The Music Dictation of Norman McLaren's Animated Piece Synchromy

栗原, 詩子
九州大学大学院芸術工学研究院音響部門

https://doi.org/10.15017/2794910

出版情報：芸術工学研究. 4, pp.65-75, 2005-12-20. 九州大学大学院芸術工学研究院
バージョン：
権利関係：

資料

The Music Dictation of Norman McLaren's Animated Piece *Synchromy*

栗原詩子
KURIHARA Utako

ノーマン・マクラレン（1914-1987）は、映像表現の分野で世界的先端の一翼を担う、カナダ国立映画制作庁アニメーション部門の専属映像作家で、同庁がまだ創成期であった1930年代から約半世紀にわたって指導的な役割を果たした[1]。《シンクロミー》は、画面を11本の短冊に区切り、マクラレン自身の作曲による７分間の音楽に同調する波形をこの短冊上に提示しつづけるという、きわめて抽象的な構想から成るが、彼の最後のアニメーション作品であることから、アートアニメーション史においても重要な位置を占めている。

ところが、この作品への言及頻度に比べて、個別研究は乏しい。内容も、画面に用いられた色彩表現の多様さのサンプル化[3]や、音高・音強と画面上の波形との関係概観[5]に留まっている。そして、７分間の映像表現を通じて鑑賞者が体験するべく組み立てられた作品内容、即ち、作品内時間における楽曲の発展性や画面構成の発展性や、両者の関係が作り出す美的経験については全く考察されてこなかったのである。

こうした研究状況に陥った一因は、《シンクロミー》の楽譜が現存しない点にあるだろう。映像作家であるマクラレン自身が作曲の筆をとった上、作品の基礎構造が音楽と映像の緊密な同調関係である以上、本作について詳述するために楽曲を詳細に把握する必要があるのは明白だが、そのための基本資料が欠けていたのである。

こうした状況をふまえ、《シンクロミー》のサウンドトラックを聴音・採譜したのが本資料である。楽曲を楽譜として資料化することで、この映像作品を分析するための基礎資料を提示したい。

1. The Necessity of the Music Dictation of *Synchromy*

Norman McLaren (1914-1987) was a pioneering animator on the National Film Board of Canada [1]. His definition of animation art is often referred to by a number of researches in this field.

> Animation is not an art of drawings that move, but the art of movements that are drawn. What happens between each frame is much more important than what exists on each frame. Animation is therefore the art of manipulating the invisible interstices that lie between the frames [2].

His last work in the field of animation, *Synchromy*, is a seven-minute film during which one can experience music as a moving image. The piece was produced by utilizing the *synthetic animated sound* technique of directly generating sound by inserting dots: this is the reverse of the process referred to as *optical sound recording*.

While this piece is considerably important and is frequently mentioned in animation studies, approaches on *Synchromy* are limited to a discussion on color sample [3] or a relative description of sound waves and sound cards [4, 5], neglecting the precise appreciation of this masterpiece.

In my considered opinion, the lack of the score of the work is partially the reason for such stagnation. It was McLaren himself who composed *Synchromy*, but no one conserved its score for it was written not for performative reproduction but just for its consummation of being animated. A restration of the score might therefore provide a key to a greater understanding of this animated masterpiece.

2. The Animated Sound in *Synchromy* and Its Dictation

An animation film is created with twenty-four frames per second. When a film that is written with ten dots in

each frame is played, it creates two hundred fourty sound signals per second, thereby generating a sound wave of 240 Hz, namely, pitch H3. It is common knowledge that McLaren possessed a pile of sound cards, that could create seventy-two sound wave sounds over seven octaves.

The tone of *Synchromy*'s music is limited to a square wave because that McLaren used a set of cards with simple hard-edge black-and-white stripes [6]. The music develops from one to three voices in six odd octaves from A#1 (58Hz) to D7 (2358Hz). Regarding the strength of the sounds, since the distinction of the twenty-five grades is not a prerequisite in musical listening or in music transcription, I subjectively considered the six stages of traditional dynamics (***pp***, ***p***, ***mp***, ***mf***, ***f***, ***ff***) [7] with accent marks (>), sforzando marks (***sf***), and crescendo (<) and decrescendo (>) marks. Although the musical language is largely traditional and easy to listen to, it is difficult to catch a brief span of bars 143 through 145 with wide-range pitched sounds; hence, a frequency analysis was conducted on the DVD sound file [8].

