Time-Loop–Looptime

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A lecture on the perception of time within a loop-based scenario, featuring examples from 1977 to 2016, Berlin, 14 March 2015.

I. Introduction

This lecture is about the perception of time within the context of loops. It refers, on one hand, to Tilman Baumgärtel's book *Schleifen*,[2] and, on the other, it takes up the discussion I started in 2002 at Darmstadt with my lecture on "Loop Aesthetics." In the meanwhile I have written about 30 loop-based pieces called *Difference/Repetition* and the 32 *Monadologies*, the latest of which you may have heard yesterday.

I'm starting by playing two loops from 1977 and from 1979, one from my band "Amygdala," one from another called "Erich-Zann-Septett." The latter is an excerpt from a 20-minute composition called *Time-Loop*, which gave the title for this lecture.

1 Composer´s website: http://members.chello.at

2 Tilman Baumgärtel, *Schleifen: Zur Geschichte und Ästhetik des Loops* (Berlin: Kulturverlag Kadmos, 2015).

II.

When speaking about the perception of time concerning loops, it seems absolutely necessary to clarify the use of terms. So, not every loop implies necessarily a repetition, not every series can be reduced to a loop, nor are the terms “loop” and “sample” identical.

II.1 Definition

A) A loop is a structure wherein the end is connected to the beginning (compare the early tape loops).

B) looping the loop: Then a *movement* of sorts is being introduced. By traversing/reading/playing back this structure, one reaches the end and jumps back to the beginning: another structure results, which we perceive as a repetition. The loop consists of the following basic parameters (simplified here):

a) *Loopstart* in time
b) *Loopend* in time
c) *Loopcontent* (information).

In the context of digital media, the loop is paired with a complementary term, the *sample*, a timed slice of information; this sample can be referred to as a section of computer memory, which is being *read* out (here it replaces the loop content). This seems to be, by the way, a usage of the term “reading,” but everything changed in the artistic approach to loops in the 1980s.

The double term “loop-samples” or “sample-loop” contains a double repetition, namely, 1) the repetition contained in the looping proces; and 2) the sample as the repetition of something given, something already existing.

d) *Reading speed* (e.g. sample rate)
e) *Reading direction*

f) *Reading mode*
   1) linear
   2) chaotic (scratching)

In programming language, the loop is a standard feature:

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for(i=0;i<2016;i++){cout<<"this is a loop";}
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this is a loop this is a loop this is a loop this is a loop this is a loop this is a loop
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int day=0; int apocalypse =666;
while (day < apocalypse)
{cout<<"wenn sonst nichts mehr geht: wiederholung wiederholen"; day++: }
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wenn sonst nichts mehr geht: wiederholung wiederholen wenn sonst nichts mehr geht: wiederholung wiederholen wenn sonst nichts mehr geht: wiederholung wiederholen wenn sonst nichts mehr geht: wiederholung wiederholen wenn sonst nichts mehr geht: wiederholung wiederholen wenn sonst nichts mehr geht: wiederholung wiederholen wenn sonst nichts mehr geht: wiederholung wiederholen wenn sonst nichts mehr geht: wiederholung wiederholen enn sonst nichts mehr geht: wiederholung wiederholen wenn sonst nichts mehr geht: wiederholung wiederholen wenn sonst nichts mehr geht: wiederholung wiederholen wenn sonst nichts mehr geht: wiederholung wiederholen wenn sonst nichts mehr geht: wiederholung wiederholen wenn sonst nichts mehr geht: wiederholung wiederholen

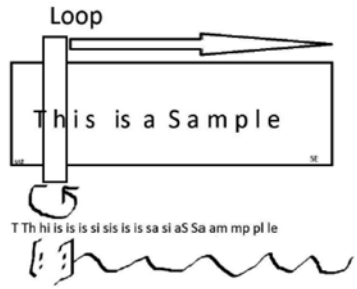
II.2 Typology

A Difference by time span:

1) granular loops: 50 ms to 200 ms
2) short-time loops: 200 ms to 7000 ms ("hypno-loops")
3) structural loops: 7000 ms to max (to create metastructures like a sonata exposition, long *fuga soggetti*)

B Difference by modulation: We have to discriminate between *modulated* and *non-modulated* loops. In the latter case:

1) modulation of loop start (wander loop of Ortiz or Arnold). This is a very specific loop, which became important for video art in the 1980s. I coined the term “granular analysis” for this technique.



