The Building of a Symbolic Image
The Juxtaposition of Giambattista Piranesi's *Vedute Di Roma* with Photographs Taken 250 Years Later

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Engravings by Giambattista Piranesi, ca.1750
Photographs by © Randolph Langenbach, 2003

Abstract. This paper discuss the making of, *The Piranesi Project, a Stratigraphy of Views of Rome*, a slide-video showing the engravings of Giambattista Piranesi juxtaposed with photographs of the same views today. When artists interpret and present views of historic sites in their works, the best of them can contribute to the "spirit of place" experienced at the sites themselves if their work becomes known and endures over time. Piranesi is indisputably such an artist. The creation of digital photographs of the same views as Piranesi's famous *Veduta* revealed a great deal about how Piranesi composed his images in ways that can be difficult to see any other way – showing both his uncanny accuracy in rendering the monumental ruins, while also showing how he managed both to isolate and highlight the essence of each place – essentially creating a single image that so fully captured each place that this image has often remained imbued on people's consciousness across generations.

Figure 1. (Left) Giambattista Piranesi, *Pronao del Tempio della Concordia.*
(Right) Author's photograph of the same view, 2003.

Giambattista Piranesi (1720–1778) and the Vedute di Roma

Giovanni Battista Piranesi was born and raised in Venice, a center of artistic ferment at the end of the Baroque Era. His early work reflects the influence of the theatrical and scenographic imagery for which Venice was famous. Although trained as an architect, Piranesi is known to have designed only one completed building, Santa Maria del Priorato, the Priory Church of the Knights of Malta, constructed in 1765. As an artist, however, Piranesi was extraordinarily prolific, producing approximately 1,200

engravings over the course of his life (Ficacci 2000).[1] Both in his time and since, he has been recognized as *"one of the greatest artists in the history of etching and the* Vedute *genre"* and as someone who *"would permanently alter how people emotionally perceive the ancient world and the city that, in Piranesi's opinion, best represented it – Rome"* (Ricacci 2000, 11-12)

Piranesi designed his images to capture the entirety of complex environments of architectural ruins, so as to represent the experience of the Roman landscape to people who more than likely would not have had a chance to visit Rome at all. He aimed to capture the visual and symbolic essence of those artifacts, and to accomplish this he frequently adjusted his vanishing points with lateral shifts of viewpoint, and at times also combined views from widely separated view points into a single plate.

Piranesi was not creating images for a mere tourist brochure. In his writings, he described a very different didactic purpose for his work: *"When I first saw the remains of the ancient buildings of Rome lying as they do in cultivated fields or gardens and wasting away under the ravages of time, or being destroyed by greedy owners who sell them as materials for modern buildings, I determined to preserve them forever by means of my engravings."*

Piranesi succeeded in this endeavor to a remarkable extent. When his views became famous throughout Europe, they helped to stimulate the "grand tour, giving birth to modern-day tourism to Rome and the rest of Italy." As the number of visitors to Rome grew, the systematic pillaging of the monuments ceased. The publicity that Piranesi and his contemporaries brought to Rome and its ancient monuments can, therefore, be classified as one of the most successful examples in the history of Europe of preservation activism advanced by the creation and publication of images.

Piranesi's work continues to be influential. A number of modern-day photographers, notably Herschel Levit and David Brooke, have undertaken to document the sites of his views photographically, but his compositions do not lend themselves to easy replication with a camera (Levit 1976, Brooke 1995). The attempts to capture the Piranesi views with photographs have been frustrated by the inability of a camera – even with the widest of flat-field lenses – to encompass the full scope and breadth of Piranesi's compositions, many of which encompass a horizontal spread of as much as 180°. Thus, rarely have photographic juxtapositions with Piranesi's views succeeded in capturing the engraved scenes in their entirety. Such photographs also rarely possess the kind of taut energy and dramatic impact that characterize Piranesi's art, in many instances contributing to the widespread belief that Piranesi somehow radically distorted his views or portrayed the monuments in made-up settings.

