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THE BROOKLYN BRIDGE: A STUDY IN GREATNESS

By John Stern and Carrie Wilson





On May 24th, 2013 America celebrated the 130th birthday of the Brooklyn Bridge, one of her most famous and beloved structures, known all over the world. On May 24, 1883, Brooklyn mayor Seth Low said, at the opening of what was then known as The Great East River Bridge, “Not one shall see it and not feel prouder to be a man.”¹

And this is still true today. This bridge of stone and steel has been a source of inspiration to more artists, writers, and photographers than any other man-made structure on our continent. Yet, as David McCullough writes in his definitive book, The Great Bridge:

Just why this bridge, more than all others, has had such a hold on people is very hard to pin down.²

We have seen the answer lies in this principle of Aesthetic Realism, stated by its founder, Eli Siegel:

All beauty is a making one of opposites, and the making one of opposites is what we are going after in ourselves.



It is the opposites in the Brooklyn Bridge—notably of strength and grace, weight and lightness—that inspired the most powerful works of painter Joseph Stella, whose “The Bridge, 1920-22” we see here.

Dynamic and graceful cables sweep down and out, drawing us in through dark soaring arches which frame a world of shape and color, glowings and darkneses, towering buildings and sky. And future and past join, for as we look through the arches of Stella's bridge at this futuristic vision we also seem to be looking at the stained glass windows of a Gothic cathedral. “Many nights,” he said, “I stood on the bridge. I felt deeply moved, as if...in the presence of a new DIVINITY.”³

And opposites in the bridge inspired Hart Crane's great poem, “To Brooklyn Bridge,” which has these lines:

O harp and altar, of the fury fused,
(How could mere toil align thy choiring
strings!)

.....

Again the traffic lights that skim thy swift
Unfractioned idiom, immaculate sigh of stars,
Beading thy path—condense eternity:
And we have seen night lifted in thine arms.⁴



And it is the opposites David McCullough writes about in describing John A. Roebling's design of the bridge:

The way he had designed it, the enormous structure was a grand harmony of opposite forces—the steel of the cables in tension, the granite of the towers in compression.⁵

Roebling was born in Germany in 1806. As a young man, he was a student and friend of the philosopher George W.F. Hegel, and in 1831 he emigrated to America. From 1848 to the 1860's Roebling built several suspension bridges, of which those at Lackawaxen, Pennsylvania and Cincinnati, Ohio are still in use today.

When the Brooklyn Bridge was completed in 1883, its towers were taller than any other structure in New York except the spire of Trinity Church, and it was half again as long as any other suspension bridge in the world. It was daring. People had felt it couldn't be done. And yet it was needed. Thousands of people crossed the East River by ferry every day. Brooklyn and New York were separate cities at that time, and Roebling's bridge was to unite them.

We look now at four ways the opposites are beautifully one in this bridge, making for its greatness.

1. Power and Grace

In the book Bridges and Their Builders, David B. Steinman and Sara Ruth Watson write:

The pierced granite towers, the graceful arc of the main cables, the gossamer network of lighter cables, and the arched line of the roadway combine to produce a matchless composition, expressing the harmonious union of power and grace. It is a thing of enduring beauty.⁶

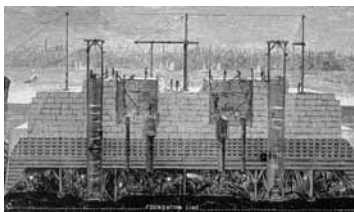
This relation of power and grace has meaning for us. Every person wants to be strong but not overbearing, graceful without being weak. As we look at this bridge and study her history, we can learn about what we are hoping for.



The history is dramatic and moving. Sadly, John Roebling did not live to complete the structure he designed. In 1869, after his death, his son Washington Roebling oversaw the construction from the detailed plans his father had made. It was to take 14 years. There were engineering difficulties with foundations, interferences by politicians, accidents, and caisson sickness or the bends, which crippled Washington Roebling himself.



To assist him, his wife Emily taught herself engineering, handled correspondence, and closely supervised the complex work for the 11 years he was partially paralyzed.



Each stage of construction was a huge undertaking. First, the foundations for the two towers had to be prepared by digging down into the riverbed to bedrock by means of caissons—these are water-tight chambers used in construction under water—where men dug with pick and shovel under primitive conditions of light and ventilation. As the caissons descended, the masonry towers were built on top, and their weight helped to sink the caissons deeper. The towers took six years to complete. As these were under way, the approaches to the bridge and the anchorages for the cables were begun. Then came the spinning of the steel cables, strand by strand, from one anchorage over one tower to the other tower, down to the other anchorage, and back again, thousands of times over one and a half years. Then the vertical suspender cables were hung from the four main cables, crossbeams were attached to the suspenders, and the roadway deck was laid atop the beams. Many thousands of people in New York and Brooklyn followed all these stages with avid interest.



