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The Wittgenstein Composite Portrait Reconstructed

in: Uwe Schögl, Sandra Tretter, Peter Weinhäupl for the Klimt Foundation (eds.):
Moriz Nähr (1859–1945). Photographer for Habsburg, Klimt and Wittgenstein.
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Exploring the concept of family resemblance, Ludwig Wittgenstein turned his attention to the technique of the photographic composite portrait developed by Francis Galton in 1878.[1] The composite picture of the Wittgenstein siblings (fig. 1) was created along the lines of this method, which is based on the superimposition of individual portraits of several persons. A composite portrait of the von Brücke siblings from the Wittgenstein family's circle that was only discovered in 2021[2] provides a second, presumably independent attempt in this field.

Both composite experiments share a number of features: They have survived exclusively in original prints in the same format of about 11 × 8 cm; each of the faces is about 7 cm high. The negatives of the two pictures have not survived. The prints came to light relatively late—in 1989[3] and 2021, respectively—and are known in only one copy each to date. Judging by the sitters' age, the composite portraits were probably created in the first half of the 1920s, although their date of creation may not be identical to that of the production of the respective portraits.

But there are also several differences: The composite picture of the von Brücke siblings is bordered by a narrow white margin, for instance; the background is darker, more homogeneous. Overall, the image strikes us as sharper, less manipulated than the other. Regardless of the sharpness of the image and whether or not the white image border of one was cut away, the two composite portraits can be attributed to one photographer because of their material-specific parallels, the same dimensions, and their formal similarity.

The experimental arrangement of both portraits was basically the same and not complicated even if it required a high degree of photographic skill and experience to achieve the best possible results, which is why it has been assumed that Moriz Nähr was involved in the composite picture discovered in 1989 at least as a photographically expert assistant.[4] Inscribed photographs as well as a few preserved glass plates showing marks of the special negative holders of his cassettes evidence that Moriz Nähr provided his services as a photographer to the family on several dates.[5]

The Wittgenstein composite has been supposed to be based on four photographs taken by Moriz Nähr: pictures of the Wittgenstein siblings Hermine (1874–1950, fig. 3), Helene (1879–1956, fig. 4), Margarethe (1882–1958, fig. 5), and Ludwig (1889–1951, fig. 6).[6] Michael Nedo expounds that individual portraits from »Wittgenstein's photo album«[7] were used for this purpose, maintaining that this can be easily seen from the conspicuous textile wall hanging in Margarethe's portrait, Hermine's dark choker, and the tangle of pearl necklaces in the composite image corresponding to the sisters' component portraits. He assumes that variants of these portraits must have been used for the composite picture.[8]

To gain clarity about the process of creation, the technical objectivity of the procedure, and Moriz Nähr's authorship of the Wittgenstein composite portrait, an attempt was made to generate a new composite image based on the individual portraits from Wittgenstein's album frequently discussed in this context following Michael Nedo (figs. 3–6). The visualization complementing the visual analysis was not done in an analog way, however, since the missing negatives preclude reconstruction, but by superimposing digital images. Although this method cannot be equated one-on-one with an analog multiple exposure, it is very well suited for understanding or approximating the composite work's genesis.

