

The Introduction of Human Capital Theory into Education Policy in the United States

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Abstract

Prior to 1958, “human capital” was little more than a suggestive phrase in economics, and played no role in discussions of education policy. Within five years, there was an active theoretical and empirical human capital research program in economics. Over the same period, the new idea of public spending on education as a form of investment with a demonstrably high rate of return, and the capacity to contribute to the achievement of important national goals, was enthusiastically communicated to the public by opinion leaders, policy makers, and even a President. This paper discusses two reasons why the human capital idea so rapidly came to influence education policy: (i) the human capital idea implied that policies promoting education could advance goals – first faster economic growth, then poverty reduction -- that circumstances pushed to the top of the nation’s policy agenda during the period of human capital theory’s initial development; and (ii) an advocate of the theory who could persuasively explain the logic and the emerging empirical evidence linking education to those goals moved into a position of power and influence. We also suggest that this episode marks the beginning of, and was a contributing factor to, a profound transformation of the public discourse surrounding education policy in the United States.

“I propose to treat education as an investment in man and to treat its consequences as a form of capital. Since education becomes a part of the person receiving it, I shall refer to it as *human capital*.” Thus did Theodore Schultz begin his 1960 article on “Capital Formation by Education”, one of the initial products of a research program that Schultz had been pursuing since the mid 1950s. In the late 1950s and early 1960s Schultz played a crucial role in converting this idea of “human capital” from a suggestive metaphor to the basis for a wide-ranging and fruitful research program in economics.¹ He did so through his own work, and also through his efforts to encourage and facilitate research by young economists, including Gary Becker and Jacob Mincer, into questions raised by the human capital concept.²

Schultz’s metaphor of human capital was quickly embraced by economists, and those outside the profession also perceived it as new way of thinking about education being advocated by a social science that had previously given little systematic attention to the phenomenon.³ It is not the rapid acceptance of the human capital idea by economists that concerns us in this paper, however. Rather, our subject is how this new way of thinking, and the formal theoretical framework that developed out of it, rapidly became prominent in discussions of federal education

¹ This paper focuses on the emergence and adoption of the human capital idea as a framework for thinking about education and education policy. However, Schultz also included health care, on-the-job training, and migration for better job opportunities as forms of human capital investment, and the analysis of these activities was part of the human capital research program in economics from its inception (Schultz 1961, p. 1; Schultz 1962).

² In the late 1950s, Schultz was chair of the Chicago economics department and an influential figure within the profession. Upon learning of Mincer’s research on human capital investments and income distribution, he arranged a post doc for Mincer at Chicago (1956-57). Schultz played a role in the process by which Gary Becker came to work on a Carnegie Corporation-funded NBER project out of which grew Becker’s *Human Capital*; and he encouraged, commented on, and promoted Becker’s work at every stage along the way. Becker made clear his debt to Schultz in the Preface to *Human Capital*, and elsewhere (e.g., his interview with Russ Roberts at http://www.econtalk.org/archives/2006/07/an_interview_wi.html). Schultz also organized the 1961 NBER Conference on “Investment in Human Beings” (Schultz 1962), at which many of the seminal papers of the human capital research program were presented (Teixeira 2006, 2010, 2011).

³ Schultz asserted the novelty of the human capital idea in his 1960 AEA presidential address (Schultz 1961, p. 1), but acknowledged that the idea was present in Adam Smith. Kiker (1966) later identified it in the work of other prominent economists of the past. However, prior to the late 1950s, thinking of certain activities that increased the inherent productivity of individuals as akin to investment in a form of capital had never become the basis of a substantial body of economic theory, nor was it central to economists’ thinking about the role of the labor in production and distribution.

policy, and began to be used to shape and motivate federal economic policy in the United States.

We believe that this is an interesting story for at least two reasons. First, such an immediate policy impact of a conceptual/theoretical innovation in economics is unusual. It is more often the case that novel theoretical frameworks and associated policy agendas which capture the imagination of economists are ignored for decades before being taken up by those who actually have the power to make policy, if they are ever taken up at all. We argue below that the surprisingly quick migration of the human capital idea from the technical literature of economics to the public comments of US Presidents and their top policy advisors was facilitated by a convergence of political, economic and cultural trends in the post-war decades that combined to make political actors particularly receptive to Schultz's message about "human capital". Schultz's version of the human capital idea can in turn be seen as his reaction to efforts by economists in the 1950s to identify the sources of economic growth, a reaction shaped by a set of research strategies and interests he had developed over his career. We also document the key role in bringing the human capital idea into discussions of education policy played by the influential economist Walter Heller. For Heller, Schultz's redefinition of education as investment in human capital, and his hypotheses about the relationship between human capital accumulation and aggregate economic growth, formed the basis for arguments that funding for education should be increased, and that the Federal Government was responsible for providing that increased funding. These arguments were ultimately accepted by John F. Kennedy and Lyndon B. Johnson, US presidents under whom Heller served as chairman of the Council of Economic Advisers (CEA).

Second, although our narrative ends in 1965 with the passage into law of the educational policies associated with the War on Poverty, we suggest that the events we describe contributed

to a profound transformation of the discourse surrounding education policy in the United States. Three assumptions that today underlie education policy discussions in the US are that the Federal Government has an important role to play in both funding and regulating public education; that the central purpose of education is to increase students' future productivity and earnings capacity, and that economists possess expert knowledge that gives them important insights into the educational process. These assumptions were not widely accepted in education policy circles in the 1950s; that they are so now is, we believe, partly due to Heller's successful promotion of Schultz's human capital idea.

In the next section of the paper we give an account of how, in the years following WWII, increasing the rate of economic growth became the paramount goal of US economic policy. We then describe the empirical research aimed at explaining economic growth being done by economists during the same period. We explain how Theodore Schultz's decision to begin a research program focused on "investment in human capital" and its relationship to economic growth was in part a reaction to this research, although it also grew out of his work in agricultural economics prior to 1955. The second half of the paper details the story of Walter Heller's promotion of the human capital concept, first as a consultant to the National Education Association in the late 1950s, then while serving as chairman of the CEA in the early 1960s.

The Nation's Growing Obsession with Economic Growth, 1945-1964

As World War II came to a close, many economists and economic policy makers feared that the US economy would return to Depression. The concern was fueled by forecasts produced by economists that predicted high levels of unemployment in the immediate post-war years.⁴ In

⁴ These forecasts turned out to be wrong, prompting a fair amount of self-criticism among economists: see e.g., Klein (1946) or Woytinsky (1947).

this atmosphere the Employment Act of 1946 was passed. The Act for the first time gave the Federal Government responsibility for the nation's economic health, instructing it to "use all its plans, functions and resources . . . to promote maximum employment, production, and purchasing power". It was a bold commitment to eliminate the business cycle, and it identified economists, speaking through a newly established Council of Economic Advisers, as the experts who would guide the effort.

The Employment Act as originally passed was more about economic stability than economic growth. But beginning in late 1940s CEA economists began to emphasize economic growth as a goal along with economic stability, and by the early 1960s increasing the rate of economic growth became the top priority of US economic policy, with full employment and economic stability seen mainly as means to that higher end. This development was an outgrowth of a cultural shift that occurred in the US during this period, one that was reflected in elite organs of commentary, the popular press, and even public school textbooks. Increasingly, Americans were hearing, articulating, and embracing the message that one of the key things that defined America's greatness was the ability of the American economy to provide its citizens with a continuously rising material standard of living (Yarrow 2010).

Several trends contributed to this cultural shift. One was the emergence of an authoritative set of measures of the nation's economic performance in the form of the official national income statistics. During the post-war years, updated measures of the GNP were released on a regular basis, giving a numerically precise confirmation of a widespread perception of growing prosperity. The numbers were talked about by the press and by politicians, and they provided a measuring rod to compare the nation's current economic performance to its past, and to that of other nations.