3. Description of the Moving Image

The screen is virtually divided into eleven columns, and the sound marks within each column appear according to their frequency rate. Initially, only the central column is used, but later, the area expands to include all the eleven columns. A number of short sound marks are drawn with the emergence of each high pitched sound, and fewer long sound marks are drawn with the emergence of each low pitched sound (Fig.1). The sound volume is indicated by the width of the mark, the starting point of shich is on either the right or the left side of the column, at McLaren's discretion.

Such contents on the screen are transcripted as a chart in the blank area above the staff notation. The blank columns are depicted gray, while the columns in use are in white. The markings for the sound waves are drawn in black on the white columns. They indicate the usage of columns and the status of the musical parts in a top-to-bottom sequence (Fig.2).

NOTES

[1] Vallière T. Richard. *Norman McLaren, Manipulator of Movement: the National Film Board Years 1947-1967.* Associated University Press, 1982, pp. 105-108.

[2] Maureen Furniss, *Art in Motion: Animation Aesthetics.* John Libbey & Company, 1998, p.5.

[3] Liz Faber and Helen Walters, *Animation Unlimited: Innovative Short Films Since 1940.* Harper Design International, 2004, pp. 58-63.

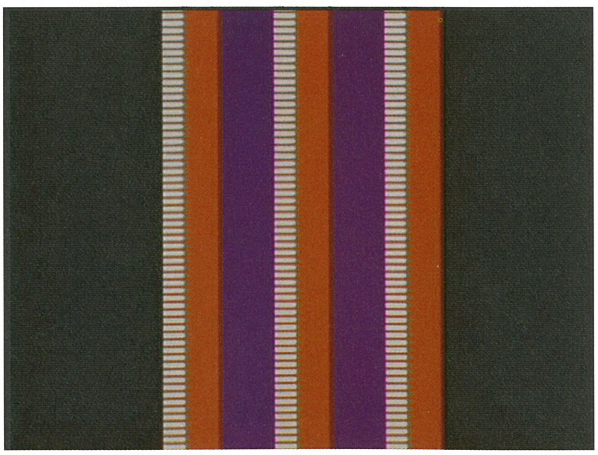
[4] Thomas Y. Levin, "Des sons venus de nulle part: Rudolf Pfenninger et l'archéologie du son synthétique" *Son et Lumières.* publiée à l'occasion de l'exposition présentée au Centre Pompidou du 22 septembre 2004 au 3 janvier 2005, Centre Pompidou, 2004, pp.51-60.

[5] Roy M. Prendergast, *Film music: a Neglected Art.* Norton & Company, 1977, p. 203.

[6] Norman McLaren, "Synchromy" 1984, in David McWilliams ed., *Norman McLaren on the Creative Process.* National Film Board of Canada, 1991, pp.91-93.

[7] McLaren himself took the volume as from "pianissimo" to "fortissimo". McLaren, o*p.cit,* p.91.

[8] An open source software for recording and editing sounds *Audacity*. http://audacity.sourceforge.net/.



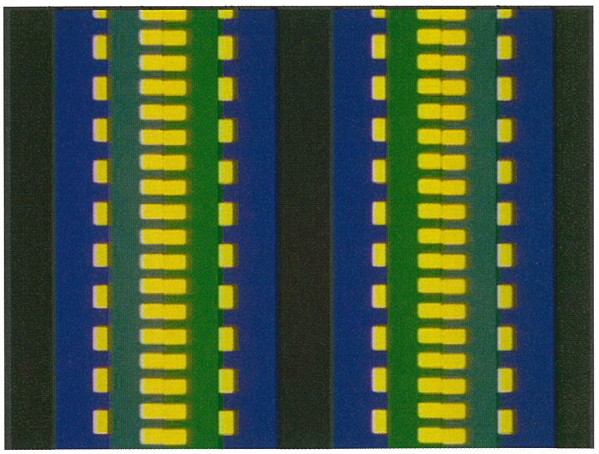


Fig.1a (left) A Screen Sample of the Music of one Part in Bars 60-78
Fig.1b (right) A Screen Sample of the Music of two Parts in Bars 159-168