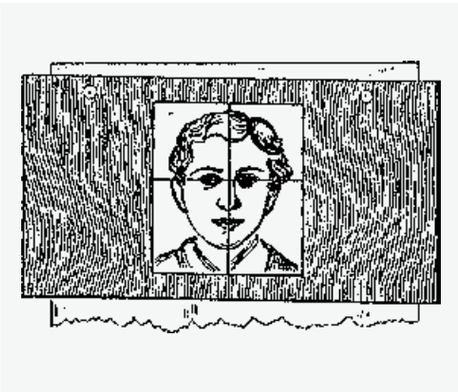
The procedure

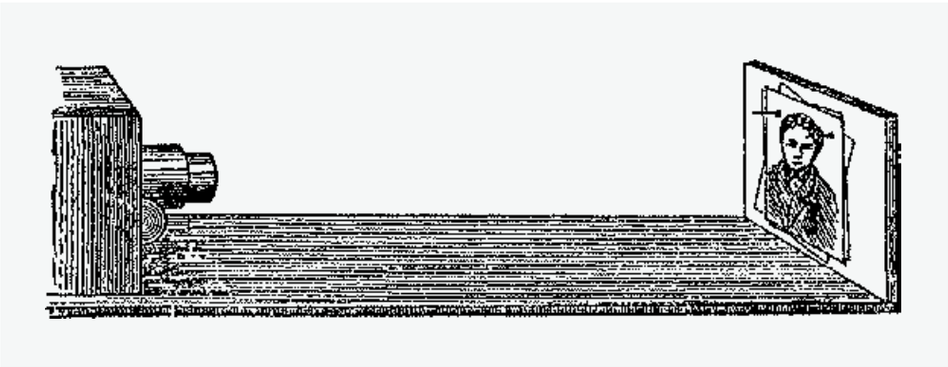
Let us first explain Galton's composite method to understand the setup of the experiment. The British natural scientist used this phototechnical method to obtain the typical characteristics of a group of people who are similar to each other and differ only in small details.[9] The approach is based on superimposing individual photographic en-face portraits, aligning the images in correspondence with the position of the eyes and mouth and the vertical midline of the face. The following can be inferred from Galton's description: First, individual portraits of the people whose pictures would constitute the composite image were made on separate glass plate negatives. The more exactly the shooting situations—camera distance, pose, lighting—matched, the better the result. Using a contact copying process, each of the photographic portraits was printed sepa-

[1]
Composite portrait of the Wittgenstein siblings, undated

[2]a
Register plate, drawing from Francis Galton, »Composite Portraits«, *Journal of the Anthropological Institute* 8, April 30, 1878

[2]b
Successive exposures on the same glass negative, drawing from Francis Galton, »Composite Portraits«, *Journal of the Anthropological Institute* 8, April 30, 1878





rately on paper. These prints were set up with a register plate (fig. 2a) hinged upon accordant horizontal eye lines and vertical face midlines and finally photographed one after the other onto the same negative plate (fig. 2b). The total exposure time of the negative was divided among the component pictures; in the case of four portraits to be superimposed, for example, it was quartered so that the sum of the four portraits' exposure times amounted to the correct total exposure value.

Much closer to Wittgenstein and Nähr, a later description of the technique by Hermann Schnauss directly referencing Galton[10] contains a modification of the method[11] that accounts for the advanced photographic technology of his time: Schnauss recommends exposing the subjects on separate thin gelatin or »celluloid films,« i.e., on the plastic negatives that had recently emerged, to stack these negatives (six to eight at the most) upon each other, and to transfer the package of negatives on photographic paper using the contact copying process.[12]

There were also other methods of performing such multiple exposures known at that time.[13] Since, apart from Ludwig Wittgenstein's reference to Galton (1929), there is no evidence shedding light on the production of the composite picture of the Wittgenstein siblings and the negatives used for the composite have not come down to us, the procedure cannot be reconstructed in detail.

Visual analysis

We are faced with a closely framed en-face portrait of a lady against a dark, heavily textured background organized in a constructivist manner. Nothing about the face is particularly spectacular or striking, apart perhaps from a slight blurring or soft-focus effect. Only a look at the overlays in the décolleté area—probably used as a design device—reveals the true origin of the portrait as a composite image. None of the respective persons can be clearly made out in the face—if somebody, Margarethe would be the most likely guess. We recognize several pearl necklaces, various lapels, blouse or shirt necklines, and Hermine's choker. A closer comparison reveals that not only details but entire sections of the clothes do not match those in the assumed source photos. Due to the no longer existing component portraits actually used, the parts of the clothing cannot be definitely assigned to a specific subject. The dark area of the jacket on the right, which shows a roughly structured pattern, deserves attention. A strongly superimposed small triangular shadow, which might stem from a shirt collar, can be seen there (fig. 7a). The assumption that we are dealing with parts of Ludwig's clothes seems conclusive since we know that tweed jackets and shirts with button-down collars were among his preferred items of clothing and that he liked to be photographed in this British-influenced style (fig. 7b). However, inasmuch as the sections of clothing cannot be classified as belonging to a certain person, it is impossible to verify this observation. Furthermore, some areas of the negative appear to have been retouched.

