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The *Golillas* (Collars) in the Final Portraits of King Philip IV of Spain

A Case of Induced Diplopia by Diego Velázquez

LUIS RAMÓN-LACA

ABSTRACT

The author makes a detailed examination of the outline of the *golillas*, or collars, that appear in the final portraits of King Philip IV of Spain by Diego Velázquez and relates their representation to the theories of binocular vision proposed by Leonardo da Vinci and François Aguillon.

Studies on the paintings of Diego Velázquez commonly mention his *pentimenti* [1]. One of the best known is found in his c. 1635 portrait of King Philip IV of Spain mounted on a horse (Prado Museum, Madrid, accession number P01178, 303 cm × 317 cm), in which the animal's legs appear duplicated. The works of other artists, such as Raphael, also contain *pentimenti*, but these alterations are particularly associated with Velázquez—perhaps because in his paintings they are easily detected in the visible spectrum, i.e. under normal conditions of illumination. In contrast, the *pentimenti* of other painters (those of Raphael, for example) are only visible in X-ray images or infrared reflectographs.

According to Andrea Kirsh and Rustin S. Levenson, “*pentimenti* are signs of reworked areas in the paint layer, places where the artist covers original paintwork with a revision” [2]. For example, in a portrait of Pope Julius II (National Gallery, London, accession number NG27, 108.7 cm × 81 cm), the above authors conclude that, to cover the crossed keys and tiara of St. Peter originally painted on the background curtain, Raphael applied a new layer of paint [3]. Clearly, he seems to have regretted having represented these papal symbols in his first version of the portrait. Similarly, in *The Surrender of Breda* (Prado Museum, Madrid, accession number P01172, 307.3 cm × 371.5 cm), Velázquez changed the height of the pikes, making them longer than in his first version of the work. Both examples perfectly fit the Kirsh and Levenson definition of *pentimenti*, in which they state that *pentimenti* carry no fixed meaning; “Their interpretation always depends on the context” [4].

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Fig. 1. (a) Portrait of Philip IV, 1655, held at the Prado Museum, Madrid. (Museo Nacional del Prado) (b) Portrait of Philip IV, c. 1657, held at the National Gallery, London. (The National Gallery) (c, d) The same portraits highlighting the duplicated collar outline.

No studies appear in the literature regarding the striking duplication of the outline of the collars worn by King Philip IV in his final portraits by Velázquez: c. 1655, held at the Prado Museum (Prado Museum, Madrid, accession number P01185, 69.3 cm × 56.5 cm) and c. 1657, at the National Gallery, London (National Gallery, London, accession number NG 745, 64 cm × 53 cm). In these paintings, the outlines of the two collars are practically identical curves, slightly separated. Figure 1 shows this to be the case for both the portrait in the Prado (Fig. 1a) and that in the National Gallery (Fig. 1b). It is also noticeable that the curves on either side of the king's head cannot meet up; the marked outline shown in Fig. 1c,

showing the left side of the portrait at the Prado, and the marked outline shown in Fig. 1d, showing the left side of the National Gallery portrait, for example, have their natural continuation in the ghost images to the right of the images, while the marked outlines on the right have their natural continuation in the ghost images on the left.

Bearing Kirsh and Levenson's work in mind, it is worth asking, "What is the context of the last half-body portraits of Philip IV?" and "How are we to interpret the duplication of the outline of the collars in these paintings?" We shall see that Velázquez did not intend here to cover the original paintwork with a revision but superimposed both outlines of the collars on purpose, and he probably did so due to his interest in optics.

VELÁZQUEZ AND OPTICS

In a recent interview, Martin Kemp, the most notable Leonardo scholar in our time, has stated that "with the great figures like Dante, Shakespeare and so on, they put so much of their knowledge, their emotion into the work that there is always more to get out of it, there is always that fresh insight" [5]. According to Kemp, the first blurring in a painting was not seen until more than 100 years after Leonardo, in the work of Velázquez: "It was not until Velázquez showed the shiny blur of a spinning wheel in *Las Hilanderas* that such effects entered mainstream painting and then only rarely" [6].

Also very recently, the art historian Fernando Marías has cleverly called attention to other alleged pentimenti left visible deliberately by Velázquez in *The Lady with a Fan* (c. 1640, Wallace Collection, London, 95 cm × 70 cm) and in *The Spinners* (1655–1660, Prado Museum, Madrid, P001173, 220 cm × 289) [7].

