

Chapter 9 Segue to the Progressive Era

§ 1. The Legacy of the Plutocratic Era

The education reforms of the Plutocratic Era took place during and were part of reorganization and reconstitution of the new American Society that rose from the bloody tumult of the Civil War of 1861-'65. It is this Society that still exists today, albeit the symptoms of disintegration are increasingly evident here in the second decade of the 21st century. The reforms of the Plutocratic Era had, to recapitulate from chapter 8, the following principal outcomes:

- expansion and revision of the common (elementary) school curriculum;
- broadening establishment of high schools with a small increase in high school enrollments;
- the widespread establishment of normal schools for better training of common school teachers;
- adoption, in a modified and generally inferior form, of the teaching innovations that had been developed from Pestalozzi's work in Switzerland at the beginning of the century;
- expansion of state colleges and universities with an accompanying slowly growing greater emphasis on science and technical training at the collegiate level; and
- establishment of the National Education Association as a professional society having for its objective the development of educational methods and policies.

What I find striking about this is: these outcomes developed from intensely political competition between rival factions and mini-Communities of the period, each working for its own self interest and each wholly committed to its own point of view. The political competition was fought state by state, the general government still being barred from having any direct role in social legislation by the 10th Amendment. In these battles the two political corporate persons – the Republican Party and the Democratic Party – reacted to both the popularity of the movements and lobbying efforts – particularly those of large-scale aggregated-capital industrialists of the pools and trusts. The political parties were by no means the drivers of any of the reforms and merely acted in accord with their own corporate self interests, which were to rule the country and to safeguard their power to rule. The parties led the country in much the same way carved wooden figureheads at the bow at one time "led" sailing ships.

The result was partial victory plus partial defeat for each contesting corporate interest. In the propaganda of our time this is called "compromise" but in fact it was not. If compromise had actually been achieved, the compromised issue would have been settled. In point of fact, none of them were and each faction, after an interlude and political cooling off period, resumed its efforts to overturn the gains made by its rival faction or to defend its own gains from a renewed assault. The Toynbee challenges faced by American Society were not met and nothing was settled. If it had been otherwise, the reform movement of the so-called Progressive Era – sometimes called Deweyism – would not have gotten underway even before the reforms of the Plutocratic Era were played out.

It is instructive to look at the divers parallel movements of the Plutocratic Era. Blake outlined some of them using timelines in his little booklet [Blake (1961)]:

- vocational education in California (1854-1915);
- the Trade School Movement (1868-1912);
- the Corporation Schools Movement (1872-1905);
- the Manual Training Movement (1876-c. 1900);
- the Public Normal School movement (1839-c. 1900);
- the common schools curriculum reform movement (c. 1850-c. 1900)
- the high school movement (1856-1900);

- the professionalism movement in education (1857+);
- the Agricultural School Movement (1868-1917);
- the Business College Era (1850-c. 1890);
- the Business Education in High School Movement (c. 1890-1937);
- the State Colleges Movement (1862-1890);
- the building of American Universities (1880-1910).

It is evident merely from the sorts of labels attached to these movements that the divers special interests associated into various mini-Communities were involved in education reform during the Plutocratic Era. It is also evident that a number of these movements continued in parallel with the common-school-centered reformations of Deweyism and became part of the Progressive Era.

§ 2. Curriculum Reform in the Common Schools

By 1900 reform in the common school curriculum had more or less taken on the form it kept throughout much of the 20th century. Table 9.1 [Cubberley (1919), pg. 327] lays out common school subject-matter from 1775 to 1900. Hand in hand with this development went a parallel development in teaching methods that often supplied the grounding purpose for the new subject-matters introduced into the curriculum. In large degree the curricula from 1850 forward have to be seen and were seen as *tools for effecting new teaching methods*.

TABLE 9.1

Elementary School Curricula
1775 to 1900

1775	1825	1850	1875	1900
READING Spelling Writing <i>Catechism</i> BIBLE Arithmetic	READING * <i>Declamation</i> SPELLING * <i>Writing</i> <i>Good Behavior</i> <i>Manners & Morals</i> ARITHMETIC *	READING DECLAMATION SPELLING WRITING Manners Conduct MENTAL ARITH. * CIPHERING	READING <i>Literary Selections</i> SPELLING PENMANSHIP * Conduct PRIMARY ARITH. ADVANCED ARITH.	READING * LITERATURE * <i>Spelling</i> <i>Writing</i> * Conduct ARITHMETIC *
	Bookkeeping GRAMMAR Geography	Bookkeeping Elem. Language GRAMMAR <i>Geography</i> History of the U.S.	Bookkeeping <i>Oral Language</i> * GRAMMAR <i>Home Geography</i> * TEXT GEOGRAPHY U.S. HISTORY <i>Constitution</i>	Bookkeeping ORAL LANGUAGE <i>Grammar</i> <i>Home Geography</i> TEXT GEOGRAPHY <i>History Stories</i> TEXT HISTORY
	Sewing & Knitting	Object Lessons Sewing & Knitting	Object Lessons * Elementary Science * Drawing * Music * Physical Exercises Sewing & Knitting	<i>Nature Study</i> * Elementary Science <i>Drawing</i> * <i>Music</i> * Play Physical Exercises Sewing Cooking Manual Training
CAPITALS = Most important subjects. <i>Italics</i> = Subjects of medium importance. Roman = Least important subjects.				
* = New teaching methods employed.				



Figure 9.1: Photograph of the common school class and teacher in Fulton, IA, 1928. The Fulton school was a typical rural one-room-schoolhouse unusual only for the fact that its teacher in 1928 (far right in the photograph) was a man rather than a woman. The total U.S. population was 76,094,134 in the year 1900; of this, 45,834,654 people (60.2%) lived in rural areas [Bureau of the Census (1949) Series B160-164, pg. 29].

Seen from the pseudo-metaphysical attitude of American Pragmatism that has always been a prominent feature of American civilization, subordination of subject-matter to teaching method is the opposite of the way most Americans usually think about school curricula. Today it is likely true that the idea of subject-matter and the idea of teaching method have become divorced from each other more or less completely – a kind of intellectual division of labor by specialty – but in the Plutocratic Era of school reform subordination of subject-matter to teaching method and to purpose-of-instruction was the rule rather than the exception and formed an essential part of the core of teacher training in the normal schools that were set up during that period. *The science of mental physics tells us this subordination is the correct relationship* for the purpose of public instructional education, and so at least in this the school reforms of 1870-1900 were correctly done. This part of the reformation is owed entirely to the mini-Community of educators. It was, however, one of the contributors to competitive discord between the educator mini-Community and the industrialist mini-Communities of the period (who all saw curriculum subject-matter as primary and had little or no regard for teaching method). The verdict of a social-natural science of education is unequivocal on this point: the professional educators were right and the industrialist mini-Communities were wrong in regard to their opinions about school reform. *Specific* teaching methods, however, are another matter. The next section discusses the era's new teaching methods.

It is erroneous to assume that common school curricula were completely common in the U.S. by 1900. The reforms were effected state-by-state and locality-by-locality and so there was a

good deal of variation in curriculum from place to place. The commonalities that existed were principally the product of teacher training in the normal schools. The variations were principally owed to local differences in funding for schools, the social environment of the place (especially urban vs. rural), and local political attitudes and decisions. The opinions and propositions of the educators did not prevail everywhere over those of other mini-Community constituents and the period was marked by an intense factional power struggle over control of the schools.

I have noticed it is fairly typical of education histories and treatises that descriptions and even presuppositions regarding the institution of public instructional education tend to be biased toward the point of view of urban-dwellers. However, in 1900 the population of the U.S. was still 60.2% rural (45,834,654 people out of a total U.S. population of 76,094,134). Of this rural population, only about one person in five lived in an incorporated rural community. There were 2,128 rural communities with between 1,000 and 2,500 inhabitants, numbering 3,297,839 people. There were 6,802 incorporated rural communities with fewer than 1,000 inhabitants, and this segment added up to 3,003,694 inhabitants. The remaining 39,533,121 people lived in the unincorporated townships [Bureau of the Census (1949), Series B161-164, pg. 29].

This fact simply cannot be ignored or discounted in any reckoning of the effectiveness of the institution of public instructional education during the Plutocratic Era. The environment and nature of the rural school was very different from that of the urban school. The most prominent feature of rural public instructional education, until well into the 20th century, was the storied "one room schoolhouse" with a single teacher working with children of all grades up to 8th, an age range from around 6 years of age up to age 13 or 14 years. Figure 9.1 illustrates one of these, the 1928 class of the Fulton common school in little Fulton, Iowa. Fulton was an unincorporated town with a population of around 100 people and 129 dogs in 1900 – hence its local nickname was "Dog Town" [Jackson County Historical Society (1989), pp. 75-76].

We can gain a feel for the rural school institution in Iowa from an account given by Mrs. Tresa Bickford (*b.* 1907), who was an Iowa schoolteacher from 1934 to 1972. Mrs. Bickford tells us,

Normal Institutions were established [in Iowa] on the 19th of February, 1874, by the General Assembly. County superintendents were required, each year at some point in the county, to hold drill for those who were teaching or aspiring to be teachers. Aspiring teachers were required to take Normal training in a Normal School and Normal Training High Schools began to appear. Extension schools were held in various parts of the state for a three month period during the summer, or a teacher could qualify for a rural school certificate with one year of training at an accredited college. Teachers' examinations were required in all cases. . . .

There were two types of school districts formed: Independent and Township. An Independent School Board was governed by a board of three directors and a secretary and a treasurer. In the Township type there was one director for each school. There were usually eight to ten or more schools in each township and so this was called a township board, together with a secretary and a treasurer. . . . Officers for all schools were elected the first Monday of March every year by the people of the district. Schools had a half day for this holiday. The number attending these elections was often influenced by the popularity and status of the teacher in the school. . . .

To stress up-grading of the schools there existed what was known as a Standard school. These had to meet certain requirements. The teacher had to have a first grade certificate. Buildings had to meet certain requirements: equipment had to be good; hot lunches served; standard textbooks; weekly programs; victrolas to teach the Fullerton Music Program. Schools also had to have some playground equipment and the building had to be kept in good repair. If a school earned this status, a plaque was put on the door. . . .

Lighting was always a problem since there was no electricity. Some schools had wall

brackets which were filled with kerosene lamps. There were usually three on each side of the building. The vestibule was lighted with lanterns brought by the patrons. The duty of the teacher was to keep the lamp chimneys clean and the bowl filled with kerosene. After Aladdin Lamps came into use, the teacher and parents would bring them for lighting. . . .

Every school was equipped with a flag and pole. The teacher could display the flag on every nice day. Sometimes in the spring and fall I would have the pupils march out and form a circle around the pole, after the flag was raised, they would say the pledge to the flag and sing one verse of the Star Spangled Banner. The students loved this and it made the flag more meaningful to them.

The first schools had very few books but gradually, as time went on, more and more books began to appear. They were placed in a special bookcase purchased for that purpose. I will mention a few of the books you would find. *Five Little Peppers*, *Swiss Family Robinson*, *Little Women*, *Little Men*, *Pilgrims Progress*, *Laddie* (by G.S. Porter¹), *Freckles* (Porter), *Mrs. Wigs of the Cabbage Patch*, *Grimm's Fairy Tales*, Karzan, Books on *Mythology of the Greeks and Romans*. I am mentioning these because I found them in every school library wherever I taught. Two sets of reference books were found in some schools, *World Book Encyclopedia* and *Compton's*. Most had a copy of the Bible. . . .

With the advent of better training came also a move to improve the buildings. Most of them were wooden structures with not much attention paid to correct lighting. Almost all had windows on both sides and some had two at the back. Quite a number were made of rock, due to the abundance of limestone in Jackson County. A stove was usually situated in the middle of the room. Most schools had a cloak room where coats and overshoes were placed for the day. Dinner pails were stored on shelves here, too, but if the weather became too cold in the winters they had to be brought inside to keep the sandwiches from freezing.

There were many problems confronting teachers as better buildings appeared. Some of these problems were: low wages, absenteeism, and crowded conditions. With all eight grades in one room, there were so many classes that ten minutes would be the most time allowed for each class. Other problems were age differences, head lice (yes, this was often a problem) and no water on the grounds. This had to be carried from the nearest neighbor or sometimes the teacher brought a cooler full of water with her. . . . It was a problem for children to give up recess time, so the wise teacher would let them take a few minutes of school time to get a bucket of water [from the well if the school had one] if their class work was done. Everyone had to bring their own drinking cup. . . .

Teachers in a rural school were expected to do all things: clean the school, start fires on a cold morning, sweep the floors (sometimes dust became a problem when sweeping compound was scarce), supervise playground, do your own bookwork, attend county meetings, drill pupils for eighth grade exams (often remaining after school with pupils who were willing; a teacher was not rated very highly if her pupils failed these tests), and *Keep Order*. This was the name most directors used for discipline. Actually, if a teacher went to the playground with the pupils and took part in the games, discipline was not much of a problem.

Games were seasonal. In the fall, especially in the twenties and thirties, it was softball in training for that tournament. First place winners were given a trophy . . . Other games commonly played in all schools were: Grey Wooley, Drop the Handkerchief, Pom-Pom Pullaway, Lose Your Supper, and Anteover (played with a ball thrown over the wood shed or, sometimes, even the school house).

In winter, a lot of indoor games were used. Some were blackboard games like One Old Cat, Tic Tac Toe, CIPHERING DOWN (which was good arithmetic drill), and Spell Downs or Bees. After a snowfall there was sledding, fox and geese, and a game called angels in the snow. Then in spring there were marbles, jumping rope and training for track events, which

¹ Gene Stratton Porter (b. 1868, d. 1924), American novelist.

was another fun day for all schools. Blue, red, and white ribbons were given for winners in these events. All the schools participated, even teachers took part in some of the events.

If the school was small, the teacher had to use a lot of ingenuity to keep the pupils happy. I taught one school where we had seven pupils, not enough for an organized game. The school house was stone with a six or seven inch ledge extending out from the wall from the front door clear around the building. We, teacher and all, would start at the front steps and try to stay on the ledge clear around. We had to use our finger holds to keep from falling off. I could keep my eye on the three little ones who brought toys from home or had other ideas for play. [Jackson County Historical Society (1989), pp. 18-19]

Two things I wish to emphasize from Mrs. Bickford's account are the elements of ceremony (in her case, the flag ceremony) and *organized games as part of the curriculum*. Perhaps you were surprised to see "Play" listed as part of the 1900 curriculum in table 9.1. *Organized play with active teacher involvement constitutes an element of corporal education* in the curriculum. Mental physics teaches us that all meanings are at root *practical*, which means they involve *physical* experience. This knowledge of experience augments the more abstract lessons of history and, combined with conduct lessons and literature, promotes the metaphysical functions of art cultivation² and corporal civics values³ in the learner's personal dimension of instructional education. The theoretical motivation behind its inclusion in the curriculum originated from the methods of Pestalozzi discussed in the following section. This part of the curriculum is *primarily* responsible for the modest improvement in corporal education in the personal dimension of the learner noted in chapter 8. It is an element almost entirely unappreciated or wholly misunderstood in the institution of American public education today. What remains of it today is a pale and more or less ineffective shadow of 1900, which is why for present day public instructional education the 3LAR rating for both these corporal education functions falls back to a zero rating. I find it ironic that this element of the reforms of 1900 – which was one of the very few things about the reforms to actually improve the institution of public education during this period – is listed in table 9.1 by Cubberley as one of the "least important subjects."

