodore M. Brown (Baltimore: Johns Hopkins University Press, 1997), pp. 288-312; idem, "George Canby Robinson and 'The Patient as a Person,'" Greater Than the Parts: Holism in Bio-Medicine 1920-1950, eds. George Weisz and Christopher Lawrence (New York: Oxford University Press, 1998), pp. 135-160.

7[7] George Engel and Frank Engel, Translation of Mitogenetic Analysis of the Excitation of the Nervous System by Alexander G. Gurwitsch (Amsterdam: N.V. NoordHollandische Utgerver Maatschappi, 1937).

After medical school graduation in 1938, George and Frank began their postgraduate training together at Mt. Sinai Hospital in New York City. Mt. Sinai was an intense, high-energy place that modelled itself to a large extent on the Johns Hopkins Hospital of Welch's day and was still very much in the Libman mode. Indeed, uncle Emanuel was a "consulting physician" until his death in 1946 and in the late thirties published occasionally in the clinically and scientifically prestigious Journal of the Mount Sinai Hospital.[8][8] The chief of medicine during the Engels' house officerships, Eli Moschowitz, moved, however, in certain new, dramatically non-reductionist directions. He was interested in the role of emotions in essential hypertension, Graves Disease and ulcerative colitis, was open to the ideas of psychoanalysis, and in the 1935 New England Journal of Medicine published a far-ranging overview of psychogenic etiology.[9][9] In fact, while the Engels worked on Moschowitz's medical service, psychoanalytically-based psychiatrists rapidly expanded their presence in the outpatient department and on the floors of the hospital. In 1939, in a major reorganizational move, Lawrence Kubie, former neurologist and now a well-known psychoanalyst, moved from Columbia College of Physicians and Surgeons to Mt. Sinai Hospital as Associate Psychiatrist on the Neurological Service and as head of a new "psychosomatic" service. He described his move a few years later as part of the "invasion of a general hospital by ... [a] large group of psychiatrists" and as an effort to create "a profound and rapid change in the practice of medicine itself."[10][10]

The Engel twins, however, remained skeptical and aloof. George dismissed most of what the psychoanalytic psychiatrists had to say as "laughable" and as "hogwash." Together with Frank, he continued to focus on physiological and biochemical investigations. They worked, for example on "the significance of the carotid sinus reflex in biliary tract disease" and on "'epinephrine shock' as a manifestation of a pheochromocytoma of the adrenal medulla."[11][11] When George did collaborate with a young Mt. Sinai psychiatrist, Sydney Margolin, he continued to maintain a reductionist point of view, trying to link neuropsychiatric symptoms to the precise tracings of the electroencephalograph and insisting on explaining them as the mere consequence of

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8[8] See, for example, Emanuel Libman, "Notes on Clinical Observations and Methods," Journal of the Mount Sinai Hospital, 5 (1938): 197-203.

9[9] Alex Lorand and Eli Moschowitz, "A Psychoanalytic Interpretation of the Constitution in Graves' Syndrome," Journal of Nervous and Mental Diseases, 79 (1934): 136-152; Moschowitz, "Psychogenic Origin of Organic Diseases," New England Journal of Medicine, 212 (1935): 603-611.

10[10] Lawrence S. Kubie, "The Organization of a Psychiatric Service for a General Hospital," Psychosomatic Medicine, 4 (1942): 252.

11[11] George L. Engel and Frank L. Engel, New England Journal of Medicine, 227 (1942): 470-474; Engel and Engel, American Journal of Medical Science, 204 (1942): 649-661.

"altered physiologic or biochemical reactions."[12][12] Still echoing his earlier anti-psychological undergraduate views, he asserted that neuropsychiatric manifestations "depend primarily on the fundamental nature of brain metabolism."[13][13] Perhaps modelling his approach on Soma Weiss' vitamin therapy in cardiovascular disorders, he attempted to correct neuropsychiatric symptoms in organic disease with vitamins and other metabolic adjustments.[14][14] And by 1941, while brother Frank got ready to move on to New Haven to pursue endocrinology, George eagerly prepared to return to Boston to work again with Soma Weiss.

George apparently did not realize that while he completed his training and engaged in reductionist scientific investigations in Baltimore and New York, Weiss -- now at the Peter Bent Brigham Hospital in Boston -- had shifted focus in some subtle but important ways. Although he still actively pursued the studies in pathophysiology, pharmacology and pharmacotherapy that had brought him fame and universal admiration, Weiss had become interested again in the emotional dimensions of clinical medicine, a topic on which he had published a few brilliant but cautious papers some years earlier.[15][15] In 1940 he published in the Journal of the American Medical Association an Alpha Omega Alpha address on "The Medical Student Before and After Graduation." Consciously echoing Francis Weld Peabody's famous 1927 address to Harvard medical students, "The Care of the Patient," Weiss pointedly told his student audience that "social and psychic factors play a role in every disease, but in many conditions they represent dominant influences" and that "mental factors represent as active a force in the treatment of patients as chemical and physical agents."[16][16] In 1941 he published a detailed case report of a Harvard medical student who had died of subacute bacterial endocarditis, which he used to emphasize the power of the student's subjective experience of illness and the

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12[12] George L. Engel and Sydney Margolin, "Neuropsychiatric Disturbances in Internal Medicine," Archives of Internal Medicine, 70 (1942): 236.

13[13] Ibid.

14[14] George L. Engel and Sydney Margolin, "Neuropsychiatric Disturbances in Addison's Disease and Role of Impaired Carbohydrate Metabolism in Production of Abnormal Cerebral Function" (abstract), Archives of Neurology and Psychiatry, 45 (1941): 881-883; George L. Engel and Sydney Margolin, "Clinical Correlation of the Electroencephalogram with Carbohydrate Metabolism" (abstract), Archives of Neurology and Psychiatry, 45 (1941): 890-891.

15[15] See, for example, "The Interaction Between Emotional States and the Cardiovascular System in Health and in Disease," Contributions to the Medical Sciences in Honor of Dr. Emanuel Libman, op. cit. (Note 2), Vol. 3, pp. 1181-1198; "The Interpretations of Syndromes Associated with Arterial Hypertension," New England Journal of Medicine, 207 (1932): 165-172; "The Etiology of Arterial Hypertension," Annals of Internal Medicine, 8 (1934): 296-314.

16[16] 114 (1940): 1711.

importance of psychological interpretation.[17][17] Weiss may have been reflecting in his own way the intensified national interest in psychosomatic medicine which marked the late thirties and early forties and that now engaged some of his most respected Harvard colleagues, such as internist Hermann Blumgart and neuropsychiatrist Stanley Cobb.[18][18]

In any event, when George Engel arrived at the Brigham in 1941 he was shocked to discover that Weiss had introduced some dramatic changes since the summer of 1937. He had invited a young psychiatrist, John Romano, to join the Department of Medicine and help teach the emotional and psychological dimensions of patient care. Fully integrated into Weiss' medical service, Romano conducted rounds at patients' bedsides, where he would pull up a chair and listen at length to their stories just as he would on a psychiatric ward. Engel watched as Romano, with Weiss' blessing, placed the patient's narrative of his life and illness experience in a central position in clinical evaluation. To add to Engel's shock, Weiss also strongly encouraged him to work collaboratively with Romano on a research project focused on delusional patients. Engel would study them with precise electroencephalographic techniques while Romano would investigate their mental states in psychological detail, after which they compared their independent observations. Even though Engel "condescended" to learn the mental status exam and approached Romano in a "patronizing" manner, the unlikely collaborators found, as Weiss very likely suspected they would, that the features of the EEG very closely correlated with the clinically determined mental states.[19][19]

George had another major shock in January, 1942 when Weiss died suddenly of an unsuspected intracranial aneurysm. Romano had already accepted a position as Professor and Chair of the Department of Psychiatry at the University of Cincinnati College of Medicine and promptly offered George the opportunity to join him in that department. George at first refused but was persuaded to move by Eugene Ferris, one of Weiss' former fellows and collaborators who was now in the Department of Medicine at Cincinnati, where he also offered George a position. George thus came to Cincinnati in 1942 with appointments in both Medicine and Psychiatry and found in each of the departments an extraordinary group of individuals. Ferris and Arthur Mirsky were the standouts in Medicine, while Romano, Milton Rosenbaum (formerly with Stanley Cobb at the Massachusetts General Hospital), and Maurice Levine made Psychiatry equally stimulating. Charles Aring, who had trained in neurology at Boston City Hospital with Stanley Cobb and in neurophysiology at Yale with John Fulton, was also a major presence. George found the Cincinnati group "the most exciting I'd ever encountered,

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17[17] "Self-Observations and Psychologic Reactions of Medical Student A.S.R. to the Onset and Symptoms of Subacute Bacterial Endocarditis," Journal of the Mount Sinai Hospital, 8 (1941-1942): 1079-1094.

18[18] Benjamin V. White, Stanley Cobb, A Builder of the Modern Neurosciences (Boston: Francis A. Countway Library of Medicine, 1984), pp.214, 225, 246-249.

19[19] John Romano and George L. Engel, "Physiologic and Psychologic Considerations of Delirium," Medical Clinics of North America, 28 (1944): 629-638.

before or since." The years in Cincinnati, in fact, turned out to be among the most fruitful and transformative of his career.

For George, the single most important event in Cincinnati was the abandonment of his resistance to psychological factors in medicine. At first, he tried to ignore the psychosomatic buzz in the Cincinnati air as he set out to trip up the psychiatrists by demonstrating somatic clinical findings they had missed. Gradually, however, he let down his guard. Ferris was instrumental as he took a broadly clinical approach to the wide-ranging studies of high altitude decompression sickness the Cincinnati group was deeply involved in under contract with the Committee on Aviation Medicine of the National Research Council. Instead of sticking to physiological observations, this former Soma Weiss collaborator led the group in watching a broad spectrum of *clinical behavior*, which left considerable room for psychological observations. In addition, Rosenbaum persuaded or perhaps manipulated George into doing psychotherapy with a patient who had complex reactions to pain. While supervising him in that psychotherapy experience over the course of a year, he helped Engel overcome his "stubborn resistance" to psychological matters and introduced him to the writings of Sigmund Freud.

While George still served as an attending in the Department of Medicine and was thus responsible for a full range of medical patients, he also undertook collaborative research in which he now explored in imaginative and open-ended ways the psychological as well as the medical dimensions of his clinical cases. With Aring, he studied a young man whose corticohypothalamic pathways were interrupted and who was therefore unable to modulate the autonomic manifestations of anxiety. In their concluding assessment Engel and Aring emphasized the psychological and behavioral interventions that should have been tried: "proper therapy should have been directed toward protecting the patient from anxiety-producing situations until he might have developed better defenses to handle his disability."[20][20] With Romano, Engel returned to one of his long-standing interests, syncope, only now with an important new psychological perspective. No longer keeping Romano and his psychological insights at a disdainful distance, Engel enthusiastically studied psychogenic fainting and distinguished between two basic types: vasodepressor syncope as an emotionally-precipitated, physiologically-based "vegetative neurosis," and hysterical fainting in which loss of consciousness serves as a "substitutive or symbolic expression of emotion" unaccompanied by demonstrable changes in circulatory dynamics or EEG- measured brain metabolism.[21][21] Significantly, Engel and Romano presented their findings to the American Psychosomatic Society and published them in the Society's official journal, Psychosomatic Medicine.

20[20] George L. Engel and Charles D. Aring, "Hypothalamic Attacks with Thalamic Lesion," Archives of Neurology and Psychology, 54 (1945): 42.

