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A revision of the TARTYP published by Pierre Schaeffer

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Abstract

Over the last 10 years I have taught the course on auditory perception at the faculty of music of Université de Montréal. This subject is one of the oldest within the electroacoustic music program. Even before the program has been officially launched in 1980, Marcelle Deschênes was already teaching it (and had already done so in Québec City in the 70's). Francis Dhomont succeeded her in the 80's and after two or three different lecturers, in 1999, I was put in charge of the esthetics of the electroacoustic music courses. Originally named *Perception auditive* (Auditory Perception), one of the main courses is now — since 2003 — called *Typologie et morphologie sonore*[1]. The course content includes the Pierre Scheaffer's typology and morphology, as well as the typology of soundscape by R. Murray Schaffer and the different writing techniques used in electroacoustic music (transmitted by Francis Dhomont before he returned to France). The general idea is to give the students a lexicon of words and tools to describe the sounds.

Typology: a revision

This conference is a proposition for a revision of the typology table by Pierre Schaeffer — the TARTYP: TAbleau Récapitulatif de la TYPologie) — as well as a proposition for a French/English correspondence of the terms and symbols used in the table. Actually, even if the Michel Chion's *Guide des objets sonores* has been recently translated in English,[2] the TARTYP itself (and the abbreviations used in it) remains in French. Some of the terms used in the table are obsolete, some categories are almost useless and some terms are ambiguous. After 10 years of using it in a university course and after many discussions with more than 200 students, it is time for a major upgrade.

1. TARTYP

1.1. The original TARTYP

This what the TARTYP was looking like in the *Traité des objets musicaux* published by Pierre Schaeffer in 1966, p. 459:

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[1] http://cours.musique.umontreal.ca/mus1217/index.html

[2] By John Dack, Christine North and available on the EARS web site:
http://www.ears.dmu.ac.uk/spip.php?page=articleEars&id_article=3597

		Durée démesurée (macro-objets) pas d'unité temporelle		durée mesurée unité temporelle / durée réduite micro-objets \			Durée démesurée (macro-objets) pas d'unité temporelle		
		facture imprévisible	facture nulle	tenue formée	impulsion	itération formée	facture nulle		facture imprévisible
hauteur masse définie fixe	ÉCHANTILLONS	(En)	Hn	N	N'	N"	Zn	ACCUMULATIONS	(An)
hauteur complexe		(Ex)	Hx	X	X'	X"	Zx		(Ax)
masse peu variable		(Ey)	Tx Tn trames particulières	Y	Y'	Y"	Zy pédales particulières		(Ay)
variation de masse imprévisible		unité causale E cas général	T cas général	W	φ	K	causes multiples mais semblables P cas général		A cas général

← sons tenus | sons itératifs →

FIGURE 34.
Tableau récapitulatif de la typologie.

The main idea of the typology was to define categories within which any perceived sound could be included.

1.2. The translated TARTYP

The *Traité des objets musicaux* (TOM) was never translated up to now, but the *Guide des objets sonores* by Michel Chion — which a guide to help to navigate within the TOM — was translated in 2009 by Jon Dack and Christine North[3]. Here what looks like the TARTYP in this translation:

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[3] Most of the English terms used in this article comes from this translation.

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| | | Disproportionate duration (macro-objects) of no temporal unity | | measured duration temporal unity / reduced duration micro-objects | | | Disproportionate duration (macro-objects) of no temporal unity | |
	SAMPLES	unpredictable facture	non-existent facture	formed sustainment	impulse	formed iteration	non-existent facture	unpredictable facture
definite pitch / fixed mass	(En)		Hn	N	N'	N"	Zn	(An)
complex pitch	(Ex)		Hx	X	X'	X"	Zx	(Ax)
not very variable mass	(Ey)		Tn / Tx	Y	Y'	Y"	Zy	(Ay)
			special wefts				special pedals	
unpredictable variation of mass		E (general example)	T (general example)	W	φ	K	P (general example)	A (general example)

causal unity — multiple but similar causes

← held sounds — iterative sounds →

ACCUMULATIONS

1.3. My own TARTYP

This is the TARTYP I was using for the last 10 years. The only change I made, except for the graphical representation, was to remove the greek letter Phi (Φ) for its latin equivalent (F):