A brief blossoming of the efforts of Horace Mann *et al.* in the Republic Era of reform – as well as some of the curricular elements of the 18th century enlightenment liberality of Jefferson, Franklin, and the American Philosophical Society – is evident in the common school curriculum by 1875. This is evidenced primarily in the increased emphasis on arithmetic, English grammar, geography, U.S. history and Constitution study, as well as the rudimentary beginnings of science education. Object lessons, a term most people are not familiar with today, was a sort of segue into the study of science and was a mark of the influence of the prescientific child-psychology-based pedagogy methods first developed in Switzerland by Pestalozzi in the early 19th century. The teaching of geography, history, and the Constitution represents in this curriculum the citizenship-preparation objectives of the reformers of the Mann era. The 1875 curriculum bears the fingerprints of the National Education Association (founded in 1870) and the primary influence of education theorists on the development of schooling in the U.S. It can be fairly said that the 1875 curriculum is representative of the closest the institution of public education in the U.S. has ever gotten to the establishment of what Hutchins, Adler and others in the 20th century called liberal education [Hutchins (1959)]. Many U.S. educators have claimed over the years that once a liberal education was provided by public schooling in the U.S., but the reality of education history does not support this claim. It might have been, but in fact never was.

² inclusion in the curriculum of designed physical exercises that exploit the phenomenon of moral realism in such a way that the learner develops a desired sense of justice.

³ inclusion in the curriculum of a suite of designed corporal exercises in scheme-building that produce a value structure within the learner according to which he becomes willing to pledge himself to Duties to others according to their situations.

The changes and non-changes in the common school curriculum in passing from 1875 to 1900 bear evidence of the political power struggle to control U.S. education that took place in the Plutocratic Era. By the end of the 19th century, the rulers of some industrial mini-Communities, proponents of the Manual Training Movement, and many pragmatically-minded parents had been pressing hard for a more "practical" education that prepared children for work at the better paying jobs in the labor market. Most factory jobs could be filled by unskilled laborers, but in some industries, such as the construction industry, skilled craftsmen were still required. The end of the apprenticeship system meant the end of the institution that once had produced skilled laborers. Craftsmen were therefore fewer in number and those who possessed the required skills could demand and get higher wages. A craftsman earned about 1.7× more than an unskilled laborer.

The present day emphasis most American parents place on schooling that prepares their children for *specific* trades traces its origins to this aspect of Plutocratic Era reforms. A greater emphasis on the teaching of science also partly came from this segment of the public, but the case for science came more from industrialists than from the public in general. Sewing and cooking (for girls) and manual training (for boys) are the clearest reflections of these mini-Communities' interests in 1900. It is a mark of the country's general ignorance of the rudiments of economics that most proponents of manual training did not understand that if the school system produced graduates skilled in specific craft trades in great numbers, the wages these jobs could demand would fall sharply as supply of the *particularly* skilled workers increased.

In one context these mini-Communities were correct to press for "practical" education because the acquisition of *capital skill*⁴ is an essential factor in tangible education. In particular, it is an essential factor in the tangible education functions of skills of enterprise and skills of civil liberty. However, then as today, the specific educational solutions proposed were inadequate because it was not capital skill that the proponents sought to make part of public instructional education. Instead it was merely *job skills*. Job skill and capital skill are not the same thing, although the latter is essential for Progress in the former. If a Community of ruling oligarchs wishes to hold a body of people in a state of economic slavery, it can hardly accomplish this more effectively than to make job skills the primary focus of public education. If a person wishes to make himself an economic slave in permanent servitude to and at the mercy of others, he is unlikely to find a way of making his slavery actual more efficiently than by devoting his educational Self-development to the single-minded pursuit of some one particular job skill. Adam Smith wrote,

The five following are the principal circumstances which, so far as I have been able to observe, make up for a small pecuniary gain in some employments, and counterbalance a great one in others: first, the agreeableness or disagreeableness of the employments themselves; secondly, the easiness and cheapness, or the difficulty and expense of learning them; thirdly, the constancy or inconstancy of employment in them; fourthly, the small or great trust which must be reposed in those who exercise them; and, fifthly, the probability or improbability of success in them.

First, the wages of labor vary with the ease or hardship, the cleanliness or dirtiness, the

⁴ By capital skill I do *not* mean a specific trade skill the individual, as wage-earner entrepreneur, can barter commercially. The term *almost* means "a job skill" but its *fundamental* meaning is *acquisition of the ability to acquire skill in some art* one can then use for barter in the economic marketplace. The vast majority of young people just starting out do not possess a sufficient tangible stock of economic goods to immediately become capitalists. Necessary consumption requirements dominant their economic life at this stage. Being without tangible startup capital, their futures depend upon their intangible stock of knowledge they can convert to tangible stock through wage-earning, by means of which acquisition of tangible capital stock becomes possible. This *intangible* stock of knowledge is what I mean by "capital skill." In the vast majority of all cases, capital skill is the gateway to what we like to call "the good life" and "the American Dream." It is the single element of tangible *Personfähigkeit* capable of defeating poverty.

honorableness or dishonorableness of the employment. Thus in most places . . . a journeyman tailor earns less than a journeyman weaver. His work is much easier. A journeyman weaver earns less than a journeyman smith. His work is not always easier, but it is much cleaner. A journeyman blacksmith . . . seldom earns so much in twelve hours as a collier, who is only a laborer, does in eight. His work is not quite so dirty, is less dangerous, and is carried on in daylight and above ground. . . .

Secondly, the wages of labor vary with the easiness and cheapness or the difficulty and expense of learning the business. When any expensive machine is erected, the extraordinary work to be performed by it before it is worn out . . . will replace the capital laid out upon it, with at least the ordinary profits. A man educated at the expense of much labor and time to any of those employments which require extraordinary dexterity and skill may be compared to one of those expensive machines. The work he learns to perform, it must be expected, over and above the usual wages of common labor, will replace to him the whole expense of his education, with at least the ordinary profits of an equally valuable capital. It must do this, too, in a reasonable time, regard being had to the very uncertain duration of human life, in the same manner as to the more certain duration of the machine. The difference between the wages of skilled labor and those of common labor is founded upon this principle. . . . Education in the ingenious arts and in the liberal professions is still more tedious and expensive. The pecuniary recompense, therefore, of painters and sculptors, of lawyers and physicians, ought to be much more liberal; and it is so accordingly. . . .

Thirdly, the wages of labor in different occupations vary with the constancy or inconstancy of employment. Employment is much more constant in some trades than in others. In the greater part of manufactures, a journeyman may be pretty sure of employment almost every day in the year that he is able to work. A mason or bricklayer, on the contrary, can work neither in hard frost nor in foul weather, and his employment at all other times depends upon the occasional calls of his customers. He is liable, in consequence, to be frequently without any. What he earns, therefore, while he is employed must not only maintain him when he is idle, but make him some compensation for those anxious and desponding moments which the thought of so precarious a situation must sometimes occasion. . . .

Fourthly, the wages of labor vary accordingly to the small or great trust which must be reposed in the workmen. The wages of goldsmiths and jewelers are everywhere superior to those of many other workmen, not only of equal but of much superior ingenuity, on account of the precious materials with which they are entrusted. We trust our health to the physician; our fortune and sometimes our life and reputation to the lawyer and attorney. Such confidence could not safely be reposed in people of a very mean or low condition. Their reward must be such, therefore, as may give them that rank in the society which so important a trust requires. . . .

Fifthly, the wages of labor in different employments vary according to the probability or improbability of success in them. The probability that any particular person shall ever be qualified for the employment to which he is educated is very different in different occupations. In the greater part of the mechanic trades, success is almost certain; but very uncertain in the liberal professions. Put your son apprentice to a shoemaker, there is little doubt of his learning to make a pair of shoes; but send him to study the law, it is at least twenty to one if ever he makes such proficiency as will enable him to live by the business. In a perfectly fair lottery, those who draw the prizes ought to gain all that is lost by those who draw the blanks. [Smith (1776), pp. 88-94]

Every one of Smith's five principles pertains directly to labor supply. Higher pay goes to the rarer skill, a supply balance that is always changing. If the Community of a Republic wishes to be or remain a Society of free people in civil Community, *capital skill* is a necessitated element in its institution of tangible public instructional education, *job skills* only secondary *as teaching-means*.

I profoundly doubt if educators, or anyone else, in the 19th century understood the Critical

distinction between capital skill and job skill. However, the educators of the 19th century did appear to clearly understand that mere job skill served the direct interests of capitalist entrepreneurs of the day rather than the indirect interests of their pupils as future American citizens. The educators pushed back against the movement to make common school education job-skills-focused, and this issue was one of the battlegrounds over curriculum in the Plutocratic Era. Reese describes the flavor of the battle for us:

Across the nation, manual training and industrial education had become a panacea. They would teach the work ethic, end vagrancy, tame the labor force, reconnect the mind and body, make schools practical, and rescue listless children from boring textbooks. Everywhere the schools had trained the mind but ignored the body. Both needed attention, as the advocates of object teaching, kindergartens, and manual training noisily and repeatedly argued. This did not always lead to any agreed-upon curricular program or rationale. But it foreshadowed heated debates in the early 1900s between the defenders of academic instruction and commonality and admirers of a more experimental, child-centered pedagogy for everyone, with vocational courses for certain groups. . . .

Like Booker T. Washington, advocates of this aspect of the new education painted caricatures of well-educated youth out of work or unfit to plow a field. Manual training, they said, was more democratic than academic studies since it prepared pupils for the mundane but essential work of the world. As one contributor to the *Educational Weekly* opined in 1883, "it is as possible to train a boy mentally and spiritually by teaching him and requiring him to solve problems in the use of a plane or a square, as in the analysis of questions in mental arithmetic or drill in the infinitive." Far better to learn how to build a wagon than study grammar, said one speaker at a national convention. . . .

By the late 1880s, many urban school systems had established experimental programs such as woodworking for boys, cooking and sewing for girls, and manual training high schools, which opened in Toledo, Chicago, and some other cities, initially under private patronage. The idea of learning by doing, of actively engaging students in the study of things and not just words or books, grew directly out of the romantic tradition and slowly shaped more urban schools. And, as one activist wrote in 1886 in the *Age of Steel*, a trade publication, once "head and hand" were educated together, children would leave school "better prepared to make a living." . . . Numerous places taught wood turning, metalworking, and leathercraft. Exactly how a class in drawing, paper folding (in kindergarten), and sewing and woodworking constituted actual "industrial education" remained unclear.

Thousands of schools nationwide added manual training and industrial courses, but there was also powerful resistance to change. Many educators . . . thought the curriculum was already overcrowded, preferred spending money on new buildings or teachers' salaries, and doubted that the practical courses reformers desired were really very practical. Even Ralph Waldo Emerson, the hero to many romantic educators, had eloquently written that the purpose of education is to make a life, not a living. . . .

While manual training and industrial education made visible headway late in the century, tradition was not easily pushed aside. Many educators and citizens went on record opposing them, even if they agreed that schools were often boring and textbooks deadening. Conventional teachers, always in the majority, were understandably offended when called old fogies or mean-spirited for insisting that children concentrate on academics. Like Harris⁵, many educators and ordinary citizens still believed that schools should stay focused on training character and teaching the basic subjects. . . . To prepare children for particular trades seemed absurd and undemocratic, said many writers. The school code hardly required teachers to "fit a man to be a gardener or a blacksmith" or "a woman to be

⁵ William T. Harris (1835-1909), a prominent educator in the latter half of the 19th century who merited being called the Horace Mann of his day. In his day he was an international figure in the field of education.

milliner or sick-nurse." Emerson E. White⁶ pointed out that the 1870 federal census listed 338 different occupations, so which trades should schools teach? Harris predictably denounced any attempt to turn the common schools into trade schools, underscoring the arrogance of the proposal. "Who can tell, on seeing a child, what special vocation he will best follow when he grows up?" he asked in 1880. [Reese (2011), pp. 105-107]

My friend, if you think vagrancy is caused by sloth rather than by lack of viable opportunity and frustration, or that the labor force needs to be tamed, or that there is some one universal work ethic best for all individuals for all times, then I'm sorry to tell you that you have developed some pretty strange, and scientifically unnatural, ideas about human nature. The recipe of the manual training reformers can only work in an economic environment that is entirely stagnant and is devoid of innovation and change. But that is never encountered in any industrial Society. It was a prescription for training a permanent lower caste of laborers and for the perpetuation of poverty.

On the other hand, romantic notions cherished by many educators of a more Rousseau-like⁷ persuasion were well off the mark, too. Such romantic fantasies either rely upon a mystic notion that book-learning disconnected from other experience is beneficial to the Community or upon a wistful fatalism that holds childhood to be such a brief and precious time of life that the vulgar world of work and the hard scrabble for *Existenz* should be put off as long as possible. Both premises overlook the fact that a child finds life as difficult and challenging for him as any adult finds it, and he is handicapped by such limited horizons of actual experience that he has had time to develop only a very limited manifold of practical rules to employ in satisfying the never-remitting dictate of his process of practical Reason for equilibrium. An adult who exhibits the same poverty of response maxims that a child has at his disposal is diagnosed by psychiatrists as having a personality disorder. The "world of work" and "the hard scrabble for *Existenz*" is known by another name as *the experience of personal independence and liberty*.

That the common school curriculum, compromised as it was, was a significant improvement over the curriculum of 1775 is beyond reasonable doubt. That it was inadequate to meet the minimal just requirements of a social contract is also beyond any reasonable scientific and social-natural doubt.

§ 3. Teaching Method Reforms of the Plutocratic Era

§ 3.1 Pestalozzi

The reforms promoted by educators in the Plutocratic Era represent an answering, or at least an attempt to answer, an intuition of societal need based on new ideas of method brought to the United States from Germany and England. These, in turn, developed from a groundbreaking new vision of teaching pioneered by a remarkable Swiss humanist, Johann Heinrich Pestalozzi. It is fair to say that the educator reforms were the first American attempt to turn teaching into a real science. That this effort failed and teaching did not become a science does not detract from the merit of the intention. Modern science was a European innovation not native to America and Americans in the 19th century were amateurs at it. At no time in our history has America been a scientific Society and our outlook on science has always been more Roman than Greek. It is fair to say we have been a nation of technologists but not a nation of scientists. There were well-bred ladies of upper-class Paris society in the 18th century more scientifically literate than the vast majority of Americans have ever been. America had just *one* physical-natural scientist in the 18th century, Benjamin Franklin, although it did have what is arguably the most remarkable group of *social-natural* political scientists who ever lived at the same time in the same country. Franklin,

⁶ Cincinnati's school superintendent in the 1880s.

⁷ as exemplified in Rousseau (1762)

John Adams, Thomas Jefferson, George Washington, Alexander Hamilton, James Madison, Benjamin Rush, Nathaniel Chipman, and James Sullivan were prominent among them and there were others as well. America has never again seen their equals.

The life and work of Pestalozzi [Cooke (1894)] is sometimes touching, sometimes uplifting, sometimes sorrowful. He was the first great humanist in education. He and his wife bankrupted themselves taking in Swiss children left orphaned and abandoned by their Society during the Napoleonic Wars. He was the first to empirically study learning phenomena in children and to experiment with more effective methods for teaching them. He was the first to apply psychological reasoning to educational Self-development, and this despite the fact that in his day psychology did not exist as a science at all. He was the first educator to insist upon seeing the child as a whole person and to understand that the child is its own agent, the teacher a guide and mentor to the child's own educational Self-development. More than a century before Piaget, he apprehended a notion that child development follows a psychological process the teacher can exploit for more effective teaching. Yet Pestalozzi, while an empiricist, was not quite a scientist. Pestalozzi methodology can be likened to education science as alchemy is to chemistry. He made education-study into a natural history but not quite a natural science. He was the first important educator to see that the role of the teacher is akin to that of the farmer. The farmer does not grow the corn; the corn grows itself and all the farmer can do is prepare the field and provide the conditions under which it can best do so. So teaching is as well: the teacher cannot "learn the child some arithmetic"; the child is the learner and all the teacher can do is provide conditions and stimuli by which the child can best self-accomplish this. Teachers are *cultivators*.

Pestalozzian educational methodology was based on 12 principles that were paraphrased from eleven "laws" (hypotheses) set down by Pestalozzi in 1800 [Pestalozzi (1820), pp. 199-211]:

1. rejection of teaching only words and facts in favor of reducing the education process to a well-organized routine;
2. basing pedagogy on the natural and orderly development of the growing child's instincts, capacities, and powers;
3. emphasizing learning based on observation, experimentation, and reasoning by the child;
4. psychologizing the educational process by harmonizing it with the natural mental and physical development of the child;
5. experimental development of teaching methods based on studying children and childish learning;
6. approach teaching using the motto "Read nothing, discover everything, and prove all things";
7. treating education as a holistic process of child mental, physical, and moral development;
8. teaching based on guided stimulation of the child's self-activities, which for the child is based on intuition and exercise;
9. using graded steps in education matched to the stages of child development;
10. learning by doing rather than by words;
11. having faith in the power of education to regenerate society; and
12. rejection of the brutal discipline common up to that time in schooling and substituting in its place a strict but loving discipline.

