The Aesthetic Education of Louis I. Kahn, 1912-1924
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Joseph A. Burton

A member of Kahn's studio, Marshall Meyers, notes that Kahn was unsure of the origins of his ideas, and hoped that his thoughts on architecture would eventually be placed within a broader historical context.[1] On this point, Kahn said:

> I speak very little about it, because I don't know how to extend things, because I don't have any historical knowledge, nor any research tendencies. I can't look up and find other literature, I just can't do it. And so it's left, in a way, in a very undeveloped state, as though it were just an offering for someone else, you know, to extend. It doesn't happen, because I really say too little to make it completely understandable. That's why I like to talk about it, because I talk about it more freely, because writing is very difficult for me, though I've done some....[2]

Although intensely personal, and at times difficult to decipher, Louis Kahn's vision of architecture can be traced to the people, places, and intellectual currents which shaped his childhood in Philadelphia. From 1910 to 1924 Kahn studied drawing, the visual arts, and architecture within an intimate community of teachers and institutions in Philadelphia: J. Liberty Tadd, drawing instructor, the Public Industrial Art School; William Gray, Professor of Art History, Central High School; and Paul Cret, Professor of Architecture, the University of Pennsylvania.

1900–1917
The Progressive Era

This period of Kahn's training took place during a time of great political and aesthetic Romanticism in America – known today as the Progressive Era, circa 1900–1917. Named after the late 19th-century reform-minded *Progressive Movement*, this community of young intellectuals and professionals was associated with political, social, and aesthetic reform. Progressivists' philosophy was a particular cross of Romanticism and pragmatism, firmly rooted in the expansive Transcendentalism of Ralph Waldo Emerson. Presented in his book *Nature*[3] of 1836, Emerson's spiritual dualities of Immanence and Transcendence were used to justify and guarantee the democratic ideals of equality and liberty. The immanence of divinity throughout nature ensures that all humankind, in their spiritual patrimony, are equal. Each child of God transcends physical limitations into freedom when he or she depends upon his or her creative genius. Humankind, when it draws upon its inner divine nature, serves as a co-creator with God in the phenomenal world. Of this divine mediator, Emerson proclaimed: "Man is here to be a reformer."

The Progressives strongly championed public art education with special schools and programs in fine art and industrial art. As a community, they firmly believed that art and art education played a fundamental role in the moral perfectibility of the citizen and thus the state. The art of the Progressive Era simultaneously looked backward to a primeval, Jeffersonian arcadia and forward in time to a scientific and industrialized utopia. America was understood to be unfettered by the past and its rigid traditions, yet heir to the evolutionary achievements of history.

The artist, as with all Progressives, was to pragmatically choose and adapt freely from yesterday in order to move with imagination and invention into tomorrow. This alchemical "melting pot" of American democratic art, harmonizing the primitive and the evolved, produced diverse and ironic shades of gray. Its inherent ambiguities polarized into numerous hybrids of conservative and radical aesthetic preferences which ran between academic figurative art and avant-garde non-objective art. This duality is best seen in the period's most popular painting style, Neoclassicism or "American Renaissance," and its most radical one, Post-Impressionism – each style emphasized, in its own way, both an archaic primitivism and a scientific abstraction.

In architecture one also notes such stylistic diversity within a Progressive sensibility. The Beaux-Arts Imperialism of McKim, Mead and White with its ancient Greco-Roman details was associated with the Progressives' *City Beautiful Movement*. Similarly, one also notes Cram's medievalism, the orientalism and organicism of Sullivan and Wright, and the modernist abstraction of Goodhue's late work. Each of these aesthetic visions shared in the complex Romanticism of the Progressive era.

To our collective benefit, Kahn's ideas are grounded in this idealistic, visionary, and reform-minded time – and if we wish to understand Kahn's person we should first turn to the ideas and attitudes of Kahn's teachers.

1912–1914
J. Liberty Tadd, drawing instructor
Public Industrial Art School

Of the three teachers from this period that Kahn credited as influential upon his thought, Liberty Tadd was the most closely associated with the Progressive Movement. The educational ideals of the Progressives honored the individuality of the student yet struggled to harmonize this uniqueness within a collective context. Tadd spoke on this subject:

> To be a good teacher requires essentially the inspiration that the art of teaching is divine. It is a mission to teach children having souls. The teacher must especially realize that each mind or soul is an immortal part of the future heaven he or she is helping to build.[4]

For Progressives, education was organic and tailored to each student. It unveiled the expressive uniqueness of the individual from the inside out. Tadd elaborated:

> In educating the young ... there is no reason why we should not give them ... a knowledge of their own character and the possibilities of which they are capable.[5]

Tadd was a graduate of the Pennsylvania Academy of Fine Arts and his time at this institution, 1876, 1879, 1880, and 1881, exactly corresponds with Thomas Eakins' greatest influence as a teacher and a director of the institution.[6] Tadd was trained by Eakins to work, "as the ancient Greeks," directly from nature. He learned that authentic art derives its vitality from direct observation of living nature, not the precedents and academic cliches of other artists. Study from life was complemented by the use of scientific discoveries and methods. Photography and anatomical dissection furthered the students' factual understanding of nature. Following Eakins, Tadd turned his back on the traditional methods of academic training and promoted in his art classes an individual interpretation based upon the student's own "self-reliant" thought process. Tadd's pedagogy in his courses given at the Public Industrial Art School continued Eakins' Romantic Realism, a style associated with the "American Renaissance."[7] Tadd intellectually supported his teaching methods with Emersonian Transcendentalism, contemporary scientific psychology, as well as Spencer, and Progressive interpretations of Hegel. Tadd's instruction encouraged animism, organicism, automatic, subconscious expression, and symbolism. Tadd's method of teaching drawing, called "natural education," was made an integral part of Philadelphia's system of public schools.[8]

In the fall of 1910, Kahn was personally introduced to Tadd by his fourth-grade teacher. At this time any boy or girl with talent in art in the Philadelphia School System was permitted to go to the Public Industrial Art School directed by Tadd. Tadd developed the pedagogy and trained the teachers for the school. Tadd's

Progressive program was a local success story. By 1891, he had expanded from a responsibility of 120 children to 1700. In the beginning, children attended two afternoons a week for two hours and during Kahn's education for 1/2 day per week.