Particularly salient in the Cold War era were comparisons between the US and the Soviet Union. Having just emerged from a major war in which economic power had been a key to victory, US citizens were naturally concerned with the relative economic strength of the US and the Soviet Union. In addition, the Soviet Union based its claims to superiority over the US as a society on its possession of a better economic system, pushing Americans to evaluate their own society increasingly in terms of the performance of the American “free enterprise” system. Clearly the US economy was larger and more advanced, but the Soviet economy was believed to be growing rapidly. Thus, the economic advantage the US enjoyed over the Soviets would erode away unless the US also maintained a rapid rate of economic growth.⁵

Post-war policy discussion also reflected a growing concern with economic growth. Leon Keyserling, chairman of President Truman’s CEA, embraced an interpretation of the Employment Act of 1946 that made growth the primary goal of federal economic policy.⁶ Shifting ideas about US foreign policy provided another basis for arguing that the promotion of economic growth was a responsibility of the Federal Government. The National Security Council memo 68, which in 1950 laid out the theory underlying the US’s policy of “containment” of International Communism, emphasized that it was both crucial and possible for the US to increase its spending on defense without lowering material living standards at home, provided that a higher rate of economic growth could be achieved.⁷ Thus, the desirability of pro-growth economic policies became an important component of US foreign and defense policy as well.

President Dwight D. Eisenhower’s CEA, however, embraced an interpretation of the Employment Act that identified stability rather than growth as the primary goal of US economic

⁵ Representative contemporary discussions by economists of Soviet economic growth and potential include Kershaw (1951) and Nutter (1959)

⁶ The remainder of this section is based on Collins (2000), pp. 18-25, 29-32 and 42-51.

⁷ NSC-68, authored by George Kennan in 1950, is famous for its long-lasting influence on US foreign policy.

policy. During Eisenhower's second term, factions within the Democratic Party worked to make this stance an issue for the 1960 campaign. The party's platform for the 1960 presidential election included a commitment to maintaining a 5% annual rate of economic growth, and John F. Kennedy campaigned with a pro-growth message. After his election Kennedy appointed a pro-growth CEA, headed by Walter Heller. Upon introducing Heller at a press conference in December 1960, Kennedy commented that "What Dr. Heller and I are in agreement with, I hope, is that the economy of the United States must grow at a faster rate than it has been growing during the last five years, and we hope to stimulate that growth."⁸ Heller did indeed agree with that sentiment. By 1962, Kennedy, at Heller's urging, had created an interagency Cabinet Committee on Economic Growth, and fellow CEA member James Tobin would write in 1964 that "in recent years economic growth has come to occupy an exalted position in the hierarchy of goals of government policy." (Tobin 1964)

Economists' Growing Fascination with Economic Growth, 1945-1960

The post-war years also saw an increasing interest in economic growth within the economics profession. Although this interest stimulated a number of important theoretical contributions to the analysis of economic growth, it is the empirical growth research of this period that has more bearing on our story.

Simon Kuznets was in the vanguard of the new empirical growth research. In 1946 he published historical national income estimates for the US, and used them to analyze long-run behavior of the nation's economic growth rate (Kuznets, 1946a,b). In 1948, in his capacity as chairman of the Universities-National Bureau Committee on Economic Research, Kuznets

⁸ Quoted in Collins (2000), p. 51.

organized a conference devoted to “The Problems of Economic Growth”, because, he explained, “of the various topics or areas for survey and exploration via such special conferences, the field of economic growth . . . elicited the keenest interest among members of the Committee and the university groups canvassed.” (Universities-National Bureau Committee 1949, p. ii).⁹

By the 1930s, the National Bureau of Economic Research (NBER) had come to be recognized as one of the leading centers in the US for empirical economic research, and changes during the 1950s in both the nature of research being done at the NBER and the organization’s public statements of its research priorities also reflected economists’ growing interest in economic growth. Although the NBER had been sponsoring the systematic analysis of productivity data since 1938, it was not until the early 1950s that labor productivity’s link to growth was eclipsing its link to employment as the central concern of the NBER productivity studies. In the NBER’s 1954 annual report, Director of Research Solomon Fabricant claimed that the National Bureau had always been interested in research related to the nation’s long run economic progress, but that recent developments prompted him to “highlight what our work suggests of the rate and nature of this country’s economic progress.” (Fabricant 1954, p. 3) The NBER’s 1959 annual report was entitled simply “The Study of Economic Growth.” In it, Fabricant emphasized that little was actually known about the causes of economic growth or how to promote it; that having such knowledge was very important while seeking it was uncertain, even risky; and that almost everything that NBER researchers were doing would contribute in some way to building that knowledge. There was a discussion of a study on economic growth in Russia, which was “an important, if not the overriding, fact of our time.” Fabricant also described research associate Gary Becker’s work on a promising new line of research that

⁹ The Universities-National Bureau Committee had been established by the National Bureau of Economic Research (NBER) in 1935 to encourage interaction between the in-house NBER researchers and economists based in leading universities. (Mitchell 1936, pp. 16-17)

regarded expenditures on education as investments in “educational capital”, a previously unmeasured input that likely contributed to growth. (Fabricant 1959, p. 13)

At the time that this report was written, the NBER was in something of a crisis, and was awaiting a decision from the Ford Foundation on a request for funding necessary to resolve an unsustainable budgetary situation.¹⁰ That Fabricant would at this crucial time prepare an annual report arguing that nearly every NBER project contributed to an understanding of economic growth stands as another piece of evidence of the great importance that had come to be attributed to the subject by members of the two overlapping audiences that he needed to persuade: leading members of the economics profession and influential figures in the Foundations.

Discovering and Measuring the “Residual”

The steadily increasing concern with economic growth in the postwar period among both economists and their clients provided the context for a line of empirical research devoted to discovering and quantifying the causes of economic growth, which led to what Griliches (1996) called “the discovery of the residual”. At the 1937 meeting of the NBER’s Conference on Income and Wealth, Morris Copeland and E.M. Martin proposed a method for decomposing the growth in real national income into that which was due to growth in the labor force, that which was due to the increase in the nation’s capital stock, and that which was due to “changes in the efficiency of operation of the economic system”. The method was essentially the one still used to calculate indexes of total factor productivity, that is, the comparison of an index of the growth of output to an index measuring the growth of real inputs (Copeland and Martin 1938).

¹⁰ See Rutherford (2005, pp. 126-30) for a detailed account of this period in the NBER’s history.

With the creation and refinement of industry-specific and aggregate capital stock measures during the 1940s and 1950s, it became possible to implement the Copeland-Martin procedure. The first application of the procedure to data for the US economy as a whole was due to Jacob Schmookler (1952), who concluded that about half of the increase in GNP from 1869 to 1938 represented the effect of increases in the quantities of inputs, the other half reflecting “increased efficiency in their use.” Two years later, Fabricant (1954) calculated that while real national income had grown at an annual rate of 1.9% between 1870 and 1950, the annual rate of growth of the combined index of capital and labor inputs had been only 0.3%, and the total factor productivity index calculated by Moses Abramovitz (1956) pointed to a similar conclusion. To Abramovitz, this was a sobering finding. Using a phrase that would be quoted frequently in the coming years, he commented that “Since we know little about the causes of productivity increase, the indicated importance of this element may be taken to be some sort of measure of our ignorance about the causes of economic growth . . .”.¹¹ Robert Solow’s 1957 paper on “Technical Change and the Aggregate Production Function” provided an influential reconceptualization of the Copeland-Martin technique as a method of empirically separating movements along from shifts in a neoclassical aggregate production function, and concluded that 7/8ths of the increase in output per man-hour between 1909 and 1949 represented shifts in the production function due to technical change, as opposed to movement along the production function due to increased intensity of capital per worker.

If capital accumulation did not explain economic growth, what did? The Schmookler-Fabricant-Abramovitz-Solow results indicated that the “measure of our ignorance” on this question was stunningly large. Even if one believed that technological change was the most

¹¹ Abramovitz 1956, pp. 5, 11. Schmookler’s conclusion that about half of the growth in GNP was due to rising productivity is consistent with the findings of Abramovitz and Solow, because they were trying to explain growth in per capita rather than total GNP.

important component in the collection of unknown or unmeasured growth enhancers that would soon be dubbed “the Residual” (Domar 1961), the sense of ignorance was little assuaged, as there was nothing approaching a consensus among economists concerning what policy levers to pull in order to stimulate technical progress. The residual was a puzzle, and given the high priority that political and media elites had assigned to the issue of economic growth, a puzzle that demanded the attention of economists. It was also the catalyst for Theodore Schultz’s human capital research program.