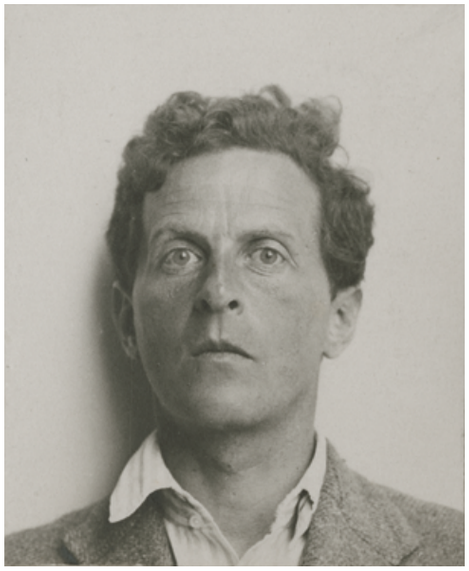
To clarify which of the surviving portraits are indeed included in the composite, the analog composite portrait was digitally overlaid separately with each component picture.[14] The experiment confirmed a striking error of previous research concerning the images used for the composite (figs. 3–6): It turned out that only Margarethe's photograph (fig. 5) tallies—in her pose, the position of her pearl necklace, and the textile pattern—with the uppermost boundary line in the background. This photograph[15] was in fact used for the composite portrait. The other three portraits from the Wittgenstein

[3]
Moriz Nähr: Hermine Wittgenstein,
from Wittgenstein's photo album,
undated

[4]
Moriz Nähr: Helene Wittgenstein,
from Wittgenstein's photo album,
undated

[5]
Moriz Nähr: Margarethe Stonborough-Wittgenstein,
from Wittgenstein's photo album,
undated

[6]
Moriz Nähr: Ludwig Wittgenstein,
from Wittgenstein's photo album,
undated



album (figs. 3, 4, 6) could not be brought into congruence with the composite—a result already suggested by the visual analysis.[16] Considering the different parts of the clothing suggests that not even variants of these portraits but completely different component pictures unknown to us were used for the siblings' composite.

The background holds additional information about the photographs used. Visual analysis shows that at least three different portraits of the Wittgenstein siblings were taken in one and the same setting, as the textile backgrounds of the pictures—probably a wall covering, a sofa, or a large cushion—are inscribed in the composite in slightly divergent positions with three boundary lines caused by the sitters' different heights. A fourth portrait, which was obviously taken in a different setting, introduces additional structures[17] in the form of curved shapes to the right as well as another textile detail in the upper right corner of the background (fig. 8). The upper edge of the fabric of the fourth portrait does not run parallel to the textile boundary lines of the other three individual portraits but rather diagonally upward like a vertically arranged drapery. This dark, irregular background was probably intended to blur and homogenize the unalignable outlines of the component portraits so that the viewer's entire attention would be directed to the face. This is better achieved in the von Brücke siblings' composite portrait thanks to the darker and more homogeneous background.

The digital reconstruction of the composite

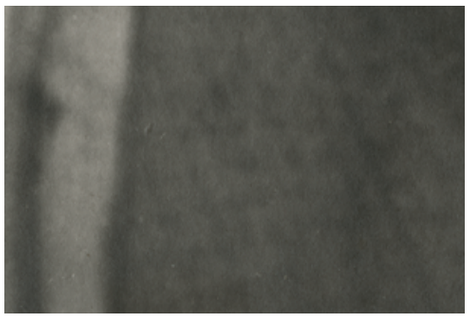
Although there can be no doubt that the analog composite portrait is not based on the four aforementioned photographs, an attempt was made to use them as source material for a new composite portrait to ascertain whether a similar result supporting the method's claim to objectivity could be achieved.