Tadd attained national and international prominence as a visionary in art instruction for elementary, middle, high, and normal schools. His book, *New Methods in Education: Art, Real Manual Training, and Nature Study,* was first published in 1899 and was translated into German and published the following year as *Neuewege zur Kunstlerischen Erziehung der Jugend.* Tadd's prominence was aided by his professional association with another Progressive educator, William N. Hailman. Author of many books and articles concerning education in English and German, Hailman wrote the introduction to Tadd's book. He pronounced its pedagogy to be the fulfillment of "Froebel's educational prophecy" and to be the definitive example of such instruction in America. Hailman had discovered Tadd's work in 1893 in the educational exhibits of the Chicago Columbian Exposition. Tadd had achieved in practice Froebel's educational vision better than Hailman himself and Froebel's other American and international disciples. Hailman elaborated how Froebel's educational principles were best realized in Tadd's work.

> Elsewhere, I had seen the child weighted down with cubes and balls, with cylinders and cones, with lines straight and curved, parallel and diverging, loading himself with wearisome definitions of these things or investing them with an unhealthy mysticism in accordance with a sadly perverted reading of Froebel's thought; here I found practical comprehension and free control of these things, attained without weariness and suppressed sorrow, a loving application of Froebel's living thought; cubes and cylinders, squares and circles becoming familiar friends through the service they gave in the expression of thoughts and in the achievement of purpose. Here I saw the so-called principles of parallelism and perpendicularity, of radiation and balance, of circle and involute, of perspective and shadow, discovered by the children in the needs of their own souls, clearly put forth and thoughtfully applied in spontaneous work, shining in the lucidity of native, not of borrowed, light.[9]

Tadd's pedagogy was three part and is summarized in the secondary title of his book: *Art, Real Manual Training, and Nature Study.* However, his emphasis upon nature study was the fundamental, romantic foundation of this tripartite approach. According to Tadd, nature is the great teacher. A student taught to love and closely observe the "Book of Nature" is given the golden key to unlock all knowledge both physical and spiritual. This is because nature is a divine expression, a kind of sacred script.

> If God speaks at all (and who doubts it?), He speaks through His works, "There are tongues in trees, books in the running brook, sermons in stones, and good in everything" (Shakespeare). Ought we not to understand these tongues, read these books and understand these sermons?[10]

Therefore, nature study leads to an appreciation of true beauty and teaches one the fundamental process of creation. This divine model is the prime means to all art or human creation.[11] Tadd's romantic theory of education parallels that of Plato and his process of *anamnesis* initiated by *eros.* The human love of natural, physical beauty, a mesmer-like, telluric force, transforms and awakens one gradually to a higher, abstract awareness.

> The inspiration is in the natural forms, as it should be, and the mere contemplation of the forms seems to influence the pupils to action. It is inspiring to the true teacher to realize the moving force and power of nature. Bring

> something into the class room like a new bird form, or fish form, all of the children follow it with their eyes, which seem to almost stick out; there is no lack of attention here, the magnetic influence is at work, the divine energy is flowing. We should flow with it instead of trying to thwart it, as is too often done. This magnetic and energizing power of nature has a splendid influence on the physical, mental and moral development of the young. It also fills the children with interest, imbues them with vigor, inspires them to think and work, while at the same time giving them an appreciation of beauty that adds vastly to the ability of the young to enjoy life.... It is thus distinctly practical, and commends itself to the most materially inclined, as well as satisfying the more ethical aspirations of our nature. "The emotion accompanying every generous act adds an atom to the fabric of the ideal man."[12]

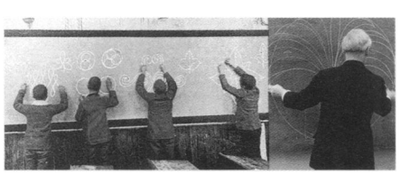
Hence, Tadd argued that the young student must begin with the study of objects from nature, i.e., shells, plants, fish, birds, and animals, before studying in class the geometric, ideal forms underlying nature — cubes, pyramids, and spheres. Abstract theory presented before direct sensual experience of natural phenomena appears meaningless, purposeless, boring, and too difficult to the student. Tadd said that students are always more interested in drawing natural objects. Only later do students begin to see the intellectual ideal of the universal geometries which underlie all natural morphology. Figure 1. The senses must be stimulated before the intellect in order to promote firsthand discovery and original insight. Then, the student's natural motivation and confidence established upon personal success and achievement are not undermined. As much as possible, Tadd's students worked directly from nature. In the Philadelphia Public Industrial Art School, he used stuffed birds, fish, and animals, as well as photographs and plaster casts of these, to present nature to students. In private lessons, for example, students were taken on field trips to the zoo to study and draw live animals. In his private summer school classes in the Adirondacks at Sarana Lake, students worked directly in nature, outdoors "en plein air," and did studies of farm animals from life. Figures 1–2.