Theodore Schultz, the Human Capital Idea, and Economic Growth

Economists today understand “human capital theory” as an integrated set of models of human behavior and social processes, with well understood implications and an associated research program. And it is true that by the early 1960s, pioneering human capital researchers, including Theodore Schultz, Gary Becker, and Jacob Mincer, had come to share, at least in broad outlines, a conception of the research agenda that arose from adoption of the human capital idea. Each of them, however, concentrated his early research on a different set of questions drawn from this agenda. Mincer’s dissertation was an attempt to explain the personal distribution of income as a result of deliberate investments in human capital.¹² Becker was interested in developing a “general theory of investment in the human agent,” built on a model of individual optimization.¹³ What first intrigued Schultz about the human capital idea, however, was its potential as a key to understanding the process of economic growth. In particular, he believed that the unmeasured accumulation of human capital over time was probably the major explanation for the puzzle of the “residual” being revealed by the research of Abramovitz,

¹² The heart of this dissertation appeared as Mincer (1958); see also Teixeira (2006).

¹³ Becker in Fabricant (1959), p. 38.

Solow, and others. He was most interested in human capital as an aggregate phenomenon, with implications for economic growth at the sectoral or macroeconomic level. Accordingly, his first serious research related to the human capital idea used the methods of national income accounting to develop an aggregate time series index of human capital formation in the US.¹⁴ He had a keen interest in producing reliable estimates of the rate of return to education, but mainly as a means of determining whether the social rate of return to human capital investment exceeded the rate of return on physical capital, thus indicating a possible role for government in eliminating an aggregate-level misallocation of resources. Schultz had the highest public and professional profile of the pioneering human capital researchers, with the most opportunities to share his ideas with elites of the profession, the funding agencies, and the policy community. So, the version of the human capital idea initially presented to economists and economic policy makers in the late 1950s and early 1960s was Schultz's version, with its emphasis on the link between human capital and growth, and on the possibility of an aggregate underinvestment in human capital formation.

That Schultz would initially view the importance of the human capital idea in this way makes sense in light of the research interests he had developed over the first 25 years of his career. He received his Ph.D. in Agricultural Economics in 1930 from the University of Wisconsin, where teachers in the institutionalist tradition emphasized the influence on economic outcomes of social institutions that could be altered through thoughtfully designed policy measures. When he took his first academic job at Iowa State College, Schultz was joining a department of Agricultural Economics known as a hotbed of statistical research. Early in his career, Schultz also adopted the neoclassical theory of the firm and the industry as a key

¹⁴ Schultz (1961), p. 1 is one place where he argues that human capital formation is probably the main component of the residual.

analytical framework for his research. Schultz's move in this direction is not surprising. By the 1930s agricultural economists had created a role for themselves in the field of "farm management", as experts who could teach farmers how to operate a successful business enterprise. These economists were well versed in and convinced of the usefulness of neoclassical theory, although, as Banzhaf (2006) points out, it was a commitment to neoclassical economics as a normative tool to guide resource allocation, not as a positive description of economic activity. Indeed, they viewed the agricultural sector as being rife with inefficiency and misallocation, thus justifying the need for farm management research. The agricultural economists at Iowa State developed a reputation for pushing this way of thinking further, and applying neoclassical analyses of efficiency to the evaluation of agricultural policies (Burnett 2011). Schultz joined the University of Chicago's economics department in 1943, and by the mid 1950s, when he began to seriously pursue the idea of human capital, he was already well-established as one of the nation's leading agricultural economists and an expert on agricultural policy.

By this time some dominant themes had emerged in Schultz's research. A first was that misallocation of resources within the agricultural sector and between the agricultural sector and the rest of the economy was the fundamental source of the persistent "farm problem" of low incomes in agriculture. Schultz assumed that economizing behavior was the norm -- people consistently and intelligently sought to improve their situations, doing the best they could given their knowledge and circumstances (Schultz 1940, p. 318). However, because of lack of information, Knightian uncertainty, and the difficulties of adjusting to changing circumstances, individual farmers were often out of equilibrium in the neoclassical sense that returns to their various efforts and expenditures were not equalized. Further, many existing agricultural policies

and institutions created incentives such that actions that were efficient from the point of view of the individual farmer led to socially inefficient resource allocations. Economic analysis could be used to identify and correct such misallocations.¹⁵

The idea that the “productivity of the human agent” was both malleable and an important factor in the productivity of the agricultural sector was mentioned repeatedly in Schultz’s work, if only in passing, between 1930 and 1950 (e.g., Schultz 1932, 1941). Around 1950, he began a research program intended to explain the historical emergence of large and persistent differences in average incomes across different agricultural areas of the US. One source of these differences, Schultz asserted, was that “the amount invested per human agent is extremely unequal from one community to another”. This made it important to “investigate the process by which capital is ‘invested’ in human agents” and explore the relationship between such investments and “the productivity of a population.” (Schultz 1950, pp. 11-12, Schultz 1951).

Schultz was aware of the statistical puzzle later called “the residual”, at least as it appeared in agricultural statistics, by the early 1950s.¹⁶ His colleague D. Gale Johnson had

¹⁵ The concepts of efficiency, equilibrium, and misallocation employed by Schultz were the conventional neoclassical ones. As he wrote in summarizing Schultz (1947) “In this book, equilibrium is defined in terms of the allocation of resources in the long run (factor equilibrium). This conception of equilibrium requires that comparable resources (in unit inputs) be employed, taking the economy as a whole, so that each input produces an equal return in the value of outputs. The main task of political economy (policy) in this context is to attain and maintain not only product but also factor equilibrium; to achieve this goal it is necessary to obtain a proper allocation of resources. This goal is achieved whenever comparable resources throughout the economy produce equal returns. The criterion is therefore *returns*. (Schultz 1947, p. 92, emphasis in original). Schultz’s embrace of neoclassical models and ideas of efficiency, as well as his commitment to the assumption that people engaged in economizing behavior, are consistent with perceptions of the “Chicago economics” during the time he headed the department. At the same time, Schultz believed that the market economy was prone to inefficiencies that could be corrected by well-designed government policies. This attitude, though inconsistent with “Chicago economics”, was held by almost all agricultural economists in the mid-twentieth century. It helps explain why Schultz’s analysis of the role of human capital in the aggregate economy left open the possibility that aggregate investment in human capital was inefficiently low, leaving a role for government action to increase in spending on education.

shown that in recent decades, the growth of agricultural output in the US had far outstripped the growth in conventionally measured inputs (Johnson 1950), and Schultz had noticed a similar phenomenon in the agricultural statistics of several Latin American nations. As it was becoming known that something similar held true for the US economy as a whole, Schultz wrote a paper that portrayed these findings as something of an embarrassment to the profession:

We have cited Fabricant and Abramovitz who found *four fifths* of the remarkable economic growth of the last eight decades unexplained by additional inputs. Fabricant explained it by an appeal to “improvements in national efficiency.” But what is that?

The question remains: Where does all this unexplained increase in output come from? Is the four fifths beyond economics? If that is the case, in view of the importance that countries and individuals attach to more output, it is high time students in other fields took over. If economic analysis, however, can explain a substantial part of this growth, why has it failed to do so?

Clearly some taking stock is called for. (Schultz 1956, pp. 756-757)

Schultz’s response was to lay out a program for establishing a “strong and satisfactory linkage” between changes in measured inputs and changes in measured output (Schultz 1956). At the center of the program would be analysis of two important “inputs” that were being neglected in the empirical studies of growth: new production techniques, and improvements in the labor force. The activities that led to the development of new techniques and improvements in the labor force could be analyzed as production activities, involving the use of capital and labor. With respect to improvement the quality of labor Schultz cited “education, training to impart skills some of which may be acquired on the job, and facilities related to health and so on”. Schultz also mentioned the desirability of comparing the rate of return on resources invested in these activities to “those realized on capital and effort used to produce conventional inputs”, noting that divergences in these rates of return would represent opportunities to “increase the

¹⁶ Zvi Griliches, discussing his time as a graduate student at Chicago 1954-1956 (Schultz was his supervisor), commented that “The residual in the productivity problem is quite up front in Schultz, before Solow is published. In some sense, Solow (was) not news for us.” (in Krueger and Taylor 2000, p. 181)

national product by appropriate reallocation of the available resources.” (Schultz 1956, p. 759). Admittedly, there were problems in measuring the value of the product of activities intended to improve labor quality, but Schultz suggested that one approach might involve the analysis of earnings differentials.

