NECSUS

# The instability of the digital archive: How to deal with pixels by hand

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How does creative research in the film and digital arts, which captures the archives and practices of found footage, confront the possibilities, limits, constraints, political issues and criticism of resolution? With the multiplication of formats – unlike the MP3 'the most common form in which recorded sound is available today',[i] the compression codecs of the image are numerous – and technical devices for shooting (smartphones, cameras), filmmakers and ethnographers working with imaging technologies face many dilemmas, both theoretical and empirical. One of them ends up in a radically different position. First of all, from an empirical point of view the plurality of moving image formats shows how much the very idea of an 'ontological stability', always 'defined by its structure rather than by its material make-up […] despite repair, renovation, and even outright replacement',[ii] is pure ideology. However, since the emergence of digital image technologies in the mid-1990s, many industrial players insist on the contrary. They contend that the continuity of practices is guaranteed by multiple formats and image resolutions – a multiplication that would serve the stability and durability of recording media. For more than a decade now, the illusion created by such discourses has been sharply criticised by research based on ethnographic surveys of amateur practices and the work undertaken by avant-garde filmmakers.[iii]

The field of practice at the intersection of anthropology and the filmic arts is particularly influenced by the question of image formats and resolutions and that of the ontological stability of visual documents. It is therefore, from this field of practice that we, as a collective, have studied these entanglements, analysing first of all how the resolution of images can be an important factor in the collection, re-use, and re-composition of digital archives, while accounting for the theoretical, methodological, political, and plastic implications of the resolution of images for a work that chooses to take it head on while entering the field of social sciences. Starting from the experience of ethnographic surveys, films, and installations produced within our collective, we will answer these questions by combining three approaches: an empirical approach, describing as closely as possible the moments and movements of an art-based research that unfolds over a 'methodology invented as projects progress';[iv] an anthropological approach, anchored in a field investigation work (ethnographic) and archiving collected images; and finally, a historical and genealogical approach, inscribing the gestures and corpora engaged by the collective in a history of the technologies of the image in Romania and a genealogy of avant-garde cinema.

Formed in 2015, the research of the Brèches collective is based on a work of ethnographic investigation, film making and archiving of family films (home movies made with smartphones, 'commissioned home movies'[v]), and an analysis and critical comparison of images by montage and film re-use. The work of the collective is the culmination of a digital cinema practice, woven image after image, working the pixels by hands. Films and installations were, therefore, produced by two pairs of hands. This collective research is also formed by gestures, more specific, and specific to the various members of the collective (either writing algorithms or the practice of ethnographic inquiry). In this case, we will take care to designate the name of the member of the collective concerned (Jonathan Larcher and Leyokki).

Composed to this day of a short film, *Romani Memory #1 – Amintire* (*RM#1*), and an installation, *Romany Memory #2 – Manej* (*RM#2*), presented in the form of a performance-conference made in collaboration with a French writer of gypsy origin, Jacques Debot, the work of the collective grasps images and sounds at the margin of ethnography, art history, and documentary film to make political and critical issues emerge from figurative and technical contentions. The series of short films engaged with *RM#1* and *RM#2* focus more specifically on Romani memories (Roma/Gypsies) from an archive of ethnographic images, home movies, and judicial images.

It is, therefore, from this empirical approach that we will present three issues of our research that closely touch image resolution and materiality (to the detriment of their stability or ontological structure). We will first describe the importance of the resolution of images in the becoming-archive of digital images, an essential dimension of the genesis of our project, before further specifying the gestures by which we have perceived the resolution of images, as a way to access the materiality of the medium or to find its texture. Finally, the singular conditions of composition, acquisition, and digitisation of the collective's ethnographic archives open a field of research on the place and function of various technological regimes constituting the practices of visual ethnography or the surveys in social sciences using image technologies.

## Ethnography of the becoming-archive of digital images

The research of our collective originates in a series of defects and instabilities of digital technologies; defects that are partly induced by the technological regime of investigative work and the collection conducted on the ground, in the 'Gypsy Hood' (*ţigănie*) of a Romanian village, and others, more fortuitous and specific to the low tech material used for shooting these home movies. These defects are both the triggers and the objects of our research, opening a horizon towards possible plastic interventions, while transforming a corpus of images and vernacular filmic practices into archives, which will thus form the main material of *RM#1* and *RM#2*. To put it more precisely, the development of these works does not rest solely on the collection of images, but rather on an ethnography of the becoming-archive of these images.