Art and real manual training are the two tools which allow one to study nature best. Tadd's method was learning by doing, summed up in the aphorism, "Every deed is a prayer." The student is educated autodidactically by self-initiated study. Tadd said that this process of self-teaching is:

> The art of building ideas by using most of the channels of impression and most of the means of expression.[13]

Tadd demonstrated how drawing could aid study in many branches of knowledge, such as language, mathematics, technical subjects — construction and mechanical drawing — and the sciences of zoology, biology, botany, chemistry, entomology, and mineralogy. He elaborated upon the empirical richness of drawing:

> All must admit that a picture presents a subject capable of illustration far more forcibly than mere words. One who accurately draws a bird, or a skeleton, or a flower, or a mathematical problem, has a more complete mastery of that special topic than could be gained in almost any other way.[14]



Tadd's exercises were geared to the development of physical strength, control, and dexterity. Ambidextrous exercise was one of his unique developments and contributions to art education. Figures 3–4.

His ambidextrous blackboard drills, for example, drawing overscaled ornaments, developed the ability to maintain correct proportions at different scales and the physical flexibility necessary for employment in many crafts. Similar ambidextrous

exercises not only in two dimensions but in 3D clay and wood carving at different scales continued this process. The students methodically rotated between these exercises in drawing, modeling in clay, and woodcarving. Figures 5–6.

Tadd said that only through working in 3D could the student improve his or her abilities to see critically and draw with precision in two dimensions. The physical sense of touch working on soft clay and hard wood trained the eye to see even more subtly than when working only in two-dimensional mediums.[15] He called three-dimensional modeling "speaking through the finger tips." Tadd argued that the best delineators are also sculptors, citing Michelangelo among several others. The result of learning to speak through the fingertips is an automatic and expressive drawing ability where hand, eye, and mind are synthesized into one instrument.

> ... when we have actually, through the sense of touch, made the form in soft material and then actually by hard struggling made the same form in tough wood, it is a very easy matter to draw it on paper or the blackboard with the hand as firm and with a line as clean as though it were being made by a steel bar.[16]

Tadd used "memory drills" to help impress through repetitive drawings the objective image upon the mind. Similar mnemonic training was also used by Eakins, Tadd's teacher. With "the power of being able to mentally photograph the object," Tadd explained, the student will automatically begin to idealize and universalize nature in his/her work through unconscious and conscious simplification.[17] Tadd's memory drills were repeated over and over again, as a musician practices scales, until drawing and 3D sculpting became completely automatic and instinctive for the student. The physical body and hand became an expressive instrument for the mind of the artist. Tadd believed that his technique freed the inner genius of the student to express ideas and feelings spontaneously.

> The pupil should learn to draw as automatically as he learns to write.[18]

> Drawing and manual training, properly taught ... are modes of thought expression, just as speech and writing are modes of thought expression. Drawing is a universal tongue.[19]

With perceptual knowledge automatically embodied in the artist through memory work, one is free to use, reinterpret, and express these facts in personal and subjective ways.

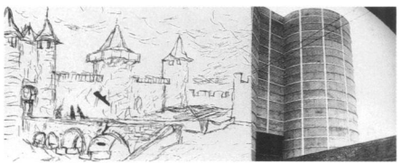
> As I have repeatedly quoted, "accurate perception and exact memory are the fundamental bases of sound reasoning and imagination."[20]

One must imitate nature first before one can express. Mimesis is sketching from nature. Design is expression.

> I like my pupils and teachers to understand the distinction there is between sketching from nature and designing. In the one case we put down facts, and in the other, ideas. There is a tendency for many students to sketch only from nature. We get our ideas by thinking as well. More time should be given, then, to dwelling on our impressions and to systematic mental reproduction, and to giving expression to these ideas constantly by designing and creative work.[21]

Tadd's Progressive pedagogy was a "natural" process taking the student from imitation to symbolization of inner experience — from "Impressionism" to "Expressionism." Art expresses human thought and feeling best. Drawing in two

dimensions and modeling in three dimensions are a form of expressive writing revealing the underlying spiritual character and soul nature of the author. Art thus mirrors the formative process of the Divine Creator who writes Its character in nature. Art for Tadd then becomes the truest form of self-expression, the highest goal of education.[22]

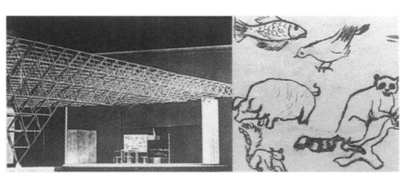


Besides the romantic-based aesthetic theory, it is Kahn's drawing method that evokes Tadd most clearly. Kahn portrayed his 1959 delineations of the medieval city of Carcassonne as a kind of writing — a mnemonic method going from *mimesis* to creative expression. Figures 7–8.

