

UNIVERSITY OF NORTH TEXAS

Denton, Texas

PROPOSAL FOR THESIS

MASTER OF MUSIC IN MUSIC THEORY

COLLEGE OF MUSIC

DIVISION OF MUSIC HISTORY, THEORY AND ETHNOMUSICOLOGY

Chia-Ying Wu

10/17/2008

I propose to the Major Professor and to the Graduate Academic Degrees Committee (GADCom) a study of the following topic to be conducted in partial fulfillment of the requirements for the degree of Master of Music in Music Theory: **HARMONIC AND MOTIVIC ANALYSES OF “GLASSWORKS” BY PHILIP GLASS.**

## 1. Purpose of the Study

Philip Glass's *Glassworks* (1981) is a six-movement composition for two flutes, two soprano saxophones/clarinets, two tenor saxophones/bass clarinets, two French horns, violas, cellos, and the DX7 electric piano. *Glassworks* consists of six movements titled "Opening," "Floe," "Island," "Rubric," "Facades," and "Closing."<sup>1</sup> After searching through the published literature, writings about *Glassworks* focus mostly on recording processes,<sup>2</sup> the composer's compositional intention,<sup>3</sup> and a partial harmonic analysis of the third movement.<sup>4</sup> As of the present writing, there are no complete analyses of all six movements, and there are no analyses that involve the concepts of harmonic loops and motivic loops (to be discussed in detail below).

The main purpose of the thesis is to determine the form and structure of harmonic and motivic loops in the work. I will first discuss the former and then the latter. In short, I hope to contribute to Glass scholarship with these analyses of how harmonic and motivic loops function in *Glassworks*.

---

<sup>1</sup> Philip Glass, *Glassworks*, authorized photocopy supplied by Music Sales Limited in 2003 from New York: Dunvagen Music Publishers, 1982, (London: Chester Music, 2003).

<sup>2</sup> Philip Glass, *Music by Philip Glass*, edited and supplementary material by Robert T. Jones, (New York: Harper & Row, 1987).

<sup>3</sup> Phillip Glass Official Website, "Glassworks," PhilipGlass.com, <http://www.philipglass.com/music/compositions/glassworks.php> (accessed May 31, 2008).

<sup>4</sup> Evan Jones, "The 'Content and Flavor' of Philip Glass's Harmonic Cycles," First International Conference on Music and Minimalism, Bangor University Wales, UK, August 31, 2007.

## 2. Literature Review

Published literature on Philip Glass and his compositions can be divided into three categories: writings concerning Philip Glass's *Glassworks*, analyses of harmonic and motivic patterns, and his compositional approaches. The three categories of published literature will aid the thesis in three ways. Writings concerning Philip Glass's *Glassworks* will provide a compositional background of the work. Writings about Glass's use of harmonic and motivic patterns will provide a context for my own discussion of Glass's harmonic and motive loops. Finally, writings about his compositional approaches will provide a general understanding of Glass's creative process in *Glassworks*.

Writings that are directly related to *Glassworks* are found in a section of the book *Music by Philip Glass* by Philip Glass,<sup>5</sup> a webpage from the official website of Philip Glass,<sup>6</sup> and a conference paper by Evan Jones.<sup>7</sup> Philip Glass introduces recording processes in his book *Music by Philip Glass*; the recording processes involve digital recording and computer-processed mixed tapes.<sup>8</sup> On the *Glassworks* webpage of Glass's

---

<sup>5</sup> Philip Glass, *Music by Philip Glass*, edited with supplementary material by Robert T. Jones, (New York: Harper & Row, 1987).

<sup>6</sup> Phillip Glass Official Website, *Glassworks*.

<sup>7</sup> Jones, "The 'Content and Flavor.'"

<sup>8</sup> Glass, 198.

official website, Glass states that *Glassworks* is a six-movement piece composed for a recording studio that he intended to introduce to a more general audience.<sup>9</sup>

In his paper,<sup>10</sup> Evan Jones focuses on harmonic cycles in Philip Glass's works composed between the years of *Another Look at Harmony* (1975) and the works of the late 1980s.<sup>11</sup> Jones applies the idea of harmonic cycles to his analysis on the third movement "Island" of *Glassworks*.<sup>12</sup> A harmonic cycle involves two or more chords which are constantly being repeated in turn. In Jones's harmonic analysis of the third movement, two types of harmonic cycles are indicated. The first type of harmonic cycle involves a chord, and its neighboring tones in the next chord. See Example 1.