If most of this sounds familiar and old-hat to you, it is because Pestalozzi's work thoroughly changed teaching and instructional education in the United States, and *you* grew up under the guidance of his methods. Today the old methods are found only among people who are uneducated in teaching and unfit to teach a dog to do tricks. If you had been a schoolchild in a pre-Pestalozzi school, you would have been required to "learn" by rote memorization, perform parrot-like recitation of what you had memorized, and any shortcoming-in-learning you exhibited would have minimally brought you a sharp rap on the skull with a thimble or a stick. If you proved resistant to this "discipline," you would have gotten to experience a switching, a beating with a

rod, or, in the most extreme case, you would have been tied to a whipping post and whipped. In the latter cases, it wasn't too unlikely you'd get a second "helping" from your parents at home later. I can think of few ways to better perpetuate outlaw/criminal mini-Societies within a general Society, or to ensure this Society experiences periodic outbreaks of the most horrid sorts of enormities characterized by extreme violence.

Pestalozzian principles can be critiqued in regard both to the mental physics of human nature and to scientific findings of 20th century developmental psychology. When this is done it is found that principles 1-4, 7, 9-10, and 12 are fully congruent with both mental physics and with various empirical findings of Piaget and his collaborators. This means that on these principles Pestalozzi was entirely correct and these principles are to be made an integral part of teaching pedagogy. Two more principles, numbers 5 and 8, are also congruent with the mental physics of human nature but require additional comment. Principles 6 and 11 have problems.

In regard to principle #5, experimental development of teaching methods based on studying children and childish learning: actualization of this principle runs into an issue very familiar to present-day psychologists. This is the issue of the ethics of experimenting with human subjects. If a teaching hypothesis that such-and-such a method will benefit the child's learning and it turns out that this hypothesis is confirmed by the experiment, then all is well. But what if the hypothesis is wrong and the experience is harmful to the social development of the children who were made test subjects? Perhaps the pertinent ethical issue involved is clear to you even if resolving it is not. The topic requires a great deal more discussion and space than is appropriate here in volume II. For now I limit my remarks to merely these: the pertinent ethics are deontological, not consequentialist- or virtue-ethics based. A Society must resolve the question on deontological grounds, and this means that the Society's social contract is the arbitrator of justice for the issue. As different Communities are formed with different social contracts, arriving at a one-size-fits-all answer to the ethical issue is unlikely. By the standards of every present-day Western Society, the educational methods of ancient Sparta were brutal and unethical almost beyond belief. But the fact remains that they were fully congruent with the Spartan's harsh social contract and were fully endorsed by the Spartans themselves. The ethics and moral customs of one Society cannot be justly condemned by another Society based on an opposing social contract. In point of fact, all of ancient Helena regarded Sparta as *the* most morally upright Society in their civilization, and this despite the fact that almost no one from any other city-state wanted to be a Spartan [Plutarch (date unknown), pp. 413-19]. Even the Romans admired Spartan moral character.

In regard to principle #8, teaching based on guided stimulation of the child's self-activities based on intuition and exercise: Intuition is objective perception grounded in the mental process of reflective judgment – which is a subjective judgment process. It is part of apprehension and apperception in the synthesis of sensibility, its process is unconscious (only the *representation* of the intuition is made conscious), and the perceiving of an intuition is a mental act the teacher cannot cause the pupil to effect. However, the teacher can stimulate the child's process of receptivity and provide objects of experience that the child will focus on in its synthesis of intuition. All meanings are at root *practical* before being *made* objective, and the representation of an intuition always is made with connections to basic sensorimotor schemes that constitute the rock-bottom Semantic of every objective perception (Weaver's model, chapter 8, figure 8.3). The correct Critical interpretation of the 8th principle is: the teacher should guide the child's *practical* understanding of lesson-objects *first* before attempting to guide the child to any *cognitive* objective understanding of the object. Furthermore, this guidance requires the teacher *to fill an active and purposive role* in guiding the child to its understanding. Most especially, the principle *does not* say, "let the child learn whatever it will from the educating experience." The principle requires the teacher to judge how learner perception of the lesson-object is connecting with his practical schemes of understanding *and then carefully stimulate the on-going process of the*

child's judgmentation to bring the child to the intended understanding of the lesson object. It is a dereliction of a teacher's Duty to provoke an educational Self-development action in the child and then let this action go off to wherever the accidents of the child's previous experience take it in producing a satisficing judgment. An important part of the art of teaching subsists in the teacher's understanding of the interpersonal communication process through the operationalization expressions that are depicted by the Weaver's model (figure 8.3) and the D-PIPOS circumplex (figure 8.1). Teaching and psychotherapy have much in common as *arts*.

In regard to #6, approach teaching using the motto "Read nothing, discover everything, and prove all things": Here the verdict of mental physics and the data of developmental psychology both refute every literal interpretation of this principle. As a precept for abandoning the old rote-memorization formula of schooling, the motto would be correct if it went, "do not base lessons exclusively on reading." "Read nothing" is an absurd overgeneralization, and I think the absurdity is probably clear enough that I do not need to launch a polemic against it. **#6 wasn't part of Pestalozzi's actual doctrine** [*op. cit.*, Pestalozzi (1820)]. Somebody tacked it on later.

"Read" should not be mistaken to mean text-only reading. Pictures, graphs, illustrations, etc. are frequently as important or more important than words and sentences. These visual stimuli are more effective at evoking a greater number of basic sensorimotor schemes that promote the establishment of *meanings* for objects. At some risk of provoking ridicule from you, I will flatly speculate that comic books might make more effective early-grade reading primers than the venerable old *Dick and Jane* books. I will also speculate that the old *Classics Illustrated* comic books might have taught more classical literature to more American kids in the 1950s and 60s than they ever learned in high school. In point of fact, a great deal of classics literature is boring and meaningless to many children – because of both the glacially ponderous style of the prose and inexperience that handicaps the child from connecting what he reads to anything he knows. A comic book more readily stimulates his imagination, helps him connect the story to things he knows from his own experience, and has some potential to *plant* a latent interest in reading "the real thing" that can bloom in his later years – be it Chaucer, Milton, Dickens, Melville, *Beowulf* or whoever else. **Sometimes what you teach a child today he learns ten years from now.**

"Discover everything" is a worthless tautology. *Every* new concept a human being represents in his manifold of concepts is a "discovery." To say "discover everything" is to say "be a human being." It adds not one whit of useful practice to the art of teaching. The maxim would better read "Do not excessively memorize." Object concepts get *all* real meanings from context with other object concepts in the manifold of concepts, and so objective learning means actions taken by the learner through which he forms connections of relationships among diverse object concepts. This is the basis for what today is called "active learning," and "active learning" is what Pestalozzians most likely actually meant by "discover everything." It is the basis for correct object lessons.

For children younger than about eight years of age, "prove everything" is an unnatural precept. This is an empirical fact established by findings from decades of research by Piaget *et al.*:

Egocentric thought and intelligence . . . represent two different forms of reasoning, and we may even say, without paradox, two different logics. By logic is meant here the sum of the habits which the mind adopts in the general conduct of its operations . . . Egocentric logic and communicable logic will therefore differ less in their conclusions (except with the child where egocentric logic often functions) than in the way they work. The points of divergence are as follows:

1° Egocentric logic is more intuitive, more 'syncretistic' than deductive, *i.e.*, its reasoning is not made explicit. The mind leaps from premises to conclusion at a single bound, without stopping on the way. 2° Little value is attached to proving, or even checking propositions. The vision of the whole brings about a state of belief and a feeling of security

far more rapidly than if each step in the argument were made explicit. 3° Personal schemes of analogy are made use of, likewise memories of earlier reasoning without openly manifesting their influence. 4° Visual schemes also play an important part, and can even take the place of proof in supporting the deduction made. 5° Finally, judgments of value have far more influence on egocentric than on communicable thoughts. [Piaget (1930), pp. 46-47]

At the very moment a child – or anyone else – forms a judgment of conclusion, this *means* his process of judgmentation has closed in an equilibrium cycle. He is, in other words, *satisfied* by the judgment, and all human beings are satisficing decision-makers. He needs no proof of his conclusion; he has reached it and that is *all* his process of practical Reason requires. You won't get a six year old to "prove" anything to your satisfaction; he is satisfied and his egocentric reasoning process presumes his conclusion is "evident" to everyone and that everyone concludes as he does. Ask him to prove it, and he will merely repeat what he has just said or he will be puzzled about what it is that you want him to do. You won't have any trouble, by the way, finding this behavior exhibited by some adults.

"Prove everything" is not a useful maxim, but that doesn't matter because a "proof" is not the point of the exercise. The point of the exercise is *expansion of the learner's sphere of concepts he can connect with the subject-concept*. The teacher should seek to evoke from the learner more and more context connections, whether these are "proofs" or only additional relevant experiences. The object of the exercise is not proof, as I just said, but *comprehensiveness in understanding*.

Finally, in regard to principle #11, having faith in the power of education to regenerate society: Pestalozzi was a social reformer and he saw proper education as the most effective and sure means of achieving social improvements. This, however, is not a teaching maxim but rather is a reason for institution of education. This principle therefore does not belong in the same list with the others. Furthermore, "faith" as he used it here implies a mystic's connection to a reified Reality – and such mysticism has no place in a social-natural science of education.

Pestalozzi's educational method was psychological but cannot be called psychology. It simply lacked the unifying effects of theory and at most might be called a form of behaviorism inasmuch as Pestalozzi experimented to find principles that seemed to work, which he then adopted, and discover methods that seemed not to work, which he then shunned. Pestalozzi's methods are often taken by others to be a form of so-called "faculty psychology," but personally I doubt very much that Pestalozzi's concepts of methodology were formally organized enough to merit being lumped with the works of those to whom the failed theory of faculty psychology is properly credited, such as the pre-Kantian rationalist philosopher Wolff. Pestalozzi, in point of fact, disagreed that "psychology," as Wolff defined it, could even *be* a science. In this, at least, he was correct. Wolff's "psychology" was not psychology; it was thinly veiled religion⁸. As Lincoln is alleged to have said, "Calling a tail a leg doesn't make it a leg."

To Pestalozzi the purpose of education is "to regenerate society." Subject-matter (courses of instruction) play merely a supporting role in working to carry out this mission. The object is to build moral character and good citizenship. Some types of knowledge, he held, were better for this purpose than others. He particularly regarded object lessons, home geography, numbers, and

⁸ Psychology as a science, in the most widely accepted view, was born in December of 1879 in the laboratory of a German physiologist named Wilhelm Wundt. The experiment conducted that day, by Wundt and his two students (Max Friedrich and Stanley Hall), is regarded as the first true psychological experiment. There had been others previously, such as Ernst Weber, Hermann von Helmholtz and Gustav Theodor Fechner, who had carried out some experimental works today recognized as psychological experiments, but it is with Wundt that psychology was established as a scientific field with an identity of its own. This new science had and has nothing whatsoever in common with Wolffian "psychology."

geometrical forms as useful to the purpose. Whether or not this is so can be, and is, debated but his key point is that subject-matter is subordinate to educational purpose. This premise is still current in teacher education today and it is a view commonly held by all later major figures in education theory and education philosophy, including Herbart and Dewey. Pestalozzi's basic principles and many of his ideas were profoundly influential in Germany, especially in Prussia, during that country's 19th century educational reforms, and they also influenced some important English education reformers. However, *this does not at all mean subject-matter is unimportant.*

Pestalozzian methodology came to America in an Anglicized form it acquired from the work of the Reverend Charles Mayo and his sister Elizabeth, especially Elizabeth Mayo. Unfortunately,

[Elizabeth Mayo] published a Pestalozzian manual for teachers, called *Lessons on Objects*, but missed the spirit of Pestalozzi's work. The lessons were formal, scientific, far too detailed and analytical, and much beyond the comprehension of children.

For example, if common salt were the "object" for the lesson, the children would be expected to learn its chemical composition, its uses, how and where found in nature, how mined and refined, that its crystalline form is cubical, that it varies in color from white to bluish and reddish, that it is transparent to translucent, that it is soluble in water and saline in taste, that it imparts a yellow color to a flame, etc., without more contact with a piece of real salt than seeing the "specimen" passed around by the teacher. "Object teaching" soon became the great educational fad in England, and was later brought to the United States. The effect of this instruction was to "formalize" the Pestalozzian movement in England, and in consequence much of the finer spirit and significance of Pestalozzi's work was lost. [Cubberley (1919), pg. 270]

Done properly, object teaching and object lessons could have been a productive and fecund method of introducing children to science. As it was, this "formalized" sort of lesson had rather the opposite effect, tending to make the study of science rote and reliant upon memorization – both of which effects are precise opposites of what Pestalozzi's methods were all about.

In the United States, the Pestalozzian movement in education began with the Oswego schools, originated by Edward A. Sheldon in New York around 1860. Sheldon learned about Anglicized Pestalozzian methodology in Canada and over the next few years set up a Pestalozzian program in Oswego. From there it expanded across the United States and displaced the German Pestalozzi methodology that had earlier been introduced in Massachusetts. Its centerpiece was "object teaching" according to the Mayo prescription. Cubberley describes how this went:

There was nothing for the child to do but memorize such subject-matter, or for the teacher but to see that the pupils knew the answers to the questions. Up to the middle of the nineteenth century, at least, and much later in most schools, the dominant character of instruction was the recitation, in which the pupils merely recited what had been learned from their textbooks. It was school-keeping, not teaching, that teachers were engaged in.

The Pestalozzian form of instruction, based on sense-perception, reasoning, and individual judgment, called for a complete change in classroom procedure. What Pestalozzi tried most of all to do was to get children to use their senses and their minds, to look carefully, to count, to observe forms, to get, by means of their five important senses, clear impressions and ideas as to objects and life in the world about them, and then to think over what they had seen and be able to answer his questions because they had observed carefully and reasoned clearly. Pestalozzi thus clearly subordinated the printed book to the use of the child's senses, and the repetition of mere words to clear ideas about things. [*ibid.*, pg. 298]

The Oswego school did not entirely miss the point of this, although the Mayo form of object

lesson was a miscarriage. Pestalozzian methods required a different way of teaching, required the teacher to organize lesson plans and to stand up in front of the class and engage the pupils. This was the birth in America of what are called "oral language lessons" – talking *with* pupils rather than *to* them (lecturing) and *not* basing the educating experience wholly on textbook reading. However short of ideal all this turned out when reduced to practice – and it fell far short of ideal, as Dewey pointed out – it was an enormous improvement over the older approach to teaching.

§ 3.2 The Herbartian Movement

The Herbartian Movement takes its name from Johann Friedrich Herbart (1776-1841), a minor German philosopher of no special merit. Two dozen years after his death, Herbart's ideas were used by a Leipzig professor, Tuiskon Ziller (1817-1883), to propound a theory of instruction upon which the Herbartian Movement was based. Herbart had been favorably influenced by Pestalozzi, who he had met and admired. Unlike the empirical Pestalozzi, Herbart was a rationalist whose metaphysic was most directly influenced by Leibniz. This metaphysic is ontology-centered and lacks objective validity. Herbart's theory of instructional process and instructional method is usually termed a "psychological" theory by education historians, but Herbart's "psychology" was that of the pre-psychology prejudices of the Wolff-Leibniz school of thought. It has particular aspects that are to a degree retained by psychology today, but Herbart's basic psychological premises by and large are not. Herbart is classifiable as an "associationist" in his psychological presuppositions, a position William James described as "defective" [James (1890), vol. I, pp. 353-360]. James described Herbart's psychologizing using the words "mythological," "repulsive," "extreme," and "hideous" [*ibid.*, pp. 603-4].