A few years ago I visited Carcassonne. From the moment I entered the gates, I began to write with drawing, the images which I learned about now presenting themselves to me like realized dreams. I began studiously to memorize in line the proportions and the living details of these great buildings. I spent the whole day in the courts, on the ramparts, and in the towers, diminishing my care about the proper proportions and exact details. At the close of the day I was inventing shapes and placing buildings in different relationships than they were.[23]

Kahn drew buildings from the ground up, reflecting the physical forces of gravity moving through them. This tectonic sensibility is akin to Auguste Choisy's "worm's-eye view" illustrations of architecture. It also captures the essence of Tadd's teaching endeavor: the synthesis of mind, eye, hand, and touch while drawing. Tadd said of such psychosomatic integration:

the hand will very soon grasp the feeling that it is delineating something tangible and concrete, not simply making pencil and chalk lines.[24]



Fifty years after studying with Tadd, Kahn was still able to demonstrate ambidextrous drawing. Figure 4. His greatest tribute to Tadd's teaching is symbolized in the use of the chalkboard. Whether intended for a child's room as shown in a painting circa 1930, an elementary school design by Anne G. Tyng of the early 1950's with children's illustrations by Kahn, or for the unplanned intuitions of Nobel Prize winners walking under the porticos of the Salk Institute, designed 1959–1965, he provided the graphic medium of his early education to further human speculation. Figures 9–10.

It was also Tadd speaking behind Kahn's words when the architect discussed the goal of education and its agencies.

School is a place which has this unique ability to serve the talent of the individual. Not just to impart knowledge but to serve the talent of the individual.

No person should be examined where his talents don't lie. I know, I studied physics. I took notes in physics. I took notes so arduously that I didn't hear what was said. Had I listened to the teacher and not taken notes, I would have learned something about physics. I took notes to pass examinations. And even then I had to copy somebody's notes which were more accurate because my mind wasn't in that direction.

Had I been asked after the physics to draw physics, I could do it. I could express through drawing what I learned in physics class. This would be my way of expressing physics.[25]

In his built constructions, Kahn did draw physics, delineating the nature of materials and the forces of gravity.

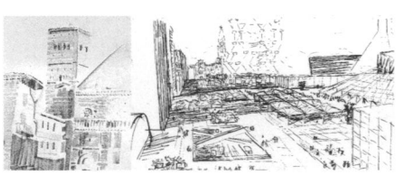
1912–1920
Willian F.Gray
Professor of Art History
Central High School

William F. Gray, the professor who lectured in art history and architectural history at Central High School, was responsible for stimulating the direction of Kahn's later professional studies. As head of the Art Department at this elite Philadelphia institution, Gray established an integrated approach toward the history of art and architecture. This more inclusive understanding of the arts began with his studies at the Pennsylvania Academy of Fine Arts from 1889 to 1891, a time when Thomas P. Anshutz, a student of Thomas Eakins, was the leading force of the school.[26] As an educator, Anshutz was even more open-minded than his teacher and is credited with conveying Eakins' most Progressive ideas into the 20th century.[27] He rejected academic conventions and encouraged his students to find their own expressive voice. He actively promoted among his students European modern art and its theories of Impressionism and Post-Impressionism.

Tutored by Anshutz in this tradition of Expressionism, Gray, like Tadd, propagated a Progressive vision through his teaching. Perhaps more importantly for Kahn, however, he addressed the discipline of architecture from this distinctly American position. He was an outspoken advocate of Philadelphia's *City Beautiful Movement* and an active member in the artistic community of the city. Being head of the Art Department at Central High School, he exercised his power to further the quality of architecture in Philadelphia. One of his students at Central, John Harbeson, remembered Gray's important influence upon fellow students:

> William F. Gray ... used his position as head of the Art Department of this school to give his students an opportunity to learn something about the history of architecture, about its styles and its beauties. To him, many men who have made brilliant records in architecture owe their start, their desire to do something worthwhile in a noble art. This quiet, dignified, sensitive man did much to inspire young Sternfeld; it was from Professor Gray that he learned about Paul Cret and what he was teaching at the Architectural School at the University of Pennsylvania, and what college training would do for him. And it was Gray who made it possible for him to get a scholarship to Penn.[28]

Gray's ideas on architecture during the first decades of this century may be surmised from a lecture he gave in 1910 and later published in 1915 entitled *Philadelphia's Architecture,* in which Gray, influenced by Ruskin, argued that materials in architecture be expressed honestly, in a straightforward manner.



Although grounding his architectural principles in Ruskin's Romanticism, Gray, like many Progressives, was not overly enthusiastic about the Gothic style, although he appreciated reserved versions of it as well as of other medieval revivals, such as Romanesque and Byzantine. Gray may have been the first to interest Kahn in the campaniles and towered fortifications of Italian medieval cities. Figures 11–12.

He would also have introduced Kahn to the architecture of the late 18th and early 19th centuries. Gray's personal preferences favored the spare detail and simple form

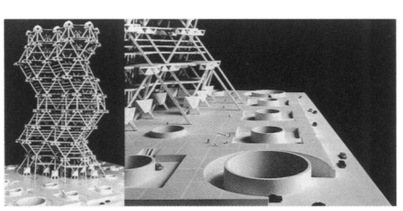
of a restrained Neoclassical architecture known as Greek Revival. He celebrated the ancient Choragic Monument of Lysicrates as a prototypical example of the style. More modern examples extolled were the work of Inigo Jones, William Chambers, and U. Walters. His interest in an architecture of unpretentious simplicity and rational clarity is consistent with that of many contemporary taste-makers in America. This classical movement during the first decades of the century was associated with the Progressive values of Jeffersonian republicanism and democracy. Its foremost apologist was Fiske Kimball, who later became the director of Philadelphia's Museum of Fine Art in 1925. Gray did not approve of England's 17th-century Baroque architecture, an aristocratic style. He was also not fond of American examples of the French neo-Baroque style, such as Philadelphia's City Hall, associated with the Second Empire of Napoleon III. Of City Hall, Gray wrote:

> The French scheme of central and terminal pavilions, with intermediate wings or curtains, and the superimposed orders, which have come down from Roman times, are here the dominant features of the design, but lacking in that finer sense of form and proportion, without which the often narrow gap between the sublime and the ridiculous is so easily crossed. The most conspicuous feature of all, the tower, is least successful. Its manifold subdivisions and broken lines eliminate the finest element in tower design - the simple, upward sweep, seen at its best in the Italian Campanile.... The detail throughout is coarse and exuberant and the iron cornice is a most egregious error.[29]

Gray's ideal for a more simplified tower design was ultimately realized in the brick, Sullivanesque skyscrapers of Chicago.