Schultz spent the 1956-1957 academic year as a fellow at the Center for Advanced Study in the Behavioral Sciences, creating estimates of the growth since 1900 in the value of capital and labor invested in education in the US. He came away from his fellowship year convinced of the fruitfulness of adopting the point of view that activities that increased the productivity of workers should be regarded as “investments” in “human capital.” He began to talk about human capital in public lectures (Schultz 1959, Schultz 1961), and in his comments on the research of others.¹⁷ And in these early statements, a central point of emphasis was the ability of the new idea to throw light on pressing questions related to economic growth and development. One person who heard Schultz’s message early on, and embraced it enthusiastically, was Walter Heller.

Federal Educational Policy Before Human Capital Theory

When Walter Heller was called to Washington to serve as Chairman of Kennedy’s CEA, he brought with him human capital theory, and used it as a framework for thinking about education policy as an element of the administration’s economic policy. This was a watershed moment in the history of educational policy in the US. In order to understand why, one must

¹⁷ E.g., Solow’s (1957) paper on the measurement of technical change includes this footnote: “I owe to Prof. T. W. Schultz a heightened awareness that a lot of what appears as shifts in the production function must represent improvement in the quality of the labor input, and therefore a result of capital formation of an important kind.” (Solow 1957, fn. 8)

understand something of the prevailing ideas and realities regarding federal policy towards education in the first half of the 20th century.

During the rise of public education in the United States, beginning with the common school movement and progressing to nearly universal secondary school attendance, the Federal Government supported and endorsed a view of the multifarious nature of educational purpose. At the same time, it explicitly refrained from attempts to acquire authority over the administration of education. For over a century, the Federal Government accepted that education was a state and local responsibility, based on the principle that education was one of the “unspecified powers” referred to in the tenth amendment of the Constitution. Each state passed its own laws concerning the organization of the school system, teachers, schools, and finances, and these laws revealed differences between states in terms of values and perceptions of educational purpose. For example, Maine, around the turn of the 20th century, stipulated that “All professors and instructors...are enjoined to impress upon their pupils the principles of morality and justice, the love of truth, country, humanity, industry, and frugality, as tending to preserve republican institutions and social and individual happiness, and public school teachers are required to consume not less than ten minutes each week in teaching their pupils kindness to birds and other animals” (US Bureau of Education 1896, p.1065). The Federal Government did recognize a responsibility to support education. Through the production and dissemination of educational research and data as well as the occasional provision of funding, it expressed its broad interest in education and made recommendations regarding improvement, while also acknowledging a clear boundary between support and control.

In 1910, the United States Bureau of Education (BOE) published five types of information: Annual Statements of the Commissioner, Annual Reports, official and informative

circulars, bulletins, and miscellaneous items; by 1938 there were thirty-five categories of BOE publications (United States, 1940). These materials promoted multiple purposes for education and did not attempt to provide or name a singular reason for why the BOE supported the states in their attempts to expand and improve education. Local administrators and teachers were given access to information on a wide range of topics and from a variety of perspectives to aid in the development of locally designed policies and practices, but there was no requirement that specific policies be adopted.

The BOE did occasionally distribute information highlighting the economic benefits to education. In 1917, the office issued a bulletin entitled “The Money Value of Education,” written by Dr. Caswell Ellis, a philosopher of education. From the outset, he acknowledged the non-monetary benefits of education and stressed that his intention was not to deny or to diminish them, but only to inform the general public of the relationship between education and earnings. In full agreement with the ideals of a liberal arts education, including condescension toward education for monetary gain, he stated, “The most valuable result of right education is the broadening, deepening, and refining of human life. This result can no more be measured by dollars and cents than truth, self-sacrifice, and love can be made out of pork and potatoes,” (Ellis 1917, p. 5). His argument was only that when the pursuit of “the higher things of the soul,” occurred, there were occasionally monetary benefits.

In addition to providing research and information believed to be helpful in meeting the needs of local school districts, Congress periodically passed legislation to provide funds for education. But these grants were only provided for very specific and often short-term purposes,

with the assumption that state and local administrations knew how best to use the funds.¹⁸

Information and data were provided by the Federal Government to be used only if administrators at the local level found them to be relevant and useful.

Until the late 1950s, there was little indication that federal politicians or economists believed education to be a means of achieving national goals. President Franklin Roosevelt resisted federal funding for education and did not see education as a means to ending poverty. Instead, his statements revealed that he saw education as an economic *effect*, rather than an economic *cause*. In 1940, he told the public:

But I suggest to you that the Federal treasury has a bottom to it, and that mere grants-in-aid constitute no permanent solution of the problem of our health, our education, or our children, but that we should address ourselves to two definite policies: first to increase the average of incomes in the poorer communities, in the poorer groups, and in the poorer areas of the nation; and second, to insist that every community should pay taxes in accordance with ability to pay (quoted in Grassmuck, 1984; p. 190).

He believed that higher incomes and a more equitable distribution of wealth would naturally lead to improvements in education in formerly poor areas.

This was also the view of the majority of economists at the time. Advocates for federal funding for education were primarily educators themselves, not economic policy advisers; economists didn't spend much time thinking about education. In 1945, Merwin Hart, president of the National Economic Council, testified against a proposed increase in federal funding for education in Senate hearings, "I oppose this bill, because I believe it would result in undesirable Federal control over education; because it would add by just so much to the bureaucratic burdens already borne by the people..." (p. 418). Hart's testimony gives no indication that he believed there was any compelling reason for federal involvement in education.

¹⁸ For example, the Lanham Act of 1941 and the Impact Laws of 1950 provided aid to school districts whose student populations increased due to nearby military establishments and war factories, which were housed on tax-exempt federal property.

Even as late as 1954, federal actors failed to use economic justifications for their decisions regarding education. Justice Earl Warren's description of educational purpose in his reasoning on the *Brown v. Board* decision in 1954 was primarily non-economic and referred to citizenship and psychological well-being. He stated: "It [education] is required in the performance of our most basic public responsibilities, even service in the armed forces. It is the very foundation of good citizenship. Today it is a principal instrument in awakening the child to cultural values, in preparing him for later professional training, and in helping him to adjust normally to his environment." (*Brown v. Board of Education*, 1954)

In discussions of educational purpose in the first half of the twentieth century, it was educational reformers who competed for influence with state and local administrators and educators. The history of educational leadership during the first half of the twentieth century is first and foremost a history of *ideas* and *practices*, not law or policy. Those who advocated social efficiency and Progressive education attacked the views of the traditionalists, who advocated a liberal arts education, but these camps worked through means of persuasion, not by seeking overt authority.

It was during the Eisenhower administration that the Federal Government began to realize its own purposes for education. In 1958, after Sputnik suggested an important connection between military security and education, Eisenhower proposed and Congress passed the National Defense Education Act (NDEA), which provided federal funding for programs to improve science education, on the strength of an argument linking education to national defense. Even though NDEA contained provisions restricting federal control over education, for the first time federal interest in a singular educational purpose for a federal goal could be defended by an appeal to the Constitution.

It was at this moment that Walter Heller made his debut before Congress as an advocate for increased spending on education, asserting that financial support of education was, by logic and by law, a responsibility of the Federal Government. Schultz's human capital theory, with its proposed link between spending on education and economic growth, allowed Heller to strengthen his argument. While state and local educational administrators had always seen educational purpose in terms of local goals, Heller urged the Federal Government to view education as a tool for meeting important national priorities: national defense and economic growth.

Walter Heller, the Human Capital Idea, and Education as Federal Responsibility

Walter Heller earned his Ph.D. in economics from the University of Wisconsin. He spent most of his career as a professor of economics at Minnesota, but he also had an active and successful career as an economic policy advisor. Trained as a specialist in public finance, he held several positions within the U.S. Treasury Department, was involved in the development of the Marshall Plan of 1947, and was a consultant on currency issues in post-war Germany. However, it was during his time as Chairman of the CEA, a position he held from 1961 to 1964 under Presidents Kennedy and Johnson, that he achieved his greatest successes.

Heller, who called himself an "educator of presidents," was particularly successful politically because of his impressive ability to translate the concepts of academic economists into policy-relevant arguments understandable to politicians as well as the public (Heller 1966; Kilborn, 1987). Alan Greenspan called him a "major contributor if not the father of modern economic policy-making," (Kilborn, 1987).