21[21] John Romano and George L. Engel, "Studies of Syncope. III. Differentiation Between Vasodepressor and Hysterical Fainting," Psychosomatic Medicine, 7 (1945): 3-11. See also, George L. Engel, "Mechanisms of Fainting," Journal of Mount Sinai Hospital, 12 (1945): 170-190.

In Cincinnati George also developed important new interests in medical education. He had done some teaching earlier at the Brigham and was now assigned the presentation of clinical pathological conferences in the Department of Medicine, to fourth-year students one morning a week and to faculty one afternoon. He likewise participated in psychosomatic conferences in which a psychiatric resident was paired with a medical resident in case presentations attended by medical students and house staff.[22][22] But under the inspiration of John Romano in the Department of Psychiatry he conceived dramatically expanded and far more ambitious teaching possibilities. It was Romano's strong conviction that "psychiatry should be taught in each year of the curriculum" and that "skilled psychiatrists should be assigned to teaching posts, not as occasional visitors but as intimate coworkers to the other teaching services of the hospital."[23][23] This novel arrangement would be essential if students were to learn how to deal with the emotional problems of patients in the general practice of medicine. Specifically, he proposed that they be taught in small seminar groups and through close, personal supervision about "the normal emotional responses of sick people" and about such additional topics as the "somatic expressions or concomitants of emotional illness." Romano acknowledged that there were "formidable interdepartmental barriers" to implementing his proposed program, and Engel soon joined him in identifying the conceptual as well as the institutional impediments. They called for "a more comprehensive frame of reference or conceptual scheme of disease [than that] with which the student had heretofore been ... familiar ... [a] conceptual scheme ... in which psychologic and social factors exist or coexist with more impersonal biologic factors, eventually to cause, provoke, or otherwise modify variations in the total human biologic behavior."[24][24] Adopting this expanded frame of reference, they acknowledged, would mean nothing less than introducing "a very considerable change in the structure of the undergraduate medical curriculum."

To work out the details of this ambitious program a liaison was established between the departments of Medicine and Psychiatry. Romano and Ferris took the lead, along with Engel in Medicine and Rosenbaum in Psychiatry.[25][25] This core group successfully sought grant support from the Commonwealth Fund and the Rockefeller Foundation for a new "psychosomatic medicine training program." Before the group could design the main features of the program, however, the Cincinnati chair of Medicine proved "somewhat

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22[22] A. McGehee Harvey and Susan L. Abrams, "For the Welfare of Mankind": The Commonwealth Fund and American Medicine (Baltimore: Johns Hopkins University Press, 1986), p. 67.

23[23] John Romano, "Psychiatry in Undergraduate Medical Education," Bulletin of the Menninger Clinic, 9 (1945): 34-40.

24[24] John Romano and George L. Engel, "Teaching Experiences in General Hospitals," American Journal of Orthopsychiatry, 17 (1947): 602-604.

25[25] Stanley L. Block, "The First 146 Years: A Chronicle of the Department of Psychiatry of the University of Cincinnati," Comprehensive Psychiatry, 9 (1968): 459.

resistant." Although many other factors contributed to his decision, Romano soon afterwards decided to leave Cincinnati for Rochester, formally announcing his move in January, 1946. He had been given the opportunity to shape a brand new department of psychiatry, just then forming at the University of Rochester School of Medicine. With the enthusiastic support of Rochester's Chair of Medicine William S. McCann and with the concurrence of Commonwealth and Rockefeller allowing him to transfer already allocated funds to his new institution, Romano now had the chance to develop the training program that had been stymied in Cincinnati. He offered Engel an assistant professorship in Rochester's Department of Psychiatry with a specific invitation to play a major role in Rochester's psychosomatic teaching. This time, Engel did not hesitate to join Romano. It was, in fact, the beginning of a whole new phase of his career.

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In 1946 the University of Rochester School of Medicine was a rather small and conservative institution which had not changed much in its twenty-one years of existence. Along with its clinical arm, Strong Memorial Hospital, it had been created in the twenties as an elite, research-oriented, "scientific" school on the Johns Hopkins model.[26][26] Abraham Flexner, the famous educational reformer who had promoted Hopkins as the gold standard, had in fact played an important personal role in the founding and shaping of the institution. As the school developed under the leadership of Dean George Hoyt Whipple (Nobel laureate in 1934 for his work on diet in blood-regeneration in anemic patients) and the first faculty (more than half of whom, like Whipple, had previously been connected with Johns Hopkins), scientific tradition and the research ethos became its definining characteristics. Indeed, the University of Rochester Medical School was so research-oriented in its first two decades that starting in 1930 and continuing until 1942 publications by students and faculty were listed in the school catalogue.[27][27] "Research," of course, was understood to be laboratory-based and strictly reductionist.

There were, however, certain other features in the history of the school that by the postwar period were becoming increasingly important. One was the leavening influence of the chair of medicine, William S. McCann, a man who mixed skill and interest in scientific investigation (he had been head of the Metabolism Division of the Department of Medicine at Johns Hopkins before coming to Rochester) with enthusiasm for the non-

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26[26] William P. Brandon, "Rochester; Flower City and Flexnerian Seedling," in Stephen J. Kunitz, ed., The Training of Primary Physicians (Lanham MD: University Press of America, 1986), pp. 59-103, and Theodore M. Brown, "Primary Care Training in Rochester," in Kunitz, ed., The Training of Primary Physicians, pp. 105-142.

27[27] Edward F. Adolph, "Perspectives of the First Faculty," in To Each His Farthest Star: University of Rochester Medical Center 1925-1975 (Rochester: University of Rochester Medical Center, 1975), p. 65.

reductionist side of clinical medicine. McCann understood the importance of seeing the patient as a whole, integrating the physical and emotional manifestations of illness, and conceptualizing symptomatic expression as the organism's general adaptive response to life and its stresses, whether physical, psychological or social.[28][28] Beginning in the thirties, he was a supporter of psychosomatic medicine and emphasized the need to see the patient as a "psychobiological entity." A second leavening influence was the presence of psychiatry within the Department of Medicine well before the founding of a separate department. Richard S. Lyman, who had trained in Psychiatry under Adolf Meyer at Johns Hopkins, was an early junior staff member appointed by McCann.[29][29] Outpatient psychiatric services were also established in the late twenties as a cooperative venture between the Department of Medicine, the Rochester Board of Education, the Society for the Prevention of Cruelty to Children, and the criminal branch of the city court.[30][30] Inpatient services were established at about the same time, and in the thirties, with the help of the Rockefeller Foundation, a demonstration child guidance program was begun within the hospital under the joint direction of the Department of Pediatrics and the Department of Medicine's Division of Psychiatry. The teaching of medical and nursing students, the supervision of medical house officers assigned to the psychiatric units, and the provision of psychiatric clinical services were under the supervision of a number of physicians, most notably Dr. Richard Jaenike, who joined the staff in 1930.[31][31] The decision in 1945 to create a separate department of psychiatry, with new clinical facilities, was prompted by a generous gift from Mrs. Helen W. Rivas of Le Roy, New York and by the prospect of soon-to-be-available federal funds. McCann lent his support to the creation of the new department -- the eleventh in the school and only the second new one since its founding -- and looked forward to future cooperation in teaching, training and service.

When Romano arrived with Engel in 1946, the road was thus open to substantial curricular innovation. They set to work immediately, planning an energetic assault on the curriculum even as they awaited the construction of new psychiatric facilities. Romano began with a new required course for first-year students, "Fundamental Concepts of Human Behavior," in which he presented material that would "constitute a framework about which the theory and practice of clinical psychiatry will be built."[32][32] He was

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28[28] Theodore M. Brown, op. cit. (Note 26), pp. 106-107.

29[29] George W. Corner, "Foundation and Earliest Years," in To Each His Farthest Star, op. cit. (Note 27), p. 49.

30[30] John Romano, "Within Bareheaded Distance," in To Each His Farthest Star, op. cit. (Note 27), p. 299. For further details in this paragraph, see also p. 300.

31[31] John Romano Papers. University of Rochester Medical Center Archives. The Edward G. Miner Library. [hereafter "John Romano Papers"] "Department of Psychiatry, 1926-1946."

32[32] Official Bulletin of the University of Rochester School of Medicine and Dentistry, 1946-1947, pp. 143-144.

careful to note, however, that the course's intention was not "to teach special skills or techniques ... as this is considered the more proper responsibility of the graduate hospital training period." Rather, the course was part of a broader plan "to work intimately with the other departments in the School and Hospital so that the student may become aware of the more or less normal emotional problems of all sick, convalescent, and disabled persons [and] of the specific role in which certain personal emotional, or social forces may modify, provoke, or cause illness." Engel's mission as Assistant Professor of Psychiatry and of Medicine was to organize a "liaison program," which meant establishing himself as an attending on the inpatient medical services, supervising Rockefeller Foundation and Commonwealth Fund fellows jointly appointed in Psychiatry and Medicine (fellowship funds having been transferred from Cincinnati), conducting "ward walks and conferences on the medical divisions," and introducing a once-a-week elective "Psychosomatic Clinic" for third- and fourth-year students and house officers in which "members of the departments of Psychiatry and Medicine present patients from the various clinical services for discussion."[33][33]

In the next two years, Romano and Engel's teaching became even broader and more ambitious. Romano continued his first-year course and Engel his Psychosomatic Clinic, but in 1947 Engel added a required course in "Psychopathology" for second-year students, in which he offered "consideration of the concepts of health and disease, with study of morbid psychologic experiences occurring at various life periods."[34][34] This course also introduced students to the clinical skills and theoretical principles involved in medical interviewing "as they relate to history taking and to psychotherapy." In addition, Engel's Rockefeller Foundation fellow -- with William McCann's enthusiastic support -- began offering a Clinical Conference in the Medical Outpatient Department for third- and fourth-year students in which presentation focused on "the more common emotional problems of patients which are met in the daily practice of medicine." In 1948 the fellow, now an Instructor in Medicine and Psychiatry, moved the conference to the fourth year to make room for expanded clinical teaching by Psychiatry in the third year. Because its new clinical facilities had been completed, students could now be assigned to a third-year Psychiatry clerkship, yet in the spirit of continuing liaison work under Engel's leadership and while Psychiatry's occupied bed census was still small, the Department opted to supervise its clerks on both medical and psychiatry floors.[35][35]

By 1949, however, it was becoming apparent that for many reasons Psychiatry needed to rethink its undergraduate teaching program. The Department had its own increasingly full inpatient floors and outpatient clinics to staff with a rapidly expanding house staff

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33[33] John Romano Papers. "Department of Psychiatry, 1946-1947," p. 1; Official Bulletin, 1946-1947.

34[34] Official Bulletin of the University of Rochester School of Medicine and Dentistry, 1947-1948, p. 153.

