

DISINTEGRATION AND REPETITION: AN ANALYSIS BASED ON WILLIAM BASINSKI

Manuel Bogalheiro

ABSTRACT

Our starting point is the musical piece *Disintegration Loops*, by William Basinski. This work is about one hour long and consists in an *ostinato* that deteriorates into noise, and finally into silence. Basinski digitized the sound of old tape loops he had recorded in the 1980s, storing them in a computer drive; as the loops were played in the magnetic reader, they began to deteriorate due to the accumulation of dust and oxidation. The reproduction of the sound and the effort to preserve it led to its destruction, which was itself recorded into a new medium. The present article questions the effects of migrations between different media (analogue/digital) and the tension between the technical crystallization of symbolism and the inevitable entropic destabilization it generates. The internal structure of Basinski's piece highlights the notion of repetition as an equally unstable and dynamic form, which creates something new. It suggests, moreover, a criticism of the determinism and the automatism that sometimes take over the technical realm, regarded as a "perfect circle". Moving along this circumference, with the deterioration this gesture implies, and with the hesitation and the human rhythms it evokes, one realizes that the circle is not perfect, and that "disintegration" is ultimately a metaphor for human nature.

KEYWORDS

Determinism; disintegration; entropy; repetition; transcodification; transduction

RESUMO

Partimos da peça musical *Disintegration Loops* de William Basinski. A obra, com cerca de uma hora de duração, é constituída por um *ostinato* que se deteriora até ao ruído e, por fim, ao silêncio. Basinski digitalizou o som de velhas bobines de *loops* feitas por si nos anos 80 para memória em disco; por força do pó e da oxidação, ao serem tocadas no leitor magnético as fitas começaram a degradar-se progressivamente. A reprodução do som, e o esforço para a sua preservação, implicou a sua destruição que, ainda assim, ficou gravada num novo meio. Questionam-se aqui os efeitos das migrações entre meios (analógico/digital) e a tensão entre a cristalização do simbólico pela técnica e a irreduzível instabilização entrópica que daí resulta. A estrutura interna da peça acentua a noção de repetição como uma forma também instável e dinâmica que cria algo de novo. Esboça-se então uma crítica ao determinismo e ao automatismo que por vezes revestem a técnica e a tomam como um "círculo perfeito". O percorrer dessa circunferência, com o desgaste que lhe provoca e com as hesitações e os ritmos humanos, mostra que tal círculo não é perfeito e que a "desintegração" é, afinal, metáfora da natureza humana.

PALAVRAS-CHAVE

Desintegração; determinismo; entropia; repetição; transcodificação; transdução

The time of the world is that of irreversibility, and the time of memory that of absolution.

Gertrude Stein

So one must be resigned to being a clock that measures the passage of time, now out of order, now repaired, and whose mechanism generates despair and love as soon as its maker sets it going? Are we to grow used to the idea that every man relives ancient torments, which are all the more profound because they grow comic with repetition? That human existence should repeat itself, well and good, but that it should repeat itself like a hackneyed tune, or a record a drunkard keeps playing as he feeds coins into the jukebox...

Stanislaw Lem, *Solaris*

TRANSCODIFICATION AND THE IMPOSSIBILITY OF STABILIZATION

William Basinski (1958, Texas, USA) studied jazz and classical music (clarinet, saxophone and composition) before he started experimenting, in the late 1970s – influenced by composers such as Steve Reich, Brian Eno or Gavin Bryars – with the manipulation and re-recording of cassette tapes, from which he extracted brief musical passages he then organized in repetitive compositions. This experimental technique, based on the repetition and appropriation of existing sound material (*found sounds*), would become his main creative form. It would give rise to an original aesthetic style, close to *minimalism* or *drone* music, recognizable by its dark textures and by the languid rhythm of extensively repeated musical phrases. With more than 20 albums released so far, Basinski has always aimed to bring the musical material he produces into direct relation with the experimental procedure he employs. This direct relationship between method and result has been regarded, by Basinsky himself and by the critics, as an exercise that inspires, both technically and symbolically, a reflective approach to the issues of time, memory, corrosion, loss, fading, frailty, instability or randomness.