He is probably best known for his work in shaping and helping to promote President Kennedy's plan to stimulate the economy by cutting income tax rates. What is less well known is that Walter Heller was the key actor in bringing the recently developed theory of human capital into discussions of federal economic policy, and in identifying educational policy as form of economic policy. While the Federal Government had long acknowledged the abstract moral and social benefits to public education, Heller encouraged politicians and policymakers to view education through the lens of human capital theory, in which education was a means to achieve national economic goals. He did not argue explicitly for a change in educational purpose, although the change was implicit in the new paradigm, but focused instead on the issue of federal funding for education using two economic concepts: human capital and externalities.

Heller's public advocacy for an increased federal role in educational funding can be found as early as November of 1957, when he appeared before a subcommittee of the Joint Economic Committee. Heller was one of a large number of public finance specialists invited to speak and submit papers on matters related to determining the appropriate scope and form of federal fiscal activity. The paper Heller submitted was a lucid summary of then-current economic thinking on principles for "dividing resources between public and private use." (Heller 1957) The hearings themselves, however, took place a few weeks after the launch of Sputnik II, and this led Heller to use his remarks to expand on a point from his paper regarding the need for government action in cases "where there are important third-party benefits . . . which accrue to others than the direct beneficiary of the service as in the case of education . . ." (Heller 1957, p. 94) The Federal Government, he argued, should provide funds for education because the quantity of "brainpower" needed to compete with the Soviet Union would not otherwise be forthcoming. In essence, Heller was arguing that education generated a positive externality, and one sees in this

passage from his testimony his ability to present clearly and persuasively what was then a little understood economic idea:¹⁹

How do we translate the Soviet scientific challenge into economic guideposts for government budgetmakers? First, under the impacts of Sputniks I and II, we have become dramatically aware of our position--the position of all of us--as indirect or third-party beneficiaries of scientific training and basic research (and their broad underpinnings of general education). Russian scientific and military advances have greatly magnified the size--as well as our awareness--of these indirect benefits that do not show up as economic advantage to particular individuals and therefore do not show up in the market prices which the private buyers of scientific brains and basic research are willing to pay. The only economic instrumentality (apart from philanthropic foundations and the like) that is able to fully assess and pay for these indirect benefits on behalf of all of us is the government. It and it alone can take the full benefits into account and balance them against the costs to arrive at the correct decision as to where our maximum advantage lies in the economic use of our national resources (US Congress, Joint Economic Committee, 1957, pg. 40-41).

According to Heller, federal aid would ensure that the United States would be in a position to compete with the Soviet Union in terms of scientific and technological knowledge. In addition, Heller stressed that the federal government, rather than states or local school districts, should provide these funds since “the indirect benefits to be weighed transcend all State and local lines.” (US Congress, Joint Economic Committee, p. 41)

We have found no concrete evidence regarding how Heller was first exposed to the human capital metaphor of education as an investment, or the hypothetical link between such investment and economic growth. Though Schultz did not introduce his ideas on human capital publicly until 1959, he had talked about them with other economists before that. Schultz and Heller were both chairs of leading economics departments in the late fifties, and both were

¹⁹ Although he was clearly making what would now be called an externality argument, Heller did not use the word *externalities*, as this word was not widely used in this sense before Bator (1957). The fact that Bator sensed a need to provide a definition of what he was also calling *external economies*, as well as his conclusion that their occurrence was “probably rare” indicates that this was not a well-known concept among economists at the time. Indeed, Heller’s 1957 testimony that the indirect benefits of education created a need for additional federal spending on education should be seen as an early introduction of the externality concept into an actual policy-making setting. Interestingly, Milton Friedman had argued in 1955 that education generated positive externalities (he referred to them as “neighborhood effects”) that warranted government funding, although not government provision, of education.

sought out by organizations desiring the advice of prominent economists (for example, both were associated at various times with the Committee for Economic Development). What we do know is that by spring of 1958, when Heller was retained as an economic expert by the National Education Association (NEA), the human capital metaphor of “education as an investment”, and the link between investment in education and growth had both become important parts of his thinking about education policy.²⁰

The NEA had a long record of lobbying for legislation providing federal funding for education, albeit with little success. During 1958 and 1959 Heller would introduce the human capital idea to Congress on the NEA’s behalf. In an interview years later, Heller described the enthusiasm the NEA showed for human capital theory: “It was a new concept to them, they just loved it - the idea that one could think of education as an investment.” (Crichton 1987).²¹ It is not difficult to see why the NEA loved the concept. By associating education with the most important political issues of the day, national defense and economic growth, the human capital metaphor could give education new prestige and importance at the federal level, and provide an additional justification for federal funding of education.

In April of 1958, Heller testified before the House subcommittee on General Education of the Committee on Education and Labor, which was holding hearings on a proposed program of federal grants to be used by the states in support of education. Heller testified along with, and in support of, NEA president Lyman Ginger. While Heller had only briefly alluded to a possible relationship between economic growth and education in his 1957 testimony, Lyman Ginger’s

²⁰ We found no evidence of contact between the two men during 1957 or 1958 in the preserved correspondence of either, nor in Heller’s files related to his relationship to the NEA.

²¹ Heller’s recollection of the NEA leadership’s enthusiasm is confirmed in several letters received from NEA officers after his first Congressional testimony on their behalf in April of 1958. (Robinson to Heller, May 2; Lambert to Heller, May 1st, Ginger to Heller, May 5th, all in folder “National Educational Association Correspondence, 1958-1959”, Box 1, Walter Heller papers, University of Minnesota Archives).

remarks to Congress in 1958 indicate that Heller had by then both absorbed and conveyed to the NEA president both the fundamental tenants of Schultz's notion of education spending as a growth enhancing investment in human capital and the idea's potential as a basis for advocating greater federal involvement in education.

Ginger told Congress that his and Heller's testimony would demonstrate "that we as a nation are underinvesting in the education of our children, and thereby retarding our economic growth and limiting our defense potential", and that the Federal government, given its "assigned responsibilities for national defense, foreign policy, economic growth, and general welfare" should correct this problem (US Congress, House, 1958, p. 70). He made the comparison between investment in physical capital and investment human capital, noting that the latter's importance had only recently come to be appreciated. He asserted that education was "the most fundamental of all sources of economic growth," and that increased spending on education was "one of the best ways of insuring that our economy will grow at an annual rate of 4 or 5 percent instead of dropping back to the 3 percent growth rate." In a chart entitled "Education as an Investment" he showed the sort of evidence relating educational attainment to earnings levels that Schultz would later cite in his early public addresses on human capital. There were several references to Soviets, including their recognition of the "strategic role of education in the development of military and economic power." Ginger also repeated Heller's externality argument of 1957 (US Congress, House, 1958, pp. 71-78).

Heller's main role at the hearings was to provide expert testimony in support of Ginger's assertion that many states were inadequately funding education, and that the Federal Government had sufficient excess fiscal capacity to provide states with the levels of financial support stipulated in the proposed bill. Heller did, however, take an opportunity to reiterate a key point of

Ginger's testimony: that the Federal Government had a constitutional responsibility for national defense, and a statutory responsibility (under the Employment Act of 1946) for promoting economic growth, both of which gave it a "direct responsibility for improved education for our school children." (US Congress, House, p. 84)²²

In February of 1959, the same subcommittee held hearings on a revised version of the bill, now known as the Murray-Metcalf Bill.²³ This time, Heller was the lead witness for the NEA. He repeated Ginger's message about the link between education, economic growth, and military superiority. An exchange with Congressman Frank Thompson of New Jersey, which seems likely to have been planned in advance, allowed Heller to make the sort of rate of return comparison that Schultz recommended to assess the advisability of public investments in human capital. Thompson asked if there were data available that related a person's education to how much he earned over his lifetime, and how much he paid in taxes. "I suggest this line", Thompson explained, "because in public works projects, for instance, in which the Federal Government has a great interest, one sells projects on the basis of the return ratio. Why cannot the same standard be used in this case?" Heller's assistant handed him the same data on education and earnings that Ginger had presented in 1958, and, after noting some shortcomings of the data for the purposes of addressing Thompson's question, Heller proceeded to read the list of education levels and corresponding median incomes to the committee. "It would occur to me", Thompson then exclaimed, "that the return ratio in terms of investment and return would be pretty healthy." Heller concluded the scene by observing that "It looks like a very good return on

²² Drafts and notes made by Heller in preparing this testimony show him to have been experimenting with how to articulate the point that education should be viewed as a critical *investment* that would both boost long term economic growth and strengthen national defense (Folder "NEA Raw Materials", Box 5, Walter Heller papers, University of Minnesota Archives).