Signs of interest in optics by Velázquez appear as early as 1618 in his *Inmaculada* (National Gallery, London, accession number NG6424, 135 cm × 101.6 cm). Eileen Reeves has argued that Velázquez may also have followed here François Aguilion's description of the moon in his rendition of it as both crystalline and extraordinarily dark, including the *stella maris* that appears over a boat—a reference to Aguilion's "solar rays that sail over [*praetervehuntur*]":

It is as if the solar rays that sail over the diaphanous part of the moon, then converge at one point, and from there are diffused in all parts and are lost far from our sight. This effect is manifest in small crystal balls, which, if observed in like manner, show the image of darkness rather than that of splendor [*Altera est figura sphaerica, quae profecto facit, ut qui lunae diaphanam praetervehuntur radij, mox in punctum unum conveniant, indeque in omnem circum partem diffusi procul ab aspectu nostro abscedant, id quod in crystallinis sphaerulis manifeste apparet, quae proinde ita conspectae, obscuritatis potius quam fulgoris speciem ostendunt*] [8].

In his *Diálogos de la pintura*, Vicente Carducho, a contemporary of Velázquez, included a reference to Pliny's *Natural History* (written in the first century CE), in which the latter discussed the works of the famous Greek painter Apeles: "The outlines depicted, and the very thoughts of the artist

expressed [9] [*Lineamenta reliqua, ipsaeque cogitationes artificium spectantur*]" [10]. The methods and ideas of Velázquez might, therefore, also be understood by examining the two outlines he made in his representations of Philip IV's collars.

DID VELÁZQUEZ PAINT THE COLLARS WITH DUPLICATED OUTLINES USING THE EYES SEPARATELY?

It should be noted that this peculiar treatment of the collar outline appears in portraits that were painted in the 1650s, when Velázquez was between 55 and 60 years of age [11]. In portraits of the same king painted by Velázquez when both were in their twenties, for example, in the one held at the Meadows Museum in Dallas (accession number MM.67.23, 61.9 cm × 48.9 cm), the artist seems to have painted the collar without hesitation (Fig. 2). It must be stressed here that this portrait, dated c. 1623–1624, is considered the very first portrait of King Philip IV painted by Velázquez, done soon after he arrived to Madrid from Seville. This portrait, which eventually guaranteed Velázquez a permanent appointment as royal painter, was probably not a work of art suitable for intellectual experimentation; the royal portraits painted 30 years later probably offered Velázquez a better opportunity.

If the portraits in Figs 1a and 1b are compared, the degree of "focus" also seems different. In Fig. 2, the young king's face is quite in focus, but it appears more blurred in the others, especially in Fig. 1b. One might initially ask whether the collars reveal that Velázquez was, by this time in his life, suffering from diplopia, an ophthalmological condition in which the separate images produced by each eye are not properly superimposed by the brain. Given the artist's age, the most likely cause would be cataract [12].

In 2006, Robert A. Weale, a British authority in the fields of ophthalmology and gerontology, drew attention to what he believed was evidence of Velázquez's divergent gaze in



Fig. 2. Portrait of King Philip IV, c. 1623–1624, held at the Meadows Museum, Dallas. Meadows Museum, SMU, Dallas. Algur H. Meadows Collection, MM.67.23. Photography by Michael Bodycomb.



Fig. 3. Double images (left) obtained during the experiment, 2019. (© Luis Ramón-Laca)

Las Meninas, which was painted around the same time as the portraits under discussion [13]. This would appear to be the only reference ever made by a medical expert interested in art history to the possibility that Velázquez may have suffered a vision problem.

The portrait of the king in the National Gallery has the yellowish tonality that one might expect if the abovementioned diagnosis were correct. Yet it is hard to explain how anyone with advanced cataracts could have painted the portrait of the Infanta Margarita dressed in blue, now held at the Kunsthistorisches Museum in Vienna [14]. According to Gridley McKim-Smith, “It now seems that [Velázquez] had a working procedure as difficult to define as his paintings are to interpret and describe” [15].

One must also consider, however, that the outlines of the collars do not meet as they should because Velázquez actually intended them not to.