> The modern business building, particularly the skyscraper or cloud scratcher, with its rapid increase in height due to the enormous recent development in steel construction, presented a problem that has taken a considerable time in its solution, if, indeed, it may be considered solved....
>
> The first of the utilitarian tall buildings of Chicago, with an absolutely plain brick skin on the steel skeleton, pointed the way to the solution - the treatment of the whole structure as a mass of plinth to be provided with a base and terminal treatment dependent on the nature of the building. All the impressiveness of the mass is thereby accentuated and the problem brought back to first principles, easier of solution.[30]

In 1919, Gray publicly recommended that the City Hall be torn down and the site be restored to a public square as William Penn had originally intended.[31] He suggested that on the perimeter of the square two restrained Neoclassical buildings to house the needs of the city be built, modeled after those of Gabriel on the Place de la Concorde in Paris. The later Free Library of Philadelphia recalls Gray's vision transplanted to Logan Circle. This campaign to tear down City Hall in 1919, the year that Kahn was enrolled in Gray's course at Central High, may have in part prompted Kahn's later proposals for Philadelphia's City Hall. Some of these schemes included demolition of the building and replacing it with a dramatic design done in collaboration with Anne G. Tyng. The new project, called "Tomorrow's City Hall," was both public square and tower. Figures 13–14.



Like Philadelphia's Second Empire style, Gray also harshly criticized the excesses of the Aesthetic Movement in Philadelphia during the late 19th century. He condemned the overly "original" architecture of Frank Furness with the morally charged words:

> Any architectural feature which is not self-explanatory is wrong.[32]

Gray referred Furness and other followers of structural mannerism to the doctrines of Ruskin.

In the 1950's, Gray noted that five of his former students later won the Paris Prize after studying with Cret at Penn. The two most celebrated of these students were John Harbeson and Harry Sternfeld. Sternfeld also went on to receive the Prix de Rome, while Harbeson became a partner with Cret. Gray often referred to these students as "Cret worshippers." This was due in part to his promoting at Central High the talents of Cret as an internationally recognized Philadelphia architect and teacher. Unfortunately, however these students were never fully accepted or encouraged by Cret precisely because of their radical tastes – tastes which Gray had fostered. Gray in typical Progressive fashion would have engendered an independent attitude and revolutionary spirit in his students at Central High – a spirit unfamiliar to Cret.

Gray died in 1956 before he could name Kahn as his most luminous and successful protégé. Although Kahn would never be completely approved by Cret, the probable reason Cret rejected such a major talent was Kahn's romantic sympathies and Progressive taste. This American vision taught by many of the teachers of Philadelphia's institutions was never endorsed by Cret himself.

1923–1924
Paul Philippe Cret
Professor of Architecture
University of Pennsylvania

Paul Philippe Cret was Kahn's design professor during his final year of architectural study at the University of Pennsylvania, 1923–24. Cret, born, raised, and educated in France, was a third-generation Néo-Grec, the student of Pascal and Guadet at the Ecole des Beaux-Arts in Paris. His view of human history, unlike that of the Progressives, was seen through the concrete objectivity of French rationalism and late 19th-century materialist science. Philosophically based in the positivist and deterministic theories of Hippolyte Taine and Herbert Spencer, Cret opposed American Romanticism with its subjectivism, idealism, and emphasis upon revolutionary reform. Cret battled the schizoid Romanticism of the Progressives on their two fronts, conservative and radical. These were, respectively, the primitivism of American Neoclassicism with its historic detailing and the utopianism of modernist architecture. The modern style was typified by the late work of Bertram Grosvenor Goodhue and the Art Deco skyscrapers of New York City, an American school of design led by Harvey Wiley Corbet and Hugh Ferriss. The titles of several of Cret's published essays bear witness to his debate with the Progressives: "The Question of Education: Evolution Vs. Revolution," "Modernist and Conservative," "The Classic Versus the Modernist," and "'The Architectural See-Saw' or 'The Law of Eternal Return.'"

According to David Brownlee in *Building the City Beautiful,* both Progressive styles of Neoclassicism and Modernism were influenced by Post-Impressionism.[33] The name for this revolutionary, abstract art pioneered by Cézanne and his followers was coined by English critic Roger Fry circa 1911.[34] For the next decade in the United States, all of modern painting was subsumed under Fry's label, including Fauvism, Cubism, and Futurism. Fry's nomenclature is, however, only chronological and not descriptive. It is more revealing to remember that Post-Impressionism's founders, especially Matisse, describe this subjective, anti-mimetic art as "Expressionism" or "Self-Expression." The influence of Post-Impressionism's neo-romantic theories upon American Neoclassicists and Modernists is in their mutual dependence upon abstraction, a metaphor for science and utopia; and primitivism, a metaphor for nature and arcadia.[35] Similarly, both styles were associated with contemporary theories of synesthesia which argued for a correspondence between color, form, and sound.