2) modulation of loop end (often in combination with start modulation)

3) modulation of loop content (filters, iteration, feedback). *Iterated* or *feedback* loops constitute a type of their own, which this categorization does not show strongly enough. They often constitute dynamic systems, which often use iteration (cellular automata, fractals, etc.).

4) modulation of reading speed (scratching)

5) modulation of reading direction (scratching).

I distinguish between global changes/modulations and local modulations:

a) global modulations result in a change over the number of repetitions, e.g. a filter opens during the first and 10th repetition.

b) local modulations result in a change within each repetition. The filter opens and closes within each single repetition.

There are different modes of modulating parameters:

1) increment

2) decrement

3) jitter: An epsilon area is defined, wherein the modulated loop-point moves erratically backward and forward, often controlled by random-generator oscillation: the specified loop point moves to and fro rhythmically within an epsilon area.

4) oscillation: The specified loop point moves to and fro rhythmically within an epsilon area.

C Difference by smoothness:

1) smooth loops: the jump point is disguised (e.g. a loop is evenly filled with noise or the jump point is not discernible within the information)

a rose is a rose is

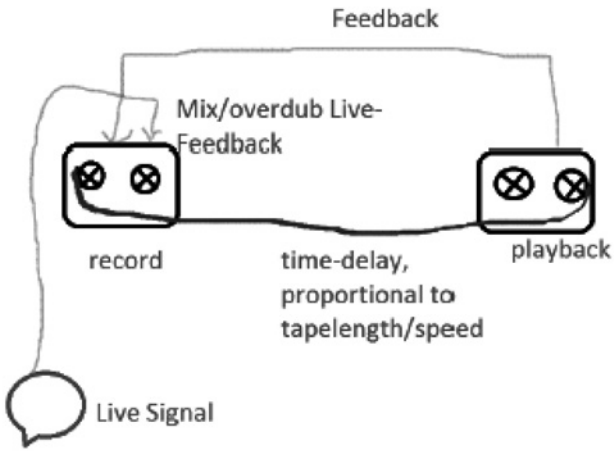
2) the hiccup loop: the jump point is exposed (e.g. the stuck record of Pierre Schaeffer or Philip Jeck).

D Difference by relating to the sample:
1) loop refers to the archives (real or virtual remix)
2) loop refers to newly created information (e.g. improvisation, composition).

E Difference by medium:
1) visual loops
2) audio loops
3) body loops
4) text loops
5) combinations of 1–4.

F Difference by historical context:
1) analog (splicing tapes, cutting and pasting movie clips): in the case of movie clips, the difference becomes evident; whereas the analog looping had to be done as succession of clips (save the rare actual film loops), the digital loop is created by repeatedly referring to the same section in computer RAM).
2) digital (c.f. Harry Lehmann's *Die Digitale Revolution der Musik*): here the loop becomes an essential module within the digital cutting program.

G Difference by complexity:
1) complexity of content: in minimal art, the primary information content of loops tends to be minimal, putting a stress on changes in perception. In the 1990s, loops started to contain very complex information, which might be the reason why Morton Feldman was a loop composer on the one hand, but never was considered a minimalist on the other. The same goes for the loops of Philip Jeck.
2) complexity of repetition: whereas minimalist loops tend to progress in a very linear, predictable way (or not at all), complex loops progress in erratic, chaotic ways (e.g. scratching).
3) complexity of content modulation: feedback loops especially, such as Robert Fripp's Frippertronics, can produce extremely complex systems, starting with simple initial conditions, something often mentioned by Stephen Wolfram.

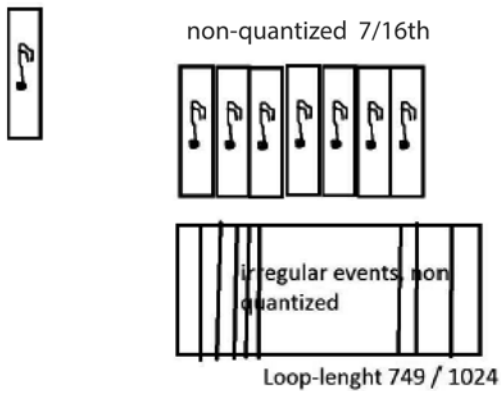


Most models of dynamic systems are based on integrated loops. Another example is feedbacking video streams (in Douglas Hofstadter's *I Am a Strange Loop*, feedback loops are somehow discussed as a model of the subject reflecting itself).

