**PFENNINGER BACKGROUND and BIBLIOGRAPHY**

1899 München; †07.1976

<http://www.centerforvisualmusic.org/LevinPfen.pdf> (the main reference for all secondary sources)

<http://kinotuskanac.hr/en/director/pfenninger-rudolf>

<http://distributedcreativity.typepad.com/reading_group/2006/04/new_media_old_m.html>

NEW>>Info from Stefan Droessler at the Munich Filmmuseum:

“Pfenninger worked for the Filmmuseum by recreating intertitles for silent film restorations like DER MÜDE TOD (you can find them even in the new restoration). “ << new very very cool.

Andor Krasna-Krausz, “Beginning of the Year in Germany,” Close-Up 10 (March 1933): 76.

“Soundless Film Recording,” New York Times (Jan. 29, 1933), Sect. 9, 6.

R. Prévot, “Musik aus dem Nichts: Rudolf Pfenninger’s ‘Tönende Handschrift’,” Münchener Neueste Nachrichten (Oct. 20, 1932). Reprinted in Sophie Duplaix and Marcella Lista, eds., Sons et lumières: une histoire du son dans l’art du XXe siècle (Paris: Éditions du Centre Pompidou, 2004), 34. Exhibition catalogue.

Jeanpaul Goergen: Das Wunder des gezeichneten Tons. Die „tönende Handschrift“ von Rudolf Pfenninger (D 1932). In: Filmblatt, Nr. 9, Winter 1998/99, S. 15-17.

James, Richard S. “Avant-Garde Sound-on-Film Techniques and Their Relationship to Electro-Acoustic Music.” *The Musical Quarterly*, vol. 72, no. 1, 1986, pp. 74–89. [www.jstor.org/stable/948107](http://www.jstor.org/stable/948107). (accessible with UvA account)

Patteson, Thomas. “‘Sonic Handwriting’: Media Instruments and Musical Inscription.” *Instruments for New Music: Sound, Technology, and Modernism*, University of California Press, Oakland, California, 2016, pp. 82–113, [www.jstor.org/stable/10.1525/j.ctt1ffjn9k.8](http://www.jstor.org/stable/10.1525/j.ctt1ffjn9k.8). (accessible with UvA account)

[“IT LOOKS LIKE SOUND!” : DRAWING A HISTORY OF “ANIMATED MUSIC” IN THE EARLY TWENTIETH CENTURY](http://drum.lib.umd.edu/bitstream/handle/1903/10458/Robertson_umd_0117N_11315.pdf;sequence=1) (MA Thesis 2010)

**FILMS BY PFENNINGER**

Where are they? Make a search in other archives**?**

Check Filmmuseum München Stefan Drößler (no online catalogue)

Production company: Produktion: Münchener Lichtspielkunst [emelka] AG (1915-19Res33)

Distributer: Bayerische Film-GmbH [de]

<http://www.imdb.com/name/nm0679468/>

[Drossler introduces Tonende Handschrift](http://www.nyu.edu/orphanfilm/orphans7/audio/Orphans7_Day4.25_DrosslerIntroducesTonende.mp3) “before he died he gave all the prints to the munich film museum”

Pfenninger’s early animations include *Largo* (1922), *Aus dem Leben eines Hemdes* (1926), *Sonnenersatz* (1926), and *Tintenbuben* (1929).

\*Serenade, Barcarole and Pitsch and Patsch are usually grouped together as *Tönende Handschrift* 1-3. Copies of this version can be found at the bundesarchiv [films in bundesarchiv](http://www.diaf.de/de/home/rubriken/Blog_Detailseite.html?b=367), but are not the only copies available.

