

Leonardo and the Gonfalon of Piety: A Contribution to the Attribution Theory

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The Gonfalon

I would like to start by saying that author of this writing this article is not one of those Leonardo fans who are looking for traces of his work everywhere. Indeed, my interest in Leonardo so far has mostly been limited to the demythologization of his reputation as a genius. One day I gave a lesson on the art of the young Perugino and I was explaining how an anonymous gonfalon found in a Franciscan convent in Farneto (fig. 1), near Perugia, which had previously been attributed to the Umbrian painter Fiorenzo di Lorenzo, had been then, after a more careful analysis, attributed to Perugino. This was also because little attention had been paid to the youthful phase of this important painter. The painting had also been neglected because it was not an oil painting, but a gonfalon, that is, a banner to be used in processions or other religious ceremonies. The canvas represented a typical subject of Umbrian art of that period, a Pietà. This theme was made famous by Michelangelo, but it has an origin that has little to do with the Florentine tradition.

Pietà is a Nordic theme, used in particular in Germany, where wooden statues with sorrowful Virgin mourning the dead Christ were called *Vesperbild* (literally, “evening images”). In Perugia there are other samples of this subject, for example, we find two in which the theme of pietà turns into a sort of triptych, as two saints are added to the sides. In one case we find St. Jerome and St. Leonardo, and in the other instead, we find St. John and Magdalene. This combination of saints is significant because in the banner we find

St. Jerome and the Magdalene, placed in the same positions, that is, he on the left and she on the right of Christ. It, therefore, seems that the banner can be placed in this series, probably between the first and the second. All this suggests an all-Umbrian work rooted in the Umbrian cultural context of that period.

The first attribution to Fiorenzo di Lorenzo, established at the end of the nineteenth century ^{* 1}, was mainly based on the comparison with another series of anonymous paintings, which deals with the *Stories of St. Bernardino*. This series shows undeniable influences from Urbino, highlighted by the predominance of architecture and the rigidity of the drapery. However, another circumstance must also be taken into account. In that period after the many studies on Tuscan and Venetian art, the discourse on Renaissance art recently rediscovered (the very concept of Renaissance is a few years earlier and is still confused in Italy with that of Risorgimento), we went expanding on hitherto neglected realities such as the so-called "Umbrian school". In other words, the Umbrian school was a new classifying container that needed to be filled, going beyond Piero della Francesca and Perugino. So, although only 3 certain works remain of Fiorenzo, it was assumed that he was the author of the *Stories of St. Bernardino*. Then, given that the *Gonfalon* had evident similarities in the drapery with the *Stories*, it was consequently thought that it was the work of Fiorenzo. If, however, the draperies of the *Gonfalon* show similarities with those of the *Stories*, they do not show significant ones with the certain works of Fiorenzo. In the end, the scholars came to the conclusion that not even the *Stories* were the work of Fiorenzo, or not only of Fiorenzo but of a group of Umbrian artists, among whom there must also have been Perugino. The only assonances between *Gonfalon* and Fiorenzo's works are found in the way of performing the hands and in the way in which the face of the Virgin is treated. This may suggest two things: that Fiorenzo intervened in the *Gonfalon* or that Perugino, even though he was a pupil of Bonfigli, had also worked with Fiorenzo since in a small city like Perugia (then of about 20,000 inhabitants) there wasn't a real division of workshops and the painters of different workshops all formed a large family.

So the reasoning of the previous historians stopped at comparisons in the local area, which find partial confirmation in the drapery and then in the hands and face of the Madonna. However, all the other elements remain to be explained.

* 1 Cfr. Jean C. Graham, *The Problem of Fiorenzo di Lorenzo of Perugia*, Roma, 1903.

The Structure of the Gonfalon

Therefore, I tried to understand how well-founded the current approach that attributes Perugino the authorship of the work was. To do this I concentrated first on the characters of the scene, and then on the composition of the background.

I started by examining the left figure, St. Jerome. Concerning this theme, it should be considered that Vasari^{* 2} tells us that the first work that gave young Perugino some fame was a fresco depicting St. Jerome naked in the desert, so thin that he looked like a skeleton, staring straight at the image of the cross. A copy of this fresco was preserved. Now, I immediately found a table in which you can see a St. Jerome with a background of rocks very similar to that of *Gonfalon* (fig. 2) and I thought I had therefore found the work of which Vasari spoke, but soon I realized that it could not be that, because the Saint was dressed there. Looking in the painting archives, I found two very similar paintings in which you can see a naked and skeletal St. Jerome staring at a crucifix, on a rocky bottom (fig. 3). It was evidently this, and not the previous one, the painting to which Vasari referred. So who made the other one? In all probability he was Perugino, because, even if the Saint is dressed, the style of both the human figure and the background is exactly the same.