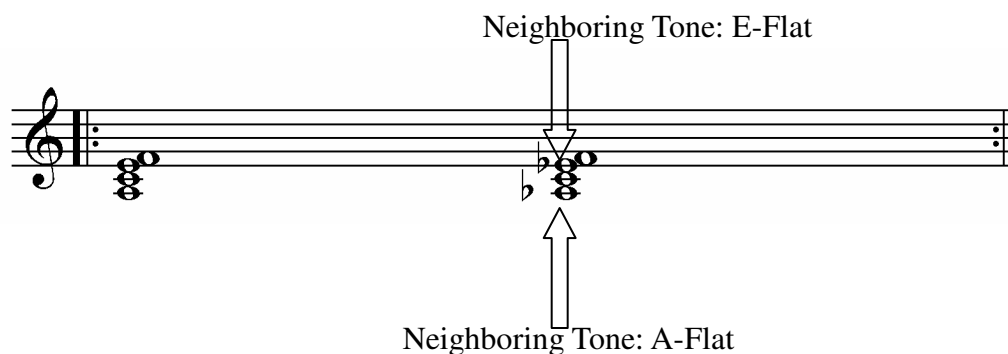
---

<sup>9</sup> Philip Glass Official Website, *Glasswork*.

<sup>10</sup> Evan Jones's paper "The 'Content and Flavor' of Philip Glass's Harmonic cycles" can be obtained by contacting him via email <ejones@fsu.edu>. I appreciate Dr. Jones for sharing his paper.

<sup>11</sup> Evan Jones does not invent the term "harmonic cycle." I posted a message inquiring about the origin of the term on SMT-Talk online message board on Sep. 23, 2008. According to David E. Cohen's response on Sep. 24, 2008, "an early (if not the first use) of the term is by Dutch mathematician and physicist Christiaan Huygens." For further study on the term, Cohen recommends Huygens's book *Le cycle harmonique (Rotterdam 1691): Novus cyclus harmonicus (Leiden 1724)*, edited with Dutch and English translations by Rudolf Rasch (Utrecht: Diapason Press, 1986). Since University of North Texas library does not have a copy of the book, I requested an interlibrary loan on October 9, 2008. I will study the term further when I receive the book.

<sup>12</sup> Jones, p. 5 and Example 10.



Example 1: The First Type of Harmonic Cycle according to Jones<sup>13</sup>

In Example 1, the first chord F Major/Major 6/5 chord, and the second chord F Minor/Minor 6/5 chord alternate to form the first type of Jones’s harmonic cycle. The notes a-flat and e-flat1 in the second chord are both lower neighbor notes to the notes a-natural and e-natural1 in the first chord. Therefore, for Jones, the harmonic cycle involves chords with neighboring tones.

The second type of harmonic cycle includes what Jones calls “diatonic drift.” Jones makes a distinction between what he interprets as “seen” as “heard.” I will not go into detail on these points because they do not contribute to my approach.

In my thesis, I will adapt Jones’s notion of the neighboring tones illustrated in Example 1; in my analyses, these neighboring tones will be represented in a Schenkerian

---

<sup>13</sup> Example 1 is adapted from Example 10 of Evan Jones’s paper.

voice-leading notation to be discussed below.

Evan Jones understands the harmonic patterns in the third movement of *Glassworks* as harmonic cycles.<sup>14</sup> Jones regards harmonic cycles as nonstop recurring sequences. However, I feel that the operations of harmonic patterns are more than recurring sequences. The operations can be terminated, or they can lead to other tasks. Therefore, I argue that the operations of Jones's harmonic patterns function as harmonic loops instead of harmonic cycles.

Philip Glass's use of harmonic and motivic patterns are discussed in Robert Fink's book *Repeating Ourselves*,<sup>15</sup> Keith Potter's book *Four Musical Minimalists*,<sup>16</sup> Wesley (Wesley) York's article "Form and Process,"<sup>17</sup> Milo Raickovich's dissertation "*Einstein on the Beach* by Philip Glass: A Musical Analysis,"<sup>18</sup> and Rob Haskins's online journal article "Another Look at Philip Glass: Aspects of Harmony and Formal Design in Early Works and *Einstein on the Beach*."<sup>19</sup> In *Repeating Ourselves*, Robert Fink relates Philip

---

<sup>14</sup> Jones, "The 'Content and Flavor.'"