35[35] John Romano Papers. "Department of Psychiatry, 1948-1949," pp. 2-3; Official Bulletin, 1948-1949, p. 148.

and junior faculty. This had implications for the training of clinical clerks, who could now have a full immersion experience exclusively in psychiatry. At the same time, Engel and his fellows -- most of whom came with training in internal medicine -- had begun to work out more systematic liaison and consultation contacts with medicine, pediatrics, and obstetrics-gynecology. This, too, had implications for the training of clinical clerks, who could be exposed to integrated and systematic liaison consultations and not merely to the occasional "psychosomatic clinic" as in the past. Moreover, Engel's very successful development of his second-year course also required rethinking the relationship between what he taught and what Romano offered in the first year. The outward signs of ferment were the disappearance of references to psychosomatic clinics, students' assignment to medical floors during the psychiatry clerkship, and the changing designations of first- and second-year courses in the Official Bulletin.[36][36] An inward sign of ferment was Romano's reference in his annual report to the dean for 1951-1952 to "letters of inquiry sent to recent graduates concerning their criticisms and suggestions of this teaching program."[37][37]

By 1953, the teaching program had been largely revamped. Romano removed himself from the first-year course and assigned Assistant Professor Walter Hamburger, an early liaison fellow under Engel, in his place. The course was described as follows: "Consideration is given to a

concept of human biology in which psychologic and social factors are emphasized. This is done

primarily through the medium of patient interviews and case discussion. The role of psychiatry in comprehensive medicine is explored."[38][38] The second-year course was left basically intact, although Engel made important changes in scheduling to accommodate the joint teaching of medical interviewing and physical diagnosis in the second semester. He also distributed mimeographed and bound copies of his revised lecture notes,

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36[36] Reference to the "Psychosomatic Clinic" drops out of the Official Bulletin for 1949-1950; in the same year, Romano's course is renamed "Basic Orientation" and Engel's "Medical Psychology and Psychopathology." The reference to assignment to medical floors during the psychiatry clerkship drops out in the Official Bulletin for 1950-1951.

37[37] John Romano Papers. "Department of Psychiatry, 1951-1952," p. 3.

38[38] Official Bulletin, 1953-1954, p. 177.

indicating that the course had acquired solidity and substance.[39][39] Third-year teaching was more fundamentally altered. The psychiatry clerkship continued as before, but arrangements were now made for Engel and William Greene, Assistant Professor of Medicine and Psychiatry, an internist, and a former liaison fellow, to "visit once weekly on the medical floors with third year medical students during their medical floor clerkship."[40][40] This well thought out and intelligently structured teaching exercise was a natural outgrowth of Engel's more fully developed and better staffed liaison service, now at a peak of demand throughout the hospital.[41][41] In the following year, third-year teaching was even more dramatically overhauled as weekly liaison conferences were scheduled during the medical clerkship on each of the four inpatient floors. Engel ran one of the conferences, Greene a second, Hamburger a third, and Franz Reichsman, Instructor in Medicine and Psychiatry, an internist, and a recent liaison fellow, the fourth. Current liaison fellows such are Arthur Schmale were assigned as tutors to each of the medical floors, to work with third-year students on their medical interviewing skills. Finally, medically trained liaison staff were assigned to the Medical Outpatient Department to work with fourth-year students on a once-weekly basis.

In November 1956, Engel and his colleagues reported on the Rochester liaison program to the annual meeting of the Association of American Medical Colleges. They called the Rochester program "a graduate and undergraduate teaching program in the psychological aspects of medicine" and clearly indicated their strong commitment to psychiatry and psychoanalysis. As they put it, "We have all maintained close association with our psychiatric and psychoanalytic colleagues and all either have undergone, are undergoing, or plan to undergo personal psychoanalysis."[42][42] But they were also careful to point out as an important general feature that, unlike other liaison programs, Rochester's was unusual in its exclusive staffing by internists. Engel, Greene and Reichsman were all board-certified in Internal Medicine, and Schmale had been a house officer in medicine and psychiatry. This thorough training in medicine gave the members of the liaison group credibility with their medical colleagues and allowed them to serve as effective role-models for the students. It also explains why they were assigned the responsibility of teaching such basic clinical skills as medical interviewing.

39[39] Engel recounts the history of the course in the published version of his lecture notes, Psychological Development in Health and Disease (Philadelphia: W. B. Saunders, 1962), p. xx.

40[40] Official Bulletin, 1953-1954, p. 178; the practice had actually started on a trial basis in 1951-1952 according to Romano's annual report to the dean for that year, p. 4.

41[41] John Romano Papers. "Department of Psychiatry, 1954-1955," p.5.

42[42] George L. Engel et. al., "A Graduate and Undergraduate Teaching Program on the Psychological Aspects of Medicine," Journal of Medical Education, 32 (1957): 863.

The presentation by Engel and his colleagues was also an occasion to lay out specific features of the program as it had taken shape through a decade's evolution. First, liaison fellows were recruited after a minimum of two year's residency training in medicine. Their initial assignment as fellows was to a medical ward on which a staff member of the liaison group was the attending physician. This intensive, closely supervised experience, usually in July and August of the first fellowship year, provided "ample opportunity to observe and develop the technics and principles which enable the physician to add the psychological parameters to his already well established medical orientation."[43][43] Then during the academic year, fellows were assigned to groups of medical students as tutors, participating in the medical liaison rounds for third-year students and the outpatient teaching of fourth-year students. In addition, all fellows were expected to attend Dr. Engel's second-year course, other teaching activities in the Department of Psychiatry, and to meet once a week with the full liaison staff to discuss "problems related to teaching and to students, as well as more general considerations of concepts and theory."[44][44] Finally, fellows were expected to participate in research seminars and conferences and to develop their own research projects.

Research and research leadership were, indeed, among the most important aspects of Engel's work with the liaison group in the fifties. In the late forties he had been so busy establishing himself clinically, developing curricular materials, and teaching that he did not have time for much more than the write-up of old projects. One result of this effort was a monograph on fainting that pulled together studies begun in the early forties and partially done with Romano, and that addressed both the physiology of syncope and psychogenic mechanisms, the latter conceived along the lines of Franz Alexander's distinction between "hysteria" and "vegetative neurosis."[45][45] Another was the write-up of twenty cases of "primary atypical facial neuralgia" Engel had seen at the Cincinnati General Hospital and which he now described as unmistakable instances of hysterical conversion.[46][46] Finally, he presented two cases of migraine headache with severe prodromal neurological symptoms -- one from Cincinnati in 1945 and one from Rochester in 1947/1948 -- and claimed that both cases contained "psychological data indicating the relationship between some attacks and periods of suppressed anger."[47][47]

43[43] Ibid., p. 867.

44[44] Ibid., p. 868.

45[45] George L. Engel, Fainting: Physiological and Psychological Considerations (Springfield, Ill.: Charles C. Thomas, 1950); for Engel's earlier work, see above (Note 21).

46[46] George L. Engel, "Primary Atypical Facial Neuralgia: An Hysterical Conversion Symptom," Psychosomatic Medicine, 13 (1951): 375-396.

47[47] George L. Engel, "Electroencephalographic and Psychological Studies of a Case of Migraine with Severe Preheadache Phenomena," Psychosomatic Medicine, 15 (1953): 337-348.

By the early fifties Engel was ready for a fresh start. At this time he was deep into his psychoanalytic training at Franz Alexander's Chicago Institute for Psychoanalysis (he regularly commuted), having begun his personal analysis with Sandor Feldman in Rochester in August, 1946. From Alexander and his staff he learned the latest in psychoanalytic and psychosomatic theory and practice, which he eagerly absorbed and incorporated into his work. But Engel was also an original and intellectually independent investigator. In 1953 he received a research grant from the United States Public Health Service and another from the Foundations' Fund for Research in Psychiatry.[48][48] In 1954 he was elected president of the American Psychosomatic Society. Romano acknowledged Engel's national prominence by asking him to take over the "direction and supervision of the research programs in the department."[49][49] The liaison group had grown large enough to allow the redistribution of many of his responsibilities and to free up more of his time for research. With a burst of energy, Engel undertook an ambitious new program of clinical research, with three major and interrelated lines of investigation: into ulcerative colitis, depression and gastric secretion in a child with a gastric fistula, and psychogenic pain.

Engel had been interested in ulcerative colitis since his internship days at Mt. Sinai Hospital, where his chief, Eli Moschowitz, piqued his interest, especially in the emotional aspects of the disease.[50][50] Starting in 1945, he began collecting his own cases, taking on the study and management of as many colitis patients as he found time for.[51][51] He proceeded in thorough and systematic fashion, beginning with an intensive look at the clinical manifestations of the disease. In 1953 Engel reported that 68% of his own cases and a significant number of those described in the literature showed that bleeding rather than diarrheal symptoms marked the transition to the disease.[52][52] This surprising result led him to a fresh look at the somatic processes in the colon. Contrary to earlier investigators, who were generally less well trained in pathophysiology and internal medicine, Engel discovered that "ulcerative colitis is a disorder involving primarily the mucosa and/or submucosa of the bowel...Prominently implicated is the vascular system, so that hyperemia and hemorrhage are identifying features of the disease....The character of the bowel movements in any individual case is determined by the location, severity

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48[48] John Romano Papers. "Department of Psychiatry, 1953-1954," p. 10.

49[49] Ibid., pp. 10 & 13.

50[50] "George L. Engel and the Development of the Biopsychosocial Model," op. cit. (Note 1): 446.

51[51] Ader and Schmale, "George Libman Engel: On the Occasion of His Retirement," op. cit. (Note 1): 87; George L. Engel, "Psychologic Aspects of the Management of Patients with Ulcerative Colitis," New York State Journal of Medicine, 52 (1952): 2255-2261.

52[52] George L. Engel, "Studies of Ulcerative Colitis. I. Clinical Data Bearing on the Nature of the Somatic Process," Psychosomatic Medicine, 16 (1954): 496-501.

and extent of the colitic process."[53][53] He then carefully reviewed all available psychological data on colitis patients -- from more than 700 cases in the literature and 39 of his own -- and was able to formulate a strikingly original psychosomatic hypothesis. Engel proposed that colitis patients "tend to fall into a population group having preponderately pregenital character traits, especially compulsive and dependent features; they show a defect in their capacity to relate to people, with a tendency to retain features of their early mother-child symbiotic relation."[54][54] Patients of this type frequently experience the tissue changes in the colon which mark the onset of the clinical disease. "The major psychologic phenomena which have been found to be associated with this transition are (1) some disturbance in a key relationship, real, threatened or phantasied, and (2) an affective state characterized by such terms as helplessness or despair."[55][55] Engel's hypothesis thus incorporated both Alexander-like specific personality characteristics and general onset circumstances conceptualized in the latest, object-relational psychoanalytic terms.

At the same time that Engel pursued these very original studies of colitis, he and Franz Reichsman were fortuitously presented with a naturalistic experiment on an infant, "Monica," who was admitted to the Pediatric Service of Strong Memorial Hospital in 1953.[56][56] Monica had been born with a congenital atresia of the esophagus, which required that two fistulas be established, one in her neck to drain anything she took by mouth and one in her stomach through which she could be fed. Monica was discharged from the hospital ten days after her initial surgery and for a while did well at home. But when her home situation changed drastically, she failed to thrive, then dramatically declined, and was eventually readmitted to Strong at age fifteen months in a dangerously marasmic and developmentally retarded condition. After she was nursed back to health and during a protracted hospitalization, Engel and Reichsman undertook a series of studies on Monica. They believed that they had near perfect study conditions to explore the connections between Monica's behavioral responses, object relationships, and gastric secretory activity. Their access to Monica's detailed case history and multiple opportunities for behavioral and physiological observation in the hospital let them probe

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53[53] George L. Engel, "Studies of Ulcerative Colitis. II. The Nature of the Somatic Processes and the Adequacy of Psychosomatic Hypotheses," American Journal of Medicine, 16 (1954): 431.

54[54] George L. Engel, "Studies of Ulcerative Colitis. III. The Nature of the Psychologic Processes," American Journal of Medicine, 19 (1955): 246.

55[55] Ibid., 251.