At this point, it will be good to introduce a logical principle that derives from the algorithms used in artificial intelligence. These algorithms are based, for example in Markov chains^{* 3}, on probabilistic events that are correlated with each other. Another type of probabilistic algorithm is called that of the nearest neighbor. Now, if Marc likes spy story films, mystery films, detective stories, horror films, etc., then the more one has the same tastes as Marc, the more Marc is probable to like what he liked. In this example, we have connected Marc to another individual whose choices we are interested in. So we have a network with probabilities whose weight varies according to the similarity.

In our case, however, we have some forms and we must understand who most likely made them. The first principle for attributing a probabilistic weight is that according to which those, who have performed a certain form in the past, are more likely to have performed it in the future than those who have never practiced it. In this case, we can

* 2 Vasari, *Vite*, 1568, p. 509. "et in Camaldoli un S. Girolamo in muro allora molto stimato da' Fiorentini, e con lode messo inanzi per aver fatto quel santo vecchio, magro et asciutto con gl'occhi fisso nel Crucifisso, e tanto consumato che pare una notomia".

* 3 See for example. Pedro Domingos, *The Master Algorithm*, London: Penguin, 2017.

speak of attribution of ex-ante probabilistic weight. However, we can also reverse the reasoning, that is, if an author made a certain form later, he is more likely to be the author of the past form than those who have never done it. In this case, the probabilistic weight is instead attributed ex-post. For the same reason, it is more likely to be the author of x who has done x more times or in a more evident way than who has done x fewer times or in a less evident way. This type of reasoning obviously presupposes the tendential continuity over time of the sensorimotor processes, due to a sort of inertia or *conatus* (clearly the comparison is also valid with parallel or simultaneous productions). Once you have acquired a certain technical process in drawing the eye, for example, you will keep it until there is a reason to change it. This is also the principle of conservation of tradition. The action of specific forces in the field is required to determine a variation of a learned standard. This variation can be either of a specific nature, that is, concerning the single process (for example because it is out of fashion, because judged bad by others, or other negative feedback, or otherwise because incidentally a better one has been discovered), or systemic (for example if I slowly changed the style of the whole figure I cannot continue to maintain that old routine, because it is now functionally inadequate to the new formal balance of the image). Even in this case, however, past models tend to persist within new configurations with little adjustments to make them homogeneous and consistent with the new structure. So the persistence of the formal traits is a decisive element for the study of the history of art, something that the Vienna school had already noticed. The fact that the artists tend to resort to operational stereotypes in the drawing had also been acutely noticed by Morelli himself, who had also noticed that these remain above all in details of secondary importance, which for this reason in his opinion could be considered as “signature motifs” (*motivi sigla*) * 4. Now, Morelli came from the study of medicine, but still ignored the unconscious processes highlighted by psychoanalysis, ignored the sensorimotor activities highlighted by genetic epistemology, and ignored cognitive patterns, and finally ignored the psycho-operational processes highlighted by mirror neurons.

Today, therefore, on the basis of this knowledge, we can reform an analytical process of pictorial activity by overcoming the gross romantic intuitionism that tries to grasp the work as a whole even when it is not.

In fact, systemic and holistic considerations must not be excluded a priori from an analysis of formal processes but must be included where this is required by systemic

* 4 Giovanni Morelli, *Della pittura italiana*, 1890.

and structural needs related to the composition of the image. This means that we must avoid the broad oppositions between analytical and synthetic, opting for their correct integration.

A final element pertaining to the transcendental structure of the figurative and decorative arts is the principle of the accumulation of knowledge and technical skills that can only proceed in one direction (unless contingent external factors such as neurodegenerative syndromes or other memory disorders intervene). We need this principle because it implies that what an artist was unable to perform at a certain moment could not have been able to perform it even before.

Having clarified these points of a transcendental logic of artistic work, we can return to the interpretation of the banner. We have seen that some tablets from the youth period justify relationships of continuity with the figure of St. Jerome, but what if we shift our attention to the central group of piety? The central group is made up of the Virgin and the body of Christ lying on her legs. The face of the Madonna has foreshortening problems. This allows us to exclude expert authors. The possibility, therefore, remains that it is Fiorenzo who has always had problems in foreshortening or even Perugino, who, being still young, could still have had indecisions. However, neither offers us directly comparable subjects in this regard. In a certain sense, the face of the Madonna is unique, since the painter forced the expressionist element to imitate the pathos of the Germanic models. On the other hand, we can compare other elements of the Madonna such as the belt, whose knot we find in other Umbrian and Florentine productions.

We cannot examine these productions in detail for reasons of space, but they bring us back to the question of the links between the Perugian and Florentine situation precisely through the figure of Perugino in an interweaving, which involves, on one hand, the Verrocchio workshop and on the other Perugino, Pinturicchio, but probably Fiorenzo di Lorenzo himself, and maybe even Sante d'Apollonio.