In 2002, William Basinsky releases the first version of *Disintegration Loops*, the most important work of his career¹. The musical piece, about one hour long, consisting in an ostinato² whose repetition deteriorates gradually into silence, is the result of the transcodification from an analogue into a digital medium: having found recordings of orchestral material in tape loops he had made in the 1980s, Basinsky decided to digitize the

¹ The piece would end up being intimately connected to the tragic events of September 11th 2001, in New York. When *The Disintegration Loops* was released, Basinski explained that he happened to be finishing production on the work the day the World Trade Centre was attacked, having listened to the piece as he watched the towers collapse from the roof of his apartment building in Brooklyn. The mood, the sound and the recording process itself led to the piece being regarded as an elegiac tribute to that traumatic event.

² In musical language, an *ostinato* is a musical motif or pattern that is persistently repeated, unaltered or with slight variations, throughout a musical piece. The Italian origin of the term is not without its relevance, as it derives from what might be translated into English as “obstinate”. Currently, the English term “loop” seems to be replacing the Italian term “ostinato”, at least in the domain of popular culture.

sound of the brief repetitive sequences recorded on tape into a computer drive. What began as a simple recording procedure became a paradoxical *performance*, which was itself recorded: due to the accumulation of dust and oxidation, the tapes, as they were played in the magnetic reader, began to deteriorate, repetition after repetition. This transformation affected the sound to such an extent that the brief orchestral sequence heard in the beginning became nothing more than noise, and finally silence. Instead of stopping the reproduction or trying to reduce the noise, Basinski allowed the technical process to run freely and take control of the unpredictable sound reconfiguration. He saw the anomalies as *compositional forces* and realized that only by betraying – or disintegrating – the original material could he create something new in the process. The reproduction of sound led to its destruction, and what is perceived in the new digital recording as “sound disintegration”, towards noise and silence, testifies to the “physical disintegration” of the tapes, until they were nothing more than useless magnetic tatters. The movement of repetition brought home an irreversible fact: everything that moves forward – everything “that goes by, and finds therein its essence”³ – is eventually worn out, *disintegrated*. The effort to preserve the sound, by playing the tape, brought about the destructive action of time, which was itself recorded into a new medium, creating thereby something new. In Basinski’s own words:

when the disintegration was complete, the body [of the tapes] was simply a small band of transparent plastic with some clinging chords; the music had turned to dust and had been dissolved along the ribbon in small mounds and remnants. However, the essence, the memory of the life and death of this music, had been saved: recorded and remembered in a new medium.
(Basinski, 2012)

The emotional tension Basinski extracts from the piece’s production process is also the image of a certain indiscernibility, regarding the simultaneously creative and destructive power of technique. It is this image that endows the piece with the cultural imprint of the contemporary age, a time that is both affected by the idea of loss, possibly with regard to the modern era, and open, as a means of compensation, to new and uniquely transformative modes of production, territorialization and conquest – from the macroscale of the planetary space to the microscale of the human genome. Accordingly, Basinski’s piece can be heard not only as the result of a recording process, but also as a dynamic sound *event* that exemplifies, with each new reproduction, the physical and temporal limits conditioning the modes of production and the conquest of experience. The sound embodies the entropy that haunts any attempt to capture what is formless, continuous or unstable. It is the consciousness of this natural impulse towards degradation that is gradually aroused in the listener as the sound exposes itself, until it is nothing more than the inaudible trace of its initial form.

³ “Life goes by, and that is its essence”, verse from Ruy Belo’s poem “Splendour in the Grass”. Belo, R. (2009) *Todos os Poemas*. Lisbon: Assírio & Alvim.

The technical procedure of transcodification from an analogue into a digital medium, which William Basinski resorted to in *The Disintegration Loops*, is decisive to grasp the full scope the work's effects. What is initially at stake – and Basinski gestures towards this aspect, even though he was not fully aware of it – is one of the key conditions of contemporary media theory: the ability of recording, reproduction and transmission media to bring about the constant *appearance* of new configurations of the real – or, in other words, their ability to introduce new sensuous organizations of the world's matter.

Going back to the late 19th century, to the emergence of the phonograph, photography or cinema, and considering their mutual migrations and their legacy to the contemporary age, it is clear that these technical media had a profound impact in the way time and space came to be perceived. Walter Benjamin's seminal observations on this issue, in his essay on the work of art, still resound today: “with the close-up, space expands; with slow motion, movement is extended” (Benjamin, 1968, p. 236), regarding the photographic camera; and particularly with regard to time, “slow motion not only presents familiar qualities of movement but reveals, in them entirely unknown ones” (Benjamin, 1968, p. 236). The film camera, on the other hand, with “the dynamite of the tent of a second”, would enhance the “comprehension of the irreversibility which rules our lives” (Benjamin, 1968, p. 236).