David McCullough writes—and this is about how the power of steel also has grace:

...finally, now, the diagonal stays were in place, hundreds of them, radiating down from the tower tops, angling across the vertical harp-string pattern of the suspenders, and forming what, at close range, looked like a powerful steel net, or, from a distance, like a fine-spun web.⁷



This relation of power and grace is something I, John Stern, have learned every woman is looking for

in the man she is close to. In his essay “Husbands and Poems,” Mr. Siegel writes of the fact that a woman can be disappointed because:

...when men are energetic, assertive, forceful...they lack sensibility, fine understanding, rich sympathy; and when they are gentle, sentimental, soft, they no longer seem to have strength, energy, momentum.⁸

And as an Aesthetic Realism consultant to women I, Carrie Wilson, have seen that every woman needs to do a good job with her desire to be forceful, and also yielding, graceful. Women, like men, can assert ourselves without kindness and respect, and yield in a way that’s insincere. Neither represents what we really hope for: to have power and grace, strength and kindness together.

As John Roebling designed this mighty and exquisite structure he proposed something bold and innovative that was deeply considerate—an elevated walkway for people. “There was not a bridge in the world with anything like it,” McCullough tells us. Roebling wrote:

This part I call the elevated promenade, because its principal use will be to allow people of leisure, and old and young invalids, to promenade over the bridge on fine days, in order to enjoy the beautiful views and the pure air.⁹

Walking across the Brooklyn Bridge, with the grand vista all about you, the cables have an embracing quality.

There is a human warmth that is so surprising it can bring tears to your eyes. You feel secure without being closed in. Roebling's vision, his kindness is part of what gives this bridge its power.



2. Heaviness and Lightness

As we look at the bridge, listen to this question from Eli Siegel's essay, “Is Beauty the Making One of Opposites?” He asks:

Is there in all art, and quite clearly in sculpture, the presence of what makes for lightness, release, gaiety?—and is there the presence, too, of what makes for stability, solidity, seriousness?—is the state of mind making for art both heavier and lighter than that which is customary? ¹⁰



The heavy granite towers seem to arise from earth itself. Yet these massive stone supports have, carved out within them, the beautiful, soaring pointed arch of the Gothic cathedral. Through these arches you can see the sky and stars. Then, there is the delicate web of cables—yet these filaments are of heavy steel. Their radiation makes for a sense of release; meanwhile it is they which lift the heavy roadway in its graceful curve, and have held it aloft these hundred and thirty years and more.

We were moved to see that when Roebling drew the Elevation and Plan for the bridge, he put a waving pennon atop each stone tower, and drew sailboats below curvetting in the wind. “Is the state of mind making for art both heavier and lighter than that which is customary?” Yes: It is.

In an Aesthetic Realism class, Eli Siegel asked me, Carrie Wilson:

Is there a conflict [in you] between the person who is lively and the person who is very serious?—a fight between lightness and gravity, the comedienne and the person who has to see life—all of it?¹¹

“Yes, there is,” I said. I felt something that had troubled me very much, made it hard for me to take seriously my own mind, was being described and understood for the first time, so it could change. Mr. Siegel explained that the way to have these opposites more at one in myself was, “to see them as real first.” “The world,” he said, is “bleak sky and rippling brook—reality is that which brings things together.”

We think a large reason so many people love the Brooklyn Bridge is because of the way it shows a oneness of these opposites, and as we see this, they are more together in ourselves.

Here is historian Lewis Mumford’s description of the Bridge in 1924:

The heavy stone plays against the spidery steel. In this structure, the architecture of the past, massive and protective, meets the architecture of the future, light, aerial, open to sunlight.¹²

Even the choice of brown granite, and beige and light brown for the cables makes for a oneness of heaviness and lightness. For many years the bridge was painted battleship grey. Now it is near what it was originally. Architectural critic Paul Goldberger writes:

The colors blend handsomely with the rich brown granite of the towers, and they bring lightness and energy to the bridge without making it seem frivolous.¹³



When I, John Stern, came to know Faith Stern, now my wife of many years, I was set in my ways, rather ponderous, and whenever Faith made a lively suggestion, I felt I had to mull it over. Heaviness and lightness were not in the best relation in me. In an Aesthetic Realism class Faith told Mr. Siegel she felt I was too slow, and he said, “You mean Mr. Stern is too stolid, too dignified.” I was. And he said to me, “Mr. Stern, there is a need to have a person serious and also lively and mobile,” adding “maybe you could talk with a red feather on your right ear, or play some music and dance a medieval round.”¹⁴ He encouraged me, with imagination and style, to have honest exuberance, to have heaviness more at one with lightness. For this and much more I thank him from the bottom of my heart.