In contradiction to Progressive expressionist theory, Cret believed in mimesis. He said that architecture was an "imitative art."[36] Ostensibly, he was not referring to Plato and the imitation of ideas but to Aristotle and the imitation of universal principles abstracted from nature. Cret's scientific and objective imitative art was to follow evolution as interpreted by Darwin, not the Progressives. With cultural Darwinism, Cret skeptically opposed Progressive millennial excesses. His rational positivism did not allow for the incongruities of an American vision paradoxically fusing arcadia with utopia.

The history of architecture as well as that of the Ecole des Beaux-Art in France was analyzed by Cret as a lengthy dialectic between conflicting views which periodically evolved to a new synthesis. He generalized the fundamental polarities of this dynamic process as either an impetus toward evolution or one toward revolution — slow, organic-like development across generations or the sudden overthrow of the status quo by antithesis. Cret shared Herbert Spencer's agnostic attitude as well as his all-encompassing exposition of evolution, concisely phrased as the movement from "incoherent homogeneity to coherent heterogeneity." Cret, however, shortened the maxim to "homogeneity moving to heterogeneity," limiting its breadth of interpretation.[37] He thus saw architecture slowly and imperceptibly evolving across centuries. Revolution plays a necessary but illusionary role in this process of change. Its influence upon the ultimate outcome — how a radical position is synthesized into its conservative opposite — is unknown and unpredictable and in the long run barely noticeable.

For Cret, it is foolhardy to think that a single individual in one lifetime could significantly contribute to the progress of evolution. The chimera of revolution to affect drastic change is summed up in the Darwinist aphorism, "nature does not skip steps." Therefore, Cret took a conservative stance against the reform-minded individual in contemporary architecture. He believed this to be too romantic, unnatural, and unrealistic — in the end impossible. In an essay of 1909, "Truth and Tradition," Cret referred to the Darwinian parallel in counterpoint to the romantic notion of the revolutionary, creative genius proposed by American Progressives. The average architect, epitomized by a certain J.W. Brownie, is incapable of formulating an original architecture — a one-man revolution. In an extended caricature, Cret, following Santayana, attacked the Hegelian academic idealism of the Progressives. Writing, tongue in cheek, he used Bernard Shaw's satire on British reform, *Man and Superman*, to drive home his point:

> Brownie was dumbfounded. "Our only hope, then, is in evolution." Evolution is a slow process, and the prospect of knowing that superman, forty thousand years from now, will perhaps build truthful architecture, is a rather comfortless contingency. Meanwhile, as he had to build, being an architect, he set himself again to the task of designing churches, residences, bank buildings and the rest as well as he could, though still hindered by the tastes of the clients which were not always the same as his own, by the meagre funds put at his disposal, by unfavorable sites, and, above all, by his own talent, of which he was the first to recognize the limitations. Everybody cannot be a genius.[38]

In the context of his Darwinist perspective, Cret's sense of modern architecture, compared to that of his modernist peers, was a much broader and inclusive panorama. Modern architecture, according to Cret, begins with the Christian epoch around AD 500. During this period two great architectural styles emerged and evolved across the ages, the gothic and, more recently, the renaissance style, an instauration of Greco-Roman antiquity. Despite other stylistic revivals such as a superficial gothic one, the true and dominant style of the 19th century was classicism which continued

the development from the 1500's. Classicism or "modified renaissance" is modern architecture. Its maturation during the last 400 years has witnessed a movement from simplicity to greater complexity. The classical tradition with its non-personal evolution across millennia exemplifies architectural progress best, being a "survival of the fittest" style. Cret used the terms "modern" for "modified renaissance" or present-day classicism, and "modernist" to portray the revolutionary dialectic found within contemporary architecture. Classicism must evolve according to natural law. In its modern, more complex state, there is no place for backsliding to a more primitive and simple, archaeologically correct, classicism. This, Cret said, was as embarrassing and unseemly as an elderly person using baby talk to express himself. In line with earlier Néo-Grecs, he opposed the romantic primitivism of any period exhibiting a regression to an archaic state of development, especially late 18th- and early 19th-century Neoclassicism with its simple, absolutely symmetrical geometries and its authentic details taken from ancient Greece, Paestum, Herculaneum, and Pompeii. Cret opposed the 20th-century American taste for Neoclassicism as an anathema, unsuitable for a complex, present-day society and untrue to natural principles of evolution.

Capable of designing in many styles including a modernist version of Art Deco for the 1933 Chicago Century of Progress, Cret always pragmatically accepted the stylistic dictates of his clientele. However, as much as possible, Cret practiced as he thought and physically articulated a classicism in evolution according to the circumstances of the first part of the 20th century. This is known best in America as "modernized classicism" or "stripped classicism."[39] Applying Darwinian evolutionary principles to architecture, his plan designs are less simple, more baroque in their elaboration, appropriate to the complicated, heterogeneous nature of contemporary life. Cret's planning strategies contrast with the simplified footprints of Progressive Neoclassical buildings. Cret reasoned:

> Modern architecture can then no longer aspire to the simplicity of the Antique or the Mediaeval. A modern plan provides a multitude of rooms for various uses distributed generally over several floors, and the external and internal appearance of the building faithfully renders this complexity by the number of openings, of stories, of reduplications of apartments on each floor, etc.
>
> We may say that the more modern a program is, the more complicated it is; and we cannot speak of this complexity as a fault chargeable to the architect, when it is only the expression of our use and custom.[40]