The new symbolic expressions produced by the technical media testified to the possible existence of a plasticity of the real, and especially of time – a time which, through the new reproduction techniques enabled by editing, could be petrified, extended, delayed, condensed or accelerated – a time that could be mobilized through the auxiliary means of machines, through “its lowerings and liftings, its interruptions and isolations, its extensions and accelerations, its enlargements and reductions”, creating thereby an empire that Benjamin called “unconscious optics” (Benjamin, 1968, p. 237). In short, in these technical gestures, where the “mechanical equipment has penetrated so deeply into reality” (Benjamin, 1968, p. 233), what was at stake was not only the possibility of getting to know other nuances of a reality that became open to operationalization, but also the fact that anyone in possession of recording and reproduction instruments could become an operator and transform anything liable to be technically apprehended.

However, although this technical plasticity reconfigures reality and time, it is nonetheless concomitant with a certain “crystalizing” effect, which the media apply to what they capture. Its technical nature entails a quest for preservation and archival storage (the same quest that motivated Basinski), along with the yearning to overcome oblivion – or, as André Bazin wrote, also with regard to cinema, “to save oneself from the ephemerality of life through the perpetuation of instants” (Bazin, 1976, p. 81). This technical determination of time, aside from the totalizing evolution of devices, seems somewhat paradoxical: once it became clear that all media would evolve into machines designed to stabilize and condense time, it was also evident that this stabilization could only come about through a plastic exploration of what was *crystallized* – that is, time could only be *halted* through an unstable succession of stages, or a permanent reworking: the power, born out of technical operationalization, to transform time into a *being in a state of*

*becoming*⁴. Returning to the cinema, the technical repetition of 24 frames per second, with its stabilizing effect, granted above all by its rotating mechanic, is the only way of transmitting a force – always variable, modulating and, to a certain extent, fallible – to the moving images.

The repeating orchestral sequences of *Disintegration Loops* offer an extreme illustration of the idea that the technical stabilization of symbolic matter, in this case connected with its own preservation, implies endowing it with a dynamic that was previously inexistent. In a way, this aspect had already become manifest when Basinski recorded the orchestral passages in the 1980s, on magnetic tape, turning them into *ostinati*, or repetitions, by means of cutting and recontextualizing techniques. But it became even more noticeable as he transferred the recording into a digital format, in 2001. The recording did not lead to the petrification of the material, but to its continual metamorphosis. This process is characterized by a double circular movement: the *mechanical circularity* of the reels, which deteriorates, with each new *technical repetition*, the sound contained in the tapes, and which exposes, with the erosion of time on the materials and their contents, new musical motifs; and the *structural circularity* of Basinski's music, which reveals, with each new *formal repetition* or *loop*, the effects of the media's material action on the sensuous realm, thereby showing that repetition, within a piece's internal logic, is the source of creative difference, rather than confining redundancy. According to Søren Kierkegaard, "the dialectic of repetition is easy, for that which is repeated has been – otherwise it could not be repeated – but the very fact that it has been makes the repetition into something new" (Kierkegaard, 1983, p. 149)⁵.

In *Disintegration Loops*, mechanic and structure, or technique and form, come together to highlight the impossibility of stabilizing an already closed set of units; indeed, what is ultimately being highlighted is the impossibility of a perfect and original unit. The technical procedure of transcodification that Basinski resorts to when transferring the loops from an analogue into a digital format reveals a new perspective on the relationship between the minimalism of form, with its constraints and delimitations, and the entropic obstinacy of its units, with their tendency towards unpredictable and unrestrained dynamics. Many contemporary musical pieces have insisted on this relationship, notably by composers like Steve Reich or Philip Glass. But the main reference is still Maurice

⁴ This aspect is also mentioned by Basinski. In an interview given to the website Mountain*7, the musician explains: "I was just blown away by what had just happened and I was incredibly moved by the whole redemptive quality of what I'd just experienced, that each of these loops had disintegrated in its own way and its own time, yet the life and death of the melody was redeemed in another medium". Retrieved from <https://mountain7.co.uk/?/archives/236-William-Basinski-Interview.html>.