By no means does it mean that our work is reduced to an analysis of the recording of ethnographic images.[vi] The ethnography of the becoming-archive of the images collected in this Gypsy Hood is in fact a detailed observation of the temporalities, the movements, the practices, and the experiences that constitute these digital images – today, largely disappeared. As Gilles Deleuze and Félix Guattari rightly point out, the *becoming*-archive is not a state, 'a resemblance, an imitation', or 'an identification' – it is not images that have become archives.[vii] Rather than a production, this becoming is an *ongoing* process, a composition with *something else*, without leading to this other (The Archive).

The investigation conducted by Jonathan Larcher in a community of Roma (who call themselves *Ţigani*) in Romania resulted in the creation of a corpus of more than 300 hours of rushes and a thesis on the filmic arts in anthropology. Most of Larcher's images are recorded for the purpose of making two documentary films. In addition to the development of this filmic corpus, he took many images for his interlocutors, following their spontaneous requests and the vernacular uses of amateur video, essentially devoted to family celebrations, such as weddings and baptisms. In addition to this practice of 'commissioned home movies', for which he was sometimes paid in accordance with the local custom, he made and collected videos in the privacy of the domestic sphere for less solemn occasions, such as birthdays, lending at times a small camera to his interlocutors (most often women). Between 2007 and 2010 few people filmed or held a camera. The few MiniDV cameras that circulated in the Gypsy Hood were mostly exchanged or recovered, rarely purchased. They worked poorly or were rarely used because of

all the equipment they required (cassettes, cables, computers), and the first smartphones were just emerging (Fig. 1). Without proper storage media, these images disappeared most often after a few months. The phones were exchanged and DVDs, delivered without plastic cases, were viewable for a few months at most. The imperfections in digital media were such that Larcher's interlocutors regularly entrusted him with the task of keeping and copying the videos of family celebrations that they had recorded elsewhere. Today, all these first domestic digital videos, filmed in extremely low resolution, have disappeared.



Fig. 1: Home movies shot with a first generation mobile phone in Dițești, 2008.

The historicity and temporality of these images is explained by their inscription in a short parenthesis of the history of filmic and photographic amateur technologies in Romania. This period (2007-2011) corresponds in fact to that of the arrival of digital image technologies in Romanian society – a historical sequence that is interposed between 'relics' of family films recorded on celluloid or analogue video under the communist regime (1945-1989),[viii] and the explosion of connected uses of photography and video, for six years. However, this period of short transition does not mean that there is an exponential increase of cameras and digital cameras in the Romanian domestic space, resulting in 'the excess of family memory',[ix] as this was also observed

for example in France between the late 1990s and the end of the 2000s. It is ultimately with the massive arrival of smartphones, laptops, and broadband Internet connections in rural areas in Romania, at the beginning of the 2010s, that image technologies were fully domesticated, relegating all these images and low-tech digital technologies to the status of memories.

These digital images do not have as their only attribute their very low resolution or the great imperfection and the significant compression of the video signal, characteristic of the technical devices used. The videos recorded in the Gypsy Hood between 2007 and 2010 are also characterised, on the experiential level, by a horizon of expectations that prolongs the experience of shooting in situations towards a future use more than uncertain, and in reality often technically impossible, given the lack of appropriate tools.

The video sequences of the movie *RM#1* belong fully to this set of images. Directed in the summer of 2009, at the request of Cornel's family for the birthday of his daughter Ana, these images were first produced to provoke a staging of the present situation (the birthday) rather than for later viewing. While the darkness is almost total during the long scene where they sing happy birthday under the direction of Ana's father, he asks the ethnographer to film the young boys who are married to his daughters probably less to see them on the image rather than to bring them out of the shadows. The recorded MiniDV cassette was never digitised as a DVD, and ended up among the cassette tapes accumulated during the investigation. Thus, five years later, during the digitisation of these video tapes classified as 'souvenir' tapes (*Amintire*, written on the case), the digitisation quickly became laborious, while no incident occurred with the tapes recorded with the DVCAM camera used for the survey. Given the poor quality of the optical system, the unique CCD sensor of the MiniDV, the high rate of compression of the video signal, and the use, for this camera only, of cassettes of different brands (each manufacturer uses a specific composition for the magnetic coating of video tapes), digitised images on the hard disk were affected by several losses and recording defects.[x] These scenes of birthdays, bathing infants, and family images filmed at the fun fair reappear, punctuated by numerous 'drop-outs'[xi] and a systematic shift of sound and image. Among these tapes, the one of Ana's birthday held our attention (Fig. 2).
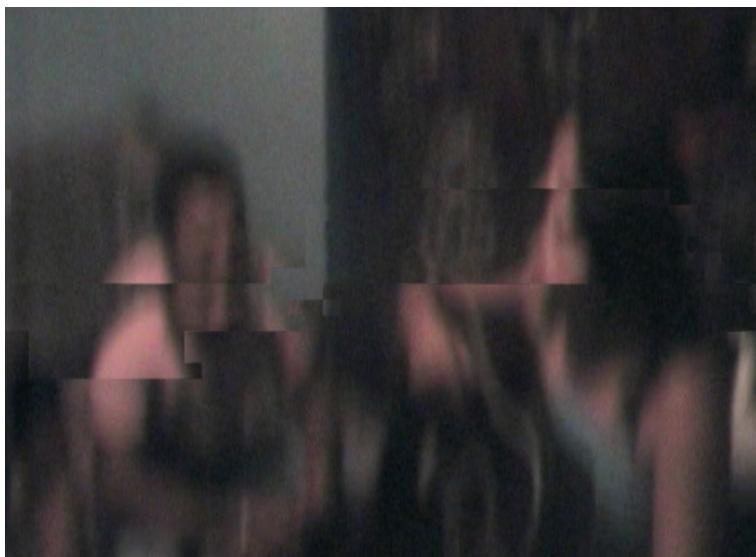
Fig. 2: DV Amintire #5 (Dițești. Summer 2009, Ethnographic Archive).