²³ Or officially, the School Support Act of 1959.

investment compared with, say, common stocks or bonds or a lot of other things that one could list.” (US Congress, House, 1959, p. 61)

Heller also emphasized that he was not arguing for federal funds merely to help such states meet their obligations. The funding of education was most certainly an obligation of the Federal Government:

First and foremost, education is an essential instrument for carrying out functions which are a direct Federal responsibility. Education is an investment in human resources from which we expect to reap positive gains in the form of higher productivity, more rapid advancement in technology . . . and a stronger Military Establishment and greater military potential. Here, the benefits of education transcend all State and local lines. . .

It is worth noting that this point is quite independent of the adequacy or inadequacy of State-local fiscal capacity and taxing efforts to support education. This point says simply that there is a strong national interest in better schooling to serve objectives that the Federal Government has been charged with both by the Constitution and the Employment Act of 1946.” (US Congress, House, 1959, p. 57)

One prominent argument against the federal funding of education was that it would lead to federal control of education. In Congresswoman Catherine May’s argument against the bill, she quoted a ranking member of the Education Committee’s views on this: “If this bill is enacted, federal control of education no longer will be a threat—it will be a reality—for programs of this kind have a tendency to snowball far beyond the expectations of well-meaning sponsors, and in order to qualify for grants, states would have to conform to the law”. Heller’s response, in addition to calling it an illogical concern, was to claim that the Murray-Metcalf Bill was a brilliant example of Federalism (May, 1959, p. 14). He stated,

The Murray-Metcalf bill is an expression of the genius of our federalism in its ability to achieve national objectives in a tightly interdependent economy through constructive cooperation among different levels of government. Under this approach, the Federal government does what it can do best; namely, mobilize financial resources through taxation, and State and local governments do what they can do best; namely, make grassroots decisions and carry out functions under the direct control and close scrutiny of the local electorate. (US Congress, Senate, 1959, p. 97).

Heller was certain that the states were capable of using federal funds wisely and that the grantor of these funds would in no way attempt to control their decisions. In the same hearing, however, it became apparent that Heller's confidence belied the legitimacy of the opposition's concerns. When the seemingly contradictory nature of incentives was brought up, he became much less assured of his position. The question was raised of how the Federal Government could expect the states and local governments to comply with its goals without providing incentives, which would interfere with self-determination. Heller acknowledged that to support incentives too strongly would be to contradict his previous statements regarding state/local rights and admitted that it was "an extremely difficult and delicate area." He went on to say "If some formula could be worked out—and I must confess I don't have this easy answer—by which these incentives could be stated in such a way that they would not be an interference with local responsibility, I should certainly feel that there is a great deal to be said for it." (US Congress, Senate, 1959, p. 100)²⁴

Ultimately, the Murray-Metcalf Bill failed in Congress, and the NEA was destined to wait for several more years before finally seeing the first broad-based federal program for funding education. In the mean time, Heller went to work for a more powerful and influential client.

Heller and the Kennedy CEA: Education as Growth Policy

In late 1960, President-elect John F. Kennedy named Walter Heller as chair of his CEA. As described earlier, Kennedy was looking to Heller for advice on how to make good on Kennedy's oft-repeated campaign promise to boost US economic growth. Unfortunately, as also noted earlier, there was at this time little confidence among economists that they understood the

²⁴ In retrospect, given the evolution of federal education policy in the US, May's concerns seem well founded.

process of economic growth well enough to design policies to accelerate it. Heller, however, brought to the CEA his conviction that the link between education and economic growth was not only a well established empirical fact, but clear proof that the Federal Government had both a statutory and a constitutional responsibility for education. Human capital theory would be at the center of CEA thinking on policies to promote long-term economic growth. As *Time* magazine reported in an article published within weeks of Kennedy's inauguration,

Next to dropping the tight money policy, Heller's most important prescription for faster economic growth is increased Government investment in "our most valuable resource, the human mind." . . .

Bubbling with excitement over the opening of a new frontier in economics, Heller points to a new concept, with "vast implications for public policy," that came into economics within the past two years: the idea that "human capital" (knowledge, skills, invention) contributes more to economic growth than "tangible capital" (factories, machinery).(The Pragmatic Professor, 1961, p. 22).

In October of 1961, the Organization for Economic Co-operation and Development (OECD) sponsored a "Policy Conference on Economic Growth and Investment in Education" in Washington DC, bringing together education policy makers and "professional economists and experts" from the member nations. Heller gave a keynote address entitled "Education as an Instrument of Economic Policy", in which he reviewed the concept of human capital, discussed the evidence on the link between investment in education and economic growth and the rate of return to education, and emphasized the Kennedy administration's commitment to using federal revenues to increase education spending in the US (OECD 1962, pp. 33-35) Theodore Schultz was listed as the "Expert Advisor" to the US delegation.²⁵ A few weeks earlier, Heller had invited Schultz to participate a "technical meeting" Heller was organizing in conjunction with the conference, in which European economists in Washington for the conference and a "small

²⁵ (OECD 1962, pp. 9, 33-35, 47). Schultz was the only member of the US delegation without an official government position.

group of American economists” would share their current research in the economics of education. One session of the technical meeting would be devoted to discussing “the kind of research needed in this field” and exploring possibilities for collaborative research between European and US economists.²⁶

The Annual Reports of the CEA during Heller’s tenure as Chair, as well as Heller’s own Congressional testimonies from that period, reveal a coherent set of arguments, derived from human capital theory and supported by evidence from the nascent human capital research program, being used to justify proposals for increased federal spending on education. First and foremost was the argument that education was a form of investment in human capital, and that human capital formation was demonstrably linked to economic growth. The 1962 Annual Report of the CEA explained that:

Americans have long spoken of foregoing consumption today in order to invest in their children’s education and thus in a better tomorrow. For an economy, just as for an individual, the use of the word *invest* in this connection is clearly justified, since it is precisely the sacrifice of consumption in the present to make possible a more abundant future that constitutes the common characteristic of all forms of investment. That devoting resources to education and health is, in part, an investment in human capital explains why programs in the area of education and health are economic growth programs (*Economic Report*, 1962, p. 117).

And in 1963, testifying in support of Kennedy’s National Education Improvement Act, Heller submitted a CEA research report showing that “a rising level of education has been a key generator of long-term economic advance.” In addition, he pointed out, “Recent private studies have convincingly shown that education’s contributions to our nation’s economic progress to date have been far higher than we had previously understood”, with one of them showing that over the period 1929-1957, “two fifths of the sharp increase in real product per worker – an

²⁶ Letter from Heller to Schultz, Oct. 6, 1961, Theodore Schultz papers, Special Collections, University of Chicago Archives. In this letter, the typed “Professor Schultz” in the salutation is crossed out and replaced by a hand written “Ted”, suggesting a prior familiarity between the two men (reproduction of letter available from the authors).

increase of 56% -- for that period is attributable to improvements in the quality of the labor force resulting from increases in formal education.”²⁷ (US Congress, Senate, 1963, p. 408)

A second argument was that the link between education and growth made education a federal responsibility. Naturally, in CEA reports this argument was made on the basis of the Employment Act of 1946. As Heller insisted to Congress in 1963, “we dare not view the Federal Government’s responsibility under the Employment Act of 1946 in unduly narrow termsMaximum employment and production do not depend only on capital equipment, agriculture and natural resources, and manhours – the traditional interests of economists – but also on the education and total skills of the labor force. Programs and policies that maximize human resources in our nation are a major concern of National policy for economic growth” (US Congress, Senate, 1963, p. 410). National Defense and foreign policy were beyond the purview of the CEA, but the President’s Special Message to the Congress on Education in January, 1963 included a statement that increasing the quality and quantity of education was “vital” to national security, i.e., a federal responsibility. (Kennedy 1963)

A third argument was that education had been shown to lead to higher earnings, which was a benefit to the individual, but also evidence that education increased productivity and thus economic growth. The 1962 Annual Report of the CEA pointed out that “Education’s contribution to output is reflected by the well-documented fact that income – the measure of each individual’s contribution to production – tends to rise with educational attainment.” (*Economic Report* 1962, p. 118) The 1965 Annual Report (largely compiled before Heller’s departure from the Council), after citing the studies showing that over the last fifty years “the rising level of education appears to account for between one quarter and one half of the otherwise unexplained

²⁷ Heller was probably referring to Denison’s (1962) influential estimate that attributed 42% of the growth rate in product per person employed to increased education.

growth of output,” invited the inference that this relationship would hold in the future as well by pointing to the 1963 data on differences in median earnings by education level (*Economic Report* 1965, p. 157).