⁵ As it is known, Kierkegaard is one of the authors that inspired Gilles Deleuze's theory of repetition – and hence, indirectly, his theory of the actual and the virtual, a conceptual pair that is also relevant to our present discussion. According to his philosophy, whereas the virtual corresponds to the result of becoming – and therefore to the realm of *difference*, of what is *new* – the virtual – since it coexists with every new actuality – corresponds to what is *repeated*. In other words, whereas everything new that arises is the result of a process of differentiation, virtualities and differences repeat themselves, in the form of tensions, problems, the tendency to *become another*, heterogenesis. Therefore, repetition does not refer to the same, identical thing, which happens again and again, while everything else remains the same. Rather, it refers to the tendency towards change. Repetition can only be understood through its counterpart: to repeat is to reinvent, and thus to change the nature of things into something previously unknown. *To repeat is to begin again*. This is also why repetition is never a redundant gesture, referring to something that already was, but always a creation of difference. (Deleuze, 1994)

Ravel's 1928 *Bolero*, the piece that contributed the most to popularizing the ostinato form. When one compares the two pieces, it is obvious that they evolve in different directions. Whereas in Ravel's work the movement culminates in an *explosion*, in Basinski's it decreases towards *disintegration*. But despite the opposite directions followed in both pieces – and herein lies the main point – there may not be an actual difference between what is left after the explosion and what is left after the disintegration, provided that one accepts the possibility of a coincidence between beginning and end. Both pieces show how the simplicity of form and its apparent circumscription can produce, through the instability generated by small, ever-evolving variations, a complexity that unfolds independently of what was originally *codified*. Deleuze and Guattari note, with regard to Ravel's piece:

Bolero is the classic example, nearly a caricature, of a machinic assemblage that preserves a minimum of form in order to take it to bursting point. (...) [The] proliferations of little motifs, [the] accumulations of little notes that proceed kinematically and affectively, [the] sweeping away a simple form by adding indications of speed to it; this allows one to produce extremely complex dynamic relations on the basis of intrinsically simple formal relations. (Deleuze & Guattari, 1987, p. 271)

FROM ENTROPY TO THE COEXISTENCE OF LEVELS

From the perspective of a systems theory, Basinski's piece seems to complexify the division introduced by the conceptual difference between an open and a closed system. The proof of its hybrid nature, halfway between process and object, is expressed by two complementary aspects, which reflect the piece's materiality and (sound) effect. First, it becomes apparent in the action exercised by the physical environment and the external conditions that determine the physical disintegration of the reels and the reconfiguration of sound. The act of playing/recording is hereby perceived as a physical and chemical process, which heightens the effects and shapes the sensuous forms of a recording material that is supposedly closed and already determined. It opens up cracks in the recording material, reveals other sounds and confronts the medium with its *physical* condition. The slow progression leading from the first traces of deterioration to the final erosion is the clearest sign of this process. Second, this hybridity also becomes apparent when one realizes that, although the piece is defined as a circular work consisting in the repetition of a single loop – a condition that indicates an apparently stable equilibrium, in a kind of formal inner isolation – it is precisely the continual repetition of the *same* unit – which, after all, is never the same – that brings forth the frailty and the instability of the structural format, bound to a permanent state of reconstitution.

The presumed rigidity of the loop's structural formality does not guarantee a balance capable of preventing the small units from following their own course, and their repetition unveils their sonic metamorphosis. In short, both the piece's performative

side (e.g. the fact it results from a recording that captured the destruction of its earlier form) and its internal structure reflect the constant tensions between what may be defined as an open system and a closed system. Consequently, *The Disintegration Loops* can also be regarded as an exercise that calls into question the mythical idea of a perfect balance, immune to external disturbances, in contrast with the notion of *entropy*. Indeed, if the idea of a perfect balance, whatever its form, is grounded in an ideal of completeness – which implies that nothing new can come of it, since within its matrix all possible variables are already teleologically given – such a perfect system corresponds, to a certain extent, to a *dead* system, i.e. to a system that cannot be updated or refashioned so as to produce something truly *new*. As for Basinski's piece, the silence brought about by the final erosion does not indicate the *death* of the *system*. Rather, it conveys the living expression of an entropic journey, already travelled: the repetition of the ostinato, far from becoming self-enclosed, welcomes external interferences in order to renew itself, aiming at an instability that turns out to be uncertain, unpredictable and free.