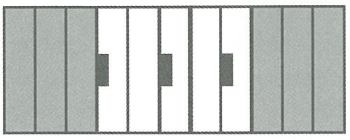
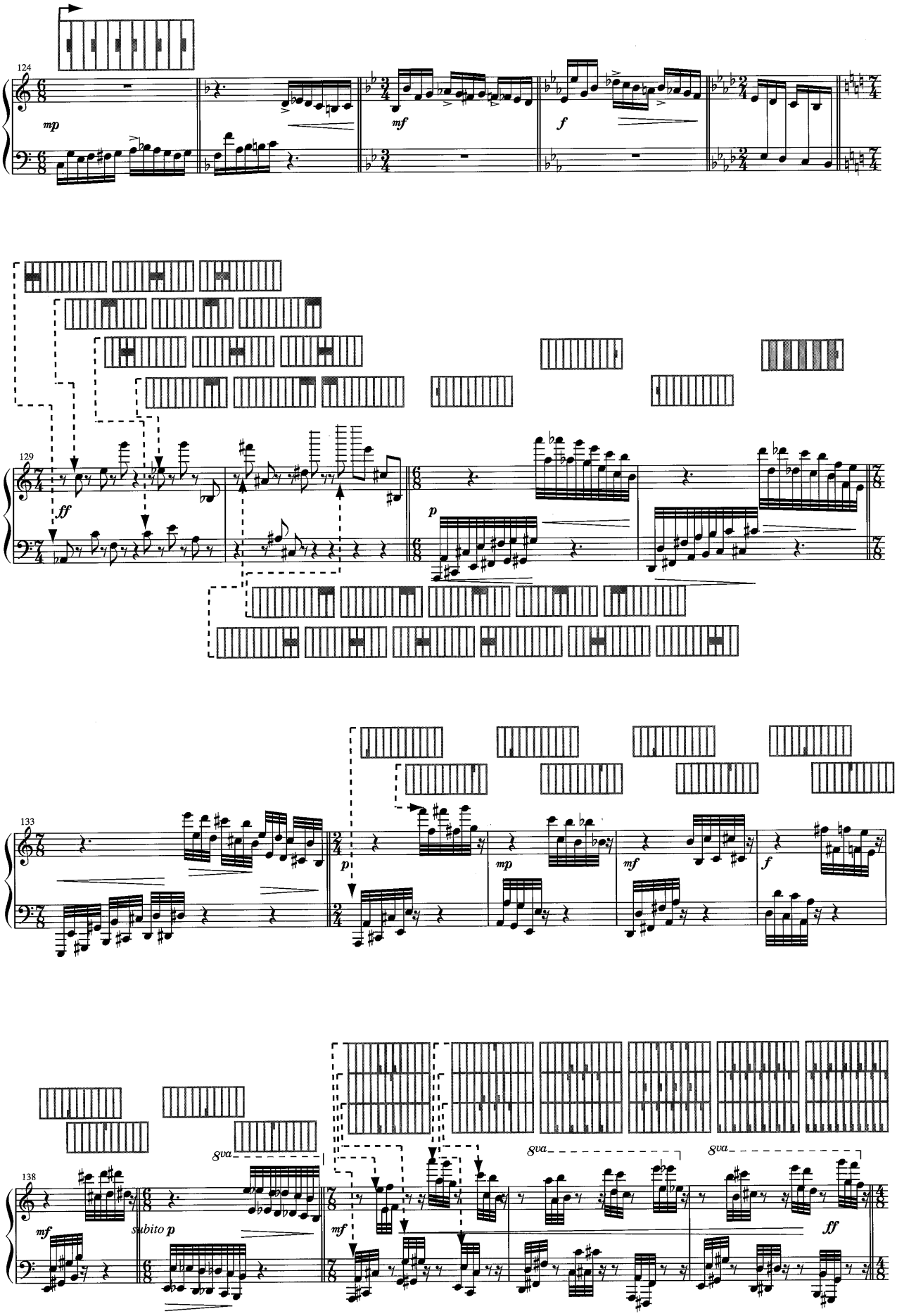


Fig.2a (left) A Transcriptive Chart for Fig.1a
Fig.2b (right) A Transcriptive Chart for Fig.1b