Photography in the Footsteps of Piranesi

During the academic year 2002–03, while on a Rome Prize Fellowship, I was inspired to follow in the footsteps of both Piranesi and these recent photographers to again photograph the views that Piranesi had etched and

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[1] For the sake of simplicity, the use of the term "engraving" will refer to the final product of both etching and direct engraving.

engraved on copper in the middle of the eighteenth century. The video produced from this project: *The Piranesi Project, A Stratigraphy of Views of Rome* included overlay images with Piranesi's *vedute,* as well as the work of other eighteenth and nineteenth century artists and 19th century photographers.

Figure 2: The *Terme Grande* in Hadrian's Villa with Piranesi's engraving on the left, and the same view in 2003 as a composite photograph by the author on the right. The image in the center is one of the 6 photographs taken with a 19mm wide angle lens (35mm equivalent) that was used to construct the overlay image.

The reason for photographing the *vedute* in Piranesi's footsteps was to explore how a quarter of a millennium had changed what was already a potent landscape of the ruins of a past civilization, and to better understand the importance of Piranesi's place in art history. His name has now become an adjective in the English language: "Piranesian" – a reference to the kind of heroic but partially torn and ruined spaces that he both documented and invented. Piranesi's *vedute* stood out as the basis for such a project over his contemporaries such as Vasi or Panini, because of the strength and evocative quality of his work.

While the usual interpretive information for tourists focuses on the speculative reconstructions of what the archeological sites may have looked like in ancient times, in my experience the viewing of Piranesi's images at their sites had a far more evocative impact. Between Piranesi's time and our own, the Roman landscape has been transformed. No longer is the site of the ancient Forum the *Campo Vaccino* (Cow Pasture) at the edge of the city of Piranesi's time; it is the *"Foro Romano"* – an archeological site with gates, guards, and regulations for tourist access at the very center of the modern city.

Thus, what started as a means to document 250 years of continuity and change in deeply historic landscapes became a voyage of discovery into Piranesi's compositional methods and his use of perspective, all of which had evolved prior to the invention of photography. This paper describes what I learned as a photographer working directly with the images created by a consummate artist 75 to 100 years before photography emerged on the scene.

By 2002, digital photography had been available for only a few years. It is this more recent invention in the history of the medium that has provided a remarkable opportunity to *reverse* the rigid optical geometry inherent in photography, and thus take the imagery created by the camera back into the perspective system used by Piranesi before photography was possible. In so doing, it became clear that what some might identify as

"mistakes" in the proper use of perspective were, in fact, artifices used by Piranesi to accomplish his mission – that of describing his subjects in single flat rectified images with a visual power that comes from a breadth of coverage, together with enhanced foreshortening that is impossible to capture in single photographs.

A photograph is as much a two-dimensional abstraction of the original three-dimensional subject as is an artist's handmade image on a copper plate. Ironically, this seeming objectivity of the camera can on occasion be a handicap, as the image produced can lack much of the sense of reality experienced by a person in the particular space.

Before the age of photography, painters and engravers were called upon to provide realistic views of the built and natural environment. Artists would compose their images so as to best represent their interpretation of the experience and the meaning of the place within the confines of a single picture frame, even if it meant adjusting the perspective of certain parts of the image. While some artists before the advent of photo-sensitive materials used a *"camera obscura"* to compose their views, even those who are known to have used the device, such as Gaspare Vanvitelli (Gaspar Van Wittel, 1652-1736), did not necessarily feel entirely bound by the results (Cursi 2002, Lüthy 2005).

Today, the demand for illustrations of the environment is largely fulfilled by photography. While photography can be very effective at documenting a complex site with a series of images taken from different vantage points, the camera can prove to be limiting when called on to illustrate a place with a single image. And yet, the public has come to believe in the "truth" of photographs when compared to artist's paintings and drawings. This is especially the case where the composition of a painting, particularly in the use of perspective, deviates from that produced by a photographic lens. As the Piranesi Project progressed, however, it became clear that departures from single-vantage point linear perspective enabled Piranesi to capture sweepingly wide-angle views without extreme wide-angle distortion.

Perspective and visual perception in the creation of flat images

When taking a wide-angle photograph, the visual recession can be very extreme – making most foreground subjects look overly large and distorted. Interestingly, the limit of the human cone of vision and wide-angle distortion was analyzed in detail as early as 1482 by Piero della Francesca. In his analysis, he noted that *"the eye…can only take in ninety degrees at once,"* demonstrating with geometric diagrams that elements on the side will appear to be stretched horizontally if linear perspective is used for a view that exceeds 90°, but not if the view stays within a 90° cone of vision (Elkins 1994, 69).