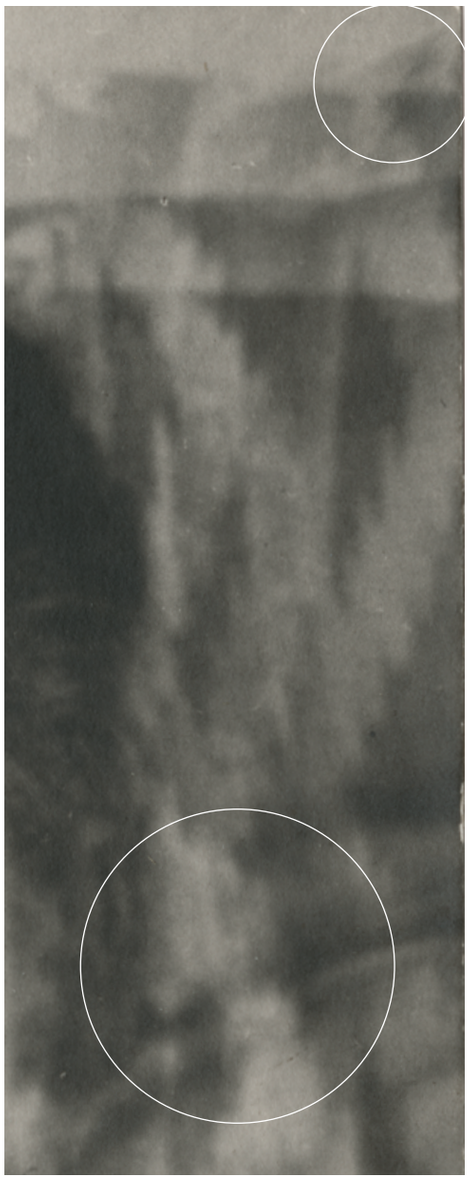
The four source photographs from the Wittgenstein album used for the digital reconstruction of the composite are of very variable quality, show different states of preservation, and could hardly be more divergent in terms of image size, brightness,

[7]a
Detail of the collar area and the textile structure of the jacket from the analog composit portrait (fig. 1)

[7]b
In comparison, a detail of the collar area and the textile structure of the jacket from the portrait of Ludwig Wittgenstein (fig. 6)

[8]
Detail of the analog composite portrait (fig. 1) with additional structures in the form of curved shapes in the background on the right





contrast, lighting, sharpness, and position—not the best prerequisite in Galton's sense. To achieve the best possible result, brightness and contrast of the digital copies had to be adjusted so as not to make one person appear more dominant in the final result. Careful consideration was given to matching the head sizes and aligning the eye and nose lines. The four digitized images were superimposed according to Galton's instructions, each with a transparency of 25 percent.[18] The digital reconstruction exemplarily shows that minimal changes to the component images in terms of position, size, or image rotation determine the final result. It demonstrates that Ludwig's portrait in particular does not quite fit in. His nose always comes to lie slightly above the other noses due to his head being tilted back, leaving his nostrils somewhat separate from the others.

In terms of overall aesthetic effect and image detail, the digital reconstructions of the composite (figs. 9–11) show a high degree of similarity to the historical (analog) composite image. However, apart from the expected deviation in the background, the three digital reconstruction attempts performed by different operators make for a noticeable difference in terms of the physiognomy of the face, which has slightly harder features with more detailed, sharper skin areas than that of the siblings' surviving composite portrait (figs. 9–11).

This contrast raises numerous questions concerning the genesis of the analog composite portrait:

- Is it Ludwig's share that causes the more austere appearance of the digital composite, and might a very dull and flat portrait of Ludwig have been used for the analog composite, which appears softer and thus more feminine overall?
- Were the component pictures' contrasts and different grades of brightness, especially in Ludwig's case, not adjusted to each other for the original composite?
- Did certain component pictures' exposure times differ from each other so that the image of Margarethe, for example, appears most distinctly?
- Is Ludwig Wittgenstein's likeness possibly not included in the original composite portrait at all as his face seems to be inscribed so little in the picture? Is it only a superimposition of photographs of his three sisters or even a superimposition of these with the portrait of a fourth unknown (female) model?