I think it is too much of a stretch to credit Herbart with the Herbartian movement. The movement was the work of Ziller and his followers, notably including his student, Professor William Rein at the University of Jena. It is true Ziller *et al.* wore Herbart as a sort of beard in their theory, but the theory properly belongs to them and not Herbart. Its first premise is that "interest" is the first and primary prerequisite to good instruction. This premise is congruent with Pestalozzian principles and, more importantly, it is congruent with the mental physics of human nature. Ziller *et al.* held that skill in instruction is in part determined by the ability of the teacher to secure the learner's interest without either resorting to force or sugar-coating the subject-matter.

A principal teaching maxim states that learner comprehension of new knowledge requires this knowledge to be assimilated in terms of what the learner already knows. This principle is often credited to Herbart, but in point of fact it is a theorem of Critical metaphysics proper, set out long before Herbart by Kant and later empirically confirmed in the findings of Piaget *et al.* These findings show Herbartian "psychology" fundamentally misunderstands how assimilation works. Herbartian metaphysics assumes: *first*, an object is perceived; then, *second*, it is "associated" with another object previously perceived. This *must* presume that a perception is *first* understood *as* an object, *then* "set against" another object previously understood, and *only then* are the two comprehended together. This is the basic presupposition of psychological associationism, but it is not how the mental physics of the process actually works. Associationist theory relies *foundationally* on the copy-of-reality hypothesis, and this is a demonstrably false hypothesis that has been empirically refuted by psychological research [Piaget (1954), pp. 3-13].

Comprehension phenomena must not be interpreted in terms of psychological associationism but, rather, as a fundamental characteristic of the *active* mental construction of the learner's manifold of concepts during judgmentation. The character of comprehensive outcome is called *assimilation by perceptual schemes* and it essentially involves sensorimotor actions taken by the learner. The "mental mechanics" of how this works is a bit too mathematical and detailed for the presentation of the detailed mental physics involved to be appropriate here. Too many readers

would soon become lost in the details and my key point would then be missed. In lieu of detailed mental physics, Piaget's description of what occurs can better serve present purposes. That the old premise of associationism was false was one of the things that appeared very early in Piaget's research. He wrote,

Recent research on the nature of perception . . . has led to the view that objects are recognized and perceived by us, not because we have analyzed them and seen them in detail, but because of "general forms" which are as much constructed by ourselves as given by the elements of the perceived object, and which may be called the scheme⁹ or the *Gestaltqualität*¹⁰ of these objects. For example, a word passes through the tachistoscope far too rapidly for the letters to be distinguished separately. But one or two of these letters and the general dimensions of the word are perceived, and that is sufficient to ensure a correct reading. Each word, therefore, has its own 'schema'¹¹.

M. Claparède, in a note on the perceptions of children, has shown that these schemas are far more important for the child than for us, since they develop long before the perception of detail. For example, a child of 4 who did not know his letters and could not read music managed to recognize the different songs in a book from one day or one month to another simply by their titles and from the look of the pages. For him, the general effect of each page constituted a special schema, whereas to us, who perceive each word or even each letter analytically, all the pages of a book are exactly alike. Children therefore not only perceive by means of general schemas, but these actually supplant the perception of detail. Thus they correspond to a sort of confused perception, different from and prior to that which in us is the perception of complexity or of forms. To this childish form of perception M. Claparède has given the name of *syncretistic perceptions* . . . It was the existence of this syncretism of perception which enabled Decroly to teach children to read by letting them recognize words before letters, thus following the natural course of development from syncretism to the combination of analysis and synthesis, and not from analysis to syncretism.

This movement of thought from the whole to the part is a very general one. It will be remembered how this point was emphasized by M. Bergson in his criticism of associationism. "*Association*," he said, "is not the fundamental fact; *dissociation* is what we begin with, and the tendency of every memory to gather to itself others must be explained by the natural return of the mind to the undivided unity of perception." [Piaget (1930), pp. 131-132]

It took another thirty years of patient observation and experimentation before Piaget and his coworkers finally were satisfied that they had enough evidence to provide the explanation Bergson said was needed. The perceptual schemas noticed so early on turned out to be the products of basic sensorimotor action schemes the perceiver effects during the act of perceiving. Piaget wrote,

Nearly all the perceptual activities so far considered – explorations, referrals, transports, and transpositions (either simple or with changes in direction), consist in genuine sensorimotor activities, that is to say, entail the intervention of motor activity over and

⁹ A *scheme* is an action that can be repeated and generalized.

¹⁰ There is no exact English translation for this word. Roughly, it can be translated "quality of the form," and in the context Piaget is using it should be interpreted to mean "the characteristics of the construction actions taken by the perceiver during the conceptual representation of a perception." All perceptions are represented with connections to acts of motoregulatory expression, and these expressions ground the root *practical* meanings of perceptions. The motoregulatory expression is not itself a conscious representation and so is not a perception. Its representation is called an "appetite of practical Reason."

¹¹ A *schema* is a rule, in this case a practical rule, governing the form of a synthesis insofar as the rule pertains to the manifoldness and ordering of the parts of the representative depiction being synthesized.

above the organization of the sense data. All repeatable sensorimotor activities give rise to schematization in the sense that whenever actions are repeated, a generalization occurs on the basis of common structures or schemes to which the new situations are assimilated insofar as they are equivalent to those which gave rise to the schemes. It is to be expected, therefore, that perceptual activities entailing motor activity will also give rise to the formation of perceptual schemes. Even perceptual activities which do not necessarily entail eye movements . . . involve links between earlier and later perceptions and this in itself is also conducive to the formation of perceptual schemes. Furthermore, as Francès has shown, the perception of sounds and of music implies the intervention of a whole series of perceptual activities . . . in the absence of any exploratory movements of the ear comparable to those of functional significance in visual activity. [Piaget (1961), pg. 189]

This willingness to take however long it takes to find evidence sufficient to objectively establish an explanation of a phenomenon – thirty years in this case – is one of the primary reasons many people, myself included, call Piaget "the 20th century's greatest psychologist." Far too many present day (and past) scientists jump too quickly to shaky and questionable conclusions and promulgate what Bacon called "idols of the market." Such papers turn the archival literature into trash bins and retard the progress of science.

What does this have to do with Herbartian method? The answer is that the principle of comprehension through assimilation of new concepts into a structure of concepts is correct, but the *means* of doing so that were actually being used by the pupils were misunderstood. Does this not have a rather obvious pertinence for the question of *how* to carry out instruction? After all, you can't just tell a nine-year-old, "Here, assimilate this" and expect that to do the job. Teaching methods have to be designed to provoke sensorimotor schemes appropriately to produce the syncretism in perception that is the starting point for both the initial apprehension and the later distinctions of analysis needed to make a newly-formed concept distinct in its details. In the 19th century they did not yet know all that was needed in order to successfully accomplish this. We still do not today, but at least we now know enough to know a 'copy-of-reality' approach or "association" miracles will not work.

Herbartian methodology called for "putting a child in the right frame of mind to apperceive the new knowledge." This sure sounds like a good idea, but what in the world does it *mean*? What is a "frame of mind"? Potter tells us what the Herbartian theorists thought it meant:

The longest-lasting direct influence of Herbartianism was the methodology developed to facilitate the presentation of material and to build "interest." Herbart believed that there were two factors which contributed to interest: association with related perceptions, and repetition of the presentation. From this he and Ziller¹² proposed four steps in a method of teaching; Rein and the American Herbartians expanded them into the "Five Formal Steps." Different Herbartians called these five steps by various names. Charles McMurray, in *The Method of the Recitation* (1892), called them Preparation, Presentation, Association or Comparison, Generalization or Abstraction, and Application.

It is first necessary to bring vividly into consciousness all the experiences the child has had which pertain to the subject at hand. After they have been reproduced, the new ideas should be presented, to be explained by the light of the old and thoroughly apperceived ones.

We pass from percepts to concepts by careful comparison of the percepts and abstraction of the essential characteristics. . . . Here, also, there are two important steps: first, the act of comparison; and second, the separation of the essential from the non-essential, the mind dwelling upon and formulating the general notion. The comprehension of this notion is to be followed by its application. . . . This is the fifth necessary step in learning. . . . So the Herbartians have named

¹² Potter has this wrong. "He and Ziller" never happened. Herbart was dead 24 years before Ziller came along and put together "Herbartian" theory.

these five formal steps.^{13,14}

Long after Herbartian theories were discarded, normal-school students [future teachers in training] learned to make out their daily lesson plans in accord with the Five Formal Steps. [Potter (1967), pg. 280]

I find myself sorely tempted to launch into a long polemic about the unbroken string of very fundamental errors this doctrine contains. The mental physics of the phenomenon of mind totally contradicts this doctrine. I am also tempted to lay out a Critically correct methodology. But to do either of these is to begin writing volume III of this work before finishing volume II. For that reason and with your kind permission, I will satisfy my temptation by merely saying this:

- (1) Is it necessary to "capture the learner's interest"? Yes;
- (2) Can this be done by "association"? No, not as McMurray understood that term;
- (3) Is it "necessary to bring vividly into consciousness *all* the experiences the child has had which pertain to the subject at hand"? No, and it isn't possible for the teacher to do this in any event; *two* pertinent experiences will do; a learner will supply others *he* thinks are pertinent if *you* can provoke the first ones;
- (4) Should step 3 be followed by *presenting* the new idea? No. You're not really going to know what perceptual schemes will be most effective for an individual learner so it is better to *pose a concrete situation the new concept pertains to* and then patiently *elicit* attempts *by the learners* (since a class generally has more than one of them in it) *to present their pertinent concepts of experience*. Teach the learners to *explore* and then *actively guide*, not *lead*, their explorations toward the desired destination for the lesson; **don't** present the new idea; *help them find it*.
- (5) Do we "pass from percepts to concepts by a careful comparison of the percepts"? *Objectively, no*, not at all; the synthesis of comprehension does not work that way. *Subjectively, yes*, but *comparison* and *reflexion*¹⁵ in the synthesis of comprehension and apperception are adjudicated by *reflective* judgments of formal expedience *for a purpose of practical Reason*. This is a subjective process of judgment, not an objective one; the percepts involved are *affective perceptions*. You "capture an interest" by provoking either a feeling of *Lust* or a feeling of *Unlust*, disturbing the learner's equilibrium state, and *then* you teach by helping him to re-equilibrate around some equilibrium cycle efficacious for the lesson;
- (6) Should "application follow comprehension"? **No!** *Comprehension arises from multiple successful applications* because it is by satisfying applications that re-equilibration is achieved. The applications must come *first* before comprehension can be expected to occur. Human beings learn *new* concepts by going *from* particulars *to* generals *always*. That is how the mental physics of mind works.

The long and the short of it is: the Five Formal Steps is an unnatural method. It bears repeating here: the metaphysics underlying a scientific theory make a difference, and a scientifically false metaphysic, like the one the Herbartian method is based on, leads to a false theory.

The Herbartians, probably more so than the Pestalozzians, were explicit about curriculum subject-matter being a tool for methodology directed at achieving a final aim for education:

To the Herbartians, "The ultimate aim of the school is the development of good

¹³ Frank McMurray, "Value of Herbartian Pedagogy for Normal Schools," N.E.A. *Proceedings*, 1892, pp. 428-430.

¹⁴ This is a mighty tall order. And mental physics tells us most of it is contrary to human nature. The 'Five Formal Steps' is wrong method.

¹⁵ Wells (2009), chap. 3. *Comparison* and *reflexion* are two of the steps in the synthesis of comparisons.

character." The focus of the Herbartian educational program was on the individual child, "his understanding, his sympathies, his interests, his feelings and mental stages, his natural ways of living." This emphasis on the child, in contrast with the customary complete concern for subject matter, was one of the legacies of the Herbartians to twentieth-century educational theory.

The Herbartians did not overlook the problems of subject matter, however. Many of the discussions of their meetings dealt with the organization of the material to be studied by the child. Although they admitted a number of courses to the curriculum, they stressed the moral value of the study of history and literature, which were to be the "center about which all others as far as possible are to be grouped." The organization of the curriculum around one subject was called the "principle of concentration," and relating other subjects to the central study was "correlation." In considering "what truths of the desired kind will prove the most interesting to children at different ages," the Herbartians relied on the "cultural epoch" theory. "The child, on the whole, passes through the same great stages of development through which all races pass," and the kind of literature appropriate to children depends on what "epoch" the child is passing through in his development. [*ibid.*, pp. 279-280]

This "centering" on literature and history can be clearly made out from the 1900 curriculum layout provided in table 9.1 above. On the whole, it is not wrong to make curriculum serve general objective of the institution – a point I think I might presume is evident enough if one thinks about why a Society institutes a system of public instructional education at all. If an objectively valid rationale for the primacy of "academics" over "occupational training" is to be found anywhere, it will subsist in the Society's general common objective for education rather than in any wistful opinions over "what every educated person should know." In this context, Herbartians were not wrong to oppose the specializations promoted by the manual training movement. My friend, I put it to you honestly and without rancor that, as a taxpayer, I have no interest whatsoever in helping your son become a doctor, an engineer, a carpenter, or a plumber so long as doctors, engineers, carpenters, and plumbers are to be found in adequate supply in our country. On this latter point, I see little or no reason to prefer public education to private education insofar as macroeconomics are concerned. I *do*, however, care about your son becoming a good citizen, an ally to me in our Republican association, and a partner in our joint social contract. In *that*, the general benefit to *all* citizens that the institution of public instructional education is to provide is at the same time *my personal* benefit serving *my personal* interests, and it is *yours* as well. It is our common ground.

"Citizenship" rather than "character" should have been the Herbartian focus. The poor rating performance of 19th century public instructional education in the social dimension of the learner is a direct consequence of this misfocus. For the moment we can let this go, the issue being one more properly belonging to volume III of this work. Of more immediate concern is the Herbartian idea of the "cultural epoch theory." Here we have education tactical planning based on theory and so the objective validity of the theory becomes pertinent to critique of the institution. If "character education" *necessarily* leads to "citizenship" as an outgrowth, then the premises of Herbartian method would be sound and the curriculum properly made. But does it?

The answer is, "no, not necessarily." There are contingent circumstances where it might do so, but these were not met with in this case. Potter quotes the doctrinal premise of the Herbartians in the selection above, i.e., "the child passes through the same great stages of development through which all races pass." At first brush, this sounds nicely psychological – it isn't, but it can sound that way – and if, like Potter, one mistakenly thinks Herbart contributed anything to the science of psychology one can be excused for thinking this ill-conceived premise can claim to be scientific. In fact, though, this premise is neither objectively valid nor is it Herbart's. It is Hegel's.