Florence and Perugia

Probably there was a group of Umbrian artists who in the 70s and 80s decidedly focused on the relationship with Florence, as a way of opening to the whole national market, which however is only successful in Perugino and Pinturicchio (to which we can add Signorelli if we want to include him among the Umbrians). In all probability, both Fiorenzo di Lorenzo and Sante d'Apollonio have had occasional contacts with this environment thanks to the mediation of Perugino. We find evidence of these contacts

in particular in two Madonnas. The first is the *Madonna and Child* (fig. 4) attributed to Fiorenzo di Lorenzo which is kept in the National Gallery. The attribution in this case too is not wrong, but methodologically incorrect and outdated. In fact, you can see the hand of Fiorenzo but others have seen that of Pinturicchio, also in this case with reason because the landscape background is typically in the style of Pinturicchio, and there may be even the intervention of Perugino in the drapery. The methodological problem lies in the romantic prejudice of the work of art as an expression of the artist's interiority and singularity, which led them to assume the existence of one only author for each artwork as if it were a painting of the nineteenth century. The paintings of modern art were created within a different regime of authorship that made the author coincide with the individual, but this was not at all true in the workshops of the fifteenth century, where the work is almost always collective. Work with several hands, on a painting, even not too large, was the norm in that age, and totally individual production was the exception, while starting from the Baroque this relationship is reversed, making individual production the norm and shared one the exception. If many paintings have reached us anonymously, it is not just for a twist of fate, but because they were conceived as non-subjective products and sometimes not even in the workshop since the cooperation could also interest people from different workshops. In other words, the situation was much more fluid than the nineteenth-century historiography made us believe. We have numerous textual and objective evidence of this. The larger the work was, the more it required the participation of different painters. A team of Umbrian-Tuscan painters came to the Vatican for the Sistine frescoes. This could also apply to works of relatively little importance, in which, to ensure a high level of quality, the work was passed through the hands of several painters, who took care of the relative specialties. This was also a way to make everyone earn a little bit, in an industry that didn't receive commissions every day. It is no coincidence that we can observe that, with the transition to the regime of individual authorship, the definition of everything that exceeds the main subject of the painting is significantly lowered (except when a total definition was explicitly requested by the client). In any case, the clarity of the fifteenth-century tables is precisely due to this collective work, in which several specialists make their contribution. The other painting is the *Madonna* of the Jacquemart-André Museum (fig. 5), attributed to Perugino, despite the evidence that the face of the Virgin is painted in a style not referable to Perugino. In fact, that face is in all probability attributable to Sante d'Apollonio. The subject is exactly the same as that of the previous lady, except that here the one who deals with the complexion has changed. Fiorenzo has been replaced by Sante d'Apollonio and Perugino himself has provided

a crispier drapery than the previous one. In the same way, Pinturicchio has created a richer garland of flowers. All perhaps because the work is subsequent to the other and perhaps because it is requested by a wealthier and more demanding client. However, we also find the same characteristics in the famous Madonnas of the Verrocchio workshop, where Verrocchio himself was involved in the complexion, and especially Perugino in the drapery, where Leonardo was presumably entrusted with the landscape and only occasionally the other elements.

The Workshop

This multi-handed process is clearly testified to us by an unfinished work in which we can see how the process of composing these Madonnas actually took place. Let's talk about the *Madonna di Camaldoli* (fig. 6). Contrary to what one might expect from a modern conception, the work was not traced starting from the face and then dwelling on the other details of the painting. In this work we see that probably Verrocchio traced the drawing, which Lorenzo di Credi then began to color, executing the landscape in more detail (which presents a fortress typical of this painter). For the rest of the coloring, sketches were made we do not know by whom. But what is important is that the faces remain only drawn because they will probably have to be made at the end, by the hand of the workshop manager, who was Verrocchio or in any case by an expert.

If we look at Verrocchiesque Madonnas like that of Volterra (fig. 7) then everything will be clearer. In fact, in this case, the landscape appears decidedly more Leonardesque, and the drapery clearly Peruginian. The faces have different styles. The Virgin was certainly made by Verrocchio, but one of the angels may have been made by Leonardo. Then a hand of the other angel that is very reminiscent of the hand of the so-called *Lady with an Ermine* (fig. 8) and that of Philip in the *Last Supper* (fig. 9) may have been made by Leonardo. In fact, if there is one who is more likely to have made it, it is the same one who then made a similar one and not the others. There would also be other considerations to be made but this goes beyond the subject of this text.

If we compare this painting with the *Gonfalon*, we will easily notice the clear links in the style of the truncated-conical drapery that we find in both works and that is certainly attributable to Perugino.

If we go back to *Gonfalon* then, we will see that, to understand the central and right parts, the comparisons must also and above all be made with the Verrocchio workshop.