<sup>15</sup> Robert Fink, *Repeating Ourselves: American Minimal Music as Cultural Practice*, (Berkeley, CA: University of California Press, 2005).

<sup>16</sup> Keith Potter, *Four Musical Minimalists: La Monte Young, Terry Riley, Steve Reich, Philip Glass*, (Cambridge, UK: Cambridge University Press, 2000).

<sup>17</sup> Wesley York, "Form and Process," In *Writings on Glass: Essays, Interviews, Criticism*, edited by Richard Kostelanetz and Robert Flemming, introduced by Richard Kostelanetz, (New York: Schirmer Books, 1997), 60-79. The same article by the same author can also be located in Wesley York, "Form and Process in Two Pages of Philip Glass," *Sonus* 1 No. 2 (Spring, 1981): 28-50.

<sup>18</sup> Milos Raickovich. "*Einstein on the Beach* by Philip Glass: A Musical Analysis," PhD. diss., (City University of New York, 1994).

<sup>19</sup> Rob Haskins, "Another Look at Philip Glass: Aspects of Harmony and Formal Design in Early Works and *Einstein on the Beach*." *Journal of Experimental Music Studies* 2005 (September, 2005),

Glass's motivic passages in *I+I* (1968) and *Strung Out* (1967) to Shinichi Suzuki and Shunryu Suzuki's interpretation of a Zen mind in music.<sup>20</sup> In *Four Musical Minimalists*, Keith Potter provides an overview of Philip Glass's career and the compositional devices of some Glass's significant works, such as the additive process in Glass's *I+I* (1968), *Two Pages* (1974), *Music in Fifths* (1969), *Music in Contrary Motion* (1969), *Music in Similar Motion* (1969); and the tonal, pitch structure, and scales in *Music in Twelve Parts* (1971-74) and *Einstein on the Beach* (1975-76), one of his famous operas.<sup>21</sup> In Wesley York's article "Form and Process" in *Writings on Glass: Essays, Interviews, Criticism*, the processes of the shifts of melodic patterns, melodic expansion, and melodic diminution in Philip Glass's *Two Pages* are shown with line charts and musical examples transcribed from a recording of *Two Pages*.<sup>22</sup> Milo Raickovich's dissertation explores the core motive, the use of the pentatonic scales and the harmonic plan of *Einstein on the Beach*.<sup>23</sup> Rob Haskins's article "Another Look at Philip Glass" contains the usages of additive variations in Glass's early works *Two Pages*, *Music in Contrary Motion*, and *Music in Similar Motion*, and the further application of additive variations in *Einstein on*

---

<http://www.users.waitrose.com/~chobbs/Haskinsglass.html> (accessed March 9, 2008).

<sup>20</sup> Fink, 225-33.

<sup>21</sup> Potter, *Four Musical Minimalists*.

<sup>22</sup> York, 60-79. The same article by the same author can also be located in Wesley York, "Form and Process in Two Pages of Philip Glass," *Sonus* 1 No. 2 (Spring, 1981): 28-50.

<sup>23</sup> Raickovich, "Einstein on the Beach by Philip Glass."

*the Beach*. For Haskins, harmonic designs in *Einstein on the Beach* include repeated pc sets, set classes, and harmonic cycles.<sup>24</sup>

Writings regarding Philip Glass's compositional approaches include Anders Beyer's book *The Voice of Music*,<sup>25</sup> and the book *Soundpieces* by Cole Gagne and Tracy Caras.<sup>26</sup> Both books are written interviews with Philip Glass about his attitudes toward his compositional processes.

### 3. Main Ideas and Their Subordinate Elements

The main task of the thesis is to show how harmonic loops and motivic loops function in all six movements of Philip Glass's *Glassworks*. A harmonic loop contains chords that repeat a certain number of times with a break that stops the loop or shifts the music to a new loop or non-looping material. A motivic loop consists of melodic, intervallic, or rhythmic motives operating in a similar manner.<sup>27</sup>

I will now introduce select examples of harmonic, then motivic loops. See Example

---

<sup>24</sup> Haskins, "Another Look at Philip Glass."