Recording defects initially make these images difficult to watch, and even more difficult to listen to, because of the white and digital noise that punctuates the digitised audio channels. The sequence does not present any particular element for an ethnographic investigation, which would attach to the idiosyncratic, to the idiomatic, or to singular visible forms of the Gypsy Hood. Like many home movies, the use of the filmic device is essentially oriented towards the creation of an atmosphere of harmonious familiarity. It is precisely this contrast between many recording defects and the effort of Cornel to regroup his family around him and in the field of the image – less for a future use, already established or projected, and more *only for the experience they have in the situation*. The sonic and visual textures that result from this chaotic digitisation seem to represent the fragility and ephemeral nature of this memory in the making. Thus, it appears to us that the work on digital material must, therefore, prolong the flaws introduced by the deterioration of the video tapes and their digitisation within these images, to further explore their temporality and the materiality of digital material. Characteristic of the becoming-archive of these recorded images – as of all those recorded in this Gypsy Hood at this period – the low resolution of images shot with this MiniDV is also the driving cause of the types of figurative processes at work in the composition and film re-engagement, initiated after the digitisation of these video tapes.

## The textility of image resolution

With this fragmentation of images and sounds, the ontological and technical stability of the recorded image is put into question. It is then the materiality of the images that becomes first and central, a material that unfolds in the distance between pixels, in the hollow of the frames or in the difference between the image and the sound. Therefore, digital noises and glitches are no longer considered as deteriorations, but rather as first glimpses of textures, which we exploit as autonomous organisms through our own algorithm.

The faults of the mechanical device open up a field of manual intervention, which by the diversion of the resolution of images seeks to work on the matter to extract the images,[xii] whether the material of origin is high or low resolution, digital or film, fixed or moving. By superposition, reframing, rephotographing, and fragmentation, our plastic interventions on these digital archives of the Gypsy Hood and the other corpus mobilised as so many revealers (in the chemical sense of the term) are part of the tradition of an avant-garde cinema which practices a re-use of film footage (of which Yervant Gianikian and Angela Ricci Lucchi are the most important figures and actors[xiii]), and a materialist approach for which 'the dialectic of the film is established in that space of tension between materialist flatness, grain, light, movement, and the reality is represented'.[xiv] Thus, what can be seen as an attack on the integrity of the original material is here conceived as a revelation: the glitches and dead pixels are due to instabilities of the physical components, and defeat the supposed stability of the medium. Their presence underlines the material dimension of the recording (the lack of technical tools, the resolution of the images produced), as opposed to an approach, which conceives the medium as transparent, apprehending the images by the only *accountability* that they offer things and filmed beings.

For *RM#1*, it is the so-called 'degradations' of the digitised material (glitch, dead pixels, offsets between the image and the sound) that give us access to the material image – that is to say, in the case of digital images, to pixels. As an extension of the sonic and visual textures produced by digitisation, which seemed to represent the fragility and ephemeral nature of this memory and these archives in the making, it seemed interesting to prolong the movement and the empowerment of pixels and sounds from the MiniDV. This access to the materiality of the image is provided by the algorithmic processing of the images of Ana's birthday. The image contains degradations, which are made organic and proliferating parts of its fabric through an algorithm written by

Leyokki. This treatment considers each pixel individually and makes it evolve according to its surroundings. The algorithm in question is inspired by *Game of Life*, by John H. Conway.[xv] This is a mathematical game, in which a set of cells, having two possible states (1 or 0, alive or dead), evolve as follows:

1.   *Survivals*. Every counter (cell) with two or three neighbouring counters survives for the next generation.

2.   *Deaths*. Each counter with four or more neighbours dies (is removed) from overpopulation. Every counter with one neighbour or none dies from isolation.