If we go to look at Christ, the body itself seems to recall the well-articulated bodies,

from an anatomical point of view, typical of the Verrocchio workshop. But above all, if we go to consider the hollow face of Jesus, we will be able to notice that his uncommon physiognomy is found in another Verrocchiesque work, the famous *Baptism of Christ* (fig. 9), to which the exploit of Leonardo is connected.

The Right Side

Now, if we finally move to the right side, we find a rather peculiar situation. The general structure of the Magdalene is rather rigid, but this contrasts with the softness of the face shape. Then this contrast cannot be understood if one does not take into account the fact that the faces were painted in that environment by a different hand. So if we want to understand who is the one who designed the general figure of the Magdalene, we will have to answer that it is in all probability Perugino, as there are correspondences in the drapery (in previous and contemporary works) and in the position of the hands (in later works). However, it is not difficult to notice that the face has a clear Leonardesque tone, completely different from that of the Madonna, Christ, and St. Jerome.

We are in the same period of the *Baptism of Christ* and therefore the comparison with this work is particularly significant. Leonardo, since his first appearance as a face maker, has a predilection for soft, supple and shady shapes (although they are still light shadows) accompanied by a sense of roundness.

Perugino at that time, however, is still linked to the late Gothic styles of the Umbrian school of Caporali and Bonfigli. In fact, as a counter-proof it will be useful to make a comparison with the first great work of Perugino (who actually paints together with Pinturicchio). Let's talk about the *Adoration of the Magi* (fig. 10). In this case we are quite sure about the identity of the two authors because they have taken up the Florentine custom of showing themselves in the work with the gaze towards the viewer and, in this altarpiece, there are two figures who look towards the public, one compatible with the portrait of Perugino and another, even younger, compatible with that of Pinturicchio.

It is clear that Pinturicchio dealt with the landscape, perhaps on the basis of a drawing sketched by Perugino himself, but that Perugino, here in his debut as main painter, left for himself the face of the Virgin, which is also proven by the existence of a drawing always attributed to Perugino with a completely similar face (fig. 11). Well this face is significantly different from that of the *Gonfalon* and is decidedly more Gothic. This means that Perugino at this date - and we are certainly after the *Gonfalon* - has not yet found a pictorial formula suitable for making a pretty face, a formula that he will find later and

that he will reproduce widely making it his own trademark.

Now, various people have noticed the Leonardesque aspect of the Magdalene, but no one has come to propose his attribution to Leonardo, due to two methodological limits that entailed consequent prejudices, prejudices which however are unfounded. Let's see them. The first is that the *Gonfalon* had to be all the work of a single painter, which is completely unfounded and contradicts the common practice in the workshops until at least the sixteenth century. The second is the idea that if a work is found in a place, it must have been created by local workers. Now, this prejudice has no logical foundation. The works have always traveled, just as painters have always traveled. It could also be difficult, for example, to make a large altarpiece travel, even though Ghirlandaio had made a dozen years after an altarpiece in Florence which he then sent to Umbria. As for a banner, there is no problem at all. It is a fabric that is foldable or rollable and easily transportable. Cennino Cennini in his treatise on painting ^{* 5} speaks of it precisely in these terms. So, Perugino could very well carry the canvas from Florence to Perugia and there is no need to suppose a Leonardo's trip to Perugia. Perugino who had just opened his own business in Florence probably built the *Gonfalon* in Florence and then brought it or brought it back to Perugia (in case he had started painting it there). Then there is nothing easier to imagine that Perugino has delegated some parts to people with whom he worked every day, and that is primarily to Leonardo, who was not yet the universal genius, but a simple workshop assistant who was also looking for starting his own business. On the other hand, Lorenzo di Credi was still too young, Botticelli already had a workshop of his own, Ghirlandaio perhaps attended Verrocchio from time to time but belonged to another workshop. So, only Leonardo remains.

Magdalene: Her Eye and Her Background

In this regard, therefore, the detail of the eye is crucial which we can consider in typical Morellian terms as a typical "signature motif". Perugino never painted an eye like this, neither before nor after. Leonardo, on the other hand, has done so since the angel of *Baptism*, but especially afterward in the angel of the *Virgin of the rocks* and in the drawings. That is a typical Leonardo's eye (fig. 12) because from the time of the angel it is seen that Leonardo puts a fold of skin over the upper eyelid, which is between the eyelid and the eyebrow that falls on the eyelid. In addition, the eyebrows are not

^{* 5} Cennino Cennini, *Il libro dell'arte, prefazione*, a cura di Mario Serchi, Firenze: F. Le Monnier, 1991.

arched from the nasal septum by tracing a semicircle but only stick to the septum with a slight arching. This marks a clear difference with the way Perugino proceeds towards the female eye. For the rest, the shape of the face is well suited to Leonardo's forms. A very similar eye as well as in Leonardo is found only in Botticelli's *Primavera* which is later (fig. 13). Botticelli worked with the Verrocchio workshop and was a few years older than Perugino. However, the problem lies in the fact that for the rest the Botticellian face fits with that of the Magdalene neither in the shape nor in the conception, showing itself bony and angular and not round and soft. So as regards the eye and face in general Leonardo remains the most formally related and therefore the most likely executor.