<sup>25</sup> Anders Beyers, "Philip Glass: When Language Fails the World is Revealed," In *The Voice of Music: Conversations with Composers of Our Time*, translated by Jean Christesen, edited by Anders Beyer, (Burlington, VT: Ashgate, 2000), 267-80.

<sup>26</sup> Cole Gagne and Tracy Caras, *Soundpieces: Interviews with American Composers*, (Metuchen, N.J.: Scarecrow, 1982).

<sup>27</sup> My notion of a loop derives in part from computer programming in which a process is repeated, then broken in a similar fashion.



2 for a sketch of an overview of the entire first movement.

2 17 2 17 28 (Third time)

f: i 5- 6- 5- 6 4 i

Example 2: Harmonic Loop 1 in *Glassworks* Movement I “Opening”

In Example 2, loop 1 is formed by an F minor chord with a neighboring  $\frac{6}{4}$  voice-leading [f, b-flat, f1, d2] and interrupted by the final F unison. Since loop 1 is broken by the F unison, the F unison can be called loop breaker 1. In the thesis, I will probe more deeply how this “deep structure” informs more surface elements of the work.<sup>28</sup>

For a more complex harmonic loop operation, see Example 3.

<sup>28</sup> I will discuss as well the Schenkerian voice-leading consequences of these sketches.

||: Loop 2 :||                      Loop breaker 2

g: I  $\frac{5}{3-}$                       UN                       $\frac{5}{3}$                       i  $\frac{6}{5}$                       VI

Example 3: Harmonic Loop 2 in *Glassworks* Movement IV “Rubric”

In Example 3, loop 2 is constituted by a G minor chord with bass moving to the upper neighbor note (UN): A-flat; and the top three voices moving to their upper neighbor notes: a-flat 2, c2 and e-flat2.<sup>29</sup> When the designated amount of repetitions of loop 2 is reached, loop 2 is terminated by another loop breaker, loop breaker 2, a harmonic progression of I  $\frac{6}{5}$  moving to VI (sounding curiously unresolved). In short, harmonic loops in *Glassworks* can be either interrupted by a unison (as in Example 2), or terminated by a

<sup>29</sup> In mm. 33 and 54, all voices (including the bass) are involved in an upper-neighbor motion.

progression of chords (as in Example 3).

There are two kinds of motivic loops in *Glassworks*. The first kind is the interchanges of intervallic qualities. See Example 4a.

(Loop 3) × 10

The musical notation shows a sequence of six measures, each containing a triplet of eighth notes. The first measure is labeled '1. 2.' and the second '3. 3.'. The third measure is labeled '3. 3.' and the fourth '3. 3.'. The fifth measure is labeled '3. 4. 5.' and the sixth '3. 3.'. Below the notes, the intervallic qualities are labeled: m3, M3, A4, M3, m3, m3.

Example 4a: Interchanges of Intervallic Qualities in Loop 3,

*Glassworks* Movement V “Facades”

In Example 4a, the motives in loop 3 include six pairs of triplets. Each pair of the triplets contains an interval. The interchanges of intervallic qualities involve the shift of intervallic qualities in both directions: minor third (m3) to major third (M3) from m. 1 to m. 2, and major third (M3) to minor third (m3) from m. 4 to m. 5. The two major thirds in m. 2 and m. 4 are connected by the pivot note d1 in the largest interval of loop 3 augmented fourth (A4), which can be considered as the climax of loop 3. The minor third

(d-flat1 and b-flat) in m. 5 is linked to another minor third (c1 and a) in m. 6, which leads back to the beginning of loop 3. Therefore, the interchanges of intervallic qualities define loop 3 as an intervallic loop.