In an attempt to find answers to some of these questions, several further digital overlay experiments were carried out:

- a superimposition of the four images Nedo refers to as the used portraits without brightness and contrast corrections of the flat likeness of Ludwig (fig. 12);
- a superimposition of what Nedo refers to as the used portraits of Hermine, Helene, and Margarethe without the picture of Ludwig (fig. 13);
- a superimposition of what Nedo refers to as the used portraits of Hermine, Helene, and Margarethe and another likeness of Ludwig[19] (fig. 14).

The results are astounding and provide valuable insights into the creation and effect of the composite.[20] It was found that the digital composite variants generally appear somewhat more austere and thus also more masculine—with and without Ludwig. Using the portrait of Ludwig with its contrast and brightness corrected (figs. 9–11) resulted in a harsher impression than that conveyed by the digital composite variant without Ludwig (fig. 13), which is more similar to the analog composite. This difference becomes marginal only with the uncorrected image of Ludwig (fig. 12). The superimposition using a different likeness of Ludwig (fig. 14) lines up with the new digital composite images in its harsher appearance in a similar way; his outlines integrate better, more invisibly, into the composite though. What is striking is the impression that Ludwig's light-colored shirt appears more clearly in both new composite variants.

[9]
Digital composite portrait based on figures 3–6 with uncropped margins, developed by Olivia Coeln, 2020

[10]
Digital composite portrait based on figures 3–6, developed by Taiyoung Ha, 2020

[11]
Digital composite portrait
based on figures 3–6,
developed by Andreas Gruber,
2020

Could the harder look of the digital experiments and the more visible shirt collar be evidence that only the sisters were depicted and Ludwig is not present in the composite at all? This hypothesis has to be rejected since the underlying individual portraits—excepting one—are unknown to us. Moreover, it is impossible to ascertain whether the exposures were positively made in equal parts, let alone whether the source photographs showed the same contrast and brightness.

Considering that it is not possible to differentiate the faces in the composite more precisely, a portrait of Ludwig's brother Paul (1887–1961),[21] who has never been mentioned in this context, or portraits of both[22] could just as well have been used instead of a photograph of Ludwig.

The difference between the digital reconstruction attempts and the original composite portrait can thus only be explained by the fact that other portraits of the siblings depicting them much younger served as material for the composite and that the position, size, alignment, exposure, and contrast of the component images were not identical. Partial exposures in different proportions aimed at suppressing some distracting details seem equally possible.

Since the superimposition of the component images by digital means does not provide a result remotely as perfect as the analog composite, manual postprocessing in the form of negative retouching must be regarded as very likely. This implies an additional visual change in the final result; the soft-focus effect is likewise due to technically perfect manual image manipulation. This caused a smoothing of the skin areas and thus an overall softer, feminine appearance.[23]

In contrast, the composite portrait of the von Brücke siblings appears more articulate and sharper. As parts of the face that do not exactly overlap are more clearly visible here, it may be assumed that homogenizing retouching, which would have been accompanied by a softer impression depending on the extent, did not play a major role in this case.

Material-technological considerations on the authenticity of the Wittgenstein siblings' composite and Moriz Nähr's authorship

The composite portrait of the Wittgenstein siblings is unusually small for Moriz Nähr (11.1 × 8.2 cm); the album portrait of Margarethe is even smaller (7.4 × 4.8 cm). Since Moriz Nähr sometimes used different negative formats in the reproduction process, as can be seen in Kirchtagtanz (*Fair Dance*, before 1909)[24] in detail, for example, the dimensions of the composite do not speak against Nähr's authorship though.

The composite image is also heavily cropped. Judging by the size of the head in the portrait, it may well have been exposed in the contact copying process typical of Nähr[25] from a large-format glass negative (e.g., 24 × 18 cm, 21 × 16 cm, 18 × 13 cm) still favored by the photographer for portraits in the 1920s, as several surviving examples show.[26]

Not to be disregarded is the fact that the legacy of Moriz Nähr's negatives from the Wittgenstein family's circle has been very marginal to date, which makes further comparisons impossible.