Now, the comparison with what was happening or had just happened in the Verrocchio workshop and that is the altarpiece with the *Baptism of Christ* is also revealing for the background. In fact, behind the Magdalene, we find the same blocks of stone that appear behind the Baptist although they are now much more discolored. We know from Leonardo's drawings that he had naturalistic interests that led him to draw rocks, rivers, and plants from life. So it is completely coherent to think that in *Baptism* Leonardo also dealt with the background. Among other things, as Leonardo's scholars well know, he cultivated a deep interest in the waters, which led him to also deal with hydraulics. For this reason, Leonardo is also perhaps the only artist of the time to be interested in the aesthetics of the waterfalls, which will become established only much later with the aesthetics of the picturesque and the sublime. The waterfalls that interest Leonardo, are not imposing, also because he had no way of seeing large ones. These are small waterfalls. In his production, we find two waterfalls and both are from this period. The first can be observed in the background of the aforementioned *Baptism of Christ* and the other is found in a famous drawing. Famous because it is the first pure landscape (i.e. without human presence) in the history of western art (fig. 14). The drawing dates from 1473, the year following participation in the *Baptism of Christ*. There you see a waterfall that descends from a sort of mushroom-shaped ravine. We also find a structure very similar to this behind the Magdalene of the *Gonfalon* where you can see a truly anomalous figure: a pinnacle of lamellar type rock and therefore furrowed by deep vertical streaks.

The Lamellar Spur and the Waterfall

This structure impressed me a lot because if it is true that in the painting of the time, we find bizarre rocky structures, with the use sometimes also of pinnacles, it is also true that this was until then completely unusual. Among other things, I was struck by the fact

that Leonardo himself painted them of this type in the *Virgin of the Rocks* ten years later.

It is necessary to dwell a moment on the *Virgin of the Rocks* because there are two versions of this work, perhaps even three. But let's focus our attention on the two versions unanimously recognized and attributed to Leonardo: that of Paris (fig. 15) and that of London (fig. 16). Art critique is also substantially in agreement in affirming that the version preserved in the Louvre is the first and that in it more consistent is the direct intervention of Leonardo's hand, while in the second, which is the copy made for the Confraternity in substitution of the first, the assistants' hand is more present.

Therefore, we usually tend to give more respect and importance to the former than to the latter. In addition, the former is considered more Leonardesque than the latter in which the design is sharper despite the darkness. However, it is also necessary to consider that Leonardo in the second version had the opportunity to clarify his ideas, and to create a design more relevant to his "internal design". These differences, therefore, concern the faces, illuminated by a more lunar light, and the rocks. In fact, in the second version the model of the lamellar pinnacle emerges in all its clarity, being placed next to the angel, it evokes a situation very similar to that of the Magdalene in the *Gonfalon*. Now, if you compare the part of the Magdalene with the part of the angel, you can easily realize how the second is the evolution of the first. The scene is reshaped emphasizing its verticality, in addition to the greater naturalism as a whole, allowed by the oil technique, compared to the opacity of a tempera, which is also discolored. Even the light is projected in the same way and creates the same soft play of shadows on the angel's eye that we already find although in a more immature way in Magdalene.

But there is more. The lamellar spur so clearly outlined in the second version, in the first there is not. In its place, there is a very strange vertical rocky streak. Those vertical lines perhaps intended at first to represent something else and then, however, turned into rocky veins and finally into the spur of the second version. Maybe it was already the spur which was then put in the second version, or it was something completely different such as a small waterfall inside the cave. This second thesis is not so far-fetched if you look at how the lines of the waterfall are drawn in the drawing of 1473.

So I asked myself if on the basis of a simple graphic analogy it was possible to move from something like water to something as different as rock, through the neutrality of the graphic sign. I thought of this curious hypothesis because Leonardo is one who, by his own admission, saw entire landscapes in the stains of the walls. Evidently, he had a strong productive imagination. Therefore, I decided to do a little experiment. I took the drawing from 1473 and superimposed it on the rocky background of the *Gonfalon*

and I noticed that they are largely coincident (fig. 17). Was it just a coincidence? In our article, we do not offer certainties, but we only think of probability. However, it should be considered that the coincidence does not only concern the spur but also its relationship with the mushroom ravine. Only the part under the edge of the ravine is different. For the rest, it's all the same. Mere fortuitous coincidence cannot logically be excluded. It cannot be excluded a priori that by extracting random letters from an abacus a triplet of the *Divine Comedy* may come out because it is not virtually impossible, but the chances of this happening are very few. It is not impossible that Perugino, by designing his own composition, made it coincide largely with Leonardo's design by pure chance, however, everything is somewhat improbable. On the other hand, Leonardo has undoubtedly transformed simple vertical streaks into a lamellar spur in the *Virgin of the Rocks*. Therefore, on the basis of this analogy, it can be thought that the 1473 waterfall is to the spur of the *Gonfalon*, just as the rocky streak of the first *Virgin of the rocks* is to the spur of the second.