3.   *Births*. Each empty cell adjacent to exactly three neighbours – no more, no fewer – is a birth cell. A counter is placed on it at the next move.

The algorithm conceived by Leyokki is taken over and applied to the images: what is meant as an 'alive' or 'dead' cell is translated as a 'black or white pixel'. It is thus the contours and forms that are affected by this treatment, and the evolution of the states and its variations are translated into an animation that disrupts and disintegrates the figures.

Each pixel thus seems to act as an autonomous agent, influenced only by its immediate neighbours, unlike a vision that captures the pixel as an element of a colour block. By setting in motion the development of pixels already present, this technique amounts to considering the appearance of pixels called 'dead' as an emergence rather than an empty image. It is thus opposed to the forms of glitch art such as 'data-mosh',[xvi] which proceed by subtraction, by playing compressions in which information is erased, to be replaced by glitches.

The use of this algorithm, as a filter modifying the perception of the images, induces, in practice, a very particular apprehension, because it is applied to each image independently of the flow in which it is constituted. To put it another way, each image is interpreted as *Game of Life*, it evolves according to these rules (with the perturbation that it induces) and is reintegrated into the flow of images. Where the algorithm differs from a visual effect simply applied to images is the very principle of *Game of Life*, because it is constituted in an interrelation of cells in their environment, following a structure of chaotic order: deterministic but non-reversible,[xvii] and whose result varies radically due to a minimal difference in the initial conditions. In this way, each image develops an independent structure, which ultimately gives an organic result.

What we define as organic, in our images, is played in a definition extremely close to what can be understood as *resolution*. The algorithmic work, by exploding the contours, creates a set of elements becoming interdependent, and shows how the resolution of the images that one perceives as a structural datum, a monolithic block gathering non-breaking elements, is actually fragmented, decomposable, to be recomposed. In this way, this work of recycling and editing, particularly by the writing of an algorithm, shows how filmmakers and practitioners of the image are rather 'makers' working with their own properties, 'not necessarily predisposed to fall into the required shape of the world, let alone indefinitely'.[xviii] The very impact of the digital material, the fact that the images both are disturbed by the instability of the components, and at the same time that this instability is the very source of a proliferating image, then attributes to the images and to the degradations a true 'textility'.[xix]

This observation of the materiality and resolution of images as a 'textility' rests on two parameters of interpretation of the initial image: the threshold allowing to attribute to a pixel the status of being dead or alive, and the resolution of the image. The first parameter is the threshold. Each image must first be interpreted as a set of binary cells to be able to follow the rules of evolution of *Game of Life*. This interpretation is done through a threshold, assigned in this case to the colour channel Green (on the RGB set). On a given image, if a pixel has a value of green (a value defined between 0 and 255) greater than 'x', then this pixel is defined as alive. In fact, the value of 'x' is itself subject to evolution (in a sinusoidal form), from 80 to 120, in order to produce an even more unstable result. Once this threshold is defined, the second parameter that radically transforms the image produced is its resolution. Indeed, the same square and white block (considered as living) can be read as a single living pixel, or as a set of four white pixels for example; in this way, in the next step, there would be no more alive pixel (first solution) or four white pixels (second solution), because these are all surrounded by three living cells. The result produced is therefore directly induced by the low resolution of the image.

The influence of both resolution and threshold on the result is a good example of where our practice of dealing with pixels by hand fits. On the one hand, it means that our algorithm depends on each pixel taken separately, not as a block (like in a datamosh process or methods entailing compressions). We connect the idea of the 'hand', in the digital, to a lace-like practice, to an