This idea of repetition as a dynamic and transductive motif, as an ever-evolving reality, which brings together different moments, in a “time [that] splits itself into present and past, present that passes and past which is preserved” (Deleuze, 1989, p. 82), lends itself to a correspondence with the very idea of movement, which, according to Deleuze, “implies a plurality of centres, a superposition of perspectives, a tangle of points of view, a coexistence of moments which essentially distort representation” (Deleuze, 1994, p. 56). This slow disintegrating progression is not about denying the existence of an ongoing movement, or of a sequencing process that the said disintegration would render irreversible. But if such a sequencing process does exist, it is not hierarchical, and can only convey the unstable transition from a heterogeneous element to another heterogeneous element. Each repeating loop reveals its own relativity vis-à-vis all the others, and even the initial loops in Basinski's piece, which are *less disintegrated*, can only be defined through a *difference of level* vis-à-vis the future ones, since they already coexist virtually with the disintegration actualized through repetition.

The destabilization is expressed, then, by the rhythm and the difference in which the various *presents* are gradually articulated, continually engaged in a mutual interaction, each being both the cause and the effect of all the others. In Basinski's piece, each disintegration involves the same *media* that, as Deleuze and Guattari noted with regard to the notion of ritornello (*ritournelle*⁶), constitute the object: an external medium relating to the materials; an internal medium relating to the composing elements and composed substances; an intermediate medium relating to the limits; an attached medium relating to the energy forces (Deleuze & Guattari, 1987). What Basinski's loops reveal is the role played by repetition in their very structure, as a force for difference and creation:

⁶ In music, the term “ritornello” refers to the chorus of a piece, i.e. to a motif that is repeated in certain parts, and which can also be considered an *ostinato*. Deleuze and Guattari defined it as a “territorial assemblage”, “any aggregate of matters of expression that draws a territory” (Deleuze & Guattari, 1987, p. 323) – a form of delimitation and organization illustrated by the example of a bird that marks its territory by singing.

a milieu does in fact exist by virtue of a periodic repetition, but one whose only effect is to produce a difference by which the milieu passes into another milieu. It is the difference that is rhythmic, not the repetition which nevertheless produces it. (Deleuze & Guattari, 1987, p. 314)

From this point of view, if the suspicion arises, one must exclude from this argumentation the notion of determinism, a concept that is too close, in a way, to that of automatism. Gilbert Simondon is among the contemporary philosophers to have offered the most cogent critiques of the technical tendency – which can be seen today as a legacy of techno-scientific Modernism – of automatism and predetermined systems. His philosophical alternative is based on the premise that the degree to which any technique or technical object is developed depends on its margin of indetermination and contingency, as well as on the extent to which it allows the interference of external elements (Simondon, 2012). Accordingly, his theory of technique refers to machines that are not autonomous or automated, but self-regulated, that is, capable of rebalancing and integrating new commands and functioning plans, along with accidents that may force them to readjust their internal settings. More than *production* or *reproduction* agents, machines are, for Simondon, *transduction* agents, i.e. complex structures in which a given kind of energy is translated, through an agonistic interplay of tensions, into a new kind of energy. What is peculiar about this conception – whose influence is evident in Deleuze and Guattari's theory of technique⁷ – is the fact that each energetic transduction integrates various other transductions, like a genetic process where “each code is in a perpetual state of transcoding” (Deleuze & Guattari, 1987, p. 313). In this genetic process, machines are centres of indetermination that extend and inaugurate relationships, energies and procedures deriving from, or bound to be integrated in, the network of other machines.

Based on this description, Simondon argues that even the technical means of recording denote a certain kind of indeterminate *plasticity*. If what is at stake in human memory is the *plasticity of forms* – in the subjective interpretation of schemes, images, impressions or perceptual units, through the selection, ranking, organization and, in short, production of meaning out of those schemes – when it comes to a *memory of machines*, evident above all in the recording media, what is at stake is the *plasticity of the medium itself*, in the *variable* aspects of the codification and translation of forms performed by the medium (Simondon, 2012, pp. 168-170).

⁷ Focused on the domain of Biology and on the study of the evolution of crystals, Gilbert Simondon defines the concept of transduction in the following manner: “this term denotes a process in which an activity is defined gradually in motion, propagating in a given domain, by basing its propagation on a structuring carried out in different areas of the domain: each region of the constituted structure serves as a constituted principle for the next, so that a progressive modification extends itself, at the same time of this structuring operation. Transductive operation is an individuation in progress; it can occur physically in the form of a progressive repetition” (Simondon, 2013, p. 32). Although his definition does not establish a direct relationship between this concept and his theory of technique, the former is the source of some of the basic principles that Simondon projects onto technical objects: openness, reaction, feedback, internal resonance, gradual change and repetition, etc. Regarding Simondon's legacy, we can find in Deleuze and Guattari some passages that *update* his concept: Every milieu is coded, a code being defined by periodic repetition; but each code is in a perpetual state of transcoding or transduction. Transcoding or transduction is the manner in which one milieu serves as the basis for another, or conversely is established atop another milieu, dissipates in it or is constituted in it.” (Deleuze & Guattari, 1987, p. 313)