Here is one place where it is important to understand that Ziller and his followers, not Herbart,

were the founders of the "Herbartian" movement. Hegel, like Herbart, was a rationalist. The two men share a common philosophical ancestor in Plato. In Ziller's day, Hegel's mystic poppycock was still influential in Germany even though the impossibility of applying Hegel's work to the issues of science was getting *all* of philosophy booted out of science by the Positivists. The hand of Hegel can clearly be seen guiding the notion that the study of *history* makes ideal subject-matter for the Herbartian movement's "principle of concentration":

The only Thought which Philosophy brings with it to the contemplation of History is the simple conception of *Reason*; that Reason is the Sovereign of the World; that the history of the world, therefore, presents us with a rational process. This conviction and intuition is a hypothesis in the domain of history as such. In that of Philosophy it is no hypothesis. It is there proved by speculative cognition that Reason . . . is *Substance*, as well as *Infinite Power*; its own *Infinite Material* underlying all the natural and spiritual life which it originates, as also the *Infinite Form* – that which sets this Material in motion. On the one hand, Reason is the *substance* of the Universe; viz., that by which and in which all reality has its being and subsistence. On the other hand, it is the *Infinite Energy* of the Universe since Reason is not so powerless as to be incapable of producing anything but a mere ideal, a mere intention – having its place outside reality, nobody knows where; something separate and abstract in the heads of certain human beings. It is *the infinite essence of things*, their entire Essence and Truth. It is its own material which it commits to its own Active Energy to work up; not needing, as finite action does, the conditions of an external material of given means from which it may obtain its support and the objects of its activity. It supplies its own nourishment, and is the object of its own operations. While it is exclusively its own basis of existence, and absolute final aim, it is also the energizing power realizing this aim; developing it not only in the phenomena of the Natural, but also of the Spiritual Universe – the History of the World [Hegel (1822-31), pg. 9]¹⁶

Universal History . . . shows the development of the consciousness of Freedom on the part of Spirit, and of the consequent realization of that Freedom. This development implies a gradation – a series of increasingly adequate expressions or manifestations of Freedom, which result from its Idea. The logical and . . . *dialectical* nature of the Idea in general, viz., that it is self-determined – that it assumes successive forms which it successively transcends; and by this very process of transcending its earlier stages, gains an affirmative and, in fact, a richer and more concrete shape – this of necessity of its nature, and the necessary series of pure abstract forms which the Idea successively assumes – is exhibited in the department of *Logic*. Here we need adopt only one of its results, viz., that every step in the process, as differing from any other, has its determinate peculiar principle. In history this principle is idiosyncrasy of Spirit – peculiar National Genius. It is within the limitations of this idiosyncrasy that the spirit of the nation, concretely manifested, expresses every aspect of its consciousness and will – the whole cycle of its realization. [*ibid.*, pp. 63-64]

I think it is worthwhile to note that Hegel was a graduate of the University of Jena, its then-most-famous alumnus, and had obtained his doctorate there. Jena, as it happens, was Rein's university and the point of origin for the American Herbartian Movement. The notion that "races" all go through (identical) stages of development, and that every child likewise goes through these same stages – presumably because he is a member of his race – follows from Hegel's Universal History principle as a corollary¹⁷. Self-development *is* stage-wise, but not from Hegel's principle.

¹⁶ If in Hegel's Absolute Reason you get the idea that by "Reason" he means God – well, that's what Hegel intended. As with Plato, Hegel's philosophy is nothing but a peculiar brand of religious mysticism.

¹⁷ So, by the way, does the so-called "revolution and inevitable triumph of the proletariat over capitalism" that Marx and Engels were so insistent on proclaiming in *Das Kapital* and *The Communist Manifesto*. This egregious drivel also derives from Hegel's mysticism, although the Communists did try their best to cleanse Hegelian religion from Communist doctrine; hence the Infallible Authority of Marx as a Roman-like deity.

Is this psychology (let alone science)? Certainly not. We cannot give credit for the Herbartian movement's "cultural epoch" theory to Herbart (or, for that matter, blame him for it). Neither can we credit Herbart with making any contribution to the science of psychology. Potter's statement,

Herbart's philosophy gave rise to the scientific study of psychology [Potter (1967), pg. 281]

is simply untrue. He contributed nothing whatsoever to the science of psychology. His work is acknowledged by, e.g., Reber & Reber as being a species of "psychological thought," but the term "psychological thought" does not mean "psychology." Referring to Reber's Dictionary, the term means "thinking pertaining to that which is mental in origin." Psychology theory is a species of psychological thought, and so is Herbart's philosophy, but "psychological thought" does *not* mean or imply "science of psychology."

§ 4. The High Schools and Normal Schools

Prior to the 19th century, the formal education of white urban American boys ended at around the age of 14 to 15 years, at which time the boy was expected to become an apprentice. The principal exceptions to this were orphans and children who had been taken from their "pauper" parents' custody by order of the governing authorities. These children were usually sent to work-houses or forcibly indentured (sold to a "master"). It isn't too much of a stretch to say that in the early history of America orphans were treated almost as if being an orphan was a crime; I'm not convinced that situation has really changed very much today. The early tradition of apprenticeship at around age 15 corresponds to ending formal education at what today is the 8th-grade level. During industrialization in the first half of the 19th century, personal circumstances often led to many children not completing even an 8th grade level of education. For example, Andrew Carnegie's formal schooling ended in Scotland when he was twelve and his family emigrated to America. In America young Carnegie's life was not all that different from the majority of boys of his age and social class. Secondary education in colonial times and into the early decades of the 19th century was represented by: (1) the Latin grammar schools, the purpose of which was to academically prepare the tiny minority of Americans who went on to attend college; and (2) the private academies, such as the one originated by Ben Franklin, which offered more "practical" training in occupational subjects.

When the idea of the public high school was first developed, this institution was seen as having a dual role. On the one hand, it was to provide the college preparation that had earlier been the province of the Latin grammar school; on the other, it was to be an institution providing a semi-technical education "for the masses who are destined to fill the ranks of common laborers." While the common school enjoyed broad public support in the 19th century, the dual role of the high school led to a great deal of controversy between: those who regarded it as unjust for public money (tax dollars) to be spent on schooling that benefited only a very few people; and those who saw high school as an extension of the common school and a necessary institution for ensuring that Americans were provided with a good enough education to make good laws and to fulfill their duties as citizens. Opponents of the high school saw it as public funding for an education that properly should be private and that was already privately provided by academies. Proponents saw it as a democratic institution beneficial to a broad middle class of Americans.

It is not surprising that such a controversy would eventually end up in court, and this is what happened during the 1870s. The landmark case of this period was the Kalamazoo case of 1872, a case originating in Kalamazoo, Michigan, where the Michigan Supreme Court eventually ruled in favor of the public high school proponents, deciding that high schools were not a public aid to the privileged upper class and that the *absence* of public high schools was a discrimination in favor of the wealthy limiting access to higher education to the rich. Unfortunately, while a court decision

can and does decide a case (at least for the time being), it rarely changes the minds of the antagonists. Three arguments put forward by those who opposed the establishment of public high schools that still recur in divers guises today, 140 years later, were:

1. The State has the right to educate its citizens just so far as will enable them to understand their duties and exercise their rights as citizens; a primary education is sufficient for this; therefore only primary public common schools are justified;
2. High schools were patronized (prior to modern mandatory attendance laws) by only a few and the majority of the public derived no benefit from it and therefore should not be taxed to pay for it; (today this argument tends to target curricula);
3. Instead of educating the large majority of children in such a way so as to prepare them for earning a living, high schools educate children in such a way as to make them discontent with their economic condition and station in life.¹⁸

Court decisions could rule that taxation to pay for public high schools was legal, but mere legality is not the same thing as justice and it is doubtful the losers felt the court decision was just. On the other hand, the claim that a primary school education is "sufficient" preparation for citizenship is certainly contestable (and was contested). As for the third argument, it reflects very old attitudes that in American history were exhibited by the aristocrats of the Middle Colonies and Southern Colonies, as well as by many of the 19th century industrialist plutocrats. Even so, the fact remains that mere legalism did not and never could "settle" the issue in the absence of a clear and generally accepted statement in a social contract. The losers always regroup and come back at a later date to fight the battle all over again. The longevity of argumentation along the lines of point (3) above demonstrate this. It is not uncommon for each new generation of foes to think they are the first to "discover" what is in fact an old argument fought over many times.

The idea of public high schools, therefore, was not popular in the first half of the 19th century and did not begin to gain public support until the last quarter of that century. By one estimation, the number of high schools in the United States in 1860 was probably about 40 to 68, and prior to 1850 probably numbered fewer than around 28 [Potter (1967), pg. 252]. The U.S. Commissioner of Education reported that in 1889-90 there were 2,526 high schools in the United States; he also reported that in 1899-1900 this had grown to 6,005 high schools nationwide. To put this in perspective, in 1890 there were 1,348 urban cities and towns (populations above 2500 people) and 6,490 incorporated towns of under 2500 people; in 1900 there were 1,737 urban cities and towns and 8,930 incorporated small towns [Bureau of the Census (1949), Series B145, 161, 163; pg. 29]. The ratio of high schools to urban and incorporated towns thus rose from 32% in 1890 to 56% in 1900. The geographical distribution for the number of high schools in 1900 was uneven:

1. North Central States (34.6% of U.S. population): 3,163 (52.7% of high schools);
2. Northeastern States (27.7% of population): 1,448 (24.1% of high schools);
3. The South (32.2% of population): 1,124 (18.7% of high schools);
4. The West: (5.4% of population): 270 (4.5% of high schools).¹⁹

The Commissioner's Report for 1899-1900 places the total number of high school pupils in the U.S. at 519,251 (6.9% of 15- to 19-year-olds²⁰). The regional distribution of high schools by total high-school-age population is: (1) = 49.0%; (2) = 32.6%; (3) = 12.9%; and (4) = 5.5%.

¹⁸ cf. Potter (1967), pp. 312-315.

¹⁹ population percentages taken from Bureau of the Census (1949), Series B31, 48, 54, 60, 66; pp. 26-27; high school distribution taken from *Report of the U.S. Commissioner of Education for 1899-1900*, pp. 2121-2122.

²⁰ Bureau of the Census (1949), Series B84, pg. 28.

The low percentage of high school attendance shows the effectiveness of high schools in the 19th century was almost nil. They were simply not an important factor in those times. The accomplishment during the Plutocratic Era was in their establishment, not their immediate utility. This was arguably worth a great deal, although precisely 'what?' is arguable. Only a small fraction of people had immediate experiential connection with the high schools. The great majority had none but remote interests each person might or might not have recognized. This meant the course of the institution would be charted by a minority of special interest mini-Communities, each of which was looking out for its own interests and competing for the primacy of its own ideas, presuppositions, and prejudices. *That* had consequences that are still being felt today.

There was no uniform curriculum found among the diverse high schools. It is therefore not possible to present a summary chart, like figure 9.1, of "the" high school curriculum in 1900. The diverse curricula are, however, broadly classifiable in terms of three departments: the Classical Department; the English Department; and the Normal Department. These departments by and large were representative of the more direct interests of specific mini-Communities who were actively involved in the institution of high schools. Not every high school offered all three departments. Those that did typically were located in the larger cities. Smaller schools offered two out of the three, and the smallest schools might offer only one department.

The Classical Department tended to primarily reflect the interests of churches and colleges. Classical curricula were college-preparatory curricula designed to serve the small percentage of young people who intended to go on to higher education. The principal emphasis usually found in the Classical Department was the study of Latin and Greek with some additional teaching of geography, history, arithmetic and algebra, physiology, natural philosophy, music, and classics (Caesar, Cicero, Virgil, Xenophon, and Homer). American colleges had their beginning in colonial times as, in effect, training schools for ministers, and up until the 1880s and early 1890s this aim was still the dominating influence in American higher education. Because one principal role for the high school was to provide a bridge to higher education for the middle class, the Classical Department was the centerpiece at the majority of high schools in this period and into the early part of the 20th century. It was also frequently the target of opponents of public high schools and of mini-Communities of capitalist-entrepreneurs, utility-minded parents, and labor unions – one of the relatively few areas of common agreement among these mini-Communities. Supporters of the Classical course of study tended to be the so-called "humanists," and when many advocates of the Great Books Movement in the 1950s spoke of "liberal education" they most often meant an extended and nonsectarian version of the Classical course of study.

The English Department reflected a growing democracy movement in secondary education responding to mini-Community interests of middle class parents and pupils, the labor movement, and capitalist-entrepreneurs. The central theme of this alliance was "utility" in education and the preparation of adolescents for the workplace. The name "English Department" carried the connotation "English high school," as opposed to the Latin grammar school. The more academy-like elements of secondary education were emphasized in this course of study with less emphasis on Latin, Greek, and the classics. Trigonometry, mensuration, surveying, navigation, book-keeping, rhetoric, logic, English literature, German or French language, and rudimentary science were offered in the course of study by the English Department. The teaching emphasis was heavily biased in favor of book-learning rather than manual arts or Pestalozzian experimentation and empiricism. This was frequently criticized by parent groups and so-called business groups (owner-proprietor capitalist-entrepreneurs, bankers, members of the Chambers of Commerce found in most cities and towns, etc.). The English Department tended to attract the greatest percentage of enrollments among high school pupils. Table 9.2 illustrates the range of subject-matters that might be found in a large urban high school. Smaller high schools generally would not be able to offer this same broad range of topical subject-matters.

Table 9.2**19th Century High School Curricular Subject-Matters**

<u>General Subject-Matters</u>			
1. reviews of preparatory studies	9. mensuration	17. natural philosophy	25. moral studies
2. physical geography	10. surveying	18. chemistry	26. etymology
3. history	11. navigation	19. geology and minerology	27. English literature
4. ancient geography	12. elementary bookkeeping	20. rhetoric	28. Hillard's First Class Reader
5. arithmetic	13. botany	21. logic	29. drawing
6. algebra	14. astronomy	22. political economy	30. vocal music
7. Davie's Legendre	15. higher astronomy	23. principles of government	31. German or French
8. plane and spherical trigonometry	16. physiology	24. mental philosophy	32. recitations and compositions
Classical Department	English Department	Normal Department	
<p><u>from general subject-matter list:</u> 1-7,14, 16-17, 26, 28, 30, 32</p> <p><u>additional subject-matters:</u> Latin grammars; first and second Latin lessons; Latin prose composition, Andrew's Caesar; Johnson's Cicero; Bowen's Virgil; Andrew's Latin Lexicon; Anthon's Classical Dictionary; Crosby's Greek Grammar; Crosby's Greek Lessons; Arnold's Greek Prose Composition; Felton's Greek Reader; Boise's Xenophon Anabasis; Owen's Homer's Iliad; Liddell and Scott's Greek Lexicon</p>	<p>all general subject-matter topics</p>	<p><u>from general subject-matter list:</u> 1-7, 12-14, 16-20, 23-30, 32</p> <p><u>additional subject-matters:</u> theory and practice of teaching; German and French (both optional)</p>	

Source: Barnard, Henry (1857), *American Journal of Education*, vol. 3, pp. 535-536. High school curricula changed very little from the Civil War to 1900. Note that some subject-matters are explicitly *books*.

The aim of the Normal Department was training of common school teachers. It was the outgrowth and fruit of the efforts of Republic Era education reformers and a growing movement for professionalism in teaching. The latter met with considerable skepticism in the first half of the 19th century because many people had grave doubts that teaching could or should ever become a profession. One of the few positive benefits of the pseudo-psychology of Wolff, Herbart, and others was that as a "science" psychology provided rational foundations in arguing for regarding teaching as a profession. This benefit was countered by a disbenefit, "mental discipline," that I will discuss in a moment. Prior to the Civil War, very few common school teachers had any training beyond what they received in high school normal courses. Beginning in 1839 one- and two-year normal schools appeared in the U.S. offering a higher level of teacher education – what we would today probably equate with the junior college level – but the number of such schools held flat at a couple of dozen institutes until after the Civil War. The post-war period saw a boom in the establishment of normal schools, both public and private, at this junior college-like level. By 1874 there were 134 such normal schools in the United States enrolling 24,405 students. By 1897-98 there were 345 normal schools (167 public and 178 private) with 46,245 pupils in the public normal schools and 21,293 in the private schools [Potter (1967), pp. 281-2].

Most of the normal schools were still merely secondary schools at the end of the century, but a movement had begun to establish college-level teacher training more broadly. The normal school and the normal school movement reflected the common interests of liberal social reformers and the National Education Association (NEA), a professional mini-Community of educators founded in 1870 by the merger of the National Teachers' Association (NTA), the American Normal School Association (founded in 1858), and the National Association of School Superintendents. In the beginning, the NEA was made up of four departments: School Superintendence; Normal Schools; Elementary Schools; and Higher Education. Other departments added later included Industrial Education (1875, changed to Manual Training in 1899), Art Education (1883), Kindergarten Instruction and Music Education (1892), Child Study (1894), Physical Education

(1895), Natural Science Instruction (1895), School Administration (1895), Library (1896), Education of the Deaf, Blind, and Feeble-minded (1897, changed to Special Education in 1902), Indian Education (1899), and Technical Education (1905) [*ibid.*, pg. 288]. These new departments and the dates of their establishments reflect changes in attitudes and emphases in public education as the 19th century drew to its close.