3. Determination and Ease, Firmness and Flexibility

One of the things we love has to do with the beautiful curve of the bridge's cables. This curve is called a catenary curve, the natural one made by gravity when a chain is suspended between two points. It has been referred to as the “lazy catenary curve,” and is the one made by a hammock. These, made by the four main cables have an effortless ease, and yet each of these cables is capable of supporting 24,621,780 pounds, or 12,300 tons. The daring thrust of the roadway, across what was then the widest span bridged by suspension, is sustained by this effortless curve.



In a class, Mr. Siegel said to me, Carrie Wilson: “The answer to life can be seen in how we stand up. It’s a job. There has to be a certain casualness—determination and taking it easy”

The reason the Brooklyn Bridge has been able to stand up so well is because it has both; it is flexible as well as firm. A great determination of purpose in the Roeblings was at one with a deep respect for, and yielding to, the forces of nature. We learned that:

The bridge was designed to adjust itself to the seasons,—its roadway was built with big expansion joints to allow for the expansion and contraction caused by temperature changes. (The vertical rise and fall at the center of the main span, for example, could be nearly three feet.) Only by thus working with nature rather than against it, could the bridge survive.

4. Simplicity and Complexity

Here is Mr. Siegel's question about the opposites of Simplicity and Complexity in “Is Beauty the Making One of Opposites”:

Is there a simplicity in all art, a deep naivete, an immediate self-containedness, accompanied perhaps by fresh directness or startling economy—and is there that so rich, it cannot be summed up; something subterranean and intricate counteracting and completing simplicity; the teasing complexity of reality meditated on? ¹⁵



The bridge is one grand, simple object, joining two shores, which we can take in at a glance; yet, the more we look the richer it becomes. The towers aren't just monoliths: there are angles, juttings, thousands of individual granite blocks, bands of lighter stone, keystones, cornices. The hundreds of vertical and diagonal suspender cables make varied geometric patterns of space as they intersect. The roadway is made up of thousands of girders—crosswise, lengthwise, up and down, and diagonal. Then, when you learn that each cable has 19 strands of wire, and each strand has 278 wires, that there are 14,000 miles of this wire and that all this was spun in the air, the oneness of simplicity and complexity makes for a respect for the world and the human mind that is tremendous.

The study of why this bridge affects people so deeply matters, because the opposites that it puts together greatly are what, without knowing it, people have yearned—sometimes desperately—to have one in ourselves. The Brooklyn Bridge, solid and graceful, majestic and democratic, strong and kind, stands for the real American spirit, and the hopes of people. We're grateful to Aesthetic Realism for making it possible for us to learn from its beauty.

End Notes

- ¹ David McCullough, *The Great Bridge* (New York: Simon and Schuster, 1972), p. 536
- ² *Ibid* p. 548
- ³ Joseph Stella, "The Brooklyn Bridge (A Page of My Life)," (Transition 16 June 1929), p. 87
- ⁴ Hart Crane, *The Complete Poems and Selected Letters and Prose*, ed. Brom Weber (Garden City: Anchor Books, 1966), p. 46
- ⁵ McCullough, *The Great Bridge*, p. 30
- ⁶ David B. Steinman and Sara Ruth Watson, *Bridges and Their Builders* (New York: Dover Publications, 1957), p. 247
- ⁷ McCullough, *The Great Bridge*, p. 511
- ⁸ Eli Siegel, "Husbands and Poems," in *11 Aesthetic Realism Essays* (New York: Aesthetic Realism Foundation, 1974), p. 31
- ⁹ McCullough, *The Great Bridge*, p. 32
- ¹⁰ Siegel, "Is Beauty the Making One of Opposites?" (New York: Aesthetic Realism Foundation, 1955)
- ¹¹ Siegel, *Aesthetic Realism Class*, 1969
- ¹² Lewis Mumford, *Sticks and Stones* (New York: Boni and Liveright, 1924), quoted by David McCullough in *The Great Bridge*, p. 550
- ¹³ Paul Goldberger, "The Bridge That Built New York" (New York: *Vogue*, May 1983), p. 184
- ¹⁴ Siegel, *Aesthetic Realism Class*, February 20, 1970
- ¹⁵ Siegel, "Is Beauty the Making One of Opposites?"