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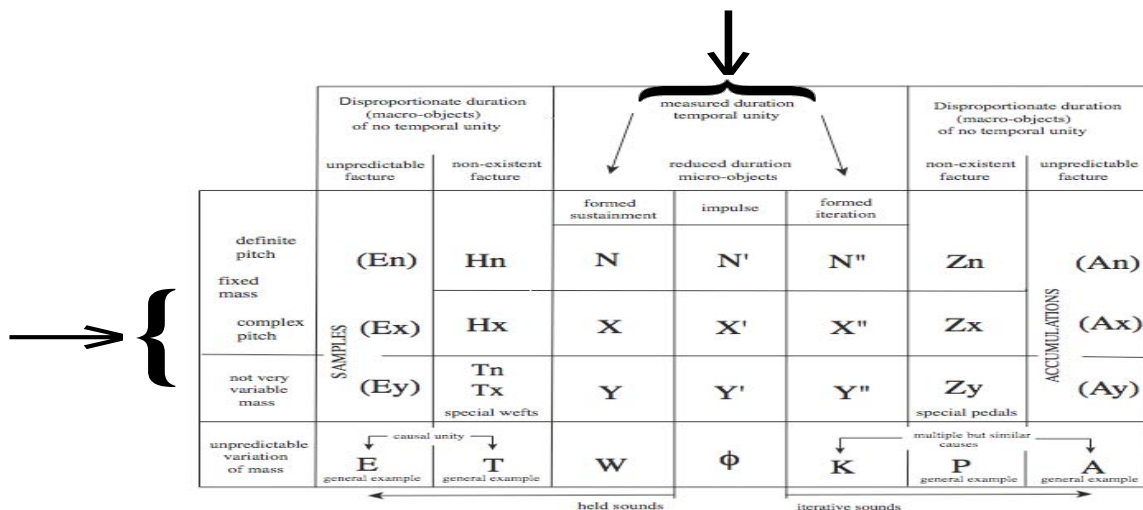|	Durée démesurée (macro objets) Pas d'unité temporelle		Durée mesurée Unité temporelle ↓ Durée réduite Micro-objets			Durée démesurée (macro objets) Pas d'unité temporelle		
	Facture imprévisible	Facture nulle				Facture nulle	Facture imprévisible	
			Tenue formée	Impulsion	Itération formée			
Hauteur définie **Masse fixe**	En	Hn	N	N'	N''	Zn	An	Hauteur définie **Masse fixe**
Hauteur complexe	Ex	Hx	X	X'	X''	Zx	Ax	Hauteur complexe
Masse peu variable	Ey	Tx Tn Trames particulières	Y	Y'	Y''	Zy Pédales particulières	Ay	**Masse peu variable**
	Unité causale				Causes multiples mais semblables			
Variation de masse imprévisible	E Cas général	T Cas général	W	F	K	P Cas général	A Cas général	**Variation de masse imprévisible**
			<— Sons tenus		Sons itératifs —>			

2. Elements of the TARTYP

The TARTYP is based on different couple of sound characteristics:

— mass-facture

— duration-variation

— balance-originality

2.1. Mass-Facture

The mass-facture is the most important couple:

— mass: an extension of pitch — the horizontal input: definite, complex, slightly variable, unpredictable

— facture: the way sound is evolving over time — the vertical input: formed, redundant, unpredictable

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2.2. Duration-Variation

The second couple is Duration-Variation:

— Duration: the perceptive duration of a sound: short, medium or extended duration

— Variation: something which changes over time: non-existent, reasonnable, unpredictable

		Disproportionate duration (macro-objects) of no temporal unity		measured duration temporal unity			Disproportionate duration (macro-objects) of no temporal unity	
		unpredictable facture	non-existent facture	reduced duration micro-objects			non-existent facture	unpredictable facture
				formed sustainment	impulse	formed iteration		
definite pitch fixed mass	SAMPLES	(En)	Hn	N	N'	N"	Zn	(An)
complex pitch		(Ex)	Hx	X	X'	X"	Zx	(Ax)
not very variable mass		(Ey)	Tn Tx special wefts	Y	Y'	Y"	Zy special pedals	(Ay)
unpredictable variation of mass		E general example	T general example	W	Φ	K	P general example	A general example
				held sounds		iterative sounds		