We will say that for attribution, the lamellar rock spur has a high quantity of information. Allow me to make another methodological parenthesis. An element that is too redundant doesn't have much information. In the Italian language, putting a U after the Q does not add any information since as a rule the Q is followed by the U. Information must have entropy content, that is, it must be detached from the regulatory predictability of the rule. In this way the higher its entropy or unpredictability content, the more significant it is of something in its particularity. Translated into the context of the figurative arts, the fact of seeing that Marina designed Hello Kitty does not allow me to say that she is the author of Hello Kitty because anyone could do it. For attribution, the value of this information is zero. Useful information for attribution must be identifying and differential, it must show something that only that person did or could do. The more this practice is exclusive and the more it has high detection information. This means that we sometimes have to settle for information that restricts the circle of possible subjects and then, however, we must find other ways to exclude multiplicity and reach the author, which is a bit what the police detective does to identify the murderer. Already Morelli had realized these problems and for this, he was defined the Sherlock Holmes of art history, because his "signature motifs" were the distinctive details that should have had, in terms of information theory, a high quantity of information.

I wasn't just looking for evidence in favor of Leonardo. I was trying to find out who the "murder" was, or the author of that curious pinnacle or at least restrict the suspects to a minimum.

Other Possibilities?

What I found out and perhaps I wouldn't talk about, if I had a simple predefined thesis to prove, is that there are two other cases of references to this form. We find one, although just mentioned, precisely in the *Adoration of the Magi* by Perugino and (in my opinion) Pinturicchio. In it, we find above the head of the Madonna, a distant rock with a mushroom structure not unlike that of the *Gonfalon*, near which you can see the top of a spire of rock that is not lamellar but covered with weeds as in the spur of *Gonfalon*. The other painting is also by Perugino and is the *Crucifixion* (fig. 18) and we find a more complex structure with a dark spur, and a lower spike of rock, both of which, however, also bring us back to the *Virgin of the rocks*, where we find used not only the same shapes but also the same colors. So this could be evidence for Perugino. One could say that Perugino is simply the author of all three of these spurs, including that of the *Gonfalon*. However, even if we exclude taking into account the coincidence of the design of 1473, a problem remains: first if Perugino had done everything and Leonardo had nothing to do with it; if Leonardo had not even seen the *Gonfalon*, for what strange case of fate Leonardo proposes the same forms more than Perugino does and with more similarity? The only revival of a spur in the lamellar form is found in Leonardo and not in Perugino. Furthermore, we find in the *Virgin of the rocks* not only the isolated forms but also a coherent overall picture of the left part of the work that is repeated in the *Virgin of the rocks*, with the "mushroom", the cave, the lamellar spur inside, behind the foreground figure (Magdalene/angel), who sees the light coming from the same angle and sees the same style in treating the eye with the same shades (fig. 19). Add to this that the occurrence of similar rocks in the *Crucifixion*, which should benefit Perugino's paternity, also resemble in colors so much those of the *Virgin of the rocks*, to make them indistinguishable, so as to suspect Leonardo's intervention there too (in fact Leonardo had the practical possibility of having done both, but Perugino did not have this possibility). It is clear that the coincidences, which must be admitted to support Perugino's paternity would begin to be too many, so much so that the situation would become untenable. Otherwise, if it is admitted that Perugino used the young Leonardo as a collaborator in some of his works, all the pieces of the puzzle go in their place. In the *Adoration of the Magi*, Perugino proposes a certain structure in his way, without the lamellar specification that he is not interested in, and in the altarpiece of the *Crucifixion*, he turns again to Leonardo for a minor part, since at that moment Leonardo was in a situation far from easy, because of a sex scandal that led him to leave Florence to go

to Milan. It was recently thought to find the date 1480 on the painting. If this date was true, it would indicate a year in which Leonardo practically did not receive commissions and a year in which he talks about the theme of the dark cave^{* 6}, which will be clearly expressed precisely in the *Virgin of the Rocks* and of which probably the part of the *Gonfalon* could constitute the background in pictorial terms. The stones of the *Crucifixion* are stylistically in color and in shapes too, similar to those of the *Virgin of the rocks* and this cannot be yet another coincidence (fig. 20).