56[56] George L. Engel and Franz Reichsman, "Spontaneous and Experimentally Induced Depressions in an Infant with a Gastric Fistula: A Contribution to the Problem of Depression," Journal of the American Psychoanalytic Association, 4 (1956): 428-452; George L. Engel, Franz Reichsman, and Harry L. Segal, "A Study of an Infant with a Gastric Fistula: I. Behavior and the Rate of Total Hydrochloric Acid Secretion," Psychosomatic Medicine, 18 (1956): 374-398.

and test various current psychoanalytical theories of psychobiological development and depression.

Engel and Reichsman were especially struck by Monica's characteristic reactions in the presence of new experimenters ("strangers") in stark contrast to her reactions in the presence of her favorite, familiar one (Reichsman). In the first instance, Monica quickly lapsed into extreme motionlessness and inactivity, lying flat on the bed with flaccid muscles, ultimately passing into a state of "depression-withdrawal" and then sleep. In the latter instance, Monica quickly displayed unmistakable signs of pleasure. She would wave, reach, laugh, coo and show striking responsivity to the experimenter. In each instance, her gastric activity was characteristically different and fully integrated with her total behavior. During the depression-withdrawal state and sleep, Monica's hydrochloric acid production was markedly reduced and almost ceased entirely. During pleasure, it was just as markedly elevated, especially during reunion with her favorite experimenter.

Engel and Reichsman drew far-reaching conclusions from their experimental findings: "These data suggest that in this infant ... the processes whereby relationships with objects in the external world are established include a general intaking, assimilative organization in which the stomach participates as if the intention is also to take objects into it."[57][57] They also concluded that their findings lent strong support to current psychoanalytic theory: "From this it appears that the genesis of early object relations includes an assimilative process, largely orally organized. The processes concerned in establishing mental representations of objects and their libidinal and/or aggressive cathexes involve an essentially oral, intaking model."[58][58] Most generally, they saw in Monica's behavior evidence that "two basic processes contribute to the development of a nuclear psychodynamic constellation which is potentially depressogenic. ... there is not only the active, oral, introjective anlage emphasized in classic theory, but also an inactive, pre-oral, pre-object anlage. ... Monica's reaction of depression-withdrawal, including gastric hyposecretion ... [is] representative of the inactive, pre-oral phase, while the response to the return of the 'good' object, with its associated massive gastric secretion, provides the basis for a future introjective pattern."[59][59]

In 1954 and 1955 Engel and Reichsman made several major presentations of their Monica findings and conclusions, which often included filmed highlights of their subject's behavior. Their two most notable presentations were on successive days in May, 1955 to the American Psychosomatic Society and to the American Psychoanalytic Association. At the latter meeting, their work was the focus of an all-day symposium, with panel discussions featuring several of America's leading psychoanalysts. Sydney Margolin stated that the study opened a new field of psychoanalytic research "through

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57[57] "Study of an Infant with a Gastric Fistula," p. 396.

58[58] Ibid.

59[59] "Spontaneous and Experimentally Induced Depressions in an Infant with a Gastric Fistula," pp. 449-450.

which visceral processes throw light on mental events which could not be understood otherwise."[60][60] Therese Benedek noted that the Engel-Reichsman investigation "brings several aspects of psychoanalytic theory into sharper focus."[61][61] Lawrence Kubie called their work "a contribution of real significance"[62][62] and George Gardner, who reported the symposium in the Journal of the American Psychoanalytic Association, concluded that "surely this work of Engel and Reichsman (with the infant Monica) is and will remain a classic."[63][63] Higher praise and more intense recognition among the psychoanalysts could hardly have been imagined.

Engel's third new area of investigation -- into psychogenic pain and the pain-prone patient -- also yielded substantial and enthusiastically acknowledged results. His work here significantly generalized his earlier study of "atypical facial neuralgia" as a conversion symptom to studies of pain in all locations and in patients with a wide range of psychologies.[64][64] Engel's fundamental insight was that a considerable amount of pain experienced by patients is not peripheral and organic in origin. Rather, higher and more complex "psychic mechanisms" often play a role, and the pain is fully integrated into the patient's total psychological development and system of object relations. As he illustrated in many reported cases, patients prone to frequently occurring and intense episodes of pain are commonly burdened with feelings of guilt, worthlessness, and aggression and often use pain unconsciously as a means of self-punishment or expiation. Sometimes the pain is a response to a real, threatened or fantasied loss of a person significant in that individual's life, and sometimes the very location of the pain derives from an unconscious identification with the loved, feared or hated "object." Although the psychological dynamics of pain-prone patients may parallel most closely those captured in Freud's "classic model" of conversion hysteria, in fact, patients with various psychiatric diagnoses (including, prominently, depression and schizophrenia), or with none, may also exhibit similar psychogenic mechanisms. Engel noted that as a matter of clinical technique the physician's most useful instrument in dealing with pain-prone patients is an "interview technic" that permits the patient "to speak of himself, his family, and his relationships as well as of his symptoms."[65][65]

60[60] "Affects, Object Relations and Gastric Secretions," Journal of the American Psychoanalytic Association, 4 (1956): 142.

61[61] Ibid., 143.

62[62] Ibid., 138.

63[63] Ibid., 148.

64[64] George L. Engel, "Psychogenic Pain," Medical Clinics of North America, 42 (1958): 1481-1496; Engel, "'Psychogenic' Pain and the Pain-Prone Patient," American Journal of Medicine, 26 (1959); 899-918.

65[65] "'Psychogenic' Pain and the Pain-Prone Patient," 917.

As the capstone to his work in the fifties, Engel led his colleagues in the Liaison Group to a distinctive "Rochester style" of psychosomatic research. He first inspired William Greene, who in the early fifties had begun general, somewhat diffuse and (by his own admission) initially "superficial" studies of "psychological factors" in patients with lymphomas and leukemias.[66][66] In 1951 Greene reported that in the cases of 20 consecutive male patients, "the recognition of the disease occurred while the patient was having to adjust to multiple stresses, which arose from multiple sources. In 17 of the 20 patients, these stresses included separation from a significant person, father, mother, wife, or other mother-figure, usually by death."[67][67] These "separations" as reported by Greene had typically taken place, however, in largely unspecified psychological circumstances and had occurred anywhere from a few months to several years before presumptive disease onset. By 1955 Greene was firmly under Engel's influence. As he explained in the acknowledgement note to a significantly more detailed and much more rigorously analytical study of women with lymphomas and leukemias, Engel now "contributed substantially to the analysis and preparation of the material for this report."[68][68] Greene had also clearly benefitted from his participation in a "working conference" which had been organized under Engel's direction during the 1954-1955 academic year, "to consider the dynamics of separation and depression."[69][69] He now summarized his principal conclusions in far sharper and more precise terms: "The occurrence of various types of losses, separations, or threats of separation in a period of 4 years prior to the apparent onset of lymphoma or leukemia is described. These included the loss of a significant person such as the mother, father, husband, or child by death or illness....Half of such separations or losses during the 4-year prodromal period occurred during 1 year prior to the apparent onset....The majority of the patients showed an affect of sadness or hopelessness for weeks or months prior to the apparent onset."[70][70]

Arthur Schmale also participated in Engel's separation-depression conferences and became a major contributor for several very productive years. In 1955 he began "a survey of the psychobiological problems on a medical floor" which he completed two years later, demonstrating "a high incidence of separation and depression preceding illness."[71][71] In 1958 Schmale published his results in Psychosomatic Medicine, laying out his methodology and conceptual framework and reporting and analyzing his principal

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66[66] William A. Greene, "Psychological Factors and Reticuloendothelial Disease. I," Psychosomatic Medicine, 16 (1954): 220 - 230.

67[67] Ibid., 229.

68[68] William A. Greene, "Psychological Factors and Reticuloendothelial Disease. II," Psychosomatic Medicine, 18 (1956): 284.

69[69] John Romano Papers. "Department of Psychiatry, 1954-1955," p. 14.

70[70] Greene, "Psychological Factors and Reticuloendothelial Disease. II," 302.

71[71] John Romano Papers. "Department of Psychiatry, 1956-1957," p. 16.

findings.[72][72] He used an "open-ended, minimal-activity, tape-recorded interview of up to 90 minutes" to obtain primary data on 42 male and female patients aged 18 to 45 suffering from a wide variety of medical conditions. He also relied on family members' reports of the patients' recent object losses, threats of loss, and affective states in the pre-onset period. Schmale developed a sophisticated categorization of "feeling states of displeasure," which included such affects as anxiety, anger, shame, helplessness and hopelessness. He reported that "31 of the 42 patients experienced the onset of disease within a week after the final significant change in relationship" and that "24 patients and/or family members ... reported feelings of helplessness as the last predominant affect prior to the onset of the disease and another 10 patients who had given up completely...reported feelings of hopelessness."[73][73] Schmale cautiously but provocatively concluded as follows: "The relatively short period of time between the final feelings of helplessness and hopelessness and the onset of the medical disease ... suggests that there are changes in biological activities related to these psychic reactions to unresolved loss....The exact influence of such psychic giving-up on resistance, immunity, organ dysfunction, and cell growth and multiplication awaits further study."[74][74]

Building on this increasingly sophisticated and suggestive work of the fifties, Engel and his Rochester colleagues felt ready in the sixties to stride onto the national and international stage. Recognized at the beginning of the decade with a Career Research Award from the National Institute of Mental Health [(?)], Engel himself remained the central figure, contributing significantly to two major areas: the specialized field of psychosomatic research and general internal medicine. Within the psychosomatic field, Engel developed new theories of conversion phenomena and the disease onset situation and offered them as alternatives to the (primarily Alexandrian) psychosomatic orthodoxies of the day. Within medicine more broadly, he roamed widely, from critiques of current educational methods to searching examinations of the deficiencies in contemporary clinical practice.

Engel foreshadowed much of this new work in 1962 when he published Psychological Development in Health and Disease, a monograph outlining his own psychoanalytically-grounded psychobiological system.[75][75] Psychological Development was also a textbook based on his lectures -- now considerably refined and expanded -- regularly delivered to second year medical students at Rochester. The book begins with an introduction to organismic biology in which Engel unequivocally asserts the "essential unity of all living matter" and claims that organisms, at whatever level of complexity, have the ability to

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72[72] Arthur H. Schmale, "Relationship of Separation and Depression to Disease," Psychosomatic Medicine, 20 (1958): 259 - 277.

73[73] Ibid., 267.

74[74] Ibid., 269, 271.

75[75] George L. Engel, Psychological Development in Health and Disease, op. cit. (Note 39).

maintain the "relative independence of the internal environment from its surroundings" and the "capacity, within limits, to adjust to environmental changes."[76][76] He devotes the next 225 pages of Part One to a detailed account, from a largely object-relational, psychoanalytic perspective, of the human organism's "biologically determined developmental destiny," beginning in infancy and ending in adulthood.[77][77]

Part Two, on health and disease, continues the organismic focus and culminates in two final chapters on the somatic consequences of "compensated" and "decompensated" psychological states. Engel's basic point is that in the human organism the central nervous system and its "mental apparatus" have evolved to the point where they can integrate bodily activities "so as to assure smooth and harmonious physiological function and the satisfaction of biological needs" and also "buffer the body against stress ... through the psychological and neural processing of the input from the body and from the external environment, sparing the body from the necessity to respond instantly to environmental changes."[78][78] In some psychologically compensated cases, however, buffering the body against stress and avoiding instantaneous emergency response may nonetheless result in the body being used psychologically, as in the "conversion reaction" where ideas are expressed "symbolically through body activities or sensations."[79][79] Almost any body part or function can be utilized in a conversion reaction, provided that they are accessible to voluntary motor control or sensory awareness, have been "involved in some way in object relating activities in the course of development," or are "capable of being imagined in the form of some concepts of the body image or a function thereof."[80][80]

In decompensated cases, by striking contrast, mental mechanisms are insufficient to buffer the body against stress, thus causing biological systems to be "mobilized for the defense and protection of the body."[81][81] Emergency mobilization takes two main forms: the fight-flight pattern earlier elucidated by Harvard physiologist Walter Cannon and the withdrawal-conservation pattern discovered by Engel and his colleagues. In the latter instance, the organism withdraws and insulates itself from environmental change, reduces its activities, and "husbands" its resources.[82][82] These adaptive physiological processes are associated "particularly with the affects attendant upon giving up, notably

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76[76] Ibid., pp. 5-6.