H Differentiation by rhythm:

1) quantized loop: the loop length is a multiple of the sounding quantization unit of the sample: e.g. there are sixteenth notes in the sample, and the sample length is 7/16th; a discernible beat results from this.

2) non-quantized loop: the loop length is an irrational multiple of the time sequence within the loop (vinyl loops), known as "damaged beats."

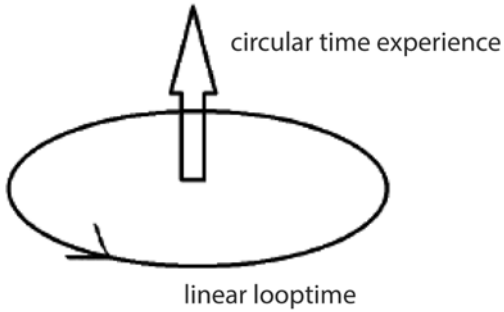


III. Loops and Time: the phenomenology of looped time

Edmund Husserl, in the essay "On the Origin of Inner Time Consciousness," defines a concise phenomenology of time. It is based on the conception of a linear progressing experience of time: this is, however, already transgressed by the notions of protention and retention, which involve memory and going forward and backward in time. Moreover, Husserl uses the sounding of a single note as a paradigm for his discussion of the phenomenology of time: "Dauer der Empfindung und Empfindung der Dauer ist zweierlei. Und ebenso steht es mit der Sukzession. Sukzession von Empfindungen und Empfindung der Sukzession ist nicht dasselbe."[3]

It seems that the above-mentioned jump point in the temporal development of loops has a definite effect on our perception: it works against the linear progression of time experience, substituting it with something else.

The involved repetitions give us the impression of a circularity, instead of a linearity, in spite of physical time progressing in the meanwhile. We encounter a phenomenon, which we would describe more as a standstill than a progression, in spite of all the movement involved. (This does not apply to loops containing static information already.)



Altered time experience corresponds to altered states of consciousness: loops can therefore be considered as a means for altering consciousness.

David Hume defines substantiality through repetition and habit, so we can deduce a substantiation created by loops, similar to the origin of the movie image through repeated frames. It is similar to the creation of a mirage, which is based on an oscillation but appears as a static object.

[3] Edmund Husserl, *Vorlesungen zur Phänomenologie des inneren Zeitbewußtfeins* (Halle: Niemeyer, 1928), 376.

> Blicken wir auf ein Stück Kreide hin; wir ſchließen und öffnen die Augen. Dann haben wir zwei Wahrnehmungen. Wir ſagen dabei: wir ſehen dieſelbe Kreide zweimal. Wir haben dabei zeitlich getrennte Inhalte, wir erſchauen auch ein phänomenologiſches zeitliches Auseinander, eine Trennung, aber am Gegenſtand iſt keine Trennung, er iſt derſelbe: im Gegenſtand Dauer, im Phänomen Wechſel. So können wir auch ſubjektiv ein zeitliches Nacheinander empfinden, wo objektiv eine Koexiſtenz feſtzuſtellen iſt. Der erlebte Inhalt wird »objektiviert«, und nun iſt das Objekt aus dem Material der erlebten Inhalte in der Weiſe der Auffaſſung konſtituiert.[4]

Moreover the loops of type 2, "short-time loops," seem to correspond to the time span of short-term memory, which is also neurologically linked to the hypnosis function. The hypnotic effect of many loops, mentioned by Baumgärtel, might be derived from this.

William S. Burroughs explored this hypnosis function with Brion Gysin in the *Dream Machine*, a rotating cylinder with a loop consisting of patterns of flickering lights.

Nevertheless, as in the "backward" movement of Webern's retrograde melodies, the standing-still and rewinding of time are illusions, subjective experiences with many consequences for aesthetics resulting from likewise constructions.

Let us systematically consider the time component of the different loop types:

1) Granular loops (50 ms to 200 ms)

In a granular loop the content of the original disappears, as does the time axis of the original. Granular loops are used to create a time stretch, a multiplication of the original sample length. Granular loops are used in *granular synthesis* to transform musical gestures into sound (clouds of sound); this application was mainly used in 1980s electronic music.