attention to details. And, through this attention, we try to grasp the materiality of the image. This produces the chaotic appearance of the resulting image, the organic look of our digital practice. On the other hand, we also calibrate the threshold manually. We are quite literally changing the lines of code of our program and recompiling it until we get a fitting result. What we were looking for here is an instable image, shifting between shapes and matter.
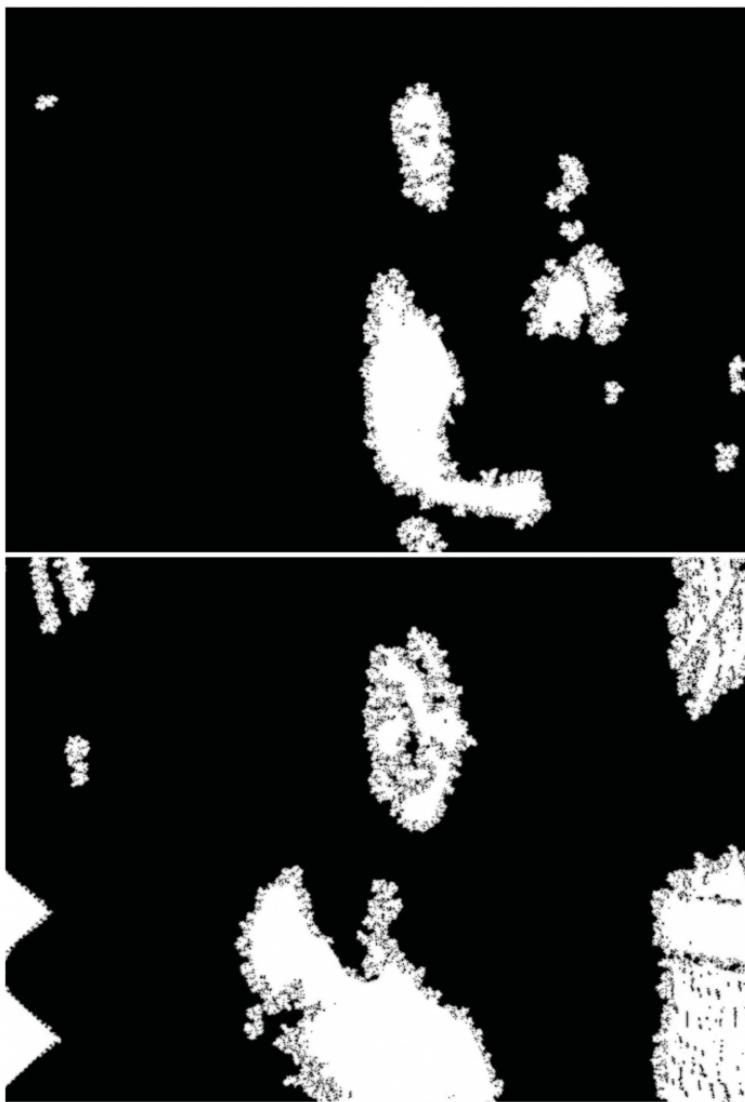


Fig. 3: First experimentations with algorithms.

Instead of 'degradation' we propose the ideas of autonomisation and 'textility': the 'dead' pixels are actually pixels whose colour value is independent of the entire image. However, we encountered difficulties in arranging this digital material with the images filmed in MiniDV. Our multiple attempts only led us at first to a vulgar superposition of pixelated evolutions and filmed sequences of the birthday, or to a total dissolution of one in the others (Fig. 3). We made the link then through another corpus, which we already wanted to address: judicial photographs by Carl Durheim on 'Stateless People and Travellers' (*die Heimatlose und Fahrende*), in the canton of Bern in 1852.[xx] From a plastic point of view, the chromatic or sonic aberrations of the MiniDV and the grains of the digitised salt paper of the Durheim photos are progressively part of the same project. The graft is immediate, the salted paper and the digital material form a single organic material.
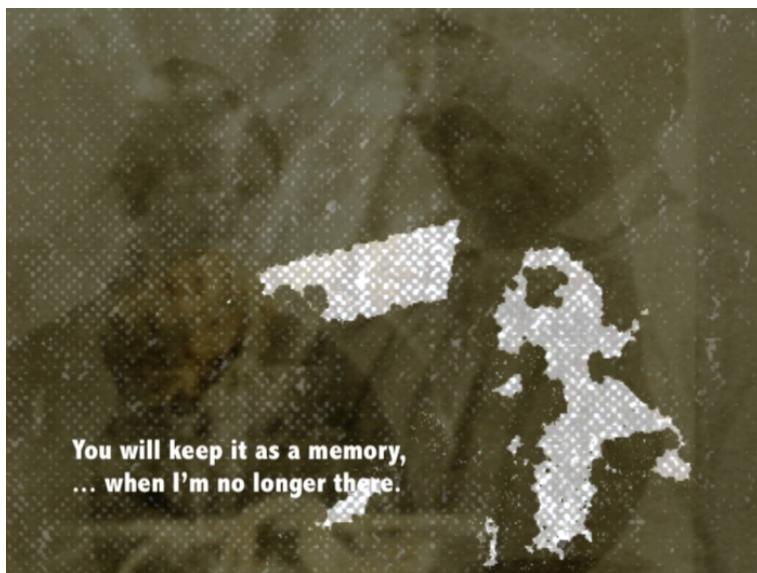


Fig. 4: Photogram of RM#1 (2016).

Fig. 5: Photogram of RM#1 (2016).