2.3. Balance-Originality

The third couple is Balance-Originality:

— Balance: between the too simple and the too much structured sound objects. They are in the centre of the TARTYP: formed sustainment, impulse and formed iteration

— Originality: capacity for a sound to challenge the expectations: redundant and unpredictable

		Disproportionate duration (macro-objects) of no temporal unity		measured duration temporal unity			Disproportionate duration (macro-objects) of no temporal unity	
		unpredictable facture	non-existent facture	reduced duration micro-objects			non-existent facture	unpredictable facture
				formed sustainment	impulse	formed iteration		
definite pitch fixed mass	SAMPLES	(En)	Hn	N	N'	N"	Zn	(An)
complex pitch		(Ex)	Hx	X	X'	X"	Zx	(Ax)
not very variable mass		(Ey)	Tn Tx special wefts	Y	Y'	Y"	Zy special pedals	(Ay)
unpredictable variation of mass		E general example	T general example	W	Φ	K	P general example	A general example
				held sounds		iterative sounds		

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3. Construction of the new TARTYP

Starting from my own version and from the translated one, I will now make many propositions to actualize the TARTYP.

3.1. Measured duration, part 1

The Balanced objets of Measured duration are well formed objects. The «musical» note is the implicit reference

• N: note. X: complex mass. Y: slightly variable mass: typically glissando

• ": Iteration

• The first group of Balanced objects: N, X, Y; N", X", Y"

Changes:

• Removal of the Fixed mass category that includes Definite pitch and Complex pitch

• Change from the English translation where «Not very variable» was used for Y, which is not exact: Slightly variable is better according to French (Masse peu variable)

			Measured duration Temporal unity				
			Formed sustainment		Formed iteration		
Definite pitch			N		N"		Definite pitch
Complex pitch			X		X"		Complex pitch
Slightly variable pitch			Y		Y"		Slightly variable pitch

Balanced objects		
N: Tonic mass		
X: Complex mass		
Y: Variable mass		
": Iteration		

3.2. Measured duration, part 2

The Balanced objects of Reduced duration are micro-objects.

• The Impulses represented by '

• The second group of Balanced objects: N', X', Y'

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No changes

			Measured duration Temporal unity Reduced duration Micro-objects					
			Formed sustainment	Impulse	Formed iteration			
Definite pitch			N	N'	N"			Definite pitch
Complex pitch			X	X'	X"			Complex pitch
Slightly variable pitch			Y	Y'	Y"			Slightly variable pitch

Balanced objects		
N: Tonic mass		
X: Complex mass		
Y: Variable mass		
': Impulse		
": Iteration		

3.3. Non-existent facture

The Disproportionate duration: related to the human body reference: duration of a breath, or rapidity of repetition

• Non-existent facture: no important variation of the facture over time

• H: Homogenous sounds

• T: (T; Trame) Drones: fusions of slowly evolving sounds.

• Z: Iterative redundant sounds

Changes:

• One of the most important change in the TARTYP: the disappearance of the H category. H stands for Homogenous sound. Practically speaking, apart organ sustained notes, there is no used of H sounds in music. So two categories, Hn and Hx for two sounds seems luxury to me. I propose to replace Hn and Hx by Tn and Tx (which were already there). And to add the Ty category.

• T: (T; Trame) Drones: fusions of slowly evolving sounds. I suggest to keep T since W is already in use for Large notes. Also, the English translation of Trame by Weft by Dack and North seems to be problematic. According to different English speaking users of the TARTYP, the word Weft seems archaic. Drone might be a better choice.