Here I attempt to demonstrate that the artist drew his curves using each eye separately. The *real* outline to the left of the king’s head would correspond to the *real* image Velázquez would have seen with his right eye, while the *real* outline to the right of the king’s head would have been what he saw with his left eye. The *ghost* lines on the left and right sides would be those he would have seen with his left and right eyes, respectively. This can be interpreted from the results of the following experiment. I took two digital photographs of a mock collar at a distance of 150 cm, displacing the camera from right to left by 7.5 cm (i.e. the approximate distance between the center of the pupils of an adult person) for the second photograph, while always focusing on a small star placed just above the back of the collar (Fig. 3). A 50% transparency setting for the second photograph allowed the pair of images to be automatically superimposed. Figure 3 shows the result to be very reminiscent of that seen in the portraits in question.

WHY MIGHT VELÁZQUEZ HAVE WANTED TO PAINT HIS LINES USING THE EYES SEPARATELY?

I argue that Velázquez seems to have been influenced by certain passages in *A Treatise on Painting* by Leonardo da Vinci and the *Six Books on Optics* by François Aguillon. Between January 1649 and May 1651, Velázquez went on

his second Italian tour. Catherine M. Soussloff indicates that Velázquez was in Rome at the time when studies on the work of Leonardo da Vinci were at their height. Casiano del Pozzo, Nicolas Poussin, and Giovanni Pietro Bellori were working together to prepare the abovementioned *Treatise* for publication and eventually published it in Paris in 1651 [16].

Consequently, in his keenness to represent reality, Velázquez could have deliberately portrayed what he saw with separate eyes. Certainly, in Chapter CCCXLI of the *Leonardo Treatise*, it is explained that “it is impossible [for] a painting, even one with perfect line, shading, light, and color, to reflect the same relief as a natural one” (*Impossibile è che la pittura imitata con somma perfezione di lineamenti, ombre, lume, e colore possa parere del medesimo rilievo qual pare esso naturale.*) [17]. In the *Treatise* Leonardo writes that “both eyes see all the space FE beyond an object C; thus C becomes transparent, according to the definition of transparency, behind which nothing can then hide. (*Adunque li due occhi vedono di dietro all’obbietto C, tutto’ lo spatio FE per la qual cosa tal obbietto C resta trasparente, secondo la definizione della trasparenza, dietro la quale niente si nasconde.*)” [18]. In the 1651 edition, this explanation is accompanied by an interesting diagram depicting both eyes’ views of a sphere (C in the above lines) (Fig. 4).

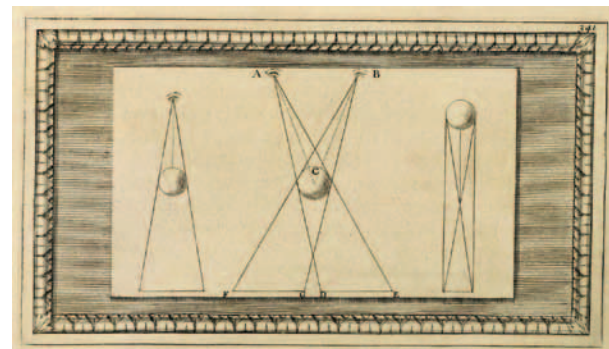


Fig. 4. Diagram explaining binocular vision, from *A Treatise on Painting* by Leonardo, 1651. [24].



Fig. 5. Copies of King Philip IV's portraits by (left to right) Moncornet (c. 1660), Martínez del Mazo (c. 1657), and Picasso (c. 1897–1898), showing their treatment of the collar. © Kunsthistorisches Museum. © KHM-Museumsverband. © Institut Amatller d'Art Hispànic—im. 05500050 [foto Gudiol-67761/1977]

It is most likely that Velázquez knew of this diagram, since he had a copy of the Leonardo *Treatise*—indeed, a book entitled “*de la pintura*,” by one Leonardo de Linçi (Leonardo da Vinci?) is mentioned in an inventory (nr. 685) of belongings left by Velázquez and his wife Juana Pacheco [19]. Velázquez’s library also included Euclid’s *Especularia* and Vitello’s *peri optike*, or *perspectiva* (Vitello’s theory of vision), as well as important works on perspective by Daniele Barbaro and Albrecht Dürer, among others [20]. Moreover, entry nr. 547, the “*Matemática de Aguilón*,” surely corresponds to the *Six Books on Optics, Tools for Philosophers and Mathematicians* by François de Aguillon. Decades before the 1651 edition of the *Treatise*, Aguillon had written extensively on binocular vision in Book II of his *Six Books*, published in Antwerp in 1630, with some illustrations by Rubens. Velázquez’s collar outline duplication might have been produced with reference to the Aguillon *plane of horopter*, or *locus in space*, where single and double images appear to be located [21].