The stripped classicism of the facades that he designed in the mid-1920's may also be considered evolutionary in their formal aspect. The abstract imagery of these elevations apparently draws upon the Post-Impressionists' association of science with such an aesthetic. Cret, apparently, was willing to ignore the primitivism simultaneously associated with Post-Impressionism for a technical, scientific reason. His stripped classicism was also a simplification reflecting the fact of modern steel construction, not an atavistic regression similar to Neoclassical primitivism. Elizabeth Grossman in *Paul Philippe Cret: Rationalism and Imagery in American Architecture* argues that he reduced the details of traditional masonry classicism, a dead-load corbeled structure exemplified by moldings and capitals, to characterize modern steel construction in a monumental manner.[41] The metal assembly frame of horizontal and vertical members tied together and acting as a unit does not need corbeled elements: moldings and capitals. She also suggests that this depiction of the steel frame, which functions structurally similarly to that of wood, reinforced the tradition, authoritatively pronounced by Vitruvius, that the classical orders were originally timber and not stone. In such ways, Cret evolved the renaissance tradition to express the technical complexity and sophistication of a 20th-century culture.

Cret's scientific position on evolution was in contrast to the popular romantic one of the Progressives. Historians of evolution contend that romantic dialectic theory (usually attributed to Hegel), not Darwin's biological theory, is a more accurate model for cultural evolution. Cret's grievous miscalculation would cost him a more celebrated and honored position in American architectural histories. Because of his ambivalence to Yankee tastes and his anti-Progressive stance, Cret was never really accepted as an American architect.[42] Although naturalized and a recipient of an AIA gold medal in 1928, Cret was still known as a "French" architect long after other European émigrés, such as the more romantic Eliel Saarinen, were accepted as authentic American architects. Cret's tragedy was that he arrived in his adopted land fully mature in a European skepticism of revolution, a doubt fostered by the Continental debacles of 1848. Unlike his student Kahn, Cret never was to experience personally the American myth held high by the Progressives. Cret's faithful disciples also suffered the same peer rejection as Cret. One of his top students, regarding his own stunted career, complained that Cret's teaching and theory did not prepare him professionally for the revolutionary apotheosis of the International Style in the U.S. after World War II.[43] Kahn, however, benefiting in America from the largess of Progressive institutions and their philosophy, was intellectually prepared to break with tradition.

Although grounded in American Romanticism, Louis Kahn's sensibility is obviously in debt to Cret's more objective French Rationalism. Kenneth Frampton was the first scholar to document the Gallic influence upon the younger architect's thought in his important article "Louis I. Kahn and the French Connection."[44] This French subtlety is manifest in his search for structural images of simultaneous rational and aesthetic worth as well as his concern for finding the right *parti* for a project, one with "character" — expressing the essence of contemporary needs, psychological and physical. Like the Néo-Grecs, Kahn was devoted to creating a Progressive, legible architecture, one that could be read by the rational mind discursively, almost left to right, through the logic of its physiognomy. Like Cret, he supported a non-personal ideal expressed by the term "commonness," and he recognized the validity of architectural precedents. However, Kahn's romantic bent led him simultaneously to pursue, against the warnings of Cret, a primitive modernism. His geometrically simplified architectural imagery with its modern structural innovations escapes the limits of scientific history into the irrational, poetic experience of mythical time. The contradictory result of this synthesis was a Hi-Tech Primitivism. Here Kahn was in debt to both Progressive camps, Neoclassicists and Modernists. The following statements made in 1959 and 1962, respectively, exhibit Kahn's careful synthesis of Cret's French ideals and those more American.

> ... modern space is really not different from Renaissance space. In many ways it is not. We still want domes, we still want walls, we still want arches, arcades, and loggias of all kinds.[45]

> Think of the wonderful discoveries of science today, and think of how much our architecture is at a standstill. I believe our architecture looks like Renaissance buildings, simply in new materials. I do not think it looks like modern buildings to me.[46]

1960–1968
Louis Kahn on education

Speaking of his own experiences as a young student in Philadelphia, Kahn said:

This is the city of availabilities. When I was a kid, one could avail oneself of places where one could learn without having the money to do so – it was all free. I went to several art schools in this city and I felt that was a wonderful thing to have these availabilities.... Now I think about the city in the same terms of availabilities. A city is measured by its institutions – not by its traffic systems, not by certain mechanical services, but by the way a man can find the places where he can develop his expression.[47]

I realized in India and Pakistan that a great majority of the people are without ambition because there is no way in which they are able to elevate themselves beyond living from hand to mouth, and what is worse, talents have no outlets.[48]

... In these countries where commonality is rarely expressed in the institutions available, I might not have had such aspirations.[49]

In time, the romantic pedagogical principles of the Progressives grew to become Kahn's own. He stated:

I believe in schools of natural talent.... School should be the center of freedom.... There should be no judgement, there should be no comparing one person with another.... If you have a classroom of thirty students in which freedom reigns, you would have thirty teachers.[50]

These educational ideals, encouraged by personal experience, inspired Kahn's making of architecture. He conveyed this Progressive sensibility as a nonverbal, expressive language rooted in the spirit of nature and humankind:

For me, architecture is not a business but a religion, devotion and dedication for human enjoyment.[51]

Endnotes

1 *Marshall D. Meyers, Conversations with author (Philadelphia: 1979–1981). Marshall Meyers was a member of Louis Kahn's office circa 1957 to the time of Kahn's death in 1974. In Kahn's office, he served as project architect for the Kimbell Museum.*