1925 Zwischen Mars und Erde (Animation)

1932 Das Wunder des gezeichneten (Tones Regie, Drehbuch, Animation, Ton)

[*Das Wunder des gezeichneten Tones*](http://www.bundesarchiv.de/benutzungsmedien/filme/view/K264943?back_url=filme%2Falpha%2FT%2Fpage%3A19) (35mm)

1932 Serenade (Ton)\*

1932 Barcarole (Ton)\*

1932 Pitsch und Patsch (Animation, Ton)\*

[Pitsch und Patsch](http://www.bundesarchiv.de/benutzungsmedien/filme/view/K72023?back_url=filme%2Falpha%2FT%2Fpage%3A20)(35mm)

1932 Kleine Rebellion (Ton)

[Then became a set designer 1939-52](http://www.filmportal.de/person/rudolf-pfenninger_5d0941133aee4ad7b0f05e1c2845b443)

*Die tönende Handschrift: Eine Serie gezeichneter Tonfilme eingeleitet durch ein Film-Interview* (Sounding Handwriting: A Series of Hand-Drawn Sound Films introduced by a Filmed Interview) premiered at the Munich Kammerlichtspiele on October 19, 1932. The program—which EMELKA circulated to cinemas throughout Europe in late 1932 under the title *Die tönende Handschrift*50— consisted of *Kleine Rebellion* and *Pitsch und Patsch,* two “groteske Puppenfilme” by the brothers Diehl entitled *Barcarole* and *Serenade,* and a “Naturfilm” entitled *Largo.* These were preceded by a fascinating pedagogical documentary entitled *Das Wunder des gezeichneten Tones* (The Wonder of Hand-Drawn Sound) (which was also released as a newsreel announcing the new discovery) and consisting of an illustrated history of sound recording followed by an on-camera interview of Pfenninger by the charismatic film personality Helmuth Renar.

[Geschichte des deutschen Animationsfilms (Gesamtausgabe](https://absolutmedien.de/film/200/Geschichte+des+deutschen+Animationsfilms+%28Gesamtausgabe%29) 2011) - The three handschrift films were released on DVD (not sure if restored, arthouse distributor: Absolutely MEDIEN GmbH)

De ontrouwe vrouw (Serenade)

**PFENNINGER AND SOUND**

<http://handmadecinema.com/mobileview.php?id=49>

<http://www.centerforvisualmusic.org/LevinPfen.pdf> (P52 onwards)

Technology used: oscilloscope

“Schablonen oder Drucktypen,” Max Lenz, “Der gezeichnete Tonfilm,” Die Umschau 36, no. 49 (3 December 1932): 971–973. N. “Despite the potential visual appeal of their sinewave

and saw-tooth forms, Pfenninger’s curves are decidedly not ornaments but are rather, as numerous critics have rightly noted, ‘templates or print-types’

“patterns, drawn on paper with pen and ink and photographed directly onto the margin of the film reserved for the sound track.” (According to some kind of ‘musical alphabet’?)

“In music, sounds are distinguishable by their pitch, strength, length and timbre. What does this tell us when it is translated into the language of visual forms?

The approach of a sound-emitting body directly towards the viewer from the back of the screen (the coordinate which is horizontal and perpendicular to the screen) indicates the increase in the **strength** of a sound.

Perpendicular (i.e. vertical) movement across the plane of the screen indicates the **pitch** of the tone.

Horizontal transference across the plane of the screen (from right to left and vice versa) along the time axis indicates the **length** of a sound.

A change in the very object emitting the sound indicates a change in **timbre**, the tint of the sound” (Avraamov)

“Unlike Fischinger, however, Pfenninger seems to have been motivated less by synaesthesial speculations than by economic necessity. According to the story, the poorly paid inventor Pfenninger was eager to provide a soundtrack for the experimental animations he was making on the side, but he could afford neither the musicians nor the studio to record them”

“Pfenninger’s curves are decidedly *not* ornaments but are rather, as numerous critics have rightly noted, “templates or print-types”63; that is, semiotic entities that can be combined to produce sounds in a linguistic—which is to say, thoroughly technical and rule-governed—manner “

**HISTORY OF DRAWN SOUND**

<http://www.umatic.nl/tonewheels_historical.html> (awesome timeline)

<http://asmir.info/gsound1.htm>

http://asmir.info/graphical\_sound.htm

<https://motiondesign.wordpress.com/2007/04/13/rhythm-in-motion/>

<http://www.mariskadegroot.com/wp-content/uploads/2011/08/Seeing-Sound-Future-Loving-Machines-Mariska-de-Groot-2012.pdf>

<https://blog.animationstudies.org/?p=291>

<http://divergencepress.com/Journal/JournalIssue/tabid/85/ID/13/Sound-and-image-relations-a-history-of-convergence-and-divergence.aspx>