If the graft takes as well (Figs 4 & 5), it is because the judicial photographs are not left as they are. Digitised at very high resolution (4800 dpi), they exceed by far the resolution of the images from the MiniDV. Our choice here, guided also by the desire to subvert the primary role of these photographs – identification[xxi] – is not to resize these images, but to let them overflow from the image. Therefore, we transform the very high resolution in a cutting factor. Each photograph is thus fragmented into a set of pieces – a piece of salted paper, where a hand, a part of a face, fabric, or simply the material of the digitised salted paper appears. Again, the image is texture before becoming a figure. Fragmented clichés are thus transformed into a digital material, from which fragmentary details of judicial photographs and movements of the video sequence of the MiniDV arise. The 'textility' of these proliferating images produced by a constant back-and-forth between high and low resolution, between recorded images and exogenous digital material, finally blurs the lines ordinarily drawn between matter and the figures presented in the image. On the other hand, the work of the collective consists in opening up possibilities to produce levels of readability, which give the same attention to these two elements.

## From technological sub-regimes to resolution parity

Such plastic interventions on the resolution of recorded images (filmic or photographic) also raise critical and ethical issues. The genesis of the film opens a field of research on the forms of *technological sub-regimes* that establish *methods of classification* and hierarchy of images at the heart of the investigation by the image in social sciences and documentary cinema.

In his study of Kodak culture in the United States, which prefigures many works on film and amateur photography, Richard Chalfen notes that, despite the fact 'that home movies [...] would be extremely rich in ethnographic data' anthropologists and sociologists have not lent 'sustained attention' to these objects.[xxii] This disinterest is not only empirical, it is also technical. The original imperfections in the images of *RM#1* result from the inattention given to these forms of images and also due to the low-resolution technologies with which they were produced.

This lack of 'sustained attention' first explains the use of a small entry-level MiniDV camera (Samsung VP-D381), exclusively reserved for domestic shots like birthday parties and the digitisation of cassettes used for the shooting of documentary films – made with a DVCAM camera (Sony DSR PD150). It is probably this same inattention that leads to the inadvertent use of cassettes of different brands, and left at the bottom of a cardboard box with a separate numbering (*Amintire* – 'souvenir' in Romanian), inscribed on the case. Thus, when digitising video tapes that are not used by documentary films, these 'souvenir' tapes are the last to be played in a video tape recorder borrowed for the occasion. Digitising becomes very laborious very quickly when no incidents have occurred with the tapes recorded with DVCAM.

*RM#1* thus proceeds directly from the organisation of a filming and an investigation according to different technological regimes. The use of these technological sub-regimes within the investigation relationship and the filming relationship – in the form of services rendered – is for the moment only recognised during informal discussions, exchanged during private discussions. A more openly reflective discussion would reveal the implications of a filmic practice organised around these shifts between low and high resolution. There is no doubt that this would make tangible the analytical grids that prevail in the scrapping by social sciences of whole areas of low resolution images, and this in disciplines where the issue of image resolution is reduced to the amount of detail in the image or the quality of detail rendering.[xxiii] If *RM#1* is part of this critical side of technological sub-regimes, it

also belongs to a tradition of filmic creation that, free from any controversy or questioning, invents forms at the intersection of vernacular film practices and technologies of low resolution image. *Le Pendule de Costel* (2013), directed by Pilar Arcila, occupies a place at the forefront in this history of forms, to our knowledge yet unpublished. By mounting the images made with a MiniDV camera by Costel, a Romanian Roma living between France, Switzerland, and Romania, with his own images made in Super 8 (silent, black and white), the filmmaker takes care to attribute a plastic and descriptive legitimacy to the images of his interlocutor. In this way, the amplitude and the depth of the two image registers form a true plastic dialogue, which, in terms of resolution, behave as equals. This is a commitment that Nicole Brenez has very accurately identified by way in which it 'establishes an editing method that is neither alternating nor parallel, but that we could qualify as auxiliary, between her own Super 8 images and the digital ones of a gypsy family', producing a 'high density visual experience that is at the same time ethical and aesthetic'.[xxiv]

The work of the Brèches collective is fully in line with this counter-history of the use of technological sub-regimes – by its critique of material processes that delegitimise low-tech videos and archives, both plastic and epistemic. It also participates in *the development of a plastic parity* between vernacular images and exogenous images (made by filmmakers, investigators, ethnographers) contrary to a common practice that opposes them according to their low and high resolution. It is from the confrontation of the digital videos of the Gypsy Hood with the judicial photographs of Carl Durheim, and then the setting in motion of these clichés by algorithms, that this search for a plastic parity emerges in our work. The fragments of the photographs are mounted consecutively at a very high frame rate, breaking down the images into lines and spaces of pure texture (digitised salted paper: the background of the photographs), without ever presenting the faces and the figures photographed. Rather than sifting through the very strong symbolism attached to the motifs present in these shots, the re-use of film footage focuses on presenting the texture of the pieces of photographs cut by the algorithms. The challenge is to transform Durheim's clichés – and their judicial status, consisting of ambivalent and even contradictory motives – into a modus operandi to neutralise and suspend the symbolic elaborations engaged by the spectator, paradoxically activated by a film whose title is *Romani Memory*. For this reason, information on the origin of these shots are given at the end of the film through a very succinct text. During the fifteen seconds preceding

these few final lines, the presentation of the photographs is never done in their totality, and these always appear mixed between them.