A fourth argument was that education as an investment had a rate of return, that its rate of return was as high or higher than the rate of return on conventional investments, and that this indicated the desirability of further investment in education. The Annual Report of the CEA for 1965 explained that “Even when viewed from the narrow perspective of economic benefit alone, expenditures on education yield high rates of return. The rate of return to society on its total expenditure for the public and private education of males is estimated at more than 10 percent at both the high school and college levels; this rate compares favorably with the return on other investments in the economy.”(*Economic Report* 1965, p. 158.) While testifying in support of Kennedy’s education bill in 1963, Heller again used an exchange with a sympathetic questioner to make the point:

Senator Morse: . . . If we can get the public to see that education is a good investment, whose return will far exceed the cost, and we can get our citizens to understand what I think is the answer you will give to the question that I now put to you, we will succeed in passing this bill. I am looking for weapons of persuasion in these hearings . . .

Do you think it would be intellectually honest . . ., based on such data as you are providing us, to say to the American people that this is really a self liquidating program? That this expenditure is just a loan that we are making to the present generation of young people to be repaid over and over again during their lives, because the college degree will mean a minimum of an extra \$100,000 of earnings on their part?

Dr. Heller: Mr. Chairman, I think it is an eminently sound statement to make. I think it is intellectually entirely honest. And what I am gratified about is that the economic profession is coming up with an increasingly persuasive amount of data, not based on conjecture but based on before and after studies, so to speak, based on very careful examination of the contributions of education as an investment to the growth of the American economy, very persuasive evidence that support the conclusion, that the investment in education yields at least as much as, and probably a good deal more than, even the investment in plant and equipment. . . (US Congress, Senate, pp. 411-412)

Finally, a correct accounting of the returns to education should include external benefits of education, those accruing to people other than those receiving the education and/or those whose State and local taxes paid for the education. Here Heller's externality argument of 1957 was subsumed into the human capital framework. The external benefits of education were now presented as part of its social rate of return, which was to be distinguished from its private rate of return as reflected in earnings differentials, and which was the proper rate of return to consider in making government spending decisions. Heller made this point in a non-rigorous way in his Keynote address to the OECD Conference mentioned above,²⁸ and interest in developing a sound theoretical and empirical basis for the argument was one motivation for Heller's invitation to Burton Weisbrod serve as a Senior Staff Economist at the CEA in 1963.²⁹

In 1961, Weisbrod, then an assistant professor at Washington University, contributed a paper on "Education and Investment in Human Capital" to Schultz's NBER conference on "Investment in Human Beings" (Weisbrod 1962). The motivating argument of the paper was that in order to apply cost-benefit analysis to educational expenditures one must consider both the benefits of received by the individual being educated and the "external" benefits received by others as a result of the individual's education. Weisbrod listed the various external benefits to education, with suggestions and some examples of how such benefits might be measured. Over the next two years, Weisbrod expanded his analysis of the external benefits of education into a book, developing a number of additional strategies for estimating those benefits, and applying them in a case study of a local community (Weisbrod 1964).³⁰ It seems plausible that Heller

²⁸ See also Economic Report of the President (1965) pp. 157-58)

²⁹ E-mail from Weisbrod to Biddle, Dec. 18th, 2013.

³⁰ The bulk of Weisbrod's 1964 book was circulating as early as August of 1963 as a report of the Cooperative Research Program of the US Office of Education (Weisbrod 1963). Weisbrod had also acknowledged the support of this agency in Weisbrod (1962), another piece of evidence that federal education policy makers had quickly taken an interest in the human capital concept.

planned for Weisbrod, while at the CEA, to generate credible figures on the value of education's external benefits that could be used to bolster the case for federal support.

Heller considered President Kennedy a quick study when it came to learning economic ideas,³¹ and Kennedy's arguments for federal funding of education were clearly influenced by Heller. On February 20, 1961, Kennedy outlined his goals for education in a "Special Message to Congress on Education" in which he proposed a \$2.3 billion dollar aid to education program. He stated:

"Our progress as a nation cannot be swifter than our progress in education. Our requirements for world leadership, our hopes for economic growth, and the demands of citizenship itself in an era such as this all require the maximum development of every young American's capacity. The human mind is our fundamental resource. A balanced Federal program must go well beyond incentives for investment in plant and equipment. It must include equally determined measures to invest in human beings-both in their basic education and training and in their more advanced preparation for professional work. Without such measures, the Federal Government will not be carrying out its responsibilities for expanding the base of our economic and military strength" (American Education, Message from the President; 1961).

This bill did not pass, but Kennedy continued to press Congress to provide federal support for education. His last attempt was the *National Education Improvement Act*. In December of 1962, Heller wrote an administratively confidential report to the president on economic growth. He explained that there were four areas the CEA was focusing on: taxation, civilian technology, and education and training. Heller's discussion drew heavily on human capital ideas, but also important is his mention of the importance of policies improving the quality of education as well as average years of educational attainment, and the growth-enhancing potential of policies that boosted the currently low educational attainment of

³¹ Heller 1966, p. 29

“marginal groups.”³² On January 29, 1963, President Kennedy submitted to Congress a special message on education in which he proposed “a comprehensive, balanced program to enlarge the federal government’s investment in the education of its citizens,” (Tiedt 1966, p.148). The CEA talking points on education and growth were clear in the message, e.g.,

This nation is committed to greater investment in economic growth; and recent research has shown that one of the most beneficial of all such investments is education, accounting for some 40 percent of the nation's growth and productivity in recent years. It is an investment which yields a substantial return in the higher wages and purchasing power of trained workers, in the new products and techniques which come from skilled minds and in the constant expansion of this nation's storehouse of useful knowledge (Kennedy 1963).

The bill itself reflected the goals and priorities Heller had recently outlined in his report, including “Expansion of Opportunities for Individuals in Higher Education,” “Improvement of Educational Quality,” and “Strengthening Public Elementary and Secondary Education.”

Although this bill was also unsuccessful, Kennedy, albeit unknowingly, did play a role in the successful legislation of federal funding for education by initiating economic research in the area of poverty. Though he would be assassinated before events played out, poverty, rather than economic growth, was the political issue that finally overcame the resistance to the permanent provision of federal funding for education.

The Human Capital Idea and the War on Poverty

In December of 1962, Kennedy asked Heller to look into the issue of poverty in the United States. After Kennedy’s assassination in late 1963, President Johnson immediately met with Heller, who briefed him on Kennedy’s request and the work on poverty that the CEA had

³² Heller, Walter. (December, 1962). Administratively Confidential Report to John F. Kennedy. Papers of John F. Kennedy Presidential Papers. Box 37, Folder: Education Subcommittee of Senate Subcommittee on Labor and Public Welfare. Pages 17-19. John F. Kennedy Presidential Library and Museum.

done so far. Johnson was enthusiastic and unequivocal in his support of Kennedy's plans for developing anti-poverty initiatives.³³ Johnson's decision to commit to a War on Poverty has been represented as a shift in the emphasis of federal economic policy from economic growth to poverty reduction. We would argue, however, that Heller did not see it quite that way. Given his commitment to human capital theory as the framework within which to think about economic policy affecting the nation's human resources, Heller viewed Kennedy's anti-poverty initiative as complementing, rather than distracting from, Heller's existing plans for promoting economic growth. It also provided another reason for giving education a central role in federal economic policy. Human capital formation through education spending was demonstrably linked to future growth. Education was also a powerful tool for fighting poverty, through its effect on earnings. Thus, programs that promoted education for America's poor killed two birds with one stone, raising the incomes of the poor, and augmenting the nation's stock of human capital.