So what emerges is a different panorama and a different story. From our research emerges a world of workshops in which many people who also work on their own take part in the works of others in minor roles according to their specialties. This is not new. The history of art has always known about this situation of Florentine workshops, but curiously it has always found it difficult to draw the consequences by continuing with the practice of attributions concentrated on the figure of the unique creator who is fundamentally false and disrespectful of historical data, including documents. In fact, why did the workshop manager make an explicit request to paint the faces of the main characters if this did the whole picture? What would workshop aids do if the workshop manager did it all by himself? Why in Perugia it is explicitly asked to keep the Florentines out if they never intervened?

Conclusions

In conclusion, if some observers had not escaped the Leonardesque character of the Magdalene, in all probability this is due to the simple fact that the one who painted it is Leonardo (this does not exclude that Perugino may have then put his hands on it for add some wrinkles or accentuate the hole in the nose). However, this does not definitively exclude the existence of other possibilities. Perugino may have copied a drawing by Leonardo for the occasion. A third painter, such as Botticelli, may have intervened. However, both these hypotheses are to be considered unlikely. The first because the indications of Leonardo's participation are not limited to the face of the

* 6 Leonardo da Vinci, *Leonardo Prosatore, scelta di scritti* Vinciani, Milano: Società editrice Dante Alighieri, 1915. p. 64 "...raggiratomi alquanto in fra gli ombrosi scogli, pervenni all'entrata d'una gran caverna, dinanzi alla quale, restando alquanto stupefatto e ignorante di tal cosa, [...]. E spesso piegandomi in qua e là per vedere dentro vi discernessi alcuna cosa, [...] subito si destarono in me due cose: paura e desiderio; paura per la minacciosa oscura spelonca, desiderio per vedere se là entro fussi alcuna miracolosa cosa."

Magdalene alone. In particular, the composition of the boulders behind the Magdalene recalls that of the *Baptism of Christ*, without considering the spike of rock with a lamellar character on which we have already focused. Perugino in the early works showed himself completely unsuitable to treat the rocky backgrounds and this could be one more reason to justify the intervention of Leonardo in the *Gonfalon* and Pinturicchio (who instead loved imaginative rocky structures) in the *Adoration of the Magi*. The second is because Botticelli's style is substantially different and it is unlikely that an older and very fashionable painter will go to assist a younger and still less known one.

But from the theoretical point of view what we propose here is a paradigm shift in artistic attribution, that is, a logical transition from the Aristotelian logic of all or nothing or the excluded middle to the fuzzy logic of probabilities, and the consideration of the game of the different probabilistic weights. The previous attributionist paradigm had as its model the criminal judgment, which must be expressed ultimately on the offender. The penal trial is forced to this draconian practice and this opposition comes clearly from the fact that it necessarily implies consequences for the defendant's freedom. The history of art, however, is not a court, and therefore it is necessary to move towards comparison with scientific and technological knowledge. We have to get out of the 100% truth knowledge myth even when data doesn't allow it. In this way, we start looking for the truth and inevitably end up in the imposture for wanting to proclaim a truth (especially institutional) even when there are no elements to do it. The scientific attitude is instead that which seeks to make the best use of the data it has to build hypotheses, ever closer to the truth, but which is clear in proclaiming the limits of its cognitive investigation. This does not mean proposing that adaptation of the sciences of the spirit to the natural sciences that has so frightened generations of humanistic scholars. Another point that emerges is that the intuitionist criterion, proposed first by the history of the art of the idealistic system and then by that of the phenomenological system, is simply theoretically crude, and unsuitable for the matter in question, so much to risk falling into the ridiculous, for example when we want to attribute works, the result of the collaboration of various authors, to the authorship of a single author, citing the spirit of the author as a justification or claiming that the holistic and unitary character of the work finds correspondence only in the intentionality of an equally unitary mind, which is presumed to be that of the author, when instead, most likely, it is nothing other than that of the spectator, who finds what he, and not the artist, has put into it.

After a long prevalence of an intuitionistic and synthetic attitude, which has left the attribution at the mercy of "experts", but who have often acted as gurus (even taking

clamorous blunders such as Argan) rather than as serious scholars, it is necessary start from an analytic attitude, like that, though now in many ways surpassed, of Morelli, which marks the point in carrying on a fruitful dialogue between the humanities and rational principles that governed the development of scientific research (on such themes cognitive sciences) and technology (artificial intelligence and digital imaging).