77[77] The quoted phrase is from ibid., p. 239.

78[78] Ibid., p. 364.

79[79] Ibid., p. 368.

80[80] Ibid., p. 370.

81[81] Ibid., p. 381.

82[82] Ibid., p. 384.

helplessness and hopelessness."[83][83] Although Engel is careful to indicate that no more than "fragmentary" information is available about the physiological and biochemical processes involved during withdrawal-conservation, he confidently suggests on the basis of clinical evidence that "psychological 'giving up,' transient or sustained, commonly precedes the development or exacerbation of somatic illness," probably by altering unfavorably "the capacity to resist other physical stresses already present or to which the individual may be exposed while in this state."[84][84]

Engel's first full development before professional audiences of the ideas outlined in the last two chapters of his textbook took place in 1965 and 1966. At meetings of the American Psychoanalytic Association, the American College of Physicians, the Royal Society of Medicine in London, and several others, he presented papers exploring his new ideas about conversion and the disease onset situation.[85][85] Thus, he drew upon his own clinical work plus a careful review of literature to probe more deeply into the ways in which conversion mechanisms are not, as for Alexander, "bounded by neuroanatomy" but may involve any parts or systems of the body having the "capability to achieve mental representation." Engel included clinical cases involving the skin, the upper respiratory tract, and the upper and lower gastrointestinal tract (all controlled by the autonomic rather than the voluntary nervous system) to illustrate how remembered "perceptual gestalts" could be the symbolic core of conversion reactions, often determining the timing and location of a broad range of somatic manifestations. In many instances, these somatic manifestations might be complicated by associated physiological or biochemical events following as natural but psychologically meaningless sequelae.[86][86]

Engel also relied on his own and Schmale's work to help sort out the psychological circumstances or "life settings" in which diseases generally had their origin.[87][87]

83[83] Ibid., p. 387.

84[84] Ibid., p. 393.

85[85] George L. Engel and Arthur H. Schmale, "Psychoanalytic Theory of Somatic Disorder: Conversion, Specificity, and the Disease Onset Situation," Journal of the American Psychoanalytic Association, 15 (1967): 344-365; Schmale and Engel, "The Giving Up-Given Up Complex Illustrated on Film," Archives of General Psychiatry, 17 (1967): 135-145; Engel, "A Psychological Setting of Somatic Disease: The 'Giving Up-Given Up' Complex," Proceedings of the Royal Society of Medicine, 60 (1967): 553-555.

86[86] Engel's most extended explanation of his ideas on conversion at this time can be found in his paper, "A Reconsideration of the Role of Conversion in Somatic Disease," Comprehensive Psychiatry, 9 (1968): 316-326.

87[87] George L. Engel, "Anxiety and Depression-Withdrawal: The Primary Affects of Unpleasure," The International Journal of Psycho-Analysis, 43 (1962): 89-97; Arthur H. Schmale, "A Genetic View of Affects: With Special Reference to the

Rejecting Alexander's specificity notions, he focused instead on a non-specific onset situation, a psychological complex of "giving up-given up" characterized by the affects of helplessness and hopelessness, which significantly "contribut[es] ... to the emergence of somatic disease ... if the necessary predisposing factors are also present." After real, threatened or symbolic psychic losses, many but not all patients experience feelings of helplessness and hopelessness and, when they do, diseases of various kinds often soon follow. Presumably because psychobiological mechanisms leading to further, as yet unspecified physiological and biochemical consequences have already been triggered, persons who "give up" become more vulnerable to pathogenic influences in the external environment or derangements in the internal one.

In 1967 and 1968 Engel was able to disseminate his views from even wider stages. In 1967 he gave the keynote address to the annual meeting of the European Psychosomatic Society and used the occasion to advertise the work of the Rochester group on the "chronological relationship ... between disease and a psychological complex we are calling 'giving up-given up.'"[88[88]] He identified the work in which he and his colleagues were engaged as potentially the most fruitful that could be pursued in the psychosomatic field.

> For the time being I believe the most useful access to the psychosomatic interface is through discovery of simultaneity or sequence of psychic and somatic phenomena, inadequate as that may be. And the most pressing task is to study with the greatest care and in the finest detail the characteristics of the psychic processes occurring in such time periods of simultaneity or sequence. ... Accordingly, at this time I think refinement of psychological techniques is much more important for us than refinement of physiological techniques. The less instrumentation we place between ourselves and our patients at this time the better, for it serves to complicate the relationship and blur psychological observation.[89[89]]

Speaking before a larger and more general audience the following year, on April 4, 1968 Engel delivered The William Menninger Award Lecture to the annual meeting of the American College of Physicians, held that year in Boston in conjunction with the Royal

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Genesis of Helplessness and Hopelessness," The Psychoanalytic Study of the Child, 19 (1964): 287-310; Schmale, "Object Loss, 'Giving Up' and Disease Onset: An Overview of Research in Progress," Symposium on Medical Aspects of Stress in the Military Climate (Washington, D.C.: Walter Reed Army Medical Center, 1964), pp. 433-447; Schmale, "The Affect of Hopelessness and the Development of Cancer," Psychosomatic Medicine, 28 (1966): 714-721.

88[88] George L. Engel, "The Concept of Psychosomatic Disorder," Journal of Psychosomatic Research, 11 (1967): 3-9.

89[89] Ibid., 8.

College of Physicians of London. Soon published in the Annals of Internal Medicine as "A Life Setting Conducive to Illness: The Giving-Up -- Given-Up Complex," Engel's Menninger Lecture broadcast his ideas of disease onset in internist-friendly and psychologically suggestive (although psychoanalytically muted) terms.[90][90] It is no wonder that Chase P. Kimball, in his overview of "Conceptual Developments in Psychosomatic Medicine: 1939-1969" published two years later in the Annals, called Engel and the Rochester group one of the major "schools" in modern psychosomatic medicine and devoted one quarter of his review article to detailing its clinical and conceptual work.[91][91]

Engel's recognition in the world of medicine was quite general now and, as a result, he was often invited to speak or write on a broad range of educational and clinical issues. A 1969 talk to fourth-year medical students at Rochester, for example, was published in the New England Journal of Medicine.[92][92] In it, Engel stressed the importance of teaching medical students "the psychologic dimension of medicine as both basic and clinical discipline." Most physicians and medical educators merely give the psychologic elements of illness "lip service" or "patronizingly relegate such matters to psychiatrists," yet properly educated medical students learn both the conceptual framework and the interview techniques they need to acquire to become truly knowledgeable physicians skilled in this critical area.[93][93] Another talk, his Alpha Omega Alpha Lecture at the Albert Einstein College of Medicine in New York City, was published in JAMA in 1965. Here Engel emphasized the general importance of "Clinical Observation, The Neglected Basic Method of Medicine" and called attention to the need for specific observations of the "manifest behavior" of the "organism as a whole."[94][94] He illustrated this principle by reviewing "empirical clinical observations that the development of illness commonly is preceded by behavioral and psychological expressions of 'giving up'" and concluded with the following tough words: "We must put an end to the arrogant attitude that depreciates the contributions which can be made by the sensitive clinical observer, that pronounces only a long emersion [sic] in the chemistry laboratory as the proper preparation for a scientific career."[95][95] Finally, Engel emerged as a strong proponent of the view that a good doctor-patient relationship was essential for proper, scientifically-grounded clinical care and was not mere window-dressing expressing "humanism" or the intuitive

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90[90] George L. Engel, Annals of Internal Medicine, 69 (1968): 293-300.

91[91] Chase P. Kimball, Annals of Internal Medicine, 73 (1970): 307-316.

92[92] George L. Engel, "On the Care and Feeding of the Faculty," New England Journal of Medicine, 281 (1969): 351-355.

93[93] See also, George L. Engel, "Training in Psychosomatic Research," Advances in Psychosomatic Medicine, 5 (1967): 16-24.

94[94] George L. Engel, JAMA, 192 (1965): 849-852.

95[95] Ibid., 852.

application of the "art of medicine."[96[96]] If physicians understood the doctor-patient relationship in rigorously psychobiological terms, they would make "the bond between patient and physician a matter of science" and not be trapped or deceived by "maudlin sentimentality ... 'do-goodism' ... [or] the principles of public relations."[97[97]]

Engel drew confidence for his feisty appearance in the national medical spotlight from his solid institutional grounding at Rochester, which grew even more solid in the sixties. As in the fifties, the teaching of interviewing skills was still begun in the first year of the medical curriculum, and Engel's course on "Medical Psychology and Psychopathology" was a mainstay of the second year. But a reform of third year teaching implemented in 1966 institutionalized Engel's psychobiological approach even more completely in the Rochester curriculum. This was the development of a General Clerkship as an innovative, interdepartmental introduction to the series of departmentally-based clerkships that defined the third year. Spearheaded by Dr. William Morgan, recruited to the Department of Medicine in 1962, and by Engel, the complex and faculty-intensive new course consisted of two major phases of closely supervised training. During the first, five-week phase students learned techniques of physical examination and history taking; during the second, six-week phase they progressed to "graduated patient responsibility" under the guidance of a preceptor.[98[98]] Especially important in the new clerkship were the expanded role of the Medical-Psychiatric Liaison Group and the corresponding emphasis on interviewing, psychological parameters of illness, and the process of clinical reasoning.[99[99]] Morgan and Engel produced a new teaching manual for the clerkship emphasizing these skills, which was first available in mimeographed form and subsequently published in 1969 as The Clinical Approach to the Patient.[100[100]] Well beyond the weekly liaison rounds still run by Engel's fellows in the medical clerkship, all students were now thoroughly exposed at the gateway to clinical medicine to "the numerous psychological facets of illness among the nonpsychiatric population."[101[101]] In

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96[96] George L. Engel, "Humanism and Science in Medicine," in Norman Q. Brill, ed., Psychiatry in Medicine (Berkeley: University of California Press, 1962), pp. 42-63.

97[97] Ibid., p. 60.

98[98] Paul F. Griner and Stanley B. Troup, "Introductory Clerkships and the Community Hospital," JAMA, 207 (1969): 897-901; William L. Morgan, George L. Engel, and Milton N. Luria, "The General Clerkship: A Course Designed to Teach the Clinical Approach to the Patient," Journal of Medical Education, 47 (1972): 556-563.

99[99] George L. Engel, "Medical Education and the Psychosomatic Approach," Journal of Psychosomatic Research, 11 (1967): 81-82.

100[100] William L. Morgan and George L. Engel, The Clinical Approach to the Patient (Philadelphia: W.B. Saunders, 1969).

101[101] Engel, op. cit. (Note 99), 82.