Another feature in the motivic loop is the loop within loop operation (See Example 4a.) In Example 4a, loop 3 is a motivic loop that contains two small motivic loops, 3a and 3b. Loop 3a is played two times; loop 3b is played 3 times, and the entire loop 3 is played ten times. Both Loop 3a and Loop 3b are partly symmetrical as in mirror images. The intervals of the first two measures in loop 3a are minor third (m3) and major third (M3). The intervals of the first two measure of Loop 3b are major third (M3) and minor third (m3). Furthermore, the operation of loop 3 can be represented by a mathematical equation. See Example 4b.

$$\text{Loop 3} \times 10 = \{ [(\text{Loop 3a}) \times 2] + [(\text{Loop 3b}) \times 3] \} \times 10$$

Example 4b: The Mathematical Equation of Loop 3

*Glassworks* Movement V “Facades”

At the risk of being repetitive, I offer the following explanation of Example 4b. In the

equation, Loop 3  $\times$  10 indicates that loop 3 are played 10 times, (Loop 3a)  $\times$  2 indicates that loop 3a is played 2 times, and (Loop 3b)  $\times$  3 indicates that loop 3b is played 3 times. The sum of (Loop 3a)  $\times$  2 and (Loop 3b)  $\times$  3 is repeated 10 times. The equation in Example 4b shows the additive and multiplicative effects of Loop 3, Loop 3a, and Loop 3b.

I believe that the harmonic loops in Philip Glass's *Glassworks* are programmed to be broken by loop breakers, while the motivic loops are designed as loops within loops with the interchanges of intervallic qualities. I will explore further consequences of these qualities of the music in my thesis.

#### *4. Time Line of Research Tasks*

Further score analyses and literature studies of *Glassworks* by Philip Glass will be carried out from October 2008 to December 2008. The production of the musical examples and the prose of the thesis will be completed by January 2009. The entire thesis is expected to be finished and defended in Spring 2009.

#### *5. Provisional Outline*

Chapter 1: Introduction

1.1 Literature Review (7-9 pages)

1.2 Purpose of the Study (5-7 pages)

1.3 Compositional Background of *Glassworks* (9-12 pages)

Chapter 2: Harmonic Loops of *Glassworks* (20-25 Pages)

2.1 *Glassworks* No. 1 Opening

2.2 *Glassworks* No. 2 Floe

2.3 *Glassworks* No. 3 Islands

2.4 *Glassworks* No. 4 Rubric

2.5 *Glassworks* No. 5 Facades

2.6 *Glassworks* No. 6 Closing

2.7 Summary

Chapter 3: Motivic Loops of *Glassworks* (20-25 Pages)

3.1 *Glassworks* No. 1 Opening

3.2 *Glassworks* No. 2 Floe

3.3 *Glassworks* No. 3 Islands

3.4 *Glassworks* No. 4 Rubric

3.5 *Glassworks* No. 5 Facades

3.6 *Glassworks* No. 6 Closing

### 3.7 Summary

Chapter 4: Conclusion (10-15 Pages)

Bibliography

#### 7. List of References

##### (1) Primary Sources

Glass, Philip. *Glassworks*. Riesman, Michael, dir. *Glassworks*, by Philip Glass. Philip Glass Ensemble. SK 90394 Sony Classical. CD. 2003.

Glass, Philip. *Glassworks*, authorized photocopy supplied by Music Sales Limited in 2003 from New York: Dunvagen Music Publishers, 1982. London: Chester Music, 2003.

##### (2) Secondary Sources

Alburger, Mark. "Minimalism, Multiculturalism, and the Quest for Legitimacy." PhD. diss., Claremont Graduate School, 1995.

Alburger, Mark. "Philip Glass: String Quartet to Strung out." *21st Century Music* 10 No. 7 (July 2004). 3-7.

Bernard, Jonathan. "Minimalism, Postminimalism, and the Resurgence of Tonality in Recent American music." *American Music* 21 No. 1 (Spring 2003). 112-33.

Beyer, Anders. "Philip Glass: When Language Fails the World is Revealed." In *The Voice of Music: Conversations with Composers of Our Time*, translated by Jean Christesen, edited by Anders Beyer, 267-80. Burlington, VT: Ashgate, 2000.

Cook, Nicholas and Anthony Pople, eds. *The Cambridge History of Twentieth-Century*

