Thomas Eakins’s 1886 Portrait of Professor W. D. Marks depicts the University of Pennsylvania professor of engineering, known to Eakins as a friend and colleague, seated at his desk. Books line the wall behind him and mechanical devices of varying size and complexity adorn the desktop where Marks’s hands rest, one hand holding a measuring tool, and the other a cigar. The awkward positioning and jutting corner of the desktop draw attention to the two large instruments, one on top and one below the desk, situated on the far right side of the painting. Both of these instruments are related to the practice of photography, then a relatively new scientific innovation that greatly interested Eakins and his contemporaries, especially as an aid in the creation of painting. Marks designed the chronograph, the instrument atop the desk, to measure the timing and duration of exposures for photographic motion studies. The chronograph thus warrants inclusion in the composition, as a symbol of this man’s achievements in the field of engineering while also referencing the artist and the sitter’s collaborative attempt to map an objective record of human and animal movement. This essay will explore how
Eakins’s depiction of W.D. Marks complicates the viewer’s encounter with the portrait by playing up the tension between the science of photography and the flexibility inherent in the practice of painting.

Eakins’s preoccupation with photography was strongest from about 1880 to 1890, when photography was expanding past its commercial role into the sphere of art and leisure.¹ During this time, photographs were important to Eakins as documents of scientific inquiry, teaching tools, and studies for both personal and artistic use. Publications by such scholars as Mary Panzer, Michael Leja, and Kathleen Foster have noted how Eakins worked to bring a more precise likeness to his canvases by using the photographic image as a tool of study. According to Foster, Eakins hoped to transfer the orderliness and truthfulness of science to the endeavors of artistic representation.² A recent study of Eakins’s work at the Philadelphia Museum of Art using infrared reflectography revealed that Eakins may have projected photographic images onto his canvases and then outlined them prior to applying his brushstrokes.³ This method of picture-making speaks not only to Eakins’s affinity for innovative approaches to painting, but also to his interest in technology to advance realism in art.

The chronograph, seen directly across the desk from Marks, was used by Eakins in 1884 as part of a project to study motion alongside the photographer Eadweard

Muybridge at the University of Pennsylvania. Muybridge’s pioneering work in photographic motion studies first came to Eakins’s attention in 1878, and six years later the two had an opportunity to work in collaboration under the auspices of a University of Pennsylvania commission supervised by doctors and engineers. Both artists had a common interest in photography and its use as a tool for capturing movements unobservable through sight alone. However, through the implementation of various aesthetic strategies, including the juxtaposition of distinct painterly techniques and the manipulation of perspectival space, the portrait of W.D. Marks reveals Eakins’s attempt in this artwork to actively engage with the tension between the practices of science and art.

The depiction of Professor Marks and the chronograph are markedly different. Layered brushstrokes of varying tonality, treatment, and direction build up the sculptural quality of Marks’s face and hands, capturing the presence of light and shadow, and softening the contours of the figure. By contrast, Eakins’s depiction of the chronograph and other instruments on the table are precisely rendered with distinct outlines that clearly define the curves of the metal and draw focus toward the concentrated light reflecting off of the metal surfaces of the bars and wheels. These divergent methods of paint application create a sense of visual dissonance and a fundamental disjunction.

4 Marks was a member of the committee that awarded Muybridge a grant to study the photography of motion. For a detailed discussion of Eakins's and Muybridge’s studies of motion, see Thomas Eakins and Kathleen A. Foster, A Drawing Manual, (New Haven, Conn: Yale University Press, 2005), 101.


6 Although Eakins admired his colleague’s work, he was critical of Muybridge’s process since it failed to record the time between photographic exposures. By attaching Marks’s electric chronograph to his camera, Eakins was able to measure the rapid shutter exposure of his own camera work. See Thomas Eakins and Kathleen A. Foster, A Drawing Manual, (New Haven, Conn: Yale University Press, 2005), 101.
between man and machine. The strict measurement and realistic depiction of the mechanical device mirrors the rigidity and order typically attributed to science, whereas the varied and active brushstrokes render the likeness of Marks with lively, more amorphous tactile qualities.

In highlighting these less fixed human qualities in Professor Marks, Eakins reminds us of certain intellectual debates that accompanied the profound changes of the late nineteenth century, a period when modernization redefined everyday life in America and led to new ways of thinking about the self and the world. An attempt to reconcile such changes can be found in the science-oriented rhetoric common to the time, which included the positivistic belief that scientific methodologies could be applied to every sphere of life. If classification and scientific analysis had the ability to expose the order inherent in all phenomena, then the problems corresponding to modernity were only equations that, in time, could be solved. Although Eakins’s association with positivism remains unknown, his exposure to its tenets seems likely given its prevalence among contemporaneous intellectual circles. Despite positivism's popularity during this period, its reductive and rigid analytical systemization was criticized for its inability to explain less easily definable areas such as subjectivity and imagination, areas central to the depiction of Professor Marks's character.

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7 For a discussion on the visual dissonances found in other works by Eakins, see Micheal Leja, “Eakins and Icons,” *The Art Bulletin* 83, no. 3 (Sept., 2001): 483.

8 For one author’s approach to the relationship between positivism and Eakins’s art, see Francis Henry Taylor, “Thomas Eakins-Positivist,” *Parnassus* 2, no. 3 (March 1930), 20-21, 43.

In the arrangement of objects within the painting’s composition, Eakins’s mastery of conventional perspective is evident. Through the strategic use of directional lines, he beckons the viewer to engage the painting at arm’s length. Yet while abiding by conventional perspective in most areas, he alters such academic rules in his depiction of objects underneath the desk. In the foreground stands an open book with its spine facing the viewer. Behind the book is a large mechanical device. The title on the upright book is indistinct, yet the viewer can easily decipher the detailed grooves and dents of the instrument positioned further away. By subverting the rules of perspective—by going against scientifically structured guidelines—Eakins emphasizes the flexibility of painting as opposed to the mechanized accuracy of photography referenced within it. This flexibility provided an opportunity for Eakins to play with the tensions between art and science, man and technology. The portrait stands as a testament to the artist’s relationship to Marks and to the intellectual endeavors to which they were both so strongly committed.