It should be remembered at this point that other (experienced) photographers were also able to make such composite photos at that time. Experiments of this kind were extremely popular, numerous instructions circulated in publications for amateur photographers.

Summary

Visual analysis of the Wittgenstein siblings' composite portrait shows that four photographs depicting Hermine, Helene, Margarethe, and probably Ludwig were used. The digital reconstruction indicates that only the likeness of Margarethe from the Wittgenstein album (ca. 1920–1925) is identifiable. The other portraits in the album were not used; this also applies to variants of these pictures assumed to be elements of the composite by previous research

Three photographs, which provided the source material for the composite, were taken at the same time and show the identical wall covering in the background. The fourth portrait was probably also taken at the same time but depicts a different background. Margarethe, whose portrait is the only surviving photograph from this series, is several years younger than in the comparable portrait series against a white background in the Wittgenstein album, which is dated to the early 1930s. The sitter's age suggests that the portrait series was photographed in the first half of the 1920s.

The digital reconstruction yields a similar but altogether more austere-looking composite portrait. However, this does not allow the conclusion that Ludwig is not present in the original composite. The digital composite portrait primarily shows that different source photos yield different results.

A definitive answer to the question of whether the photographs of the Wittgenstein siblings were taken for the composite portrait cannot be given here. Particularly the textile background, which brings a lot of movement into the picture, speaks against the assumption that the photos were taken with a composite picture in mind; it may well be that there was not even the intention to produce such a picture when the component photographs were taken.

The experiment elucidates that in the analog genesis of the work the combined negative must have been retouched to a greater or lesser extent or details scraped away to homogenize face areas that did not overlap exactly. Such a perfect result required a sophisticated and technically skillful approach. Moriz Nähr's surviving portrait negatives, for example, show such perfectly retouched faces.[27] On the one hand, every experienced photographer was basically able to perform such experiments. Considering the two analog composite portraits' (almost) identical pictorial effect of the facial parts and the fact that Moriz Nähr was active as a photographer in both families, however, the chain of evidence suggests to attribute these works to Moriz Nähr.[28]

[12]
Digital composite portrait
based on figures 3–6,
Ludwig Wittgenstein not corrected,
developed by Andreas Gruber,
2021

[13]
Digital composite portrait based
on figures 3–5 (without Ludwig Wittgenstein),
developed by Andreas Gruber,
2021

[14]
Digital composite portrait based
on figures 3–5 with a different portrait
of Ludwig Wittgenstein (see note 19),
developed by Andreas Gruber,
2021

Notes and references

1 Ludwig Wittgenstein refers to Galton's composite photography for the first time in his lecture on ethics on November 17, 1929. See Michael Nedo, ed., *Ludwig Wittgenstein. Ein biographisches Album* (Munich, 2012), 268.

2 See Elisabeth Kamenicek, »The Wittgensteins, Visually«, in Verena Gamper and Hans-Peter Wipplinger, eds., *Ludwig Wittgenstein. Photography as Analytical Practice*, exh. cat. Leopold Museum-Privatstiftung, Vienna (November 12, 2021–March 6, 2022) (Cologne, 2021), 24–39, ill. 38.

3 Vereinigung bildender Künstler Wiener Secession, ed., *Wittgenstein. Biographie, Philosophie, Praxis*, exh. cat. Vienna Secession (September 13, 1989–October 29, 1989), Palais des Beaux-Arts, Brussels (December 15, 1989–January 28, 1990) (Vienna, 1989), 156–157.

4 Nedo 2012, see note 1, 269.

5 Portraits of the von Brücke family can be found in the Brandstätter Collection, Vienna, for example.

6 Nedo 2012, see note 1, 268–269.

7 Photo album of Ludwig Wittgenstein, undated, 16 × 9.8 × 3 cm, Cambridge Wittgenstein Archive.

8 See also Michael Nedo, »Familienähnlichkeit: Philosophie und Praxis. Eine Collage«, in *Ludwig Wittgenstein. Ingenieur –Philosoph – Künstler*, ed. Günter Abel, Matthias Kroß, and Michael Nedo (Wittgensteiniana, ed. Matthias Kroß and Jens Kertscher, vol. 1) (Berlin, 2007), 163–178.