Rochester, Engel's psychologically-oriented approach was so thoroughly integrated into the educational mainstream that it was indistinguishable from learning clinical medicine as such.

When the seventies began, Engel was thus in very high gear. The Clinical Approach to the Patient received a dual rave review in the prestigious Annals of Internal Medicine, where it was praised by one reviewer as "a milestone in clinical medicine" and by the other (an editor of

the journal) as a "medical classic."[102[102]] Engel also actively engaged in a series of new research projects with Rochester clinical colleagues and in 1970 published a co-authored study of the role of psychological processes in the onset of multiple sclerosis.[103[103]] In 1971 he followed with a study of psychological factors in ischemic stroke.[104[104]] Engel was likewise much in demand as a distinguished lecturer. He was, for example, the Edward Weiss Lecturer at Temple University School of Medicine in 1975, and the Samuel Novey Lecturer at Johns Hopkins in 1976. Engel used these occasions to address fundamental clinical issues such as the need for closely attentive and rigorously scientific observation of the individual patient's psychodynamics and the importance of psychological stress in variously precipitating, in different patients, vasodepressor syncope, life-threatening cardiovascular episodes, or sudden death.[105[105]] He also discussed these and related issues as a keynote speaker and named lecturer at medical society meetings and in other honorific settings.[106[106]]

As the seventies unfolded, however, the ground under Engel began to shift. Notable changes -- both national and local -- overtook several major fields of medicine, and these changes had important effects on his work and influence. Most significantly, psychiatry and internal medicine underwent dizzying and dramatic shifts. In psychiatry, the

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102[102] Annals of Internal Medicine, 72 (1970): 291-295.

103[103] Varda Mei-Tal, Sanford Meyerowitz, and George L. Engel, "The Role of Psychological Process in a Somatic Disorder: Multiple Sclerosis," Psychosomatic Medicine, 32 (1970): 67-86.

104[104] Rolf Adler, Kenneth MacRitchie, and George L. Engel, "Psychologic Process and Ischemic Stroke," Psychosomatic Medicine, 33 (1971): 1-29.

105[105] George L. Engel, "The Care of the Patient: Art or Science ?," The Johns Hopkins Medical Journal, 140 (1977): 222-232; Engel, "Psychologic Stress, Vasodepressor (Vasovagal) Syncope, and Sudden Death," Annals of Internal Medicine, 89 (1978): 403-412.

106[106] See, for example, George L. Engel, "Memorial Lecture: The Psychosomatic Approach to Individual Susceptibility to Disease," Gastroenterology, 67 (1974): 1085-1093. This was presented at the Annual Meeting of the American Gastroenterological Association in San Francisco, May 25, 1974.

seventies were marked by the rapid decline of psychoanalysis, the rise of the neurosciences, and the general advance of an aggressive new "biological psychiatry."[107[107]] Locally, Romano heralded a decade of turbulent change when he underscored two significant "unmet needs" of the Department of Psychiatry in his 1970-1971 annual report: "clarification of how best to teach the basic essentials of psychotherapy" and "significant Department faculty appointments in the field of psychopharmacology and the neural sciences."[108[108]] In internal medicine, several large, interrelated shifts also became apparent. Departments of medicine felt themselves reeling in "future shock" as they struggled with unsettling changes in size, subspecialty fragmentation, geographic dispersion, and administrative balkanization.[109[109]] Tied up with these changes were further transformations: the displacement of physician-investigators by Ph.D.-trained biomedical scientists[110[110]]; the refocusing of research from human subjects and disease processes to "basic" and increasingly molecular events[111[111]]; the alteration of study designs from selected patient cases to biostatistically rigorous clinical trials.[112[112]] The cumulative impact of all these changes was readily apparent in the medical textbooks of the seventies, especially in chapters on diseases long thought to have particularly clear psychosomatic components. A comparison of the chapters on asthma and ulcer in the 1971 and 1979 editions of the Cecil-Loeb Textbook of Medicine, for example, readily reveals a dramatic decline in psychosomatic orientation distilled into the following comment in the 1979 text: "Much has been written about a possible psychogenic basis for asthma. More often than not, however, emotional

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107[107] Edward Shorter, A History of Psychiatry (New York: John Wiley and Sons, 1997), chapters 7 & 8.

108[108] John Romano Papers. "Department of Psychiatry, 1970-1971," p. 212.

109[109] Robert G. Petersdorf, "Internal Medicine 1976: Consequences of Subspecialization and Technology," Annals of Internal Medicine, 84 (1976): 92-94; Petersdorf, "The Evolution of Departments of Medicine," New England Journal of Medicine, 303 (1980): 489-496.

110[110] James B. Wyngaarden, "The Clinical Investigator as an Endangered Species," New England Journal of Medicine, 301 (1979): 1254-1259.

111[111] William G. Rothstein, American Medical Schools and the Practice of Medicine (New York: Oxford University Press, 1987), pp. 251-252.

112[112] Harry M. Marks, The Progress of Experiment: Science and Therapeutic Experiment in the United States, 1900-1990 (New York: Cambridge University Press, 1997), pp. 129ff.; see also, Stanley Schor and Irving Karten, "Statistical Evaluation of Medical Journal Manuscripts," JAMA, 195 (1966): 145-150 and Erik Juhl, Erik Christensen, and Niels Tygstrup, "The Epidemioogy of the Gastrointestinal Randomized Clinical Trial," New England Journal of Medicine, 296 (1977): 20-22.

problems prove to be a result rather than a cause of the disease."[113][113] In short, the audience in mainstream medicine for Engel's clinical and scientific work shrank dramatically as the seventies progressed and seemed near disappearance by the decade's end.

Engel was also denied the opportunity to retreat to the "safe haven" of psychosomatic medicine, because that field, too, was undergoing disconcerting changes. From Engel's point of view, the problems of psychosomatic research -- already evident in the sixties -- deepened in the seventies as animal "models," "stress" studies, and psychoendocrine bench research took over a larger and larger portion of the field and tended to displace earlier, psychoanalytically-grounded clinical studies.[114][114] During Herbert Weiner's tenure as editor of Psychosomatic Medicine from 1972 to 1982, the journal published many more studies of the kind Engel found disconcerting.[115][115] Moreoever, Weiner's 1977 Psychobiology and Human Disease emerged as the dominant book in American psychosomatic studies of the decade, and its approach -- based largely on neuroscience, animal "models" of disease, and generally increased experimental rigor -- gave little solace to Engel, none of whose recent work shared these characteristics.[116][116] Thus when Engel turned in 1974 to the studies of Rochester experimental psychologist Robert Ader on stress-induced gastric lesions in rats to provide a "paradigm for elaborating the complementarity between the clinical and experimental approaches" and to lend legitimacy to his hypothesis regarding the "final common pathway" to disease onset, it was a sign of his growing discomfort and insecurity, even within the putatively safe confines of psychosomatic medicine.[117][117]

Because by the latter part of the seventies he was no longer a cutting-edge clinical and scientific leader in medicine, psychiatry, or even psychosomatic research, Engel

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113[113] Paul B. Beeson, Walsh McDermott, James B. Wyngaarden, Fifteenth Edition Cecil Textbook of Medicine (Philadelphia: W.B. Saunders Company, 1979), p. 959.

114[114] For astute assessments of the problems in the field, see Erik D. Wittkower, "Twenty Years of North American Psychosomatic Medicine," Psychosomatic Medicine, 22 (1960): 308-316 and Erik D. Wittkower and Z.J. Lipowski, "Recent Developments in Psychosomatic Medicine," Psychosomatic Medicine, 28 (1966): 722-737. For Engel's critique, see "The Concept of Psychosomatic Disorder," op. cit. (Note 88), 3, 5.

115[115] On Weiner and his emphases as editor, see Dorothy Levenson, Mind, Body, and Medicine: A History of the American Psychosomatic Society (New York: American Psychosomatic Society, 1994), pp, 166-168, 181, 183.

116[116] Herbert Weiner, Psychobiology and Human Disease (New York: Elsevier, 1977).

117[117] George L. Engel, "The Psychosomatic Approach to Individual Susceptibility to Disease," Gastroenterology, 67 (1974): 1085-1093.

increasingly assumed a new role. He became primarily a spokesman for what Alvan Feinstein in 1970 had labeled "clinical exhortation," that is, the *rhetorical* assertion of "the importance of patients and of attention to clinical phenomena in the medical world of modern science."[118][118] Feinstein introduced this sardonic terminology after reviewing marked trends toward basic and molecular research at the annual meetings of the American Society for Clinical Investigation and the Association of American Physicians in the period 1953-1969 and noticing the disconnection between what research papers actually contained and what leaders of these organizations said in their presidential addresses. Papers were becoming narrower and more reductionist, but presidents were waxing eloquent about old-fashioned clinical virtues. As Feinstein put it, "The data show an inverse relationship ... betweeen the 'clinical exhortation' of the presidential address, and the 'clinical' content of the concomitant research programs."[119][119] With the changes underway in the seventies, Engel steadily assumed or was pushed into the role of "clinical exhortor."[120][120] Then, in 1977, he heightened the intensity of his exhortation by beginning to appeal to a comprehensive, "biopsychosocial model" as an alternative to the narrow and restrictive "biomedical reductionism" that had become dominant in medicine.[121][121] As he had done occasionally earlier in his career but now with a greater sense of urgency, Engel challenged reigning medical orthodoxy -- governed, he claimed, by a "paradigm" which had hardened into a restrictive "dogma." He called for the adoption of a broadly inclusive, "systems"-based, intellectual framework that legitimated, among other things, the paying of close attention to the patient's social needs and emotional realities and the training of a new generation of "biopsychosocial" clinicians.[122][122]

118[118] Alvan R. Feinstein and Neal Koss, "The Changing Emphasis in Clinical Research," Archives of Internal Medicine, 125 (1970): 891; italics added.

119[119] Ibid.

120[120] See, for example, George L. Engel, "Care and Feeding of the Medical Student," JAMA, 215 (1971): 1135-1141; idem, "The Deficiencies of the Case Presentation as a Method of Clinical Teaching," New England Journal of Medicine, 284 (1971): 20-24; idem, "Must We Precipitate a Crisis in Medical Education to Solve the Crisis in Health Care?," Annals of Internal Medicine, 76 (1972): 487-490; idem, "Enduring Attributes of Medicine Relevant for the Education of the Physician," Annals of Internal Medicine, 78 (1973): 587-593; idem, "The Prerequisites for Graduate Medical Education," Bulletin of the New York Academy of Medicine, 50 (1974): 1186-1193; idem, "Identification, Inspiration, and Learning," Archives of Internal Medicine, 135 (1975): 1381-1383.

121[121] George L. Engel, "The Need for a New Medical Model: A Challenge for Biomedicine," Science, 196 (1977): 129-136.