The strange familiarity – because a priori opposed – between the digital noise and the grain of the salted paper concretises one of the first hypotheses emitted to define the horizon of our intervention. The material produced by the grafting of these different digital materials comes unexpectedly close to the specific aspect of the silver photographs of the families of the village of Dițești – that are drawn on cardboard and pinned on the walls of the 'family home' (*casa bătrânească*), or crumpled, stained, and literally decomposed by their piling in the drawers, or digitally rephotographed and published on Facebook (Fig. 6). Cropping, pen marks, folds, spots, the materiality of these family photographs corresponds with the erasure or retouches in pencil brought to Durheim's photographs, occasions that, in several places, come to highlight or resume a facial feature or a line of clothing (Fig. 7).



Fig. 6: A silver photograph from D.

Fig. 7: Fragment of Anton Appel portrait. Photography by Carl Durheim (1852).

Thus, *RM#1* and *RM#2* are not only composed in opposition to archetypes produced by cultural industries, by state authorities, or by social network users to profile, control, or denigrate Gypsy and Roma families. The work of plastic intervention is first and foremost a way of archiving and figuring the singular materiality of the photographic and videographic images made, exposed but also, and often, poorly preserved by the inhabitants of the Gypsy Hood, and to requalify these vernacular images by transforming their resolution. By working on the texture of the images in MiniDV, we aim to give these images the aspect of the visual culture of Dițești and to both archive it and present it in a public space. To this end, the reasons for photographic clichés are reduced to the state of shapeless materials by a sapping work conducted with the algorithms. Thus, reduced to the state of digital material, the salt paper photographs, digitised in high definition, operate as a developer, which brings out from the material itself the resolution, the grain, and the frame of vernacular images. It is therefore by *translation* that the images of this birthday party acquire this texture and materiality specific to the visual archives of the Gypsy Hood. From a documentary point of view this work is all the more important as most of the first digital videos recorded in the Gypsy Hood have now disappeared, as mentioned earlier, and the conditions for storing family photographs contribute to the gradual erasure of the prints they have in their possession, and the circulation – in digital formats and on social networks – which are also characterised by their low resolution, their instability, or a certain lack of appropriation (by Facebook in particular).

Complementarily, the requalification of family archive images of the Gypsy Hood requires a transformation of their resolution. In doing so, we

voluntarily reverse the values currently associated with high and low resolution in digital archives, i.e. the *heritage value* of the national archives, and the *authenticity* of low-res amateur images. Thus, in *RM#2*, the compressed images of mobile phones are projected on a white wall lined with fiberglass and rephotographed with a still motion camera, loaded with a positive film. Image by image, these souvenir images are re-recorded so that the grain of the fiberglass is superimposed on the texture of the digital image. Projected through a slide carousel as one of the five screens of the *RM#2* installation, these images appear with a new texture – an almost pictorial grain. From this point of view, our practice echoes Giovanna Fossati's observations on how 'practice is in a constant state of transition, characterized by a growing hybridization between analog and digital technology'.[xxv]



Fig. 8: A digitised slide from the installation RM#2 (2017).

## Conclusion

The resolution of images, whether low or high, is conventionally regarded as an ontological value that determines both the form and the identity of these images. Contrary to these approaches that *structurally* think the images, we have experienced, through a succession of lived and filmed situations and plastic events, the materiality of the images and the textility of their resolutions.

From this experience, we have developed a practice that combines the collection of low-resolution vernacular images, 'hand-made' pixel processing, and special attention to technical defects. This allowed us to unveil a set of technical, political, and historical regimes of classification and hierarchy of images, and the figurative elements that constitute them.

This research, developed collectively, allowed us to build our works in the wake of a critical history of processes that delegitimise both plastic and epistemic videos and low-resolution archives. While in several fields of film practice (we have limited ourselves here to those of documentary cinema and human sciences), the distinction between low and high resolution seems to close the status of the image – vernacular images, institutional archives, or documents – and the work on the videographic corpus of the Gypsy Hood of the village of Dițești and the judicial photographs of Carl Durheim led us to question the materiality of the becoming-archive of the digital low tech, and to work rather on the ground of a resolution parity, opening up opposing images in terms of resolution. This recycling of materials threatened by defective technologies resulted in an inversion of ratios (between noise and detail, between texture and figure) recorded in each of the two corpora. While the very high-resolution scan of the judicial photographic portraits renders figures and grains extremely precise, we have chosen to disaggregate the pixels, to corrode the resolution – fragmenting all the patterns and portraits – to transform them in formless digital material, able to preserve the texture of the vernacular images recorded in MiniDV and to reveal the plastic events and the figures. The work done around *RM#1* and *RM#2* opens, we hope, new horizons of investigation for a policy and a critical study of the instrumentalisations and the sidelining of low resolution images in the history of cinema and media, while forming an additional argument in favour of the springs and stakes precisely raised by a research that develops and unfolds through the filmic arts.