[4] *Ibid*, 372.

2) Short-time loops (200 ms to 7000 ms) ["Hypno-Loops"]

These are the loops mainly used in *granular analysis*; it is a kind of time stretch, but with a different look at the content. It results in a kind of microscopic analysis of the content, transforming it, reinterpreting it, revealing sub-layers of meaning.

To demonstrate the effect of these loops on our perceptions, the best examples stem from Raphael Montañez Ortiz:

"Our civilization sees the dream as irrational. I remember actually reading once about some scientist trying to invent a pill that would eliminate the toxin secreted by some gland in the brain that would then eliminate dreaming! *We want to eliminate it, because we are a culture that is still suffering from nightmares*, in contrast to the Senoi in Malaysia, where there is no nightmare, it's all been integrated by the time one gets through adolescence.
Then, your dreams serve your highest creative potential. The dream is for counsel, whether it's finding solutions for an illness, or ways to engineer a bridge that has to be built. So, the dream becomes the original art process, the art process that is inherent to our being, our imagining, our creativity. We daydream, we sleep dream. That imagining is the original art within which we make this bridge."[5]

„Digitale Verfahren der Bildverarbeitung verwendet Ortiz, um Prozesse der De- und Resemantisierung zu initiieren. Die Filmabläufe von ‚Kiss' und ‚Conversation' verweisen nicht nur auf sich selbst als mit elektronischen Mitteln konstruierte Zeichensysteme, sondern auch auf soziale Prozesse. Typisch für Ortiz' Verfahren ist, daß er auf soziale Bewertungen verzichtet: tatt ein Verhältnis zur Gesellschaft auszudrücken, schafft er Anlässe für Reflexionen über rozesse, die Sozialisation konstituieren. Die meist wertindifferente Behandlung des Filmmaterials des Video--Buddhisten Nam June Paik wandelt der Video-Schamane Ortiz in Modelle des ‚Liminoiden'.[6]

[5] Raphael Montañez Ortiz, interview with Lauren Raine, 15 August 1988, accessed on 23 January 2017, http://www.rainewalker.com/raphaelortiz.htm [emphasis added].

[6] Thomas Dreher, "Raphael Montañez Ortiz: Destruktionskunst für und in selbstinstituierender Gesellschaft,"

3) Structural loops (7000 ms to max)

"Whatever can be said about loops, also the opposite is true." – Hassan I Sabbah, Berlin 2016

The Functions of Loops in Our Aesthetic Consciousness		
Loops as the means of the phenomenology of gestures	New interpretation of works, deconstruction of pathos	*Theater der Wiederholungen*; Martin Arnold
Loops as magnifying glasses for sounds	Husserl's table; turning an object	Morton Feldman
Loops as generating structures	Pattern and cell as new musical atomism/monadology	Ligeti, cellular automata
Loops as the means for deconstruction	The different repetitions as irritative material lighting	*Maskenspiel*
Loops generating experience of the substance	Hume's substance: constitution of the identical by repetition	
Loops as the means of hypnosis/of forgetting one's self	Burroughs' Dream Machine Rauscherfahrung	*DW2, Trance Musik*
Loops as the bearers of the difference	Different repeats, Zuck/ Scratchrhythmen, Damaged beats Variances that make an attractive condition	*Maskenspiel 1, Room full of Shoes, Chop the Past*
Loops as a method of memorizing	Bergson; form-generating repetition	Versuch über das Vergessen
Loops as an expression/result of automatism	Loops in the process of automatic writing, automated loops by digitized loops; the theme of machinery	Osman Spare, Dadaism
Loops depicting cinematic structures (e.g. frame rates)	The image constituted from the loops of differential single images	
Loops as improvisation concept	Loops as pre-compositional experimentation	*VLO*
Loops as a nonlinear, uncountable principle	Breaking a linear narrative flow; William Burroughs' cut-up method	

accessed on 23 January 2017, http://dreher.netzliteratur.net/2_Performance_Ortiz_Text.html.