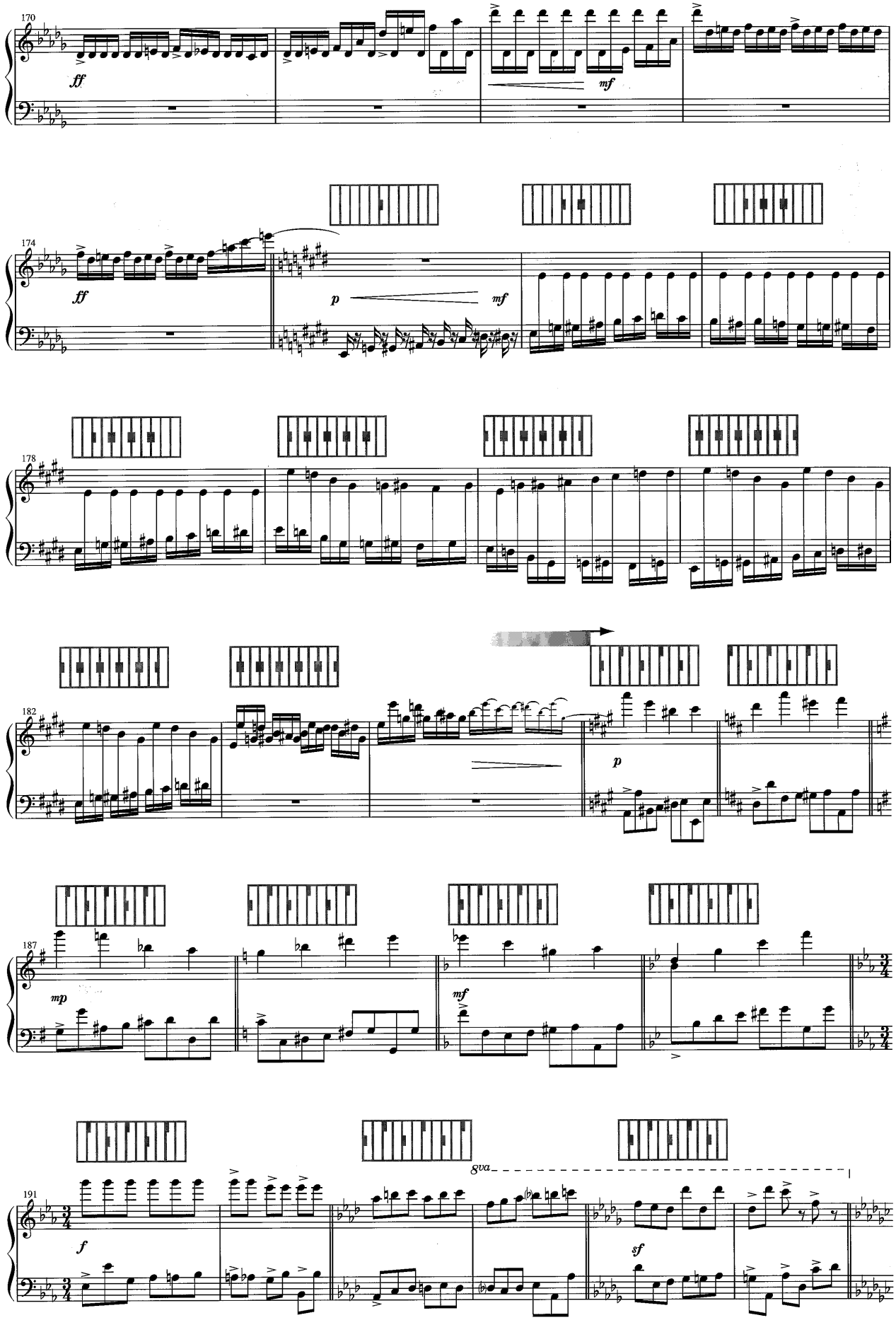

= 45
sempre staccato
= 90
= 180
sf


51
cresc.
ff
sf
sf
sf
56
62
68
73
crescendo
76
crescendo
ff
83
subito p
mf


88
ff
p
mf
93
mp
100
sf
sf
106
110
ff
pp
113
117


124
mp
mf
f
129
ff
p
133
p
mp
mf
f
138
mf
subito p
8va
8va
8va
mf
ff


143
ff
147
f
p
ff
mp
152
f
8va
ff
160
8va
f
glissando
gliss.
ff
164
167
5
ff


170
ff
mf
174
ff
p
mf
178
182
p
187
mp
mf
191
8va
f
sf


197
8va
sf
201
8va
escendo
205
8va
ff
211
8va
sf
sf
sf
sf
216
8va
ff
222
8va
subito mp
f


8va
227
8va
231
f
pp
8va
236
240
244
mp
250
ff


253
8va
255
più
ff
258
f
ff
262
268
f
p
273
ff
ff