Returning to our subject matter, we can now affirm that in Basinski's play these two dimensions are paradigmatically conjugated and reflected: the plasticity of forms and the plasticity of the medium. But we can also emphasize the idea that the conjugation of these two kinds of plasticity determines the relationship between the individual and the symbolic material he records and reproduces with the aid of technical media. There is, both with regard to *forms* and with regard to the *media*, a certain degree of instability and vulnerability; in other words, both human memory and the *memory* of machines is subject to the same kind of deterioration, adulteration, transformation and loss.

Therefore, the action of the media – as recording and transcoding devices, enabling the transition from analogue into digital formats – is not deterministic, and the same can be said for *The Disintegration Loops'* internal repeating structure. In contrast to this idea of determinism, we are closer to a concept such as *destiny*, as defined by Deleuze in *Difference and Repetition*:

destiny never consists in step-by-step deterministic relations between presents which succeed one another according to the order of a represented time. Rather, it implies between successive presents non-localisable connections, actions at a distance, systems of replay, resonance and echoes, objective chances, signs, signals and roles which transcend spatial locations and temporal successions. We say of successive presents which express a destiny that they always play out the same thing, the same story, but at different levels: here more or less relaxed, there more or less contracted. This is why destiny accords so badly with determinism but so well with freedom: freedom lies in choosing the levels. The succession of present presents is only the manifestation of something more profound - namely, the manner in which each continues the whole life, but at a different level or degree to the preceding, since all levels and degrees coexist and present themselves for our choice on the basis of a past which was never present. (Deleuze, 1994, p. 83)

TECHNIQUE AS A PERFECT CIRCLE DISINTEGRATES THROUGH THE ACTION OF RHYTHM

The denial of determinism, however, or the possibility of *choosing a level*, seems alien to the post-Fordist paradigm, in which computers assimilated the logic of mechanical rotation and the assembly line in order to transform it, through a codified logic, into a new binary structure. Lev Manovich, favouring an archaeological approach to media, highlights the following:

it is relevant to recall that the loop gave birth not only to cinema but also to computer programming. Programming involves altering the linear flow of data through control structures, such as “if/then” and “repeat/while”; the loop is the most elementary of these control structures. Most computer

programs are based on repetitions of a set number of steps; this repetition is controlled by the program's main loop. So if we strip the computer from its usual interface and follow the execution of a typical computer program, the computer will reveal itself to be another version of Ford's factory, with a loop as its conveyer belt. (Manovich, 2000, p. 266).

The development of computational science, as it integrated and absorbed all previous material and industrial procedures, also meant the transformation of all technique into realized mathematics, into applied logic. The civilizational importance of this step, i.e. the colonization brought about by the *numerical concept* and the conquest of the possibility of a mathematical reworking of the real, was perhaps that of bringing us closer to mastering contingency – of being able, at any given moment, to filter random events through statistical probabilities and predetermined logical sequences. The *choices of levels* seem to have been reduced to the options available within the code. And as for the latter, the more binary and circular (viz. simple) it is, the more efficient it becomes. The inseparability between control and mathematics becomes hereby apparent. Ultimately, the universal machine of maximum security would correspond to a universal cosmos devoid of accidents⁸.

The link between the tendency towards the mathematization of the real and the circularity motif (which also includes the idea of repetition) can be elaborated in two different ways. The first one relates to the acknowledgement that there is an essential nature in the mechanical gesture – and, therefore, in the automatism of calculation – which takes the form of repetition. Harun Farocki⁹, in the 1986 documentary film *Wie man sieht*, after claiming that in the Industrial Revolution “the regularity of the textiles [embarrassed] the worker's unstable hand”, goes on to note that with the Jacquard loom, “controlled by punched cards like the ones used in calculators”, “arithmetic controls manual labour”. In Farocki's archaeological enquiry, the tendency towards mathematization and control leads back to the primary relationship between technical media and the movement of rotation, whether circular or repetitive. After the discovery of fire, the wheel is said to have been humankind's most important technical invention. Not only did it set the course of material progress, from the first means of transportation to the sprocket wheel or the loom, but it also determined humankind's perception of reality and the world. In reference to this, the director adds, later on, the following:

⁸ In his 1932 treatise on the contemporary worker, and on the related idea of a total mobilization of the world through technique, the German author Ernst Jünger speculates, on various occasions, about the possible advent of a technocratic space with the same kind of characteristics: “the unknown itself, the insolvable becomes calculable – that is, to the extent that a plan and a prognosis of the solutions becomes possible. (...) Technical space gains in clarity, organization, and planning, and partial solutions are no longer a happy finding, but results from the orderly march of an increasingly calculable time” (Jünger, 2000, pp. 170-175).