Moreover, in extreme wide-angle photographs, a subject in the middle distance, such as a building or the space between buildings, is very small in relationship to the foreground which may contain less meaningful objects. To offset this effect, Piranesi enhanced the foreshortening of the sides, which served to pull the elements at the center of the image closer so they

would appear larger despite the wide coveratge of the overall view. (For an example, see Figure 2)

In making these artistic manipulations, Piranesi must have recognized that the creation of non-distorted and realistic views in two-dimensional graphic images of topographical subjects does not rely on rigid adherence to the rules of perspective or the optics of a lens in a *camera obscura*. He had also realized that the relative size of the elements in a two-dimensional composition of a three-dimensional subject can be varied for visual effect without a loss of realism.

Rudolf Arnheim describes this as a psychological as well as a visual phenomenon: *"Physically, the image thrown onto the retina of the eye by any object in the field of vision diminishes in proportion to the square of the distance...However, we do not in real life get impressions to accord with the images on the retina. If a man is standing three feet away and another equally tall six feet away, the area of the image of the second does not appear to be only a quarter of that of the first…This phenomenon is known as the constancy of size. It is impossible for most people – excepting those accustomed to drawing and painting… to see according to the image on the retina."* (Arnheim 1957, 13)

Figure 3: (Left) Piranesi, Island Enclosure, Hadrian's Villa, preliminary sketch. (Right) Same view, 2002, Piranesi's has enlarged the apparent size of the distant element on the left for dramatic effect. (The colonnade, fallen and buried in Piranesi's time and therefore missing in his sketch, has been found and re-erected.)

Piranesi overcame this inconsistency between the mechanics of human optics and visual perception by consistently compressing his views to bring the distant subjects forward, as if – had he been using a camera – they were viewed at a distance through a telephoto lens. While the layouts of his compositions were more consistent with wide-angle views, the perspective applied to the principle elements in the images was consistent with longer focal lengths.

Piranesi's creativity is evident in how he managed to make his subjects look realistic and undistorted, even while expanding his horizontal coverage sometimes to 180°. To test the concept of "realistic view" at the psychological level, German psychologist Alf C. Zimmer compared a Piranesi view of the Forum (then the *Campo Vaccino*) with a modern photograph by Herschel Levit from the same vantage point. He found that when tracings from each of the structures and spaces common to both were shown to 32 different ordinary tourists in Rome who were asked which *"depicted most correctly the real scenery,"* 23 selected the tracing from the

Piranesi print, while only 2 selected the tracing from the photograph (7 were undecided). (Zimmer, 1995)

The explanation for this lies in the fact that the human mind interprets the visual data that the physical eye records. This process of interpretation is different for images reproduced onto a flat surface than it is for the original three-dimensional environmental space being drawn or photographed. For the three-dimensional space, the conceptual "rectification" of the image scene is automatic, with converging verticals interpreted by the mind as parallel regardless of the point of view. Flat images of the same subjects are necessarily seen differently, since the spatial cues are missing, and so converging vertical lines and surfaces conflict with the norms that the mind has learned to expect in such subjects.

Such vertical rectification of the imagery by the artist is, therefore, a manipulation designed to make an optically accurate image look more realistic than it would be if the line of sight were to be placed at the geometric center of the image rather than horizontal. Mathematician Anthony Phillips made the observation: *"Far from being natural, perspective is a calculated illusion, giving the brain false clues so it will construct a virtual reality"* (Phillips 2000). So fundamental is the acceptance of maintaining the verticals as parallel lines in architectural views that few question this, but in fact it is part of the *"calculated illusion"* that allows the visual construction of a virtual reality. In other words, the works of art demonstrate how artists and photographers have attempted to recreate how the eye/mind combination sees and interprets an image, not just how the eye sees it.