This perspective can be seen in a column Heller wrote for *The New Republic* in 1962. There were several references in the column to investment in human capital, and Heller also developed the idea that "if full use is not made of present economic potential, growth of potential itself slows down." (Heller 1962, p. 41) And lest anyone think he was only talking about waste due to cyclical unemployment, Heller offered the example of "discriminatory practices in employment and education" citing a CEA report that had concluded that "if discrimination in education against non-whites had not existed in the past", the GNP today would be 3% higher. (Heller 1962, p. 40) Non-white victims of discrimination, of course, became a population of special interest in the War on Poverty. We have already mentioned Heller's reference, in his 1962 memo to Kennedy on education, to "marginal groups whose educational input can still be

³³ Transcript, Walter Heller Oral History Interview I, 2/20/70, by David G. McComb, Internet Copy, LBJ Library, pp. 20-21.

greatly increased” as a target for educational programming that could have a “consequent substantial and specific impact on growth.” In 1964, when testifying in support of the Economic Opportunity Act, a centerpiece of War on Poverty Legislation, Heller conveyed the idea this way:

The Nation is more and more aware that in compassion lies strength – not only moral strength but economic strength. For a war on poverty is truly a war on waste – on waste of our most precious asset: the mental, physical, and spiritual power of human beings.

A program which gives life to the latent capacities of millions of our poverty-stricken citizens is a sound investment which will yield rich returns:

First, in human dignity, personal satisfactions, and a fuller sharing in the social and political life of the community;

Second, in the reduced costs – both human and financial, both private and public – of the delinquency, vice and crime which are so often woven into the fabric of poverty;

Third, in the higher output and income that will flow, to the benefit of all of us, from the minds of the newly educated, whose contributions would otherwise have been lost; hands newly trained, whose skills would otherwise have lain dormant; workers newly employed, whose productive potential would otherwise have run to waste in idleness.

These returns on capital invested in human beings are fully as real and as great as those we realize on the money we invest in machines and equipment. (US Congress, 1964, pp. 29).³⁴

Two comprehensive educational acts were passed as part of the War on Poverty – the Elementary and Secondary Education Act (ESEA) and the Higher Education Act – and the majority of its initiatives had an educational component. Human capital theory significantly influenced the decision to make education a prominent part in the War on Poverty. Educational and economic policy makers at the federal level accepted the basic assumption of human capital theory, which was that the central *purpose* of education was to increase the productivity, and thus the future earning power, of the student.³⁵

³⁴ The reduced costs of delinquency, vice, and crime were also prominent in Weisbrod’s (1964) list of the external benefits of education.

³⁵ Educational historians have largely missed the connection between human capital theory and War on Poverty educational policy. Neither Julie Roy Jeffrey’s *Education of the Children of the Poor* nor Maris Vinovski’s *The Birth of Head Start*, (both excellent histories) discuss it. Outside of educational history, Alice O’Connor points out the application of human capital theory to the issue of poverty in *Poverty Knowledge: Social Science, Social Policy*,

During the early years of the War on Poverty, the human capital theory was not the only conceptual framework being employed by the people and agencies working on the design and administration of new Federal education policies. After speaking with Kennedy about poverty policy in 1962, Heller had turned to Robert Lampman, an economist from the University of Wisconsin who had recently joined the CEA staff, to develop a poverty strategy. Lampman's framework for an antipoverty program, eventually published in the 1964 Economic Report of the President, revealed that he believed a combination of insights derived from human capital theory and cultural theories of poverty was necessary for an effective policy strategy, and many of his specific recommendations were educational in nature.³⁶ Lampman became a key figure in the design of the War on Poverty and was even called its "intellectual architect" by economist James Tobin (Passell 1997).

After Johnson took over the Presidency and Kennedy's proposed War on Poverty, he appointed Heller to lead a task force drawn from members of the CEA, the Bureau of the Budget, and the Department of Health, Education, and Welfare. From November of 1963 to February of 1964, Heller led this task force, and he and the other members of the CEA primarily advocated educational programs and interventions as the best means of addressing poverty. However, a task force led by Sergeant Shriver was also planning for the War on Poverty starting in February of 1964. A number of members of the Shriver task force, many of whom later joined him in the Office of Economic Opportunity when he became its first director, viewed poverty through the

and the Poor in Twentieth-Century U.S. History, but does not mention education. One exception is Brauer (1982), who identifies the link between human capital theory, poverty policy, and educational policy. He points out that Burton Weisbrod, a human capital "champion", was involved with early anti-poverty plans and that "(Robert) Lampman's preference for investing in youth as the best way to fight poverty reflected faith in education and human capital theory" (p.107). Brauer also writes that the economists involved in the War on Poverty "were in part guided by ideals of social justice, but their approach to poverty also reflected efficiency ideals, faith in human capital theory, and culture-of-poverty assumptions" (p.118-119).

³⁶ *Economic Report*, 1964, chapt. 2. See also Lampman (1965) and Brauer (1982).

lens provided by “empowerment theories” developed in the more radical precincts of political science and sociology (Forget 2011). Many of the ideas developed by the Heller task force were dropped in favor of proposals from the Shriver group during the development of The Equal Opportunity Act of 1964, which included educational components such as Head Start and provisions for adult education. However, some of these same ideas, reflecting the influence of human capital theory, came to be included in the Elementary and Secondary Education Act of 1965 (Jeffrey 1978, p. 28). This bill, which authorized the use of unprecedentedly large amounts of federal funds for educational programs designed to serve the children of low income families, remains the major piece of legislation governing federal funding of and influence over elementary and secondary education in the US.

Conclusion

Before 1958, “human capital” was little more than a suggestive phrase in economics, and played no role in discussions of education policy. Within five years, there was an active theoretical and empirical research program in economics organized around the idea that certain activities could best be understood as investments in human capital. Over the same short period, the new idea of public spending on education as a form of investment with a demonstrably high rate of return and the capacity to contribute to the achievement of important national goals was enthusiastically communicated to the public by opinion leaders, policy makers, and even a President. We have documented two reasons why the human capital idea so rapidly came to influence education policy: the human capital idea implied that policies promoting education could advance goals – first faster economic growth, then poverty reduction – that circumstances pushed to the top of the nation’s policy agenda during the period of human capital theory’s initial

development; and an advocate of the theory who could persuasively explain the logic and the emerging empirical evidence linking education to those goals moved into a position of power and influence.

The War on Poverty marked the Federal Government's acceptance (or claim) of an ongoing responsibility for education. As we have noted, human capital theory was only one of several conceptual frameworks employed by the designers and administrators of the new federal education policies. We would say, however, that Heller's work while chairman of the CEA had established a beachhead for human capital theory in the federal economic and education policy apparatus. This was in part due to his own skills in explaining and promoting the theory, but also likely owes something to his decisions about whom to hire as staff researchers, and to the growing acceptance of the theory among economists in general. Pioneering human capital researcher W. Lee Hansen remarked that during his time as a CEA staff researcher in 1965, everybody at the CEA thought about education policies and programs from the perspective of human capital theory.³⁷

We would also say that the beachhead proved to be permanent, and provided a base from which economists were able to expand their influence on US education policy.³⁸ It would take us well beyond the scope of this paper to prove this assertion, but the basic argument begins with a point made in the introduction: It is now widely agreed that the Federal Government has a responsibility to provide funding for education, and increasingly, in practice if not in principle, a right to exercise control over education. A, if not the, central purpose to be promoted by federal education policy is economic; based on education's perceived capacity to increase the

³⁷ Interview with J. Biddle, Oct. 2014

³⁸ It should be noted that economists employed by the Department of Health, Education, and Welfare were also working on education policy in the early War on Poverty period. Forget (2011) tells the fascinating story of how economists were able to gain influence at the OEO at the expense of Shriver's "OEO radicals."

productivity and thus the earnings potential of the individuals who receive it, as well as the nation's economic power or "global competitiveness." And it is widely accepted that economists, and the modes of thought and methods of analysis employed by economists, have an important role to play in the shaping, evaluation, and administration of education policy. None of these things were true in 1960; but all of them follow logically from the human capital perspective on education policy established at the CEA by Walter Heller.

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