⁹ Harun Farocki (Czech Republic, 1944 - Germany, 2014) was one of the most significant and challenging filmmakers of documental and experimental cinema. His vast filmography – focused from the outset on the relationship between the mediatization of war and the existence of a spectator influenced by it – constitutes a crucial reflection on the status of images in the contemporary world, on the tension between their real and fictional character, or on the power of technology over spectators.

circular motion provided the prerequisite for continual production. It is also said that the movement of planets was the model for the spinning wheel's continual motion. But I prefer to say: it was because human beings already knew the moving spindle that they were able to recognize the movement of the planets. (Farocki, 1986).

This passage allows us to introduce the second aspect of the relationship between the tendency towards mathematization and the notion of repetition or circularity. As the perception of space and time and the image of the world became conditioned by technical devices, the evolution towards the general rationalization and equipment of reality and the sensuous realm led to an image that revives the old utopia of absolute positivity, envisaged as a closed circumference: reason, science and the formalism on which the two previous notions are grounded, in the form of a perfect circle, or a circle of security. Everything inside it works against the irregularities of human nature. The attempt to draw the circle leads back to the notion of *ritornello*, already mentioned earlier, understood as a *territorial agency* whereby chaos gives way to order: “for sublime deeds like the foundation of a city or the fabrication of a golem¹⁰, one draws a circle, or better yet walks in a circle” (Deleuze & Guattari, 1987, p. 311). This latter aspect, of *walking in a circle*, appears to be decisive for countering the totalizing nature of the technical circle: it is by following through the circle's perimeter, which is supposedly perfect, and by repeating this movement in search of order, that we force its deterioration, and expose thereby the fiction surrounding its perfection. The reason for this deterioration rests on the ceaseless movement of repetition, but also on the rhythmic and variable nature of our movement around the circle, which may imply improvisation and error. Basinski's piece places us precisely on the perimeter of the circumference, which disintegrates irreversibly due to the slight indeterminations and unpredictabilities that arise by chance as the magnetic tape rolls on, and as the music's internal structure unfolds. We realize, during

¹⁰ Deleuze's reference to the legendary figure of the Golem is particularly relevant in the present context. Anchored in Judaism's cabbalistic mythology, and to a certain extent in the Greek myth of Prometheus, the Golem refers to the creation by a human being of his or her own artificial duplicate. Imitating the divine gesture of creation, the individual would sculpt the shape of a man out of a piece of clay, and would then bring it to life, so that it would replace him in the performance of certain domestic or dangerous tasks. In some versions, the Golem is unable to act on its own and can only understand the orders given to it; in other versions, it manages to become autonomous and to rebel against its human creator; in this second version, the Golem represents the first embodiment of the well-known theory of alienation. The enduring relevance of this mythological narrative is due to its clear anticipation of the robot, or the android. Above all, however, it can still be regarded as one of the first formulations of the idea of artificial intelligence – the Golem embodies the tension between the externality of human creations and that which in them is inherently human. Ultimately, it embodies the tension between man and culture, regarding the latter as an artificial form of experience, or between the irreconcilable contrast between man and technique. The Golem is torn between the logic of control and servitude, or automatism, and the logic of autonomization or artificial intelligence, which is self-generating and able to create new languages and abstractions. The Golem's speculative power stems from the ambiguity of being both a replica and a replicant, to borrow the words used by Philip K. Dick in *Do Androids Dream of Electric Sheep?* (1968). As the repetition of a human being, the Golem is a symbol of the most advanced technical means (it is not by accident that Deleuze evokes the Golem to illustrate the creation of “the most sublime works”), embodying a total and perfect circumference. However, just like the loops that become actual through their movement, the Golem shows not only that repetition is always the creation of something new and different, but also, through the deterioration of its own actions, that a perfect technical state does not exist. The Golem is hereby revealed as a false repetition: it disintegrates either because it is unable to act on its own, or because it engages in a confrontation with its creator.

