

Analysis of *Rounds* by Luciano Berio

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Despite its cohesion in terms of sound and general features, *Rounds* for solo piano by Luciano Berio presents significant difficulties to any purely set-based analytical approach. In an effort to discover unifying features and ideas throughout the work, I examined the piece from several different angles. I isolated and qualified its salient features and analyzed Part I for set content, structure, and the role played by different variables such as dynamics, articulation, and pedaling. Beyond identifying some key unifying material in the piece, I found representations on several levels of the idea suggested by the work's title manifested in the music.

Upon first listening, *Rounds* impresses one as a collection of gestures or utterances. The overall effect furnished by the abundance of grace notes, sudden dynamic changes, and obscured pulse is one of improvisation. Berio's indications for rhythm, pedaling, dynamics, and articulation are extremely specific, and nearly every note in the piece is affected by some kind of expressive marking. The result of this extreme control and specificity is a unique and varied texture of shifting ideas.

The basic form of the piece, ABA, follows the idea suggested by the title. The pianist plays Parts I and II in succession, then returns and plays Part I a second time, creating a "roundness" on the largest, formal level. Part II, despite sounding completely distinct from Part I, is a repetition of Part I in retrograde inversion. Though some features, especially rhythmic, are changed in Part II, the material remains largely the same¹.

In both Parts I and II, there are distinct sections of varying length, separated by thin double

¹*Rounds* was initially written as a piece for harpsichord and later reworked substantially for the piano. In its previous version, the inversion was much more literal. The harpsichordist played the same page of music three times, the first and third time with the page in its normal orientation and the second time with it upside down.

bars. Berio instructs the pianist to pause at each double bar for the length of the preceding measure. In Part I, three of the five double bar sections end with a *rallentando*, further intensifying the effect of segmentation.

One of the most striking features of *Rounds* is its frequent repetition of C-sharp, which, when between the staves is the only pitch other than middle C unaffected in the retrograde inversion of the score. C-sharp is present in almost every measure of the piece and Berio frequently draws attention to it by isolating it from the surrounding texture with dynamics and accents. The C-sharps are more conspicuously placed in the beginning of the piece, with the music beginning with and seeming to depart from it as Part I progresses. The opening section of Part I, from measures 1-4b², continuously expands in range around the initial C-sharp, creating a subtle wedge-like effect. Jumping ahead to measures 30 and 31 in Part II, shown in Example 1, the range of the keyboard used reaches its widest point with an interval class 4 above and below C-sharp (index of 2), creating an even larger-scale wedge that can be imagined throughout Part I. This reflects a long-term expansion - and contraction in Part II - around the opening C-sharp in measure 1.

Example 1. Interval class 4s around C-sharp in mm. 30 and 31.



² In my copy of the score, the measures were numbered incorrectly after measure 4. I have labelled the measure after 4 "4b". From measure 5 on the measure numbers are referred to as numbered.

In terms of set class content, the most cohesion can be found in the early sections of Part I. Visually and aurally, the first two sections are distinct from the rest of the piece; their gestures are longer and more purposeful, and in the first section, voices overlap in a way they do not later. Dynamic levels stay constant for longer here than elsewhere.

Perplexingly, Berio has indicated for the *una corda* pedal to be held for the duration of each of the first two sections. Because they are so clearly underlined in this way, perhaps Berio is highlighting the similarity of the two sections as opening statements or suggesting that they are in some other way significant. I suspect that this indication is more for the performer than for the listener, who, without a score in hand might not perceive this subtle sound effect.

Delving deeper into the first few sections, we discover cohesive set material, much of which is diatonic. (016) and (026) are two important trichords which appear frequently throughout the first two lines. These two trichords and the (01357) in measure 3 [See Example 2] serve to infuse the opening of the piece with diatonic material, which will recur continuously later on.

Example 2. (01357) in measure 3.



(0126) begins the first two sections [Example 3] and also appears in the left hand of measure 2 [Example 4]. It is the maximally sized subset of two notable non-diatonic sets:

(01267) and (01268). (01267) is every note connected by the long beam in the left hand between measures 1 through 3. This is the longest beam in the piece, and as Berio does not make use of slurs in *Rounds*, it is probably used like a phrasing mark, for grouping those pitches into a single idea.

Example 3. (0126) at the beginning of Sections 1 and 2.