122[122] For his earlier, highly theoretical efforts, see George L. Engel, "Homeostastis, Behavioral Adjustment and the Concept of Health and Disease," in Roy R. Grinker (ed.), Mid-century Psychiatry (Springfield, IL: Charles C. Thomas,

Although he struck a resonant chord with many and got considerable praise and attention for his biopsychosocial model, Engel's new exhortatory role had its limitations. He was still highly visible and, by some, more enthusiastically applauded than before, yet even his strongest sympathizers acknowledged that his alternative model sometimes received "lip service" rather than true support and predicted that real acceptance "may be long in coming."[123][123] Clinically and scientifically, his star had begun to wane, as was abundantly clear in the ulcerative colitis chapter in the 1979 edition of the Cecil-Loeb Textbook of Medicine. In contrast to the chapter in the 1971 edition which still gave considerable credence to Engel's ideas, the chapter in the later edition dismissed his approach with the comment: "[R]ecently, these [psychosomatic] concepts have been both challenged and ignored by workers in the field."[124][124] Adding insult to injury, the author of the 1979 chapter misspelled Engel's name twice, a likely sign of spreading eclipse and fading reputation, at least in scientific medicine.[125][125] Thus, it was oddly symbolic that Engel had to step down formally from his leadership of the Rochester Liaison program in that same year, after he reached his sixty-fifth birthday. The program had been a bridge connecting dynamic psychiatry to patient-centered internal medicine via extensive teaching and respected research. Now both fields pulled apart in their own, rapidly changing directions, and Engel was left without the scientific research legitimacy that had

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1953), pp. 33-59, and idem, "A Unified Concept of Health and Disease," Perspectives in Biology and Medicine, 3 (1960): 459-485. For Engel's less abstract, more missionary efforts, see idem, "Biomedicine's Failure to Achieve Flexnerian Standards of Education," Journal of Medical Education, 53 (1978): 387-392 and "The Biopsychosocial Model and the Education of Health Professionals," Annals of the New York Academy of Sciences, 310 (1978): 169-181.

123[123] Richard S. Blacher, "The Anxiety of the Physician," Man and Medicine, 4 (1979): 277-278.

124[124] Beeson, McDermott, Wyngaarden, Fifteenth Edition Cecil Texbook of Medicine, op. cit. (Note 113), p. 1568. Contrast the general approach of this chapter with that in the corresponding chapter of the Thirteenth Edition (Philadelphia: W.B. Saunders, 1971), summed up in this statement on p.1346 of the earlier edition: "The physician must be aware of the patient's psychological problems as well as his physical requirements. An important aspect of therapy is to foster a strong physician-patient relationship based upon a willingness to accept responsibility for the needs of the patient with sympathy and understanding. An abrupt alteration of the intense involvement with his physician may cause the patient to feel hopeless and may hasten his downward course." Engel's work is highlighted in the references to the 1971 chapter. For an account of "The Rise and Fall of the Psychosomatic Hypothesis in Ulcerative Colitis," see Robert A. Aronowitz, Making Sense of Illness (Cambridge: Cambridge University Press, 1998), Chapter 2.

125[125] For misspellings of Engel's name, see Fifteenth Edition, pp. 1568 & 1576.

been crucial to his mainstream success. What primarily remained was teaching and the attempt to assure succession.

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When Engel stepped down as the head of the Medical Psychiatric Liaison Program, his long-time associate Arthur Schmale took over as Acting Director. The position had first been offered to Mack Lipkin, Jr., who had come to the Liaison group in 1972 as a Commonwealth Fund fellow and who in 1974 was appointed Assistant Professor of Medicine and Psychiatry. Lipkin's appointment coincided with the formal launching of the Associated Hospitals Program (AHP), a new primary care residency training program based in the University's affiliated hospitals and in certain community ambulatory settings (the prepaid group practice at the Joseph Wilson Center being the most important of these).[126[126]] Lawrence Young, Chair of Medicine at Strong until 1974, agreed to direct AHP and immediately invited Engel and his colleagues to develop extensive biopsychosocial teaching in the new residency program. Young even wrote enthusiastically about this unusual development in national publications.[127[127]] As an energetic and very promising member of the Liaison faculty, Lipkin was asked to take on a great deal of this new teaching responsibility and, specifically, to develop a psychosocial block for the residency program at the Wilson Center.[128[128]] Because of the success of these initiatives and Lipkin's "rising star" status, at a meeting in the summer of 1978 it was decided that Lipkin would take over as Liaison Program director upon Engel's retirement. Although Engel was not present at that meeting, he at first seemed to agree with these arrangements. A bit later, however, Engel offered Lipkin the "acting directorship," an offer Lipkin interpreted as Engel's reneging on the original commitment. Frustrated and disappointed, Lipkin left Rochester in 1979.

Schmale then took over as Acting Director and much returned to the *status ante quo.* In fact, under Schmale Engel remained actively involved in all aspects of the program. He supervised postdoctoral Liaison fellows and continued to appear at all teaching activities of the Liaison Group. He also stayed centrally involved in medical student teaching, remaining both the director of his long-standing second year course (now called "Psychosocial Medicine II") and an instructor and supervising committee member in the General Clerkship.[129[129]] Despite Engel's continuing presence, however, the length of the General Clerkship gradually shrank from eleven weeks to eight and the imprint of psychosocial perspectives on Rochester medical students shrank with it. At the same

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126[126] Brown, op. cit. (Note 26), pp. 132-136.

127[127] Lawrence E. Young, "Changes in the Postdoctoral Education of Internists?," Annals of Internal Medicine, 83 (1975): 729.

128[128] Telephone interview with Mack Lipkin, Jr., July 30, 1999.

129[129] Official Bulletin of the University of Rochester School of Medicine and Dentistry, 1981-1982, pp. 33-35.

time, psychiatric-liaison rounds during the third year clerkship in Medicine also began to fade, in part because of the difficulties involved in providing fellows for this purpose at the affiliated hospitals. Some observers close to the scene thought that these changes were reinforced by the, at best, lukewarm support for the Liaison Group during the tenures of Daniel Kimberg (1974-1976) and Richard Hornick (1978-1985) as chairs of Medicine.[130][130]

During Schmale's tenure as Acting Director a formal search was launched for Engel's permanent replacement. The University trustees decided that funds earlier bequeathed by Helen Cohen, one of Dr. Engel's grateful patients, would be applied to the creation of a "George L. Engel Chair in Psychosocial Medicine."[131][131] Supplementary funds were also solicited, and an interdepartmental search committee appointed by the Dean of the Medical School began to look for an occupant of the Engel chair who would serve simultaneously as Director of the Liaison Group. The search committee identified six serious candidates: two internists, two psychiatrists, a pediatrician and an experimental psychologist. By 1981 the candidate who had emerged as the favorite was Jules Hirsch, an internist and biochemist at Rockefeller University in New York City well known for his path-breaking research on the biology and psychology of obesity.[132][132] Considerable effort went into the "courtship" of Hirsch, who first accepted but then withdrew from the offer (for "personal reasons"). In July, 1982 Robert Ader, the prolific experimental psychologist long associated with the Liaison Group, was appointed director; in 1983 he also formally became the "George L. Engel Professor." At the time of his appointment, Ader had recently completed a term as president of the American Psychosomatic Society and was receiving worldwide acclaim for his pioneering work in the exciting new field of "Psychoneuroimmunology."[133][133] Despite Ader's scientific accomplishments and visibility, there was surprise in some quarters that the Engel chair went to a non-clinician, followed by disappointment when Ader reorganized what had been the deliberately interdisciplinary Liaison Program as a Division of Behavioral and Psychosocial Medicine within the Department of Psychiatry.

130[130] Interview with Jules Cohen, July 26, 1999. See also transcript of conversation between George L. Engel, Jules Cohen and Tim Quill, August 27, 1987, p. 4. George L. Engel Papers. University of Rochester Medical Center Archives. The Edward G. Miner Library. [hereafter "George Engel Papers"], Box 37.

131[131] "George L. Engel Chair in Psychosocial Medicine," October 24, 1986. George Engel Papers, Box 37.

132[132] George L. Engel to Bernard B. Keele, Jr. and Jane R. Nile, November 18, 1981. George L. Engel Papers. For one of Hirsch's very impressive papers, see "Adipose Cellularity in Relation to Human Obesity," Advances in Internal Medicine, 17 (1971): 289-300.

133[133] Robert Ader, "Psychosomatic and Psychoimmunologic Research," Psychosomatic Medicine, 42 (1980): 307-321.

To soften the impact of Ader's appointment, the Department of Psychiatry recruited David Rosen to take up some of the anticipated "clinical slack" in the Liaison Program.[134[134]] Rosen was an Assistant Professor of Psychiatry at the University of California, San Francisco and a great admirer of George Engel. A few years earlier, he had introduced an innovative clinical course at UCSF on "The Psychiatric Aspects of Medical Practice" that he promoted in conferences and national publications as "a working example of Engel's biopsychosocial model."[135[135]] Rosen came to Rochester in1983 as Associate Professor of Psychiatry and Medicine, Associate (Clinical) Director of the Division of Behavioral and Psychosocial Medicine, and supervisor of what was now called the "Behavioral and Biopsychosocial" fellowship program (much reduced in size because of the drying up of external funding). He also took over the second year Medical School course in which he warmly invited Engel, whom he revered, to participate.[136[136]] Other internists asked to play significant roles in that course were Jules Cohen (now Senior Associate Dean for Medical Education and once a medical student and research fellow under Engel), Timothy Quill (a graduate of the Medical School and of the AHP residency and a Liaison Fellow in the late seventies, now Assistant Professor of Medicine and Clinical Assistant Professor in the Division), and Anthony Suchman (an internist recently trained at Strong who was a General Medicine and Behavioral and Biopsychosocial Fellow from 1982 to 1984).[137[137]] Despite the heavy involvement of biopsychosocially trained internists, under Rosen Psychosocial Medicine II was directed for the first time by a psychiatrist.

Events took a few further turns in 1986. The most dramatic was Rosen's departure, precipitated, in part, by the almost complete disappearance of even internal fellowship funds and by various frictions that had developed between Rosen and other faculty. Longtime Liaison Group member William Greene, for example, was known to regard Rosen as having more "flash" than substance.[138[138]] The months leading up to Rosen's departure coincided with Engel's most intense concern about the "mishandling" of the Helen Cohen bequest (now interpreted as belonging wholly to Psychiatry), a concern which seems to have sharpened when Department of Psychiatry stalwart Otto Thaler was appointed director of Psychosocial Medicine II in Rosen's place. Thaler's appointment

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134[134] Interview with Jules Cohen, July 26, 1999.

135[135] David H. Rosen and Barbara Blackwell, "Teaching Psychiatry in Medicine: The Development of a Unique Clinical Course," Archives of Internal Medicine, 142 (1982): 1113-1116. See also, Rosen, "Teaching the Psychiatric Aspects of Medical Practice and the Psychosocial Factors in Healing," The Western Journal of Medicine, 132 (1980): 363-364.

136[136] Interview with Anthony Suchman, February 10, 1997.

137[137] Memo from David Rosen to Jules Cohen, July 9, 1984. George L. Engel Papers. Box 37.

138[138] Interview with Jules Cohen, July 26, 1999.

announced Psychiatry's perception of its "proprietary right" to the course and jumped over two young internists and biopsychosocial loyalists -- Quill and Suchman -- whose future careers at the Medical School were thus left in doubt. Engel tried to get the attention of Medical School administrators through letters, memos and meetings.[139[139]] He was given general assurances about the School's continuing regard for teaching the biopsychosocial approach, but these assurances were frequently coupled with solicitations of Engel's help in raising targeted donations.[140[140]] It was an irony not lost on Engel that he now seemed more honored outside the School than within, and external recognition most certainly translated into internal regard when it was accompanied by the prospect of new resources.[141[141]]

While these events were unfolding within the Medical School and Strong Memorial Hospital, Quill, Suchman and a few other former Liaison fellows began to build their primary careers at other Rochester medical institutions, on the geographic and organizational periphery of the Medical Center. By the mid-eighties, Quill had become well established in the Department of Medicine at Genesee Hospital and Suchman in the General Internal Medicine Unit at Highland. In addition, Cecile Carson had been heading up a psychosomatic unit at Genesee since 1979, Bernard Shore had been teaching in the Family Medicine Department and then became Medical Director at the Jewish Home, and Thomas Campbell became Assistant Professor in Family Medicine. All five continued to have formal appointments in Aders's Division and to teach in Psychosocial Medicine II, but all had come to realize that their careers were grounded elsewhere. Sometimes they jokingly referred to themselves as "Children of the LIE (Liaison in Exile)."[142[142]] On

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139[139] See, for example, memos from George L. Engel to Dean Robert J. Joynt, February 17 and especially October 31, 1986. George L. Engel Papers. Box 37.