The universal acceptance of rectified images with parallel vertical lines in paintings and drawings since the Renaissance may explain why so soon after the invention of photography, cameras were constructed with a rising front that enabled the film plane to be precisely vertical while the lens was shifted. This continues to be the accepted practice for almost all professional architectural photography, but it leaves open how horizontal perspective is to be represented.

Piranesian Perspective

Piranesi realized that the stretched distortion at the fringes of a wide angle view is perceived as less realistic than are the subtle shifts in the vanishing points which are used to correct it. Working with Piranesi's images raised many of the crucial issues of recent art historical theory on the "discovery" and use of linear perspective during and since the Renaissance. Intellectual and artistic debates over the correct application of perspective have dominated the discussions of two-dimensional art of Western civilization since the Renaissance.

The introduction and proliferation of photography in the 19th and 20th centuries has narrowed that debate by focusing on a new and more limited truth – that of the optical correctness of what the lens can record onto film in a single increasingly short moment in time. This is what has been referred to in scientific and art historical debates as the "snapshot" view. Art historian Sir Ernst Hans Josef Gombrich (1909-2001) observed that art history *"has been written by critics (ancient, Renaissance, and later) who*

have accepted the snapshot vision as the norm and who could not but notice how rarely it was adopted in the past. The images of great civilizations such as those of Egypt or of China were never constructed on these principles, and so their essentially different approach was seen as a deviation from a natural norm" (Gombrich 1980)

Gombrich goes on to point out that it is only the center of the eye – the "foveal" area – that records and communicates with the mind the level of perceptual acuity capable, for example, of producing readable text. *"Things are not just blurred outside of the foveal area, they are indistinct in a much more elusive way."* Thus, while people see and experience a wide field of view, the mind decodes and interprets that view essentially by scanning it with one's eyes, rather than recording it in a single "snapshot" as a camera does. This means that each and every scene looked at by a person is experienced as a composite image "constructed" from information that contains not one, but many different perspectives with differing vanishing points, and sometimes even different station points (see Figure 4), seen in sequence over time.
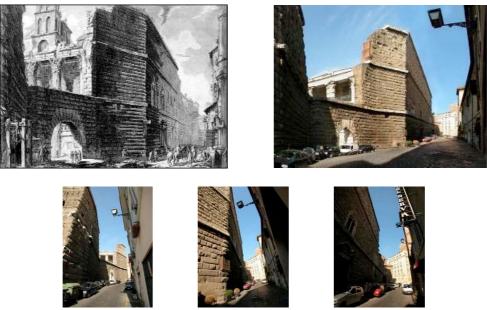
Figure 4: The Augustinian Firewall, by Piranesi, together with the three individual photographs taken with a 19 mm lens (35mm equivalent) and the composite image constructed from them by the author. The photo on the left is taken approximately 100 meters from the one in the center, which is 30 meters from the one on the right. The width of the street was the same in Piranesi's time as it is now.

This observation is central to the varieties of departures from fixed viewpoint linear perspective undertaken by Piranesi as well as a number of other artists from the same era. Piranesi did his engravings based on what he saw by turning his head in a way that a camera, other than a swivel panorama camera, cannot record in a single photograph. He thus managed to interpret what he saw and compose his images in ways that avoided the signature distorted look of a two-dimensional panorama. Piranesi's compositions are, in effect, a product of his understanding that visual experience is an amalgamation of body and eye movement integrated by a

complex cerebral synthesis of the perceived visual information. Cameras utterly lack this synthetic capacity.

This simple phenomenon – the fact that we must move our eyes and turn our heads to see the world in front of us – may be the one most important reason why Piranesi's seeming violations of the fixed geometric rules of linear perspective often (but not always, as some of his views do look visibly distorted) have resulted in images that, as A. C. Zimmer demonstrated, appear to people to be more "realistic" than unaltered photographs of the same scenes.