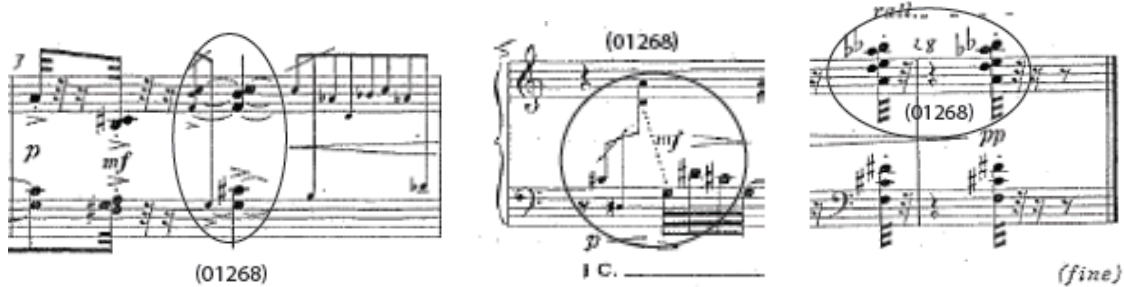
The image shows two musical staves. The left staff is for the first section, marked 'I Scorrevole e nervoso' with a tempo of ♩ = 60. It includes the instruction '(1a II volta ♩ = 72)'. A large oval encircles a sequence of notes in the left hand, labeled '(0126)'. The dynamics are marked 'ppp' and '1 C.'. The right staff shows a similar circled sequence in the left hand, also labeled '(0126)', with dynamics 'p' and '1 C.'.

Example 4. (0126) in the left hand in measure 2.

The image shows a musical staff with a circled sequence of notes in the left hand, labeled '(0126)'. The notes are connected by a long beam. There are triplets indicated by a '3' and a bracket below the staff.

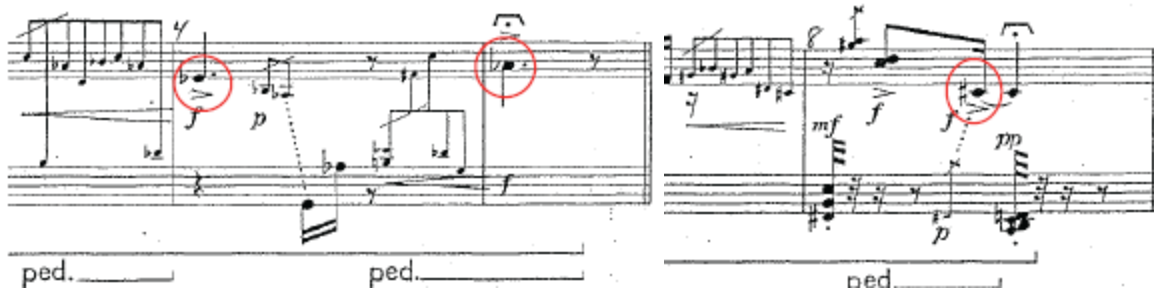
(01268) is heard in measure 3, as the first five notes of measure 5, and in the right hand in measures 27 and 28 at the end of Part I, making it one of the first and also the last chord we hear in the piece [Example 5].

Example 5. (01268) heard in measures 3, 5, and 27-28.



The single accented notes which are such a prominent feature of the piece are both more conspicuous and generally longer in the first three sections than elsewhere in Part I. By extracting from the first three sections the most conspicuous accented notes, two important sets are formed. The longest notes in the first two sections, the E-flat and A-flat in measures 4 and 4b and the C-sharp in measure 8³ make up (027) [Example 6]. The notes which are marked the loudest in the third section, the C natural in measure 11, the C-sharp in measure 14 and the F-sharp at the downbeat of measure 15 make up (016) [Example 7]. These notes are significant both because of the way they draw focus and the fact that when grouped they form two diatonic trichords which can be derived from the opening material.

Example 6. Accented notes in Sections 1 and 2.



Example 7. Accented notes in Section 3.

³ I skip the D-sharp in measure 7 because it is the same pitch class as the E-flat in measure 4.



In the first two sections of Part I there is an interesting but subtle relationship between the way the sections begin and end. Section 1, the opening of the piece, begins and ends with the pitch classes 1, 7, and 8. Section 2 (measures 5 through 8) begins and ends on a C-sharp. Taking this information in the context of the entire piece, this discovery takes on a special significance. The piece itself is circular, departing from and then returning to an original idea both in its ABA form and the fact of Part II being a retrograde inversion of Part I. It is plausible that this idea is telegraphed here on a smaller scale; perhaps, the first two small sections of Part I are “round” in the way that they begin and end on the same pitches.