9 Francis Galton, »Composite Portraits«, *Nature*, vol. 18, no. 447, May 23, 1878, 97–100; id., »Composite Portraiture«, *The Photographic Journal*, June 24, 1881, 140–146. Thanks are due to Verena Gamper (Leopold Museum-Privatstiftung, Vienna) for making me aware of this.

10 Hermann Schnauss, »Combinirte Porträts«, in id., *Photographischer Zeitvertreib. Eine Zusammenstellung einfacher, leicht ausführbarer Beschäftigungen und Versuche mit Hilfe der Camera* (1892), 8th, enl. ed. (Leipzig, 1903), 139–146.

11 After the geologist and amateur photographer W. Jerome Harrison (1845–1908).

12 With the resulting thin slides, many different variants can be assembled from a portrait series of siblings, for example, by omitting individual images and be viewed pressed between two panes of glass. Schnauss also describes the making of composite images with portraits in profile view. This is interesting insofar as the Wittgenstein album also contains numerous profile pictures of the siblings. Whether these have been used as source material for another composite cannot be answered.

13 Publications for amateur photographers from around 1900 abound with suggestions and instructions for making doppelgänger pictures, ghost photographs, etc. relying on various methods of multiple exposure. See, for instance, Alfred Parzer-Mühlbacher, *Photographisches Unterhaltungsbuch*, 4th ed. (Berlin, 1915).

14 Software: Adobe Photoshop 2021. The composite image was used as the background over which the component portraits were stacked as separate levels, each scaled at reduced opacity based on the composite. Color information of all levels was discarded, and the portraits were converted to grayscale images. The composite and the respective individual image to be checked were colored in the complementary colors red and green. Congruent parts of the images yield a more neutral tone when superimposed with reduced opacity, while non-matching areas retain their respective hues and remain visible as red and green multiple contours.

15 Not, however, the photo from the album but another print of the same negative.

16 Thanks to Olivia Coeln for carrying out the digital overlays.

17 Structures not found in the textile pattern in the photograph of Margarethe.

18 Software: Adobe Photoshop 2021. The analog composite image was used as the background over which the individual portraits were bedded as separate levels, each scaled at reduced opacity based on the composite. Color information of all levels was discarded, and the portraits were converted to grayscale images. Finally, the analog composite image was completely masked out so that only the levels above it came into play for the genesis of the image.

19 Moriz Nähr, *Ludwig Wittgenstein. Portrait for the conferment of the Trinity College scholarship 1929*, 1928/29, gelatin silver glass negative, 24 × 18 cm, Klimt Foundation, Vienna, inv. no. KF S188/92.

20 It should be emphasized once again at this point that each operator may be faced with a slightly diverging final result due to different rotation, scaling, etc.

21 Which must be considered rather unlikely as he wore a tie and glasses.

22 Unfortunately, the component pictures such as Margarethe's portrait or those of the other sisters cannot be digitally subtracted from the analog composite image to see if anyone and which person remains from it. Intent on bringing new image information to light, one will find it impossible to proportionally subtract complete individual images from a gray or black area with limited density of blackness that has been created by superimposition and in which several individual images have acted on the same silver halide particles through exposure.

23 Slight blurring can also occur, however, when details are copied and enlarged from a negative, as can be observed repeatedly in Nähr's case in the portrait variants of Gustav Klimt with cat or Gustav Mahler for instance, both of which are based on the same source negative.

24 Moriz Nähr, *Dancing at the Fair*, three gelatin silver glass negatives, Klimt Foundation, Vienna, inv. no. KF S188/11, KF S188/12, KF S188/13. See also Uwe Schögl and Hans-Peter Wipplinger, eds., *Moriz Nähr. Fotograf der Wiener Moderne*, exh. cat. Leopold Museum-Privatstiftung, Vienna (August 24, 2018–October 29, 2018) (Vienna and Cologne, 2018), 100–103, and Uwe Schögl, »Moriz Nähr and the Vienna Secession. Interrelationship between Photography and Painting«, ESHPh, ed., *PhotoResearcher*, no. 31, 2019, 126–129.