<https://www.nfb.ca/film/pen_point_percussion/>

<http://handmadecinema.com/mobileview.php?id=41>

**OTHER SOUND PIONEERS**

The first practical sound-on-film systems were created almost simultaneously during the early 1930s in the USSR, USA and Germany. Pfenninger’s research deserves to be compared closely not with Fischinger but rather with the very similar—and similarly analytic—investigations into synthetic sound undertaken at the same time in the Soviet Union by Arseny Avraamov, Nikolai Voinov and Aleksandr Ivanov, who cut out saw-toothed sound shapes from paper in the form of contoured combs, each representing a halftone, which could then be used repeatedly and in various combinations much like the basic formal vocabulary of visual animation; and by Evgenii Sholpo, who developed a very successful circular “disc” variation on Voinov and Ivanov’s combs.

**Arseny Avraamov:**

*“what if we take some Egyptian or ancient Greek ornaments as a sound track, perhaps we will hear some unknown archaic music?* “

In 1930 Arseny Avraamov was the first to demonstrate his experiments of animated sound on film. Also in this year he founded the Multzvuk group in Moscow. In order to produce his first drawn animated sound tracks he had on staff including animator Nikolai Voinov and acoustician Boris Yankovsky. [**https://monoskop.org/Arseny\_Avraamov#Film\_sound\_research\_.281929.E2.80.9336.29**](https://monoskop.org/Arseny_Avraamov#Film_sound_research_.281929.E2.80.9336.29)

<https://www.youtube.com/watch?v=8EGFPZdiVqI>

**Nokolai Voinov:**

In 1931 Nikolai Voinov left Multzvuk group and start- ed his own research as a developer of paper sound techniques. With great precision Voinov cut combs of ‘sound’ waves out of paper and photographed them on the soundtrack area. He invented the ‘Nivotone’ which could play back musical sequences created by feeding the combs into its slots.

**"Rachmaninov Prelude", 1932** [**https://www.youtube.com/watch?v=Z7Zb4rso82M**](https://www.youtube.com/watch?v=Z7Zb4rso82M)

**“Vor” (*Thief*), 1934** [**https://www.youtube.com/watch?v=6U4lRtjw9q0**](https://www.youtube.com/watch?v=6U4lRtjw9q0)

**Boris Yankovsky :**

Boris Yankovsky left the Multzvuk group in 1932 and developed a system of animated sound in which he abandoned the frame-by-frame shooting or wave cards. Instead he printed the drafted patterns on continuous rolls by means of a rotating gear system[a], the Vibroexponator.

**Evgeny Sholpo:**

Evgeny Sholpo’s Variophone, 1932[**https://www.youtube.com/watch?v=YiIB36ZY0WM**](https://www.youtube.com/watch?v=YiIB36ZY0WM)

**Oskar Fischinger:**

Looking at the hand-drawn soundtracks of Oskar Fischinger and comparing them with those of Pfenninger, Avraamov, Voinov or Yankovsky it’s obvious that he approaches animated sound in a more visual way. They look more like ornaments then calculated sinusoidal waves.

"Between ornament and music persist direct connections, which means that Ornaments are Music. If you look at a strip of film from my experiments with synthetic sound, you will see along one edge a thin stripe of jagged ornamental patterns. These ornaments are drawn music - they are sound: when run through a projector, these graphic sounds broadcast tones of a hitherto unheard of purity, and thus, quite obviously, fantastic possibilities open up for the composition of music in the future". (Oskar Fischinger)

[**http://www.centerforvisualmusic.org/Fischinger/SoundOrnaments.htm**](http://www.centerforvisualmusic.org/Fischinger/SoundOrnaments.htm)

**László Moholy-Nagy:** TÖNENDES ABC (1933). The original film went lost. http://whiteclipper.blogspot.nl/2014/11/on-may-23rd-1936-laszlo-moholy-nagy.html

**Three documentaries on Optical Sound:**

* *Der Tonfilm* (Dir. W.L. Bagier, 1934)
* British documentary *How Talkies Talk* (Dir. Donald Carter, 1934)
* DIE TONENDE HANDSCHRIFT (Germania, 1932)

P.: Emelka. Con Rudolf Pfenninger, Helmut Renar. D.: 13'. 35mm. V.O. From Münchner Filmmuseum (shown at Il Cinema Ritrovato festival in 1993)

**SERENADE THE FILM**

Was it censored like other works by Pfenninger?