Though there was a significant recurrence of the same sets in the first few sections of Part I, there was far less cohesion after Section 3. In light of this, I turned to analysis of some other facets of the piece. I investigated Berio’s use of dynamics, articulation, grace notes, pedaling, and chords and clusters, taking note of how these various elements contribute to the work as a whole.

Dynamics

In the 28 bars in Part I of *Rounds*, there are sixty-four indications for discrete

dynamic levels, nine diminuendos, and sixteen crescendos. Berio uses *ppp* twice, *pp* fifteen times, *p* fifteen times, *mf* eight times, *f* fourteen times, *ff* eight times, and *fff* twice. *mp* is entirely absent from the piece. These numbers demonstrate that Berio tends to use smaller dynamic markings more liberally. This leads one to presume that he found neutral ground in *pp*, *p*, and *f* with forays outside of those reserved for more emphasis. Table 1, below, summarizes occurrences of dynamic markings in Part I. I adapted the CSEG technique for use here by assigning a number to each discrete dynamic marking, identifying patterns, and then grouping them according to prime form in Table 2. No pattern is repeated more than three times, nor are there patterns longer than four dynamics. While these findings cast doubt on the possibility of any overt design in Berio's dynamic scheme, it does give an informative picture of the dynamic range and fluidity of the piece.

Table 1.
ppp=0, *pp*=1, *p*=2, *mf*=3, *f*=4, *ff*=5, *fff*=6

Section	Succession of Dynamic Levels
1	023424
2	23442142234241
3	13146341213562545255121
4	405513212525111342411
5	4511356

Table 2.

Prime Form	Sets as they appear in the music
01	121 (twice)

02	242 (three times), 113 (twice)
03	525 (twice), 411 (twice)
04	551 (twice), 511 (twice)
012	234 (three times), 342 (three times), 2342 (twice)
013	241 (twice), 356 (twice), 214 (twice)
024	135 (twice)

Articulation

Berio makes liberal use of articulation markings, with fifty-six accents, thirty-seven staccato indications, three tenuto markings, one *sff-p* (measure 25 downbeat), and one vertical wedge mark in Part I (measure 16 downbeat). Indications of staccato are only used for single notes and chords, never in horizontally driven passages. Staccato indications occur throughout Part I, often in conjunction with accents, and only once above the dynamic of *mezzo forte*. Accents are also used liberally, even during sudden loud moments where they are not needed for sonic effect. Like staccato indications, they are used mostly over single notes and chords, and only occasionally set off moments in a horizontal passage, such as in measure 18, Example 8. Tenuto markings can be observed three times, always under chords, in measures 15, 20, and 24. Interestingly, as I mentioned previously, *Rounds* is entirely devoid of slurs. The general aesthetic of the piece being rather dry and detached, Berio seems to use long beams, like that between measures 1 through 3, to present a sustained musical idea.

Example 8. Accents in a horizontally driven passage.



What becomes clear from this examination of articulation markings is that Berio worked with a diverse palette of sounds in mind. Clearly, there was some association between soft and short and loud and full, so the variables of articulation and dynamics are not completely independent of one another.

Grace notes

One of the most noticeable features of *Rounds* is its preponderance of grace notes. According to Berio's performance notes, these are to be played as fast as possible, presumably not interfering with the timing of notated rhythms. It is interesting that in a piece with such strictly controlled expressive variables, Berio leaves so much material in this quasi-spatial notation⁴. The grace notes are used throughout Part I to build intensity and point out accented notes, and they often occur in conjunction with an increase in dynamic level. The length of grace note bursts drops off dramatically after Section 2, up to which point they had occurred in groups of six to thirteen accompanied by a crescendo and application of the damper pedal. I identified some sets that were somewhat consistently used for grace note passages, to be discussed later. On the whole, their dynamic and expressive effect seems to be more important in this piece than their pitch content.

⁴ In the version of *Rounds* for harpsichord, all rhythms were notated spatially.

Pedaling

Rounds is very sparsely pedalled. Berio keeps this variable under tight control with infrequent and very specific indications for both the *una corda* and damper pedals. As I mentioned before, the first two double barred sections of the piece use the *una corda* pedal for their duration. This pedal is only used five times in Part I and with the exception of measure 20, only on the first page.