The big change in my view of repetition came about through my reading of Gilles Deleuze's *Difference and Repetition*. I've been studying it since 1995, after my friend Christian Loidl gave me the cue. I will not go into Deleuze deeply in this article, but I will present a quotation from the work:

> "Repetition changes nothing in the object repeated, but does change something in the mind which contemplates it. Hume's famous thesis takes us to the heart of a problem: since it implies, in principle, a perfect independence on the part of each presentation, how can repetition change something in the case of the repeated element? The rule of discontinuity or instantaneity in repetition tells us that one instance does not appear unless the other has disappeared–hence the status of matter as *mens momentanea*. However, given that repetition disappears even as it occurs, how can we say "the second", "the third" and "it is the same"? It has no in-itself. On the other hand, it does change something in the mind which contemplates it. This is the essence of modification. Hume takes as an example the repetition of cases of the type AB, AB, AB, A … Each case or objective sequence AB is independent of the others. The repetition (although we cannot yet properly speak of repetition) changes nothing in the object or the state of affairs AB. On the other hand, a change is produced in the mind which contemplates: a difference, something new in the mind. Whenever A appears, I expect the appearance of B. Is this the for-itself of repetition, an originary subjectivity which necessarily enters into its constitution? Does not the paradox of repetition lie in the fact that one can speak of repetition only by virtue of the change or difference that it introduces into the mind which contemplates it? By virtue of a difference that the mind draws from repetition?"[7]

This presents a kind of overview over the following considerations: for me, the shift of difference–a kind of difference, in Derrida's terminology–towards perception was crucial here. Repetition as a differentiated technique became another means of deconstruction in my work, aiming at a new kind of perception of musical gestures and sounds; herewith I would aim at the same goal as the Minimalists, but this similarity is a superficial one, as I would like to show, as a student of the Schoenberg school (of sorts), repetition had been a banned thing for me for a long time, in my aim to achieve a continuous variety within my music, of never saying things twice. In Daniel Charles's essay "La musique et l'oubli" (Music and Forgetting), he even draws political consequences from repetition-oriented music, especially from techno and German progressive rock of the 1970s; this hit me hard, because I adored the very music he denounced. It was mainly Deleuze's book that woke me from my dogmatic slumber.

[7] Gilles Deleuze, *Difference and Repetition*, trans. by Paul Patton (London: Continuum, 1994), 70.

Another starting point was my *changing view of narrative structures*. In literature, there have been various attempts to break up narrative structures:

1) William S. Burroughs' cut-up/fold-in technique;

2) the Joycean stream of consciousness technique, wherein the endlessly changing flow of textuality somehow escapes the linear time axis. Differentiation becomes noise somehow. This was the main idea behind the *Schrift* series.

3) repetition: my personal metaphor was of a kind of third dimension emerging out of the two-dimensionality of a rotating disk. Here the text flow is stopped, inverted upon itself, and somehow the semantic aspects shift to the aspects of rhythm and movement, or to the aspect of sound. If this works, it would open a new view of a particle, a gesture, an insight into a special sound, a new perception of familiar things.

Perhaps behind all this is Luigi Nono's idea, that we operate within a defined pool of significants, and it is our task to develop new ways of listening. The breaking-up of narrative structures is also an issue with improvisation. After having recorded many, many recording sessions, we found a certain speech structure to be inherent in many of the improvisations we did; I found this also in the pieces of the *Schrift* series.

After some experiments with flow-of-consciousness-texts [Husserl] we started to improvise with loops in about 1997. Several projects emerged from this: *VLO*, *Laleloo*, *Tricorder*. Since then it has become a mutual process of transcribing and retranscribing improvised repetitions and written-out repetitions. In the beginning the *DW* pieces tried to transfer the repetitions from improvisation to written music; now I have reintroduced live sampling into the pieces, as well as improvised sections, all combined with written textures.

The bands have become the laboratories for the written pieces, and we have started to remix pieces like *DW1* and *DW3* with live musicians. One of these projects, called *Black Friday*, conceptualized by Uli Fussenegger, featured several computer artists, such as Christof Kurzmann, Christian Fennesz and turntable virtuoso Dieb13, in addition to live musicians.

4) All the above considerations were focuses in some examples of visual arts, which impressed and inspired me deeply in 1996, giving me also the courage to change my method of composition. The most important one here to be cited is Martin Arnold. It does not seem necessary to comment a lot on this; you will certainly agree that it features a new look at well-known things, and that repetition is a central issue.