According to Aguillon’s theorem number 148, the object seen most clearly is that over which the optical axes coincide—in other words, the object upon which the gaze is fixed. The remaining objects in the plane of horopter, then, are all those present except for that on which the gaze is fixed; and, finally, any object outside the plane of horopter appears double. This would certainly appear to be the case with the Philip IV collars, especially their tips, which would have fallen into Velázquez’s peripheral vision if he was looking at the eyes of the king or in their vicinity. The collars’ ghost images, with their partial tracing and unfinished form, might now be interpreted as a “perfect imperfection” that reveals the artist’s intention.

Interestingly, Velázquez seems to have anticipated by nearly a century the Scottish philosopher David Hume, who in his 1739 *Treatise on Human Nature* refutes direct realism, basing his argument precisely on the existence of double vision:

When we press one eye with a finger, we immediately perceive all the objects to become double, and one half of them to be removed from their common and natural position. But as we do not attribute a continued existence to both these perceptions, and as they are both of the same nature, we clearly perceive, that all our perceptions are dependent on our organs, and the disposition of our nerves and animal spirits [22].

In this exercise of inducing double vision, one of the images is much more intangible, like a ghost image that dissolves into its more tangible counterpart. In the portraits of Philip IV, Velázquez similarly exemplified this type of image shift in his rendition of the collars by closing one eye at a time while he painted.

VELÁZQUEZ’S CONNECTIONS TO REALISM AND HIS INFLUENCE ON LATER PAINTERS

It is not surprising that Velázquez’s work drew the attention of the Impressionists, especially Édouard Manet; since Velázquez painted exactly what his eyes saw, one might consider him to be an Impressionist *avant la lettre*. According to McKim-Smith, Velázquez became admired by the Impressionists because he developed a type of free, blurred brushstroke, while at the start of his career he was line-faithful and, like his father-in-law Francisco Pacheco, sought to depict precise outlines [23]. The free, blurred paintings of Philip IV produced during Velázquez’s later life might well have been his vision of reality.

The painters and engravers who copied these final portraits of Philip IV confirm the peculiar treatment of the collar outlines (Fig. 5). For example, in the engraving by Balthasar Moncornet (Biblioteca Nacional de España, 22.7 cm × 17.4 cm), dated ca. 1660 and without doubt based on the portrait held by the National Gallery, the collar seems to be made up of two independent pieces. It would appear that the copyist simply reproduced what he saw, although he probably did not understand it. Juan Bautista Martínez del Mazo, or whoever truly was the copier of the portrait at the Kunsthistorisches Museum, Vienna (c. 1657, accession number GG-324, 47 cm × 37.5 cm), resolves the problem and gives absolute continuity to the right and left sides of the collar. The copyist (perhaps Mazo) recognized the discontinuity of the lines and corrected it. Finally, in the copy of the Prado portrait held at the Museo Picasso de Barcelona (c. 1897–1898, 54.2 cm × 46.7 cm.), Pablo Picasso seems to have recognized the discontinuity of the lines, and exaggerated the duplicity of points of view, converting it into a further expressive resource, as one might expect from a painter who created Cubism.

The hypothesis and experiment described in the present article, and the available literature from the time of Velázquez, suggest that the duplicate collar outlines in the

last portraits of Philip IV may well have been intentionally painted by the artist.

Following the same reasoning, as Mariás has suggested, other cases of possible pentimenti by Velázquez might also be scrutinized, such as those in *The Lady with a Fan* and *The Spinners*, not excluding the remarkable duplication of the horse legs in the equestrian portrait of Philip IV.

As a corollary, the presence-absence of ghost images in the outlines of the king's collars might also be helpful in establishing the provenance of portraits of King Philip IV that appear from time to time on the art market. The presence of ghost lines would point to Velázquez as the possible painter, while the absence of them would point to a copy.

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References and Notes

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