2 *Alessandra Latour, editor and introduction,* Louis I. Kahn, Writings, Lectures, Interviews *(New York: Rizzoli, 1991): 309.*

3 *Louis Kahn in his personal library kept at his office possessed the following copy concerning Emerson: Ralph Waldo Emerson,* Selected Essays, *(London (?): T. Nelson and Sons, Ltd., no date). The book had the name of Kahn's daughter, "Sue Kahn," written inside. I catalogued Kahn's personal library between 1978 and 1981 as part of the research for my University of Pennsylvania dissertation, 1983. This collection of books is currently housed in the home of Kahn's widow, Mrs. Esther I. Kahn.*

4 *J. Liberty Tadd,* New Methods of Education: Art, Real Manual Training, Nature Study *(Springfield: Orange Judd Company, 1899): 15.*

5 *Ibid., 359.*

6 *Marietta P. Boyer, Librarian at the Pennsylvania Academy of the Fine Arts, Telephone conversation with the author (Philadelphia: March 20, 1991). Ms. Boyer kindly researched the dates of J. Liberty Tadd's and William F. Gray's attendance for me in the closed archives of the Academy. Lloyd Goodrich,* Thomas Eakins *(Washington: National Gallery of Art, 1982). Wilford Wildes Scott,* The Artistic Vanguard in Philadelphia, 1905–1920 *(Ph.D. dissertation, University of Delaware, 1983).*

7 The American Renaissance, 1876–1917, *exh. cat. (New York: The Brooklyn Museum, Pantheon Books, 1979).*

8 *Sally Lorensen Gross,* American Manuals for Art Instruction in the Public Schools: Progress, Prophecy, and Art for the Millennium *(Ph.D. dissertation, Bryn Mawr College, 1987): 256–277.*

9 *Tadd, xxi.*
10 *Ibid., 62.*
11 *Ibid., 155.*
12 *Ibid., xii, 253–254.*
13 *Ibid., 24–25.*
14 *Ibid., 339–340.*
15 *Ibid., 188.*
16 *Ibid., 233.*
17 *Ibid., 162–163.*
18 *Ibid., 76–77.*
19 *Ibid., 32–33.*
20 *Ibid., 208.*
21 *Ibid., 57.*
22 *Ibid., 32–33.*

23 Louis I. Kahn: Drawings, *exh. cat. (New York: Max Protech Gallery; Los Angeles: Access Press Inc., 1981): 3.*

24 *Tadd, 128.*

25 *Richard Saul Wurman, editor,* What Will Be Has Always Been, The Words of Louis I. Kahn *(New York: Access Press Ltd. and Rizzoli, 1986): 76.*

26 *Boyer.*
27 *Scott, 52–57.*

28 *Willard G. Myers, "William F. Gray," Obituary in Sketch Club files (Philadelphia: Sketch Club, 1956).*

29 *William F. Gray,* Philadelphia's Architecture *(Philadelphia: City History Society of Philadelphia, 1915): 339–343.*

30 *Gray,* Philadelphia's Architecture, *361–363.*

31 *"City Hall? Awful Cry 'Tear It Down,'"* Bulletin *(Philadelphia: January 25, 1919).*

32 *Gray,* Philadelphi'a Architecture, *357.*

33 *David B. Brownlee,* Building the City Beautiful, *exh. cat. (Philadelphia: Philadelphia Museum of Art, 1989): 1–12.*

34 *Donald E. Gordon, "On the Origin of the Word 'Expressionism,'"* Journal of the Warburg and Courtauld Institutes, *29 (London: Warburg Institute, University of London, 1966): 368-385;* Expressionism, Art and Idea *(New Haven: Yale University Press, 1887): 174–176. Richard Shiff,* Cezanne and the End of Impressionism *(Chicago: The University of Chicago Press, 1984): 155–157.*

35 *Howard Anthony Risatti,* American Critical Reaction to European Modernism, 1908 to 1917 *(Ph.D. dissertation, University of Illinois at Urbana-Champaign, 1978).*

36 *Paul P. Cret, "The Architect as Collaborator of the Engineer,"* Architectural Forum, *49 (1929): 97–104.*

37 *Ibid.*

38 *Paul P. Cret, "Truth and Tradition,"* Architectural Record, *25 (1909): 107–110.*

39 *Craig Zabel and Susan Scott Munshower, editors,* American Public Architecture, European Roots and Native Expressions *(University Park, Pennsylvania: The Pennsylvania State University, 1989): 272-303.*

40 *Paul P. Cret, "Modern Architecture,"* Significance of the Fine Arts *(Boston: Marshall Jones Company, 1923): 181–243.*

41 *Elizabeth Green Grossman,* Paul Philippe Cret: Rationalism and Imagery in American Architecture *(Ph.D. dissertation, Brown University, 1980): 122–134.*

42 *Ibid., 2–3, 37–92.*

43 *John Lane Evans, Telephone conversation with author (Philadelphia: March 1991).*

44 *Kenneth Frampton, "Louis I. Kahn and the French Connection,"* Oppositions, *22 (Cambridge: MIT Press, Fall 1980).*

45 *Latour, 90.*
46 *Latour, 149.*
47 *Wurman, 122.*
48 *Latour, 267.*
49 *Ibid., 344.*
50 *Wurman, 153.*

51 *August E. Komendant,* Eighteen Years with Architect Louis I. Kahn *(Englewood Cliffs, New Jersey: Aloray Publishers, 1975).*