25 Nähr exposed »small-format« photographs of up to 21 × 27 cm—a category in which the composite portrait also falls—exclusively from negatives of the same size using the contact process.

26 For example, the en-face portrait of Ludwig Wittgenstein, 1928/29, gelatin silver glass negative, which even measures 24 × 18 cm, see note 19.

27 At this point, thanks are to be extended to Verena Gamper (Leopold Museum-Privatstiftung, Vienna) for the constructive discussions and exchanges during the preparation of the exhibition *Ludwig Wittgenstein. Photography as Analytical Practice*, as well as to Uwe Schögl, Sandra Tretter, and Peter Weinhäupl, managers of the research project *Moriz Nähr (1859–1945). Photographer for Habsburg, Klimt, and Wittgenstein. Catalogue Raisonné*, as well as the Klimt Foundation team.

28 Further multiple exposures of photographic experiments that, according to Michael Nedo, can be found in Helene's photo albums but were not available for this investigation might provide essential insights into the genesis of the composite photograph. See Kamenicek 2021, see note 2.

Location and image credits

[1]
Composite portrait of the Wittgenstein siblings, undated, gelatin silver print, 11,1 × 8,2 cm, Cambridge Wittgenstein Archive, inv. no. 598

[2]a
Register plate, drawing from Francis Galton, »Composite Portraits«, Journal of the Anthropological Institute 8, April 30, 1878, 133

[2]b
Successive exposures on the same glass negative, drawing from Francis Galton, »Composite Portraits«, Journal of the Anthropological Institute 8, April 30, 1878, 134

[3]
Moriz Nähr: Hermine Wittgenstein, from Wittgenstein's photo album, undated, gelatin silver print, 5,4 × 4,2 cm, Cambridge Wittgenstein Archive

[4]
Moriz Nähr: Helene Wittgenstein, from Wittgenstein's photo album, undated, gelatin silver print, 10,2 × 7,2 cm, Cambridge Wittgenstein Archive

[5]
Moriz Nähr: Margarethe Stonborough-Wittgenstein, from Wittgenstein's photo album, undated, gelatin silver print, 7,4 × 4,8 cm, Cambridge Wittgenstein Archive

[6]
Moriz Nähr: Ludwig Wittgenstein, from Wittgenstein's photo album, undated, gelatin silver print, 6 × 3,7 cm, Cambridge Wittgenstein Archive

[7]a
Detail of the collar area and the textile structure of the jacket from the analog composit portrait (fig. 1)

[7]b
In comparison, a detail of the collar area and the textile structure of the jacket from the portrait of Ludwig Wittgenstein (fig. 6)

[8]
Detail of the analog composite portrait (fig. 1) with additional structures in the form of curved shapes in the background on the right

[9]
Digital composite portrait based on figures 3–6 with uncropped margins, developed by Olivia Coeln, 2020

[10]
Digital composite portrait based on figures 3–6, developed by Taiyoung Ha, 2020

[11]
Digital composite portrait based on figures 3–6, developed by Andreas Gruber, 2020

[12]
Digital composite portrait based on figures 3–6, Ludwig Wittgenstein not corrected, developed by Andreas Gruber, 2021

[13]
Digital composite portrait based on figures 3–5 (without Ludwig Wittgenstein), developed by Andreas Gruber, 2021

[14]
Digital composite portrait based on figures 3–5 with a different portrait of Ludwig Wittgenstein (see note 19), developed by Andreas Gruber, 2021

Mag.art. Andreas Gruber

born 1970 in Linz. Restorer with a focus on photography and graphics at the Wien Museum, as well as freelance at the Institute for Paper Restoration in Schönbrunn Palace. Teaching activity at the Centre of Image Science at the Danube University Krems. Numerous lectures, workshops and publications on the processes and technological history of photography and photomechanical printing processes.