For this reason, bringing the modern-day digitally manipulated photographic images together with his eighteenth century views sometimes required as many as nine separate photographs to form a single image. In many of these multi-photograph assemblies, the images on the sides would have to be rectified based on a vanishing point nearer the center of the composite image, but each side of the resultant image would usually have a different vanishing point from the other, resulting in a perspective recession that would be slightly splayed. This is not usually perceived by the viewer as a distortion. At the same time, the side elements are foreshortened more than they would be had a single viewpoint and direction of view been used for the image, but this also proved to be subtle enough to appear as a realistic two-dimensional image of the three-dimensional space. (See figures 5 & 6)

The Meaning of "Truth" in Art and Photography

With the advent of photography, what is accepted as truth has shifted – primarily because the lens of a camera imprints the three-dimensional scene onto the film with an optical geometric accuracy. This type of literal accuracy, however, rarely has been the primary objective of the pictorial or topographical artist. A more important goal for the pre-photographic era artist when documenting a real, rather than an imagined, landscape or architectural subject is capturing the totality and the spirit of the place — in other words, capturing its symbolic image so that the meaning or interest that the artist has found in the subject is conveyed through his or her work to the viewer. Piranesi touched upon this phenomenon when he wrote: "*These ruins have filled my spirit with images that accurate [architectural] drawings…could never have succeeded in conveying. …Therefore, having the idea of presenting to the world some of these images, but having little hope that an architect of these times could effectively execute some of them…there seems to be no recourse than for me…to explain [my] ideas through [my] drawings and so to take away from sculpture and painting the advantage…they now have over architecture*" (Piranesi 1743).

The experience of working with the multiple photographs to "build" single images itself raises the question of whether the resulting images that are constructed to approximate Piranesi's views of the same scene are themselves "false" because they no longer conform to the unretouched reality of what was exposed through the camera. In response to this question, one must recognize that a photograph is itself an abstraction. The camera's rendition of the three-dimensional scene into a two-dimensional photograph is no less a transformation of the actual scene than are the

results of the further transformations done on the computer to bring the images into register with Piranesi's compositions, or for that matter, Piranesi's compositions themselves.

It was not until the first showing of the Piranesi Project in Rome that I had the chance to validate the difference between literal and perceived truth of the images. The reaction of the Roman viewers who were familiar with the actual sites did not lead, as I had feared, to questions and criticisms on the veracity of the photographic images. On the contrary, most were startled by how "realistic" the photographs were. In fact, the composite photographs actually served to rehabilitate Piranesi's reputation for the accuracy of his views. Historians, archeologists, and architects at the American Academy and in Rome, as well as the city planners of the City of Rome, repeatedly commented that previously they had believed that Piranesi had manufactured a great deal of what he had drawn in his *Vedute di Roma* series, but that the photographic overlays dissuaded them from that belief for the first time. In other words, the creation of the photo-mosaic from the multiple sets of images in the field did <u>not</u> make the resulting images unrealistic. Just as A. C. Zimmer demonstrated, looking "accurate" is as much a subjective as an objective process.

The manner in which Piranesi turned his head and incorporated the shifted perspective into his views comes closer to the reality of how all people perceive a view than does an image constructed from a single viewpoint and direction. As we scan a view with our eyes, our sense of the perspective is constantly shifting in the same way that it does when we turn a camera to face in a different direction. The mind merges all of this information into a rational image of the scene – not with a single perspective geometry, but a composite one. Thus, the composite photographs in the Piranesi Project looked even less distorted than did many of the unedited photographs before they were assembled into a single image. As E. H. Gombrich observed: "*Perspective cannot and need not claim to represent the world as we see it.*" (Gombrich 1980, 209-10)

Figure 5: Composite of 9 separate photos overlooking the Roman Forum in 2007. The view of approximately 140˚ is wider than Piranesi's view from the same place.

Figure 6: This view of Machu Picchu from a combination of 3 photographs. The view of approximately 130˚ bringing the river canyon into view.

Conclusion

The act of "building" the composite photographic images based on Piranesi's compositions offered an opportunity to take documentary still photography in a direction I had never explored before. (See Figure 5&6).

In Rome, it also provided an opportunity to document the changes to an iconographic human landscape over the quarter of a millennium between his time and mine. As a documentary tool, the ability to make such creative manipulations may, in fact, be a powerful gift, because it has the potential to expand documentary photography beyond its previous confines to show sweeping views of a subject that can not only inform, but also stimulate the viewing public to grasp – perhaps for the first time – the full magic of the powerful and deeply historic buildings they see and the landscapes they traverse In so doing it can truly contribute to people's understanding of the "spirit of place."

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Acknowledgements