It would be a mistake to get the impression from table 9.2 that the high school curriculum was broad-based on a per-student level. Potter reports,

The curriculum of the high schools did not undergo any great or radical changes between 1860 and 1900. The range of courses was fairly broad, including both traditional and practical subjects, but the college preparatory subjects increasingly dominated the offerings. Only 10 percent of the high-school students and 30 percent of the graduates in 1900 were preparing for college. Yet over half of them took Latin, an increase from approximately 35 percent in 1890. About 50 percent of the students took algebra, the most popular single subject. Fewer than 3 percent studied Greek. In general, mathematics, Latin, and English were commonly studied, with history and civics on the rise at the end of the century. Commercial subjects began to appear in considerable numbers by the end of the century, particularly bookkeeping, which had been one of the most common practical courses throughout the period.

While most high schools offered more subjects than any student could take in four years, it was not general practice to permit free election. Instead the student chose a course in which the subjects were specified. Most high schools had a course designed to prepare students for college, sometimes called the "classical" course or the "college-preparatory" course, but occurring under a variety of names. Many high schools had another college preparatory course intended for those who wished to get more science and less Latin and Greek; it was usually called by some variation of "scientific course." For the non-college-bound student, there would be an "English course" or perhaps a special course, such as the normal course for those who wanted to be elementary school teachers or the commercial course or manual training course. In a study of 60 schools in the period from 1896 to 1900, 25 had only one course, 12 had two, 8 had four, 2 had six, and 1 had seven. Of 20 schools surveyed between 1860 and 1865, 12 had one course, 6 had two, and 2 had three.

There was little general agreement on how long any subject in the curriculum should be studied. Some schools spent three or four years on a subject that other schools disposed of in only half or a third of a year. Nor was there agreement on the length of the recitation period or the number of days a week a subject should be pursued. The result was almost complete confusion, particularly to college administrators trying to evaluate an applicant's high school background. [Potter (1967), pp. 318-319]

In response to this general confusion, in 1892 the NEA appointed a ten-man commission "to arrange a series of conferences of school and college teachers in the college preparatory subjects to study the proper content, time allotments, methods of teaching, and testing procedures for the academic high schools." This became known as the Committee of Ten. It was headed by the president of Harvard, Charles W. Eliot. Other committee members included William T. Harris, United States Commissioner of Education, four other college presidents, a college professor, the headmaster of a private school, and headmasters or principals from other high schools.

The committee set up nine sub-committees or conferences on the various academic subjects: (1) Latin; (2) Greek; (3) English; (4) other modern languages; (5) mathematics; (6) physics, astronomy, and chemistry; (7) natural history (biology, including botany, zoology, and physiology); (8) history, civil government, and political economy; and (9) geography (physical geography, geology, and meteorology). Each conference was made up of ten members, and of the ninety appointed to serve, more than half were from college faculties. Most of the others were headmasters and teachers in private schools and

academies stressing college preparation. . . . Clearly, the colleges dominated the conferences as well as the parent committee. . . .

When the committee tried to organize the conference recommendations into programs which could be included in a student's four years in high school, they had to reduce the number of periods requested for several of the subjects. The members of the committee all accepted a "disciplinary" psychology and the chairman, President Eliot, was an enthusiast for electives; consequently, it is not surprising that the committee solved the time problem by equating all subjects as suitable for general education. Since all subjects would "be used for training the powers of observation, memory, expression, and reasoning," colleges ought to admit "any youth who has passed creditably through a good secondary school course, no matter to what group of subjects he may have mainly devoted himself in the secondary school."

All the conferences recommended that their subjects be introduced at an earlier age; all but the Greek conference suggested changes in the elementary schools that would have tied even those schools closer to the colleges and oriented them in the direction of the "insignificant percentage of the graduates" of the high schools who "go to college or scientific schools." This was justified on the grounds that waiting until high school is too late to build the kind of mental habits needed for secondary school and college work. Nowhere does the committee show awareness that the assumption of a mental disciplinary psychology was being challenged by psychologists. [*ibid.*, pp. 321-323]

Mental discipline is a name given to a brand of what was once known as "faculty psychology" and present-day psychologists call "formal discipline." Reber's Dictionary defines the latter as

The approach to education which advocates that some subjects ought to be studied independently of any content that they might have because they acquaint the student with basic principles (or *forms*) that will ultimately prove of value in other ways and generally serve to 'train the mind'. The enthusiasm for this approach has waxed and waned several times over the years. [Reber & Reber (2001)]

In the 19th century the presuppositions of "mental discipline" utterly dominated the thinking of college educators and, because it was taught to students in the normal schools, was accepted by the majority of common school teachers and high school teachers as gospel. Like an infestation of box elder bugs, this pseudo-science has proved resistant to being eradicated over the years. It originated in the pseudo-psychology of Wolff and the transcendent, ontology-centered idea that the human mind is made up of "faculties." Reber & Reber say of faculty psychology,

A faculty was defined as a general power of the mind, a cognitive ability such as intellect, wit, memory or understanding. Faculty psychology approached the study of the mind by attempting to account for mental processes in terms of a fixed number of such powers or abilities. . . . Although regarded as a discredited historical curiosity for decades, faculty psychology has recently been revived under the name of *modularity*, coined owing to the practice of hypothesizing cognitive and perceptual modules (e.g. a language module, a numerical module). [*ibid.*]

The verdict of Critical metaphysics proper and mental physics regarding the *Dasein* of mental faculties is unequivocal: the idea utterly lacks all objective validity. It is nothing else than a mathematical idea that has been reified to represent fictitious mind-brain entities that have no factual basis in actual human experience. There is a vast and fundamental difference between *modeling* mental capabilities in terms of logico-mathematical *functions* (descriptions of what the capability-in-question does and how, mathematically, it operates) and making an ungrounded leap that the *Existenz* of a function implies the *Dasein* a either a soul or a brain entity as the substance of that function. Modeling is mathematics, the other nothing but ontology-centered prejudice.

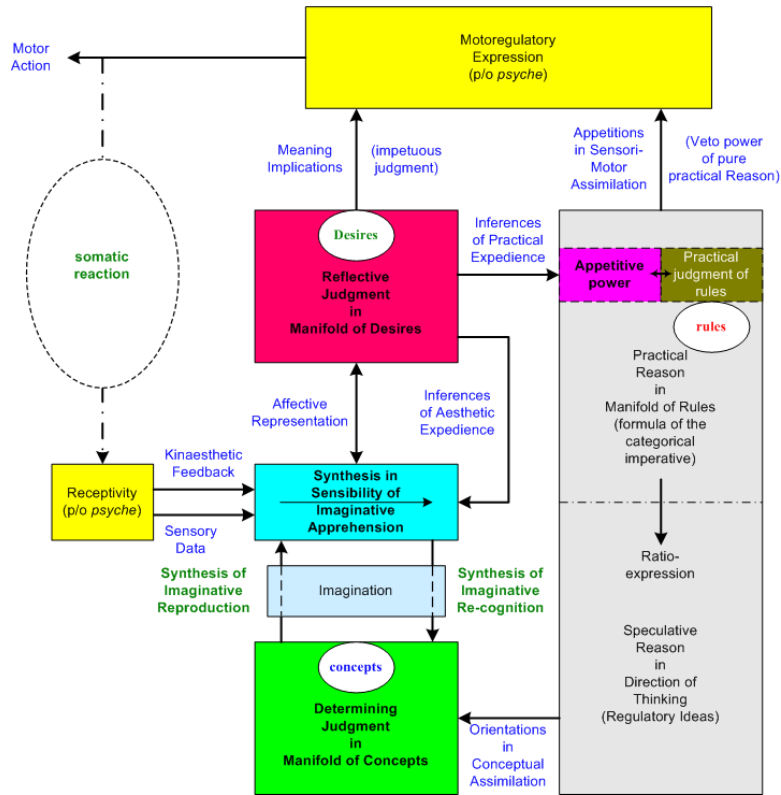


Figure 9.2: Mathematics of functional processes of the phenomenon of mind.

§ 5. Mental Discipline

Figure 9.2 illustrates functional characterization of the phenomenon of mind by mathematical processes and the flow of information among these processes [Wells (2009), chap. 1]. *The blocks depicted in this figure have no ontological significance whatsoever.* They are constructs of pure mathematics *defined* for the purpose of explaining the epistemology of human mental representation. Conceptualization and ordering of such constructs is the task and the method of all objectively valid science. To attempt to go further than this sort of explanation is to become lost in an impenetrable fogbank of transcendent speculation. Indeed, the discovery that we *must* show this restraint in science was Kant's most important discovery, and confirmation of this by modern physics early in the 20th century is physics' most profound accomplishment. As Sir James Jeans and all the other foremost physicists of those days had reluctantly admitted by 1943,

Because we are human beings and not mere animals, we try to discover as much as we can about the world in which our lives are cast. We have seen that there is only one method of gaining such knowledge – the method of science, which consists in a direct questioning of nature by observation and experiment.

The first thing we learn from such questioning is that the world is rational; its happenings are not determined by caprice but by law. There exists what we have called a 'pattern of events' and the primary aim of physical science is the discovery of this pattern. This, as we have seen, will be capable of description only in mathematical terms. . . .

But we not only wish to predict phenomena, but also to understand them. Thus it is not surprising that philosophy and science have alike found this mathematical description unsatisfying, and have tried to attach concrete meanings to the mathematical symbols involved – to replace unintelligible universals by intelligible particulars. We may argue that

if there is a pattern, there must be some sort of loom forever weaving it; we want to know what this loom is, how it works, and why it works thus rather than otherwise.

The physicists of the last century thought that one of the primary concerns of science should be to devise models or draw pictures to illustrate the workings of this loom. It was supposed that a model which reproduced all the phenomena of a science, and so made it possible to predict them all, must in some way correspond to the reality underlying the phenomena. But obviously this cannot be so. . . . In brief, we can never have certain knowledge as to the nature of reality. [Jeans means " 'reality' as an ontological *thing*" – rbw]

We know that there is no danger of even one perfect model appearing – at least of a kind which is intelligible to our minds. For a model or picture will be intelligible to us only if it is made up by ideas which are already in our minds. Of such ideas, some, as for instance the ideas of abstract mathematics, have no special relation to our particular world; all those which have must, as we have seen, enter our minds through the gateways of the senses. These are restricted by our having only five senses . . . Thus an understanding of the ultimate processes of nature is forever beyond our reach; we shall never be able – even in imagination – to open the case of our watch and see how the wheels go round. The true object of scientific study can never be the realities of nature, but only our own observations on nature. [Jeans (1943), pp. 174-176]

Unfortunately for the physics profession, the teaching of physics to college students failed to incorporate the history of the science into the students' lessons and neglected to explain to students – following the generation who made the great 20th century discoveries – the philosophy that the explanations of quantum phenomena had forced upon our understanding of physics. They were only taught the mathematics without the nature of the relationship between mathematics and empirical sciences. The consequence is that today's generation of physicists was never taught the lesson Jeans shares with us here, and today that science is undergoing a Platonic decay.

The ontology-centered pseudo-metaphysical prejudices of a faculty-psychologist lead him to look at figure 9.2 and presume the blocks in this figure must – as science views it today – correspond to structures in the brain. He will see the block labeled "imagination" and suppose there must be a "faculty of imagination" existing as an ontological *thing* in the neurology of the brain. He will not understand that the relationship between sensible phenomena of neurobiology and supersensible phenomena of mind is a Relation of thorough-going reciprocity (that is, a Relation of community in Critical metaphysics proper) and he will presume instead that the Relation is one of causality & dependency. But between an object of mathematics and an object of sensible experience there can **never** be a relationship of cause-and-effect. Mental phenomena are *reflected in* biological phenomena and, *at the same time*, mental phenomena are *reflections of* biological phenomena. Mind does not cause body, body does not cause mind, and the mind-body division is a purely logical – that is, a mathematical – division *expedient* for our understanding of the *real* phenomenon, which is nothing else than the phenomenon of being-a-human-being²¹.

From the fallacy of faculty psychology comes the malpractice of mental discipline. Mental disciplinarians either never learned or had forgotten Locke's warning and admonition:

However, the name *faculty*, which men have given to this power called the *will*, and whereby they have been led into a way of talking of the will as acting, may, by an approbation that disguises its true sense, serve a little to palliate the absurdity; yet the will, in truth, signifies nothing but a power or an ability to prefer or to choose: and when the will, under the name of a faculty, is considered as it is, barely as an ability to do something, the absurdity of saying it is free, or not free, will easily discover itself. For, if it be reasonable

²¹ If you wish to pursue this point in greater technical detail, I refer you to my two-part paper on this topic, Wells (2011a, b), cited at the end of this chapter.

to suppose and talk of faculties as distinct beings that can act (as we do when we say the will orders, and the will is free), it is fit that we should make a speaking faculty, and a walking faculty, and a dancing faculty, by which these actions are produced, which are but several modes of motion; as well we make the will and the understanding to be faculties, by which the actions of choosing and perceiving are produced, which are but several modes of thinking. And we may as properly say that it is the singing faculty sings, and the dancing faculty dances, as that the will chooses, or that the understanding conceives; or, as is usual, that the will directs the understanding, or the understanding obeys or obeys not the will: it being altogether as proper and intelligible to say that the power of speaking directs the power of singing, or the power of singing obeys or disobeys the power of speaking.

This way of talking, nevertheless, has prevailed, and, as I guess, produced great confusion. . . .

The attributing to faculties that which belonged not to them has given occasion to this way of talking: but the introducing into discourses concerning the mind, with the name of faculties, a notion of their operating has, I suppose, as little advanced our knowledge in that part of ourselves as the great use and mention of the like invention of faculties in the operations of the body has helped us in the knowledge of physic. Not that I deny there are faculties, both in the body and mind: they both of them have their powers of operating, else neither the one nor the other could operate. For nothing can operate that is not able to operate; and that is not able to operate that has no power to operate. Nor do I deny that those words, and the like, are to have their place in the common use of languages that have made them current. It looks like too much affectation wholly to lay them by: and philosophy itself, though it likes not gaudy dress, yet, when it appears in public, must have so much complacency as to be clothed in the ordinary fashion and language of the country, so far as it can consist with truth and perspicuity. But the fault has been, that faculties have been spoken of and represented as so many distinct agents. For, it being asked, what it was that digested the meat in our stomachs? it was a ready and very satisfactory answer to say that it was the digestive faculty. What was it that made anything come out of the body? The expulsive faculty. What moved? The motive faculty. And so in the mind, the intellectual faculty, or the understanding, understood; and the elective faculty, or the will, willed or commanded. This is, in short, to say that the ability to digest, digested; and the ability to move, moved; and the ability to understand, understood. For faculty, ability, and power, I think, are but different names of the same things: which ways of speaking, when put into more intelligible words, will, I think, amount to much. [Locke (1706), Bk. 2, pp. 179-181]

Faculty psychology was not born out of Locke's empiricism. It was the 18th century child of the German rationalism of Wolff's school. The pseudo-psychology of Wolff was never anything more than a strenuous but failed effort to apodictically prove the existence of God and the soul through philosophy. Religion underpinned everything upon which it was premised. It is, consequently, not a wonder the dogmatism of mental discipline took on the stern visage of an old school-dame. The history of the Western religions – Judaism, Christianity, and Islam – was already a history descended from prehistoric civilizations, where the state religion was but an enforcement arm of the ruling tyrant. All major religions have always found it expedient to keep a skeptical community of the faithful under control by the use of threats and violent sanctions. *Any* study of the history of churches and organized religions effortlessly finds this character exhibited, and numerous enormities of religious despotism stain the pages of history with human blood and suffering. If it was possible for a religious ruler to endanger the soul of a member of his church – a proposition I reject – then it would have to be said that religious rulers have likely damned more souls than they have ever saved. Speaking for myself, I have never forgotten this Sunday School lesson from my boyhood:

Beware of false prophets, who come to you in sheep's clothing but inwardly are ravenous wolves. You will know them by their fruits. [Matthew 7: 15]

The fruits of the mental disciplinarians included a dulling of the intellectual power-of-the-person in the learners, imparting a distaste for formal education, and provocation of a rebellious antisocialism in a learner proletariat who found its methods insufferable. It has to be said that these were all *unintended* consequences and the opposite of what well-meaning educators were trying to achieve. But, as the proverb often attributed to St. Bernard puts it, the road to hell is paved with good intentions. The intentions were good, but the methods were based on a pseudo-science that propounded means unnatural in their application to human beings. These methods consisted of relentless memorizing drill, minute dissection of the philological content of books without an effort to link lesson to life, punishment (whether social or corporal) for failure to parrot back the lesson in the approved manner, and lack of guidance or expression of concern for how the subject matter had any relationship to the actual lives of the learners. All of this resulted from the dogma that mental faculties were ontological things and needed only to be exercised in order for the pupil to become enlightened by the learning experience.