Copyright or public domain?

**PHOTOS**

<http://www.umatic.nl/tonewheels/historical/painted_soundtrack.jpg>

[tonende handschrift screengrab](https://3636b2d4-a-62cb3a1a-s-sites.googlegroups.com/site/orphans7/home/tnende-handschrift/TonendeHandschrift1932.png?attachauth=ANoY7crzCUY7k87xV8dtodvjELJzqP0xgA3wlK-GK7m0TbavDskqbxpbvYMkOjI5cmHBYFjipF_FX1amR_YAlQsiqeLPxqCRvb0G37m4WfwFPQYY5zcBNQanA3CRxFQTv9g9uLPDGw-rvXqY9z9zXr6i8PdLbqwTxZoXI3wvM0se3g16UuqjFOg4wys-3M1N1erpb24nGuj5qAtmOdbhH6PsO4uwvzgqesiwFtlWIoSsczFRknBcXWQwlWiedNf01jU-Mw95wVeh&attredirects=0)

Serenade: <https://absolutmedien.de/bilddatenbank/bilder/201/Serenade.jpg>

Barcarole: <https://absolutmedien.de/bilddatenbank/bilder/201/Bacarole.jpg>

**FILMS (YOUTUBE ETC)**

Filme im Schatten (1977) Documentary on animation film in the 1930s - serenade clip used

<http://www.filmarchives-online.eu/viewDetailForm?FilmworkID=d56dede463d376c637fbdd4701e6ab8d>

**OTHER RESTORATION PROJECTS**

Films by Fischinger have been restored. Cindy Keefer, Director of LA's [Center for Visual Music,](http://www.centerforvisualmusic.org/) which is dedicated to this particular genre of experimental film. CVM recently announced that it has received funds from the Avant-Garde Masters Grant (which is funded by The Film Foundation and managed by the National Film Preservation Foundation) to preserve three reels of Fischinger's original 35mm nitrate film experiments from his Raumlichtkunst multiple projector performances of the 1920s. <<we should email her

[Restoration of variable density film soundtracks](https://hal.archives-ouvertes.fr/hal-00834503/document)

the optical soundtrack undergoes the same type of degradations as the images of the film (dust, scratches,.etc). Moreover, since the soundtrack is close to the extremity of the film, it is sometimes degraded by abrasion or altered over a large surface due to moisture. The soundtrack might also be badly exposed. This problem is due to the diffusion of light during different duplication processes.

In most cases, the restoration of the soundtrack is performed in the sound domain, using signal processing methods, in spite of the fact that it is recorded as a continuous image between the film images and the perforations. Working with the image representation of the soundtrack has several advantages. First, the defects are visible at the image level. Most importantly, an image-based restoration makes it possible to preserve the authentic sound as it was originally recorded, whereas an audio-based restoration might cause the loss of this authenticity (by filtering a noise which was originally present in the sound for instance).

[EFFICIENT RESTORATION OF VARIABLE AREA SOUNDTRACKS](https://www.ias-iss.org/ojs/IAS/article/viewFile/854/757)

[Film Sound in Preservation and Presentation](https://pure.uva.nl/ws/files/2007438/138459_thesis_print.pdf) (MA Thesis)

[Digital Image Based Restoration of Optical Movie Soundtracks](http://retouche.free.fr/download/report_streule.pdf)

“Digital AIR works by employing precision high-definition optics to capture high-resolution images from optical audio tracks and transfer them onto multi-processor computers. Once the images are stored onto disc, Technicolor Creative Services' patented image processing software is used to clean and restore the resulting high-definition digital images.” <http://www.mi2n.com/press.php3?press_nb=44153>

**FINANCIAL PLAN/BUDGET**

**FUNDERS/SPONSORS**

Avant-Garde Masters Grant funded by The Film Foundation and managed by the National Film Preservation Foundation