140[140] See, for example, memos from George L. Engel to Vice President C. McCollister Evarts, September 3 and October 1, 1986. George L. Engel Papers. Box 37.

141[141] The following comment in Robert Ader's November 9, 1987 "Report of the Division of Behavioral and Psychosocial Medicine," p. 6, is significant: "In terms of extra-university funding, the prospects for the support of clinical trainees looks somewhat more promising since the "Wickenberg"[sic] meeting. This Conference on the Biopsychosocial Concept of Illness and Disease was held in May of 1987 and was supported by the Kaiser Foundation. George Engel and several other present faculty and former Rochester trainees attended this conference in which educational issues were a prominent part. While no decision about funding priorities has been established, some individuals (including Dr. Engel) have been approached with respect to the kinds of programs that should be considered by the Kaiser Foundation." The proceedings of the Wickenburg conference were published as The Task of Medicine: Dialogue at Wickenburg, ed. Kerr L. White (Menlo Park, CA: The Henry J. Kaiser Family Foundation, 1988). Engel's paper, "How Much Longer Must Medicine's Science Be Bound by a Seventeenth Century World View?," was published on pp. 113-136 of this volume.

142[142] Interview with Cecile Carson, July 27, 1999.

occasion they had exploratory conversations with Jules Cohen, but when Quill and Suchman grew impatient with these conversations they began to take initiatives and begin collaborations on their own.[143][143]

After a few failed attempts, between 1985 and 1987 Quill and Suchman were able to free up enough funds in the Genesee and Highland Department of Medicine budgets to create ad hoc arrangements for a small number of post-residency fellows per year. The recently trained internists Geoffrey Williams and Kathryn Markakis, both graduates of the Associated Hospitals residency program, were among the fellows in this select group. To provide a broader base and a richer intellectual setting for these fellows, informal evening meetings were arranged in the homes of "Liaison in Exile" members to which an eclectic array of other University faculty were also invited. By September, 1988 the fellowship felt sufficiently well established for Quill to submit his first "Annual Report" on the "Advanced Clinical Educators Fellowship Program." He concluded his report as follows:

> It is clear that there is a strong demand from both Departments of Medicine and Departments of Family Medicine for faculty skilled in teaching medical interview-ing, clinical reasoning, medical epidemiology and psychosocial medicine. Few faculty nationally in mainstream medicine are skilled in these areas. Many of those who are skilled passed through Rochester in the 1960's and 1970's when the former Fellowship was in full operation. We feel the time is right for this fellowhip to grow and become a showpiece of the University of Rochester.[144][144]

The further growth of the fellowship proved far more complicated than Quill anticipated. One step was relatively easy: collaborating with the Department of Family Medicine, which began smoothly enough in 1988. In that year Quill agreed with Richard Botelho, head of the Family Medicine Faculty Development Program, to pool resources and together fund and supervise a joint, two-year primary care fellowship. Ronald Epstein, a recent graduate of the Family Medicine residency, was the first joint fellow in

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143[143] "GLE Meeting With Jules Cohen," August 6, 1987 and "GLE with Jules Cohen and Tim Quill," August 27, 1987. George Engel Papers. Box 37.

144[144] Timothy Quill, "Annual Report, Advanced Clinical Educators Fellowship Program, University of Rochester School of Medicine and Dentistry." George Engel Papers. Box 38.

1988-1990.[145][145] Other steps, however, proved far more difficult, particularly the gaining of support within the Medical School for a proposed "Center for Biopsychosocial Studies" – first unveiled by Quill in late 1988 and discussed, debated and politicked over through much of 1989 and early 1990.[146][146] What was at stake were such administrative issues as institutional location (whether at the Medical Center or Genesee Hospital and, within the Medical Center, whether in Psychiatry's Division of Behavioral and Psychosocial Medicine or in the Dean's Office as a special unit reporting to Senior Associate Dean for Medical Education Jules Cohen); possible overlap with other primary care activities (such as in Strong Hospital's General Medicine Unit and the Associated Hospitals Residency Program); and, of course, budget. Newly recruited Chief of Medicine at Genesee Mark LaForce and Jules Cohen were consistently supportive in trying to sort through the morass. George Engel also got involved in the fray, but his efforts to help by identifying a funding source in a potential gift from Mrs. Ruth Blumberg galvanized interest in the Dean's Office and the passive support of Psychiatry yet in the long run mostly muddied the waters. In Quill's words, pursuit and struggle over the Blumberg Bequest "confounded our attempt to create a formal relationship with the University."[147][147]

By February 19, 1990 Quill admitted to Jules Cohen that he felt "rather pessimistic" about the future of his proposed Center for Biopsychosocial Studies at the University. "It's becoming more and more clear to me," he wrote, "that the people in power are not overly enthused with the idea, and that meaningful integration is going to be something that will occur only after a difficult struggle." Cohen assured Quill that such struggles were commonplace in Medical Center politics and in April, Quill -- now well-established as Associate Chief of Medicine at Genesee Hospital -- wrote to new Medical School Dean Marshall Lichtman with a sharpened sense of realism.

> Trying to put a formal program together has been an education for me about the political complexity of the Medical Center. I have come to the conclusion that our lack of financial independence and limited departmental support make a formal program unrealistic at this time. ... We will continue to develop an interdepart-

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145[145] Interviews with Susan McDaniel, February 11, 1997 and Anthony Suchman, February 10, 1997.

146[146] Documentation for what follows derives from many letters, memos and draft proposals in the files of George Engel and Timothy Quill. For the relevant material in the Engel files, see George Engel Papers. Box 38. Timothy Quill generously allowed the author access to his personal files from the period 1987-1993.

147[147] Quill in letter to Marshall Lichtman, April 12, 1990.

> mental group devoted to research and education about biopsychosocial integration and the study of people's unique illness experience. We will be applying for research and training grants, seeking independent funding to develop and support our current teaching and research activities, and trying to promote interdepartmental and interhospital collaboration on our projects. We will be tied together by a common mission and by the projects on which we collaborate. Our ties to the University, outside of the formal departmental relationships of our individual members, will remain informal.[148[148]]

Within a few months, the tide began to turn. The recent recruitment of Howard Beckman as Chair of Medicine at Highland Hospital and of Richard Frankel as Associate Professor and Director of the residency program in Beckman's department added important new allies. Working out the kinks and establishing better coordination with the Family Systems fellowship (a recently begun joint venture between the Family Medicine Department and the Family Programs Division in Psychiatry) was also helpful.[149[149]] Most important was Quill's clear recognition of what needed to be done fiscally and organizationally and his firm commitment to seek outside resources. He focused his efforts and those of the biopsychosocial group on putting together a grant application to the Health Resources and Services Administration of the Department of Health and Human Services for fellowship support of "The Advanced Clinical Educators Program." Although the application submitted in June, 1990 was not initially successful, there were clear signs in the months following submission of increased respect and growing negotiating leverage in the Medical School. In October, Jules Cohen noted in a memo to Marshall Lichtman that the biopsychocial faculty "will be expected to have an important role in all four years of the medical school curriculum in such courses as PSM I, PSM II ... and various clerkships and electives. In addition, we expect that the faculty will mount a substantial post-residency fellowship program to be supported by external training grant monies, the affiliated hospitals, and perhaps interested departments."[150[150]] In November,

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148[148] Ibid.

149[149] Interviews with Susan McDaniel, February 4 & 11, 1997.

150[150] Jules Cohen to Marshall Lichtman, October 1, 1990.

Lichtman wrote essentially the same thing in a latter to prospective donor Ruth Blumberg.[151[151]]

The next major step came in the1992-1993 academic year when Quill's resubmitted application to HRSA this time proved successful. Already in January 1992, the existence of the Biopsychosocial Program was officially acknowledged by the Dean's Office ("for fellowship, granting, fund raising and recruitment purposes"), with Quill as Director and Suchman as Associate Director.[152[152]] Recognition was strongly reaffirmed in September in a series of letters solicited by Quill from various deans and department chairs and submitted to support his grant application. According to that application, now formally for a "Fellowship in Advanced Biopsychosocial Studies," the program would use "multiple faculty resources, primary care practices, and clinical programs affiliated with the University of Rochester School of Medicine and Dentistry ... The fellowship will reside administratively within the city-wide General Medicine Unit of the University of Rochester." Moreover, "primary care practices associated with the community hospitals will be the sites of ambulatory practice, including community-based urban and rural opportunities. Preceptors from these practices have well-developed skills at biopsychosocial integration and person-centered teaching methods. In addition, senior faculty at each of the community hospitals have agreed to serve as mentors for the fellows research and academic development." The grant application also specified that Professor Emeritus George Engel would donate 50 hours of teaching time to the program, to train the fellows in medical interviewing and systems theory.

The grant application was explicit about which young physicians were to be recruited as trainees: "Fellows will be board certified or eligible graduates of certified three-year training programs in internal medicine who plan academic careers in primary care or general internal medicine. Participants must plan careers that combine patient care, teaching, and research, and must plan to spend two years in training." Finally, the grant application clearly stated that the fellowship program would be conducted under the auspices of an officially recognized, University-wide Program in Biopsychosocial Studies, which was described as follows:

> The newly established Program for Biopsychosocial Studies brings together primary care oriented faculty throughout the city from the Departments of Internal Medicine, Family Medicine, Pediatrics, Psychiatry, Nursing, Psychology and Obstetrics/Gynecology [who] have formally joined together to form the University of Rochester's Program for Biopsychosocial Studies. The program holds a monthly academic meeting where there is a formal research presentation by a faculty member, followed by an administrative meeting where opportunities for collaboration in education and research are shared. An extensive system of courses and workshops on various aspects of medical interviewing and

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151[151] Marshall Lichtman to Mrs. Ruth Blumberg, November 14, 1990.

152[152] Timothy Quill to Jules Cohen, January 31, 1992.

> biopsychosocial integration has been developed and implemented for students, residents, practitioners, and faculty by the Program. Our fellows have the opportunity to participate in the organization and implementation of a variety of these collaborative educational and research programs.

Once federal funds were committed and to further consolidate the new program, Biopsychosocial faculty led by Quill and Suchman met together to draft the "Mission Statement" with which this chapter began.

How well the Biopsychosocial Program has functioned in training and research will be discussed in several of the chapters that follow. It is fair to note at this point, however, that with some minor variations and changes, the Program has done reasonably well in teaching during the last several years under the scheme that crystallized in 1992-1993. Perhaps the most notable change, certainly in a symbolic if not yet in a systemic sense, has been the recent move of the monthly academic meeting from Genesee Hospital to a well-appointed conference room in the Medical School. Dr. Engel's portrait hangs nearby in a public, student-accessible space in a suite of offices of the Senior Associate Dean for Medical Education (now Edward Hundert). With Dr. Engel's death in November, 1999, the Program in Biopsychosocial Studies and the faculty dedicated to it, pursuing what is yet to unfold, are Engel's living legacy in Rochester.

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