As one example, easy to pick on today, the chief argument for teaching Latin and Greek was that these languages "were the best means for disciplining the faculties of the mind which, properly exercised over the difficult dead languages, would then better serve the needs of practicality" [Potter (1967), pg. 319]. Potter quotes an article by A.F. Nightingale that appeared in the NEA *Proceedings* in 1887:

Put . . . pupils into the study of Latin grammar, and the slow but gradual dissection of a Latin sentence . . . will open the intellect, develop the powers of discrimination and adaption, multiply the instruments of labor, enlarge the vocabulary, until when they have studied Latin one-half of the time that they have studied English . . . they will know more of their own language, write a better English essay . . . than if they should spend double, aye, quintuple the time in a continuance of the study of English grammar. And all this . . . because we more naturally dissect the dead than the living . . . because strength of intellect comes more from solving the difficult than the easy. [Potter (1967), pg. 319]

There are a few tiny grains of truth in what Nightingale wrote, but most of this is pure hogwash. The "faculties" of faculty psychology do not exist in real human beings and so there is nothing for the drillmasters of mental discipline to "open" or "develop."

I can give you a good *practical* reason to study Latin or Greek (or *18th century* German or French²²). The ancients came up against most of the same challenges that face modern Societies today, had to grapple with similar problems and issues, learned hard lessons of experience, *and wrote these lessons down*. Often these were technical in their descriptions and prescriptions. I have found that most – I'm tempted to say all – modern language translations extant and available today *mistranslate* the technical vocabularies of ancient authors. By doing so, they change the meanings – sometimes into the opposite meaning. Aristotle, Plato, Theophrastus, Euclid, Archimedes, Cicero, Boethius, and many ancient mathematicians come particularly to my mind in this context. The translations of Kant are, likewise for the most part, just as technically flawed. The only defense you have against the errors of translators is to be able to read the original material in the original language and see what the author actually said, not what someone centuries later, through the colored lenses of his own judgments of taste, *thinks* he said or *says* that he said²³. Santayana never uttered a phrase more true than when he wrote, "A people who cannot remember the past are condemned to repeat it." *Quis custodiet ipsos custodes?* **You** must. To neglect this is to come carrying a butter knife to a gunfight.

²² German, French *and English*, because they are living languages, have evolved well past their expressions found in the Enlightenment period of 18th century Europe. One of my collegial friends, who is a native of Germany, calls Kant's writings "Shakespearean German." As a metaphor, I find this description suitable.

²³ Another example of corrupt translations with widespread consequences is the Bible.

Mental discipline in 19th century American public education, with its religious undertones, fueled and laid a match to a counterrevolution at the end of the 19th century that carried forward to the mid-1960s. This was the counterrevolution of the so-called Progressive Era associated with the name of John Dewey. Hutchins had his timing off by more than half a century when he wrote,

Education is supposed to have something to do with intelligence. It was because of this connection that it was always assumed that if the people were to have political power they would have to have education. They would have to have it if they were to use their power intelligently. This was the basis of the Western commitment to universal, free, compulsory education. I have suggested that the kind of education that will develop the requisite intelligence for democratic citizenship is liberal education, education through great books and the liberal arts, a kind of education that has all but disappeared from the schools, colleges, and universities of the United States.

Why did this education disappear? It was the education of the Founding Fathers. It held sway until fifty years ago. Now it is almost gone. I attribute this phenomenon to two factors, internal decay and external confusion.

By the end of the first quarter of this century great books and the liberal arts had been destroyed by their teachers. The books had become the private domain of scholars. The word "classics" came to be limited to those works which were written in Greek or Latin. Whitehead refers to Wordsworth's remark about men of science who "murder to dissect" and properly observes: "In the past, classical scholars have been veritable assassins compared to them." The classical books, it was thought, could be studied only in the original languages, and a student might attend courses in Plato and Lucretius for years without discovering that they had any ideas. His professors were unlikely to be interested in ideas. They were interested in philological details. The liberal arts in their hands degenerated into meaningless drill.

Their reply to criticism and revolt was to demand, forgetting that interest is essential in education, that their courses be required. By the end of the first quarter of this century the great Greek and Latin writers were studied only to meet requirements for entrance to or graduation from college. Behind these tariff walls the professors who had many of the great writers and much of the liberal arts in their charge contentedly sat, oblivious of the fact that they were depriving the rising generation of an important part of their cultural heritage and the training needed to understand it, and oblivious also of the fact that they were depriving themselves of the reason for their existence. . . .

The revolt against the classical dissectors and drillmasters was justified. So was the new interest in experimental science. The revolt against liberal education was not justified. Neither was the belief that the method of experimental [physical-natural] science could replace the methods of history, philosophy, and the arts. As is common in educational discussion, the public had confused names and things. The dissectors and drillmasters had no more to do with liberal education than the ordinary college of liberal arts has to do with those arts today. [Hutchins (1959), pp. 26-29]

Other than for a few nitpicky details, the only major disagreement I have with what Hutchins writes here is his contention that "liberal education" ever existed in the United States at all. The education of *some* of the Founding Fathers it was, but they acquired it by private means (not public education) and honed it over the course of their adult lives. Nor were the "dissectors and drillmasters" unique to the first quarter of the twentieth century. In the public common schools and high schools, they were around and in charge in the last half of the 19th century; in American colleges, they had been around and in charge from the beginning.

It is easy to read and imagine from Hutchins' polemic a sinister intent in the actions of the professors of the era. I don't doubt there were some arrogant professors and some antisocial Little Caesars staffing the colleges. After all, we have more than a few today too. I do, however, reject

implications that the malpractices Hutchins cites were deliberately malevolent or selfish. Far more congruent with human Nature is the proposition that most of these people were sincere in their beliefs, in their methods, and in their convictions about the fundamental social importance of their subject-matters. These were, unfortunately, beliefs, methods, and teaching traditions born of an unnatural pseudo-science – namely, mental discipline. 20th century reforms aimed to sweep it out the door, and this reform movement got started in late 19th century college reforms.

§ 6. Colleges in the Plutocratic Era

Reliable national statistics on U.S. higher education are not available prior to 1870, the year that the then relatively new Office of Education began issuing its annual Commissioner reports²⁴. We do know that prior to 1860 the states exhibited little actual interest in higher education, which was left almost entirely to the private sector and, within this, primarily to the different religious denominations. Cubberley offered some numbers on the number of colleges founded from before 1780 to 1900, but his figures are substantially lower than those of the Office of Education from 1870 onward. The best estimate I have been able to come up with is that the number of U.S. colleges in 1860 was between 246 – a Cubberley figure [Cubberley (1919), pg. 204] – and 356, a statistical estimate that assumes the growth trend in institutes of higher education from 1870 to 1890 (figure 9.3) can be projected back to 1860. Given the intervention of the Civil War and the period of Reconstruction during this decade, this assumption has to be regarded as being rather dubious. Further, it must be remembered that higher ed in the South was destroyed by the war.

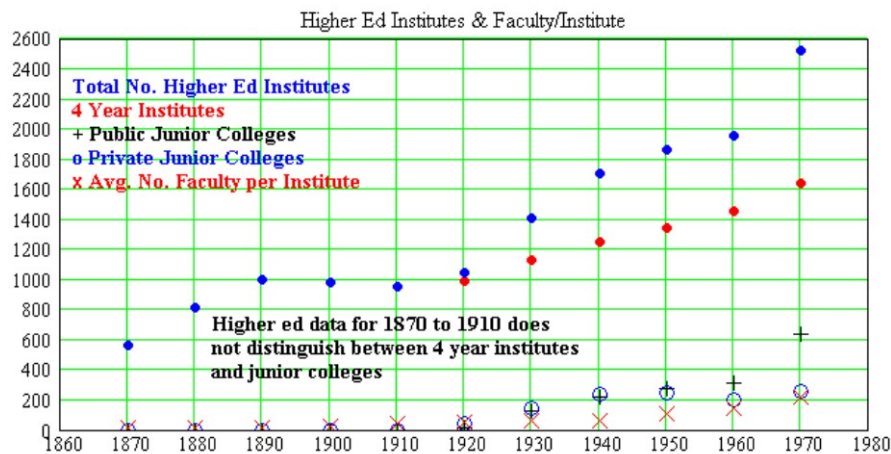


Figure 9.3: Total number of institutes of higher education, number of 4-year colleges, and number of public and private junior colleges from 1870 to 1970. Also plotted is the ratio of total instructional faculty in higher education to the total number of higher education institutes. Source: Bureau of the Census (1976), Series H689-699, pp. 382-3. Census data does not distinguish the institutes by type prior to 1920.

²⁴ Congress established a National Department of Education in 1867. However, its first commissioner did not get along well with the Secretary of the Interior or with Congress. The Secretary and many members of Congress actually opposed the existence of the Department, fearing it would lead to control of education by the general government. In 1869 Congress reduced the DOE to a bureau within the Interior Department, where it was renamed the Office of Education. There it remained until 1930, when it was briefly made a separate and independent Office. In 1939 it was changed again to a bureau within the Federal Security Agency, then was moved to the newly created Department of Health, Education, and Welfare in 1953. It was not until the Carter Administration in 1979 that it was recreated into a cabinet-level Department of Education. Since that time, the Republican Party has labored to have the Department abolished once more. [Potter (1967), pp. 353-355; Reese (2011), pg. 254]

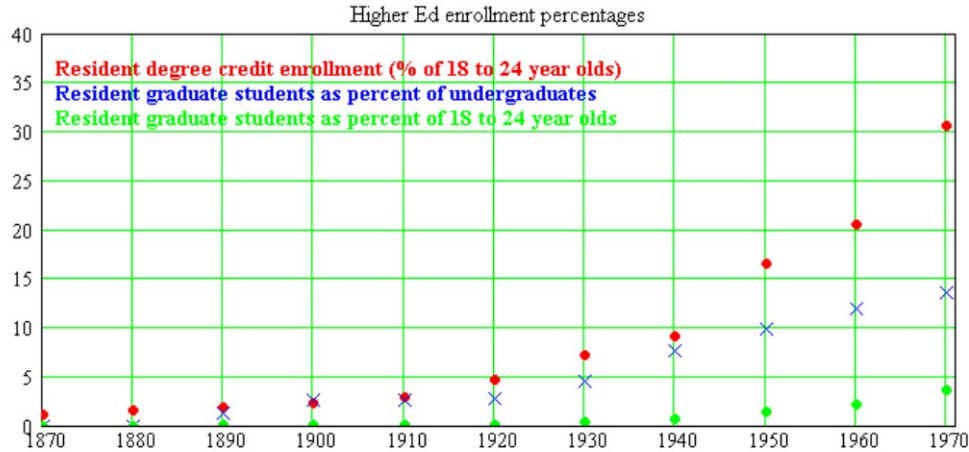


Figure 9.4: Higher education resident degree-credit enrollments in 4-year institutes as percent of 18 to 24 year olds, percent of resident graduate student enrollments to undergraduates, and resident graduate student enrollments as percent of 18 to 24 year olds from 1870 to 1970. Source: Bureau of the Census (1976) Series H706-709, pg. 383.

Two things are readily apparent from figures 9.3 and 9.4. The first is the vigorous growth in the number of higher education institutes from 1870 to 1890, followed by a modest decline from 1890 to 1910. Most of these institutes would be, or quickly become, 4-year institutes (in 1920 junior colleges accounted for only 5% of the total number of higher education institutes). There are two major factors that are generally credited with the growth from 1870 to 1890. One was the Morrill Act of 1862, which provided land grants to states in exchange for the states establishing or supporting "colleges teaching agriculture and the mechanical arts." Sixty-five institutes had been established under the Morrill Act by 1900. These were and are the land grant colleges and polytechnics we know today. This is where the "A&M" universities got their start. Twenty-seven of these Morrill institutes were colleges of agriculture and mechanical arts; eight southern states established industrial arts and agricultural institutes for Negro students.

The other major factor was the private philanthropy of those Potter called "the 'men of affairs' in the Gilded Age" – men like John D. Rockefeller, Leland Stanford, Johns Hopkins, Ezra Cornell, Cornelius Vanderbilt, and others. Andrew Carnegie was a relative latecomer to this group; his major philanthropic donations did not begin until 1901 and his first gifts to higher education went to Scotland rather than American institutes. It is beyond reasonable doubt that the sort of "moral spirit" often associated with generous philanthropy was one of the personal motives of the philanthropists. It is equally beyond reasonable doubt that these men had their own visions for reshaping future American Society and were determined to steer events in the directions they desired. These 'men of affairs' were, after all and to a man, controlling individuals. Potter wrote,

Two ways of influencing the policies of an institution are to control its sources of income and to capture its system of government. Before 1900 the business community²⁵ had begun to influence the policies of higher education in both ways.

²⁵ Like many authors, Potter often uses 'business community' when he means the relatively tiny fraction of capitalist entrepreneurs who had achieved the highest degrees of personal wealth. The general store owned by Harry and Mabel was just as much a part of the business community as the Union and Pacific Railroad, but America's Harry's and Mabel's didn't work to establish control over Iowa State College in Ames. Let us not sanctify overgeneralized class labels for granulated mini-Societies by giving them too-sweeping names.



Figure 9.5: Harry and Mabel in their general store. Yes, really. One of the subtle traps by which errors arise in social-natural sciences is to work too exclusively with abstractions of people (stereotypes) and eventually forget that all these abstractions originate with actual human beings. A social-natural scientist cannot too often remind him- or herself of this fact. Especially to those of radical-liberal leanings, I say, "Look you upon the faces of the capitalists." There's many more Harry's and Mabel's than Rockefellers.

In addition to having much political "pull" with the legislators who appropriated money to the state universities, the tycoons of the Gilded Age could impress their interests on the colleges by granting or withholding substantial gifts. Philanthropy affected some of the liberal art colleges and universities as well as the strictly technical schools. . . . Coinciding with these lavish gifts was a trend toward the domination of college boards of trustees. Up to the time of the Civil War, most of the colleges were denominational institutions under the control of ministers, and college presidents were chosen almost exclusively from the ranks of the clergy. By the twentieth century, the situation was quite changed. Thorstein Veblen²⁶, commenting in 1918 on the control of higher education, noted that there had been "a wide-spreading substitution of laymen in the place of clergymen on the governing boards." [Potter (1967), pp. 301-302]

Growing assumption of control over the direction of higher education was accompanied by a much greater emphasis placed on skills of the technical trades and on the study of science. Potter noted,

Philanthropy was a primary virtue among the wealthy of the Gilded Age, and one form of giving that combined business with public virtue was the endowment of schools to provide the engineers and technicians for the expanding industrial society. . . . The new schools, having none of the academic traditions of the liberal arts institutions, did not hesitate to offer the kinds of courses that would prepare young men to enter the industrial world. Relatively independent financially, they blazed the trail toward practicality and applied

²⁶ Veblen (1857-1929) was an American economist.

science in higher education. [*ibid.*, pg. 301]

"Having none of the traditions of the liberal arts institutions"? Well, the new schools had at least one, which brings me to the second point. As figure 9.4 clearly shows, resident degree-credit enrollments at higher education institutes was a tiny fraction of the total population of 18- to 24-year olds and from 1870 to 1910 grew at the anemic rate of 0.04% per year over this forty year period. This means the population of the student bodies went up in lockstep with the general population growth and no faster.