• Z: Iterative redundant sounds

• First group of Disproportionate duration with Non-existent facture: Tn, Tx, Ty; Zn, Zx, Zy

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		Non-existent facture	Formed sustainment	Impulse	Formed iteration	Non-existent facture		
Definite pitch		Tn	N	N'	N"	Zn		Definite pitch
Complex pitch		Tx	X	X'	X"	Zx		Complex pitch
Slightly variable pitch		Ty	Y	Y'	Y"	Zy		Slightly variable pitch

Disproportionate duration / Macro-objects / No temporal unity (left and right); *Measured duration / Temporal unity*, *Reduced duration / Micro-objects* (center)

Balanced objects		Redundant objects	
N: Tonic mass		T: Drones	
X: Complex mass		Z: Iterative redundant sounds	
Y: Variable mass			
': Impulse			
": Iteration			

3.4. Unpredictable facture

The Disproportionate duration with Unpredictable facture

Changes:

• The second major change: Schaeffer used the word Échantillon for the left hand category. The word has adopted a completely different meaning in the commun language of the electroacoustic community. As well as the English translation: Sample. I suggest to replace it by Excentrique-Eccentric

• E: Eccentric

• A: Accumulation

• First group of Disproportionate duration with Unpredictable facture: E and A

	Unpredictatble facture	Non-existent facture	Formed sustainment	Impulse	Formed iteration	Non-existent facture	Unpredictatble facture	
Definite pitch	En	Tn	N	N'	N"	Zn	An	Definite pitch
Complex pitch	Ex	Tx	X	X'	X"	Zx	Ax	Complex pitch
Slightly variable pitch	Ey	Ty	Y	Y'	Y"	Zy	Ay	Slightly variable pitch
	Causal unity						Multiple causes	

Disproportionate duration / Macro-objects / No temporal unity (left and right); *Measured duration / Temporal unity*, *Reduced duration / Micro-objects* (center)

Balanced objects		Redundant objects		Eccentric objects	
N: Tonic mass		T: Drones		E: Eccentric	
X: Complex mass		Z: Iterative redundant sounds		A: Accumulation	
Y: Variable mass					
': Impulse					
": Iteration					

3.5. Unpredictable variation of mass

The Disproportionate duration with Unpredictable facture and Unpredictable variation of mass

• The general cases of E, T and A: where there is no obvious mass signature of N, X or Y; or when two or three of them are present together

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Changes:

• P (Pédale) becomes O (Ostinato) (and belongs to Man made objects like F and K). Ostinato was already the term used in the English translation. It describes better the category.

• Second group of Disproportionate duration with Unpredictable variation of mass: E, T, O and A

Disproportionate duration Macro-objects No temporal unity		Measured duration Temporal unity Reduced duration Micro-objects			Disproportionate duration Macro-objects No temporal unity		
Unpredictatble facture	Non-existent facture				Non-existent facture	Unpredictatble facture	
		Formed sustainment	Impulse	Formed iteration			
Definite pitch	En	Tn	N	N'	N"	Zn	An	Definite pitch
Complex pitch	Ex	Tx	X	X'	X"	Zx	Ax	Complex pitch
Slightly variable pitch	Ey	Ty	Y	Y'	Y"	Zy	Ay	Slightly variable pitch
	Causal unity					Multiple causes	
Unpredictable variation of mass	E	T				O	A	Unpredictable variation of mass

Balanced objects	Redundant objects	Eccentric objects
N: Tonic mass	T: Drones	E: Eccentric
X: Complex mass	Z: Iterative redundant sounds	A: Accumulation
Y: Variable mass		O: Ostinato
': Impulse		
": Iteration		

3.6. Man made objects

The Measured duration and Reduced duration of Unpredictable variation of mass

• Unpredictable variation of mass with Impulse and Formed iteration

• Man made objects: Φ, K (and O)

Changes:

— Φ becomes F (Fragment): an artificial sound objects (edited)

— K (Cell) stays like that and Multiple causes is added: an edit of multiple objects, a micro-editing

• Second group of Unpredictable variation of mass that has one thing in common, they are man made objects: F, K and O