- Music*. New York: Cambridge University Press, 2004.
- D'Alimonte, Nancia. "Philip interview. III: Sinfonia Glassica." *21st Century Music* 10 No. 11 (November, 2003). 1-4.
- Duckworth, William. *Talking music: Conversations with John Cage, Philip Glass, Laurie Anderson, and Five Generations of American Experimental Composers*. New York: Da Capo, 1999.
- Fink, Robert. *Repeating Ourselves: American Minimal Music as Cultural Practice*. Berkeley, CA: University of California Press, 2005.
- Gagne, Cole and Tracy Caras. *Soundpieces: Interviews with American Composers*. Metuchen, N.J.: Scarecrow, 1982.
- Glass, Philip. *Music by Philip Glass*, edited with supplementary material by Robert T. Jones. New York: Harper & Row, 1987.
- Grimshaw, Jeremy. "High, Low, and Plastic Arts: Philip Glass and the Symphony in the Age of Postproduction." *The Musical Quarterly* 86 No. 3 (Fall 2002). 472-507.
- Haskins, Rob. "Another Look at Philip Glass: Aspects of Harmony and Formal Design in Early Works and *Einstein on the Beach*." *Journal of Experimental Music Studies* 2005 (September, 2005). <http://www.users.waitrose.com/~chobbs/Haskinsglass.html> (accessed March 9, 2008).
- Haskins, Rob. "Philip Glass and Michael Riesman: Two interviews." *The Musical Quarterly* 86 No. 3 (Fall, 2002). 508-29.
- Heisinger, Brent. "American Minimalism in the 1980s." *American Music* 7 No. 4 (Winter, 1989). 430-47.
- Hitchcock, H. Wiley. "Minimalism in Art and Music: Origins and Aesthetics." In *Classic Essays on Twentieth-century Music: A Continuing Symposium*, selected and annotated by Richard Kostelanetz and Joseph Darby; assistant editor Matthew Santa. New York: Shirmer Books, 1996.



Huygens, Christiaan. *Le cycle harmonique (Rotterdam 1691): Novus cyclus harmonicus (Leiden 1724)*, edited with Dutch and English translations by Rudolf Rasch. Utrecht: Diapason Press, 1986.

Johnson, Timothy A. "Minimalism: Aesthetic, Style, or Technique?" *The Musical Quarterly* 78 No. 4 (Winter 1994). 742-73.

Jones, Evan. "The 'Content and Flavor' of Philip Glass's Harmonic cycles." First International Conference on Music and Minimalism, Bangor University Wales, UK, August 31, 2007.

Karolyi, Otto. *From Charles Ives to Minimalists*. London: Cygnus Arts, 1996.

Kostelanetz, Richard, and Robert Flemming, eds. *Writings on Glass: Essays, Interviews, Criticism*, introduced by Richard Kostelanetz. New York: Schirmer Books, 1997.

Lemieux, Glenn. "Construction, Reconstruction, and Deconstruction: Music in Twelve Parts by Philip Glass." PhD. diss., University of Iowa, 2000. Ann Arbor, MI: University Microfilms International, 2000.

Mertens, Wim. *American Minimal Music: La Monte Young, Terry Riley, Steve Reich, Philip Glass*, translated by J. Hautekiet. London: Kahn a Averill, 1983.

Morgan, Robert P. *Twentieth-Century Music: A History of Musical Style in Modern Europe and America*. New York: W. W. Norton & Company, 1991.

Phillip Glass Official Website. "*Glassworks*." PhillipGlass.com.  
<http://www.philipglass.com/music/compositions/glassworks.php>  
(accessed May 31, 2008).

Potter, Keith. *Four Musical Minimalists: La Monte Young, Terry Riley, Steve Reich, Philip Glass*. Cambridge, UK: Cambridge University Press, 2000.

Raickovich, Milos. "Einstein on the Beach by Philip Glass: A Musical Analysis." PhD. diss., City University of New York, 1994.

Rockwell, John. "The Orient, the Visual Arts & the Evolution of Minimalism: Philip Glass." In *All American Music: Composition in the Late Twentieth Century*. New York: Da Capo Press, 1997.

Salzman, Eric. *Twentieth-Century Music: An Introduction*. Englewood Cliffs, NJ: Prentice Hall, 1988.

Schwarz, K. Robert. *Minimalists*. 1996. Reprint, London: Phaidon, 2008.

Strickland, Edward. *Minimalism: Origins*. Bloomington, IN: Indiana University Press, 1993.

Toop, Richard. "Expanding Horizons: The International Avant-gard, 1962-1975." In *The Cambridge History of Twentieth-century Music*, edited by Nicholas Cook and Anthony Pople, 453-77. Cambridge, UK: Cambridge University Press, 2004.

York, Wesley. "Form and Process in Two Pages of Philip Glass." *Sonus* 1 No. 2 (Spring, 1981). 28-50.