The total U.S. population in 1870 was 39,818,449; by 1910 it had grown to 91,972,266. It is true that the number of resident college students in 1870 was 52,000 and in 1910 is was 355,000 – a ratio of 6.83 compared to a ratio of total populations of only 2.31. If one were to go by this comparison of ratios, one would conclude that college attendance was swelling over this period. However, this would not take into account factors of birth rate, infant mortality, and life expectancy. By 1910 the birth rate was 29.2 live births per 1000 white women age 15 to 44 years (2.92%); in 1870 it was 38.3 live births per 1000 white women (3.83%) [Bureau of the Census (1976), Series B6, pg. 49]. But the infant mortality rate, estimated from the Massachusetts Registration Area²⁷ statistics, was 17.03% from 1870-74 vs. 11.67% from 1910-14 [*ibid.*, Series B148, pg. 57]. Average life expectancy at birth for whites in 1878-82 was 41.7 years for men, 43.5 years for women; in 1909-11 it was 49.3 years for men and 53.1 years for women [*ibid.*, Series B126-7, pg. 56]²⁸. The breakthrough advances in medicine of the 1890s had shown up in the college-aged population by 1910. At present a mathematical model of the population growth dynamics of the period is still elusive but the bottom line is captured by the statistics in figure 9.4: the direct ratio of resident credit enrollments to the population of 18-to-24 year olds.

And so it would seem that despite the land grants, the philanthropy, the new trustees and institute presidents, and the politics, there was no sign of any significant social change favoring college attendance. The annual growth rate of the number of higher education institutes (2.9%) was outpacing the national population growth rate (2.48%) and was not being accompanied by a matching increase in demand for what higher education had to sell despite the curricular changes taking place in its product. Why?

Causal factors are not difficult to understand. Figure 9.6 shows the average annual earnings for a non-farm wage-earner, expressed in thousands of 2010-equivalent U.S. dollars, from 1861 to 1900. The figure caption provides additional data regarding the earnings of farm laborers and skilled wage-earners vs. unskilled laborers. Because figure 9.6 is expressed in 2010-equivalent dollars, it provides us with data immediately comparable to the present day. From 1870 to 1880 average real earnings were flat at about \$8500/year and rose somewhat erratically from 1880 to 1900 to reach about \$12,500/year in 1900. By point of comparison, a wage earner earning the 2010 federal minimum wage (\$7.25/hour) and working 8 hours/day, 5 days/week, and 52 weeks per year earns \$15,080 per year. The official poverty line threshold in 2009 was \$11,161 for a single individual under age 65, \$14,366 for a two-person householder under age 65, and \$17,098 for a three-person household [U.S. Census Bureau (2011), Table 710, pg. 464].

In comparison, college fees and tuition were high in the Plutocratic Era. There is no detailed national data on college fees and tuition prior to 1920, but in that year the average fee per degree-credit resident college student, in 2010-equivalent dollars, was \$7,659 [Bureau of the Census (1976), Series H706, pg. 383 and Series H718, pg. 384]. Only the wealthy could afford college.

²⁷ National infant mortality rate statistics are not available prior to 1915.

²⁸ Again, national figures on average life expectancy at birth are not available before 1900-02. The national figures for whites from 1909-11 [*ibid.*, Series B116, pg. 56] are 50.2 for men, 53.6 for women – both quite comparable to the figures for the Massachusetts Registration Area.

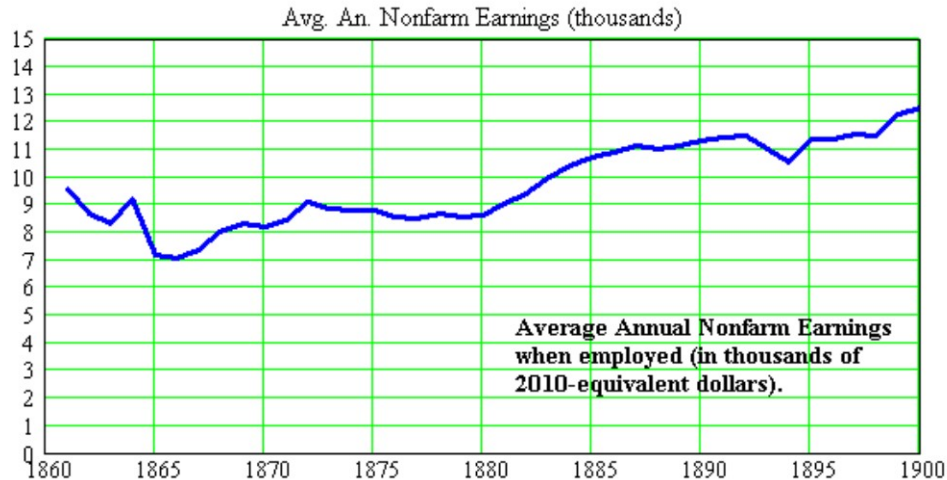


Figure 9.6: Average annual non-farm earnings from 1861 to 1900 expressed in thousands of 2010-equivalent U.S. dollars. The ratio of farm laborer monthly earnings (board included) to monthly non-farm earnings was $0.45\times$ in 1860 and declined by about $0.45\%/year$ before leveling off to a low of $0.35\times$ in 1890 and rising to $0.37\times$ by 1899. Farm labor was seasonal work. A skilled non-farm wage earner (machinists, carpenters, blacksmiths, etc.) earned on the average about $1.7\times$ the wages of an unskilled laborer. This ratio was flat throughout the reported period. Source: Bureau of the Census (1976), Series D736, pg. 165; D705, pg. 163; and D735, pg. 165.

Widely-available financial aid to poor students simply did not exist during this period. The sort of availability of student financial aid we know today was a mid-1960s creation that came out of President Johnson's Great Society Program. Although today it is not uncommon for a college student to dig himself into a debt obligation comparable to the mortgage debt for a small starter home, students in the second half of the 19th century did not have even this dubious option. The fact that college education was closed to all but the wealthiest members of the Society was one reason why state tax support for higher education was strongly opposed by many Americans. It was seen as a benefit available only to a financially-elite minority of Americans.

That is, it was seen as a benefit by that segment of the public who saw in it any benefit at all. It was not evident to many Americans that this unaffordably expensive undertaking would return *anything* worth the sacrifices of tangible *Personfähigkeit* it required. The 'Gilded Age' was gilded only for a tiny fraction of Americans. For the overwhelming majority of them it was a time of economic hardship and of hard-scrabbling to earn a living (as figure 9.6 makes clear). It is an almost trivial theorem of mental physics that under such conditions Duties-to-Self become very focused on the more immediate personal and family needs of individuals within their own personal societies. Many of the academic reformers of the period were very out of touch with this facet of public mood, and most members of the public neither grasped nor cared to grasp the concerns that motivated the reformers. On this point it is worth quoting Veysey in detail:

The fifties and sixties marked the budding season for a new and discontented group of future American academic leaders. Jolts provided by newly released wealth and an awareness of static or declining college enrollment were to bring some of these reformers to power far more suddenly than they could have foreseen in 1865. The clergymen who still held control in that year were exiled from a number of prominent seats of learning during the following decade. That the reformers gained leverage so rapidly indicated several facts about the change that was taking place. . . . [It] demonstrated that the trustees of the existing institutions, more than a third of them clerical, sometimes preferred to risk experi-

mentation rather than to continue in the unpromising ways of the past. Since these older ways were firmly identified in everyone's mind with religious piety, and innovation with unsettling intellectual influences, the reform-minded trustees whose votes were essential in selecting new [college] presidents had obviously shifted to a primary concern over educational rather than religious problems. Finally, once any one respectable institution moved in a new direction, others found themselves under a powerful compulsion to follow suit. . . . Colleges which lagged behind for any reason, including religiously motivated traditionalism, had to face the threat of eventual starvation. . . .

Down into the sixties proposals for major academic reform in America had been regarded rather vaguely by their proponents and opponents alike. The word "university" was already much in use in discussion . . . But the phrase lacked clear definition. . . . From this primordial, scarcely thought-out vision of "the university" there appeared, in the period from 1865 to 1890, three much more specific conceptions. These centered, respectively, in the aim of practical public service, in the goal of abstract research on what was believed to be the pure German model, and finally in the attempt to diffuse standards of cultivated taste. . . .

Meanwhile . . . the new American academic reformers would have to face a restless and for the most part ill-educated population. The American public had little enthusiasm for the foreign, the abstract, or the esoteric. Yet some of this public must be tapped if enrollments were to expand. . . . This was the time when industrial leaders liked to issue acid statements about the uselessness of higher education. In 1889 a banker attracted attention by his declaration that he would hire no college graduates anywhere in his office. Most publicized of all were Andrew Carnegie's ringing words of the same year:

When the college student has been learning a little about the barbarous and petty squabbles of a far-distant past, or trying to master languages which are dead, such knowledge as seems adapted for life upon another planet rather than this as far as business affairs are concerned, the future captain of industry is hotly engaged in the school of experience, obtaining the very knowledge required for his future triumphs. . . . College education as it exists is fatal to success in that domain.

Mistrust of the bookishness and cultivation which academic life symbolized was also to be found at all the less prosperous levels of the society . . .

The newer purposes of the university long failed to register in the public mind; when they did become clear, the gap between scholar and ordinary citizen might thereby grow wider instead of disappearing. The student always continued to be judged by his friends and relatives in terms of a material scale of prestige. In many communities a young man's decision to attend college was regarded as a "questionable experiment." All that his parents and neighbors usually asked – in these early years with skepticism – was: "Will he make more money, will he secure a better position in life, will he become more distinguished than if he had remained at home and married young?" In rural areas positive fear of the college long existed. . . .

The would-be academic reformer also had to cope with a suspicious public in the form of well-defined pressure groups. Prominent among these were the proponents of organized religions, political factions of all persuasions, and . . . agricultural societies such as the Grange. Religious leaders often resented the trend toward secularization [and] might even seek legislative means to hamper a foundation . . . which at the same time drained students from the local colleges operated by the denomination. Meanwhile, politicians found a device for votes in anti-intellectual oratory. Grangers, for their part, demanded the teaching of agriculture rather than literature . . . Everywhere and at all times newspapers gleefully emphasized academic misdoings, real or imagined. . . .

For the internal development of the new universities, these difficulties over public relations heralded two widely divergent consequences. First, such problems tended to produce academic leaders whose careers were molded by their insistent efforts to woo a recalcitrant clientele. . . . This group of academic executives emerged with a battle-scarred

sensitivity to the subject of public opinion. Knowing its power, fearing its forces, these men could develop an almost obsequious habit of submissiveness to it. But, secondly, the very aloofness of many academic concerns from public sympathy tended also to attract men to the university who sought to separate themselves from the other elements of the society. This second kind of academic man, more often a professor than a president, relished the distinctiveness of the higher learning. He wished to build the university in an almost deliberately unpopular style. While naturally he hoped to win the loyalties of a certain number of students, he assumed that these students would have to meet the standards he imposed, not that he should have to go forward to bargain with them. The academic life, for this kind of believer in the university, must set its own terms. [Veysey (1965), pp. 10-16]

The 19th century vividly demonstrates the correctness of 18th century American Enlightenment advocates of a national institution of education, who had stressed the necessity that the educational system be adaptive and proactively anticipate where trends and developments were taking American Society. Instead, however, the American institution bumped along at all levels without a coherent plan, without congruence in agreement over its objectives, and had its directions set by tradition, habitual judgments of tastes, and short-term, immediately satisficing decision-making. Even what concessions to "practical" instruction were made did not escape the tight grip of the traditional dogmatic practice of mental discipline by teachers. Mental discipline was a dogma conditioned by the original religious objectives of public education long before it acquired the name and pseudo-scientific respectability of Wolffian psychology dressed up to pose as an actual science of psychology. All by itself, this hapless unnatural pedagogy contributed to a granulation between academia and America's other mini-Communities and mini-Societies:

College disciplinarians essentially desired a controlled environment for the production of the morally and religiously upright. The atmosphere of rigid control brought with it certain psychological consequences. . . . This demanding style of authority, alien to the free-wheeling temper of so many non-academic Americans, may be considered the product of unusual causes: the ideological intensity of a religious leadership, and its insecurity in attempting to keep an unruly and youthful population continually in check. . . .

Above all else, believers in mental discipline firmly identified themselves with a prescribed four-year course of study emphasizing the traditional subjects: Greek, Latin, mathematics, and to a lesser extent moral philosophy. In contrast, the primary demand of all academic reformers was for the transformation of the curriculum. . . . The protracted debates extended from before the Civil War to a culmination in 1884-85, when the forces of orthodoxy made their last notable effort to stem the tide of change. [*ibid.*, pp. 35-6]

§ 7. Summary of the Analysis

The fragmented institution of education that the competition of divers and narrowly provincial special interests established in America at the beginning of the 19th century was one that could not help being profoundly reactionary rather than proactively adaptive in both the reform periods that followed. After the wide-ranging effects of the Economic and industrial revolutions, and its final phase of increasing mechanization, were being felt everywhere in the nation, the system of education found itself ill-equipped and ill-prepared to deal nationally with mounting challenges to civil cooperation. It could not and did not provide the republic with statesmen prepared and committed to that Duty of stewardship which is, as Mill put it,

to promote the virtue and intelligence of the people themselves. The first question in respect to any political institutions is, how far they tend to foster in the members of the community the various desirable qualities, moral and intellectual; or rather . . . moral, intellectual, and active. . . . We may consider, then, as one criterion of the goodness of

government, the degree in which it tends to increase the sum of good qualities in the governed, collectively and individually; since, besides that their well-being is the sole object of government, their good qualities supply the moving forces which works the machinery. [Mill (1861), pp. 18-19]

It is a mark of the depth of ignorance in America at the start of the 19th century that many basic social-natural laws of social contracting went unrecognized. Among them was the law that *public* instructional education is not only a necessary part of the government of a republic but that it belongs to the Justice System function of that government. Today the failure to comprehend this basic fact about the function of public education is still widespread. Uncomprehended also is the historical fact that failure to provide for this element of the justice function of governance, which is vital to the preservation of a social contract binding a mere aggregation of people into a civil Community, leaves a Society's response to inevitable Toynbee challenges to the subjectivity of individual judgments of taste and satisficing decision-making. These are the challenges which, if not successfully met, eventually produce the fall of that Society.

It was not heaven-ordained that the American Enterprise-protein would develop into a state of uncivic free enterprise rather than a state of civic free enterprise. It is not true that capitalism must be antagonistic to public welfare. Both of these situations develop when the people of a Society are not adequately prepared to understand how to merge the primal drives of Duties-to-Self with intellectual and intelligent development of reciprocal Duties of republican citizenship. The failure of the institution of public instructional education to provide this preparation is the reason the 3LAR ratings at the end of the 19th century stand as I presented them at the end of chapter 8.

On the whole, American public education at the end of the 19th century did provide, more by accident and primarily from Pestalozzian pedagogy, for factors of corporal education in the personal dimension of the learner. In no way, though, was this provision adequate even to bring about social Order, much less Progress. The reforms that in tiny amounts provided for some degree of preparation for skills needed by the individual in pursuit of perfecting his own tangible *Personfähigkeit* were too specialized and the instruction provided too focused upon objective market-economy skills rather than on preparing pupils *to acquire their own ability to acquire* such new skills as an ever-evolving economy would continue to demand. Thus, some lessons in skills of civil liberty in the personal dimension were provided, but the provision was inadequate for the needs of American Society.

In the social dimension, accidental corporal lessons, such as Mrs. Bickford's flag-raising ceremony, did promote convention cultivation but fell short of exercising social arts or corporal civil values. Even in convention cultivation the instruction provided was not adequate to satisfy the requirements of Order. Lessons of *mos maiorum* were not totally neglected, but because of the presuppositions of ontology-centered pseudo-theories of ethics and moral customs these lessons fell far short of being adequate even for Order. In the other categories of instruction, no planned lessons at all were provided for, and the empirical accidents of competition between Duties-to-Self among the individual citizens and granulated mini-Communities often taught, through the educational Self-development of individuals, *anti-republic* maxims and tenets.

One of the clearest empirical signs that Plutocratic Era reforms had failed even before they were fully instituted was the start of a third wave of reform at the end of the 19th and beginning of the 20th centuries. And this brings us up to the so-called Progressive Era in the 20th century.

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