## Authors

Jonathan Larcher is a filmmaker and an anthropologist. He completed a Master of Anthropology at the EHESS in Paris and a Master of Film Studies at the University Paris Sorbonne Nouvelle. He received his PhD in Anthropology at the EHESS. After conducting a long ethnographic survey into a Gypsy

Hood in Romania, his research and creative work explore the epistemological and methodological issues raised in anthropology by audiovisual practices, vernacular images, and archives. He is currently co-editing a book on the experimental filmmakers Yervant Gianikian and Angela Ricci Lucchi.

Leyokki is a weaver of 'lines of flight'. Artist and film-maker, he works on non-verbal meaning, representation of nature, ecology, and hand-made algorithms. His practice focuses on computer-generated images, altered through layers of compositing, in order to recompose a sense of organicity within digital images. Mostly autodidact, his work consists of hand-crafted visual essays and installations. With the collective Orama, he organised the first Cinegraphic Hackathon, dedicated to Open Source and Free Software, at La Paillasse in 2018. He co-founded the Brèches artist collective with Jonathan Larcher in 2016.

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# Notes

[i]     Sterne 2012, p. 1.

[ii]    Nagel & Wood 2010, p. 8.

[iii]   For a critique of the media and photographic industries, see Merzeau 2006 and Jonas 2010. For a critical approach of the film industries 'technicides' and a perspective of technical determinations by avant-garde filmmakers, see Brenez & Jacobs 2010.

[iv]    Delacourt & Schneller & Theodoropoulou, 2016, p. 13.

[v]     Aasman 1995, p. 105.

[vi]    The transformation of ethnographic images into archival images is at the center of several research groups: see in this regard the various ethnological collections of the Consortium 'Archives des Ethnologues' (https://ethnologia.hypotheses.org/).

[vii]   Deleuze & Guattari 1980, p. 291.

[viii]  The rare historiographical research on photography and amateur film under the communist regime exposes the many 'blind spots' and the difficulty of dating precisely the beginning of these practices. See Bădică 2012, pp. 40-62; Blos-Jáni 2013, pp. 77-92; Blos-Jáni 2016, pp. 40-62.

[ix]    Jonas 2010, p. 102.

[x]     To judge the difference between a camera equipped with a tri-CCD sensor, with a sensor for each color (red, blue, green), and a single-sensor camera, as well as various recording defects see Bellaïche 2002. Precise and concise, the manual of Philippe Bellaïche considers that: 'the DV is a totally digital format and therefore supports direct copies without any degradation. *Drop-out* problems, which are particularly irritating in analogue, are definitely eliminated thanks to error correction, as well as band noise' (p. 355). For a fine and critical description of these digital image technologies, see Jacobs 2014 and Jacobs 2017.

[xi]    'A magnetic tape is not immune to local disparities in the distribution of ferromagnetic particles [generating] more or less significant level falls on the read signal, resulting in the image by the loss of one or several lines. This defect is commonly called *drop-out*.' Bellaïche 2002, p. 309.

[xii]   'The image is generated by the material […]. Within the material, there is the image, which requires to be extracted.' Gioli 2003, p. 16.

[xiii]  See Hibon & Païni 2000, pp. 97-104.

[xiv]   Gidal 1976, p. 1.

[xv]    For a more complete explanation see Gardner 1970, pp. 120-23.

[xvi]   http://datamoshing.com/

[xvii]  Prigogine & Stengers 1984, pp. 257-90.

[xviii] Ingold 2010, p. 93.

[xix]   Ibid., pp. 91-102.

[xx]    221 photographs by Carl Durheim have been digitised and deposited on Wikimedia Commons by the Swiss Federal Archives (Schweizerische Bundesarchiv). The lithographies made from the snapshots, grouped in a single document, are also scanned and available on Wikimedia.

[xxi]   On the context of the realisation of these clichés and their different purposes see Jäger 2001.

[xxii]  Chalfen 1987, p. 50.

[xxiii] On this point see Larcher 2018.

[xxiv]  Brenez & Larcher 2015.

[xxv]   Fossati 2011, p. 26.