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	Disproportionate duration Macro-objects No temporal unity		Measured duration Temporal unity / Reduced duration Micro-objects			Disproportionate duration Macro-objects No temporal unity		
	Unpredictatble facture	Non-existent facture	Formed sustainment	Impulse	Formed iteration	Non-existent facture	Unpredictatble facture	
Definite pitch	En	Tn	N	N'	N"	Zn	An	Definite pitch
Complex pitch	Ex	Tx	X	X'	X"	Zx	Ax	Complex pitch
Slightly variable pitch	Ey	Ty	Y	Y'	Y"	Zy	Ay	Slightly variable pitch
	Causal unity				Multiple causes		Multiple causes	
Unpredictable variation of mass	E	T		F	K	O	A	Unpredictable variation of mass

Balanced objects	Redundant objects	Eccentric objects
N: Tonic mass	T: Drones	E: Eccentric
X: Complex mass	Z: Iterative redundant sounds	A: Accumulation
Y: Variable mass	F: Fragment	O: Ostinato
': Impulse	K: Cell	
": Iteration		

3.7. The large note

The last category in Unpredictable variation of mass

• W: Large note: a Formed sustainment sound but with two many internal variations. Typically the sound of a bell.

Changes:

• The main difference here with Large note, as well as F and K, is that they are part of the Measured duration category

	Disproportionate duration Macro-objects No temporal unity		Measured duration Temporal unity / Reduced duration Micro-objects			Disproportionate duration Macro-objects No temporal unity		
	Unpredictatble facture	Non-existent facture	Formed sustainment	Impulse	Formed iteration	Non-existent facture	Unpredictatble facture	
Definite pitch	En	Tn	N	N'	N"	Zn	An	Definite pitch
Complex pitch	Ex	Tx	X	X'	X"	Zx	Ax	Complex pitch
Slightly variable pitch	Ey	Ty	Y	Y'	Y"	Zy	Ay	Slightly variable pitch
	Causal unity				Multiple causes		Multiple causes	
Unpredictable variation of mass	E	T	W	F	K	O	A	Unpredictable variation of mass

Balanced objects	Redundant or short objects	Eccentric objects
N: Tonic mass	T: Drones	E: Eccentric
X: Complex mass	Z: Iterative redundant sounds	A: Accumulation
Y: Variable mass	F: Fragment	O: Ostinato
': Impulse	K: Cell	W: Large note
": Iteration		

3.8. Held and Iterative sounds

• Held sounds on the left hand side

• Iterative sounds on the right hand side

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3.9. The new TARTYP

Here is what the new TARTYP looks like:

	Disproportionate duration Macro-objects No temporal unity		Measured duration Temporal unity / Reduced duration Micro-objects			Disproportionate duration Macro-objects No temporal unity		
	Unpredictatble facture	Non-existent facture				Non-existent facture	Unpredictatble facture	
			Formed sustainment	Impulse	Formed iteration			
Definite pitch	En	Tn	N	N'	N''	Zn	An	Definite pitch
Complex pitch	Ex	Tx	X	X'	X''	Zx	Ax	Complex pitch
Slightly variable pitch	Ey	Ty	Y	Y'	Y''	Zy	Ay	Slightly variable pitch
	Causal unity				Multiple causes		Multiple causes	
Unpredictable variation of mass	E	T	W	F	K	O	A	Unpredictable variation of mass
	<— Held sounds				Iterative sounds —>			

Balanced objects	Redundant or short objects	Eccentric objects
N: Tonic mass	T: Drones	E: Eccentric
X: Complex mass	Z: Iterative redundant sounds	A: Accumulation
Y: Variable mass	F: Fragment	O: Ostinato
': Impulse	K: Cell	W: Large note
": Iteration		

Please note that the TARTYP representation in two dimensions is not exact. The TARTYP is actually a cylinder: both extremities touch each other. The Eccentric sound and the Accumulation are neighbors. It happens very frequently in their use that sounds could be placed in one or the other category.

4. Conclusion

The TARTYP is very useful tool in a course about sound perception. It is not only a good theoretical way to classify sounds; it is also a good table to help the students and the composers to classify their sounds. Ultimately, this exercise of classification affine their way of perceiving sounds. And it puts words on their attempt of description of the characteristics of sounds. The TARTYP has been useful for years; it was just about time to renew it a bit. This paper is a proposition. I hope that the community could participate on the debate and that we can make an «open-source» contribution to the TOM.

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