this process, that the circumference is less and less perfect, and less and less closed. It can no longer be positivistic or deterministic because, by being impelled forward, it no longer follows “the meter [that] is dogmatic, but, [instead, it follows] the rhythm [that] is critical” (Deleuze & Guattari, 1987, p. 314) – the rhythm is creative. The circle’s rhythmic indeterminism, viz. its unpredictability or improvisation, leads “the circle to open, on its own, onto a future (...) in order to join with the forces of the future (...). Improvise is to join with the World, or meld with it” (Deleuze & Guattari, 1987, p. 311). The noise and the silence at the end of Basinski’s piece are a proof of the world’s presence inscribed in that symbolic object.

AND EVERYTHING ELSE IS NOISE, OR THE IMPOSSIBILITY OF THE ORIGINAL LOOP

The randomness that threatens the circumference leads to the suspicion that we are not dealing, after all, with an achieved circumference. There might be an escape to the image of a perfect circle, which the technical realm imposed on the real, in order to determine it. There might be something outside that circle. On the one hand, this external side corresponds to the fertile ground from which other modes of explaining the real can blossom, offering an alternative to scientific positivism. On the other hand, it is a constant reminder of the possibility of joining together the whole symbolic realm.

Every movement, despite the illusion of continuity it may produce, is an act of disintegration into parts, an act of disturbance in which differences lead to the actualization of virtualities. It is this irreversible movement that runs through the circle, creating discontinuities and forcing technique to open up the circumference, but without letting it go. *Disintegration Loops* is the audible image of such a possibility, the image of a suspension of desire, of an alternative to the acceleration that imposes its vicious circularity. In the end, assuming that the recording media are characterized by the same vulnerability that affects human memory, the elegy of what might have been is deemed better than the scientific certainty of what can be captured. Repetition as disintegration is thus the metaphor for the variations, unpredictabilities, deteriorations, hesitations and delays that end up enabling human action and its *choices of level*. For what remains after the supposed death of Basinski’s loops is every erosive, brutal, confusing and formless element that the world has added to it — everything that proves the impossibility of an original loop: an immaculate element which, in truth, could never have been so.

Translation: Bernardo Ferro

BIBLIOGRAPHIC REFERENCES

- Bazin, A. (1976). *Qu'est-ce que le cinéma?* Paris: Cerf.
- Benjamin, W. (1968). The work of art in the age of mechanical reproduction. In *Illuminations* (pp. 217-251). New York: Schocken Books.
- Deleuze, G. (1989). *Cinéma 2 – the time-image*. Minneapolis: University of Minnesota Pre.

Deleuze, G. (1994). *Difference and repetition*. New York: Columbia University Pre.

Deleuze, G. & Félix G. (1987). *A thousand plateaus*. Minneapolis: University of Minnesota Pre.

Jünger, E. (2000). *O trabalhador: domínio e figura*. Lisboa: Hugin Editores.

Kierkegaard, S. (1983) *Repetition*. Princeton (New Jersey): Princeton University Pre.

Manovich, L. (2000). *The language of new media*. Cambridge (Mass.): MIT Pre.

Simondon, G. (2012). *Le mode d'existence des objets techniques*. Paris: Aubier.

Simondon, G. (2013). *L'individuation à la lumière des notions de forme et d'information*. Paris: Editions Jérôme Million.

Wiener, N. (1998). *The human use of human beings: cybernetics and society*. Da Capo Press.

FILMOGRAPHY

Farocki, H. (1986). *Wie man sieht*.

MUSIC

Basinski, W. (2002). *The Disintegration Loops*.

Ravel, M. (1928). *Bolero*.

BIOGRAPHIC NOTE

Manuel Bogalheiro teaches at the Faculty of Communication, Arts, Architecture and Technology of the Lusophone University, Porto, where he directs the Doctoral Programme in Media Art. He has a PhD in Communication Sciences, with a specialization in Contemporary Culture and New Technologies (FCSH-UNL). His doctoral research was funded by the Portuguese Foundation for Science and Technology (FCT) and led to a thesis entitled “Materiality and Technicity: On Technical Objectuality”. He conducts research and publishes in the fields of Philosophy of Technique and Media and Culture Theory.

E-mail: manuel.bogalheiro@gmail.com

Address: Universidade Lusófona do Porto, Rua de Augusto Rosa 24, 4000-098 Porto (Portugal)

* Submitted: 30-11-2017

* Accepted: 15-02-2018