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Figures



fig. 1
Gonfalon of Piety, 1473 ca., Perugia, National Gallery of Umbria.



fig. 2
St. Jerome in the Desert, 1473 ca.,
Frederick Mason Perkins Collection.



fig. 3
St. Jerome, 1470 ca.,
Accademia Carrara, Bergamo.



fig. 4
Umbrian School, *Virgin and Child*, 1473 ca.,
National Gallery, London.



fig. 5
Virgin and Child, 1470 ca.,
Jacquemart-André Museum, Paris.



fig. 6
Virgin of Camaldoli, End of the 15th Century.
Camaldoli Museum, Camaldoli.



fig. 7
Virgin with Child and Two Angels
(Madonna di Volterra), National Gallery, London.



fig. 8
Lady with an Ermine, Czartoryski Museum, the division
of the National Museum, Kraków, Poland (with the hand
kept from Madaonna di Volterra for comparaison)



fig. 9
Leonardo da Vinci, *The Last Supper*,
Milan (detail)



fig. 10
Adoration of the Magi.
National Gallery of Umbria, Perugia.



fig. 11
Perugino's drawings,
Musée d'Art et d'Histoire of Geneva.



fig. 12
Comparisons of Leonardo's eyes. By using AI, I have extracted a 3D face from Leonardo's artworks to turn them in the same position of the Magdalene. The faces are the angel (*Virgin of the Rocks*) and Maria (*Virgin and Child with St. Anne, sketch*).



fig. 13
Sandro Botticelli, *Primavera* (detail), 1477-1482, Uffizi, Florence.



fig. 14
Leonardo da Vinci, *Arno Valley Landscape*, 1473, Gabinetto dei Disegni e delle Stampe, Florence.



fig. 15
Leonardo da Vinci, *Virgin of the Rocks*,
1483-1485, Louvre, Paris.



fig. 16
Leonardo da Vinci, *Virgin of the Rocks*,
1494-1499, National Gallery, London.



fig. 17
Overlapping the waterfall of the Landscape and the background of Magdalene.



fig. 18
Crucifixion, 1480, Uffizi, Florence.



fig. 19
Detail from the *Crucifixion*
(1480, Uffizi, Florence)
compared to a detail of the
Virgin of the Rocks
(National Gallery, London).

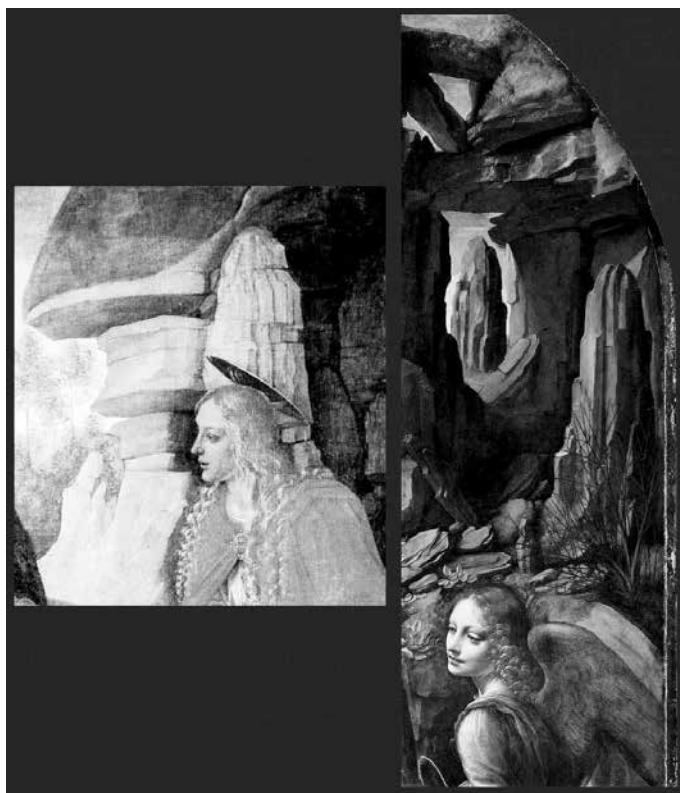


fig. 20
Comparing the right side of
the *Gonfalon* with the right
side of the *Virgin of the
Rocks*.

Leonardo and the Gonfalon of Piety: A Contribution to the Attribution Theory

Roberto TERROSI

This article will examine the case of the Gonfalon of Farneto (Perugia), representing the Virgin mourning the Dead Christ (Pietà) between St. Jerome and St. Mary Magdalene. This banner was attributed to the Umbrian painter Fiorenzo di Lorenzo and later (in particular starting from the '80s) to Pietro Perugino. A closer analysis reveals the presence of the intervention of different painters. This poses the question of workshop composition in the 15th Century Italian Renaissance. In this case, the question is particularly relevant because Perugino belonged to the workshop of Verrocchio together with Leonardo da Vinci. When in a workshop we find only minor painters it is not so important to individuate the contribution of each painter, but the case is different for painters of primary importance like these. Therefore, another problem arises: how to distinguish each contribution? To this aim we have to retake the problem of the theory of attribution, going back to their founders like Morelli. Now today have more theoretical instruments than one century ago. But we also need a new epistemological framework passing from the true/false paradigm to probabilistic one adopted today by deep learning AI systems. In this way, a new alliance between art-history and digital technology is today possible.