Often, Berio uses the damper pedal to help create a crescendo through accumulation of sound (for example, in measures 3, 4 through 4b, 6, and 17 through 18). Elsewhere, its purpose is not as clear. Neither set class analysis nor a summary of length of damper pedal application, (detailed in the appendix in Tables 5 and 6), was particularly revealing. Perhaps the most important result of the relative absence of pedaling in the piece is the transformation of this common effect - applied liberally by most pianists in most music - into something striking and unusual.

Chords and clusters

Chromatic clusters and closely spaced chords are prevalent throughout *Rounds* and constitute one of its most important features. Defining a closely spaced chord as having at least three notes with an outer range of no more than interval 7, Table 3 summarizes the sets represented in Part I. Most of these chords are diatonic.

Table 3. Closely spaced chords.

Set	Found in:	Diatonic?
(01346)	m. 13	no

(0135)	mm. 8, 9, 12, 13	yes
(01356)	m. 13	yes
(01357)	mm. 3, 13, 16	yes
(014)	m. 26	no
(015)	m. 27	yes
(01568)	m. 19	yes
(02357)	twice in m. 13, mm. 17, 20	yes
(0246)	m. 25	yes
(0248)	m. 9	no
(0257)	m. 9	yes
(027)	m. 27	yes

Analyzing the outer limits of all chromatic clusters used in Part I, I found the most common span to be interval 7 followed by interval 5, 6, 10, and 11. These clusters begin to appear in double bar Section 3 and afterwards persist throughout Part I. Because of their outer range of interval 7, they bear a close resemblance aurally to the closely spaced chords detailed above. [Table 4].

Table 4. Span of chromatic clusters.

Interval Span of Chromatic Clusters	Number of Occurrences
5	5
6	4
7	9
T	3
E	3

Sets

While there were many sets that were repeated in the piece, only a few could be placed in sensible categories according to their function in the music.

The sets (012346) and (0123468) often appear in horizontal orientation as grace or thirty-second notes. (012346) is the last eight grace notes of measure 3; the right hand notes, excluding the C, in the second beat of measure 5; and the left hand notes in measure 22 [Example 9]. (0123468) is the right hand thirty-second notes in measure 12 [Example 10].

Example 9. (012346) as grace or thirty-second notes in mm. 3, 5, and 22.



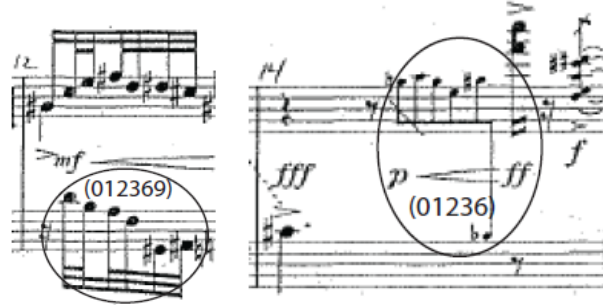
Example 10. (0123468) in similar use.



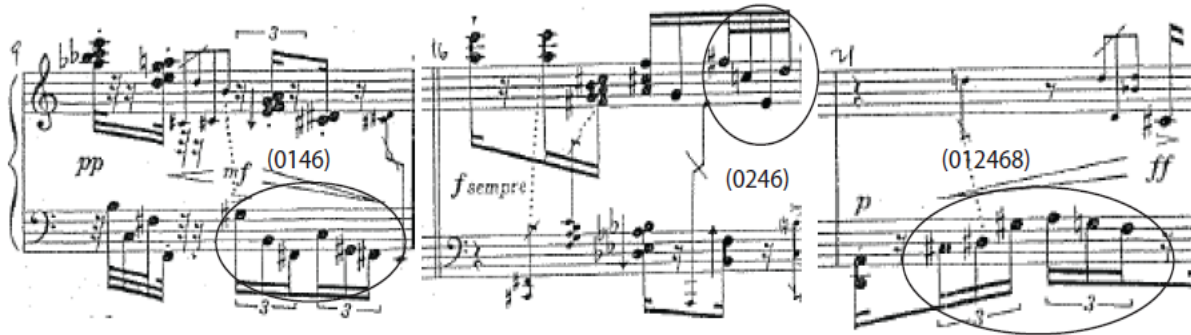
Two more sets with four half steps are used similarly: (012369) in measure 12 and (01236) in the measure 14 grace notes [Example 11]. The use of some subsets of (012346) and (0123468) is worth noting here: (0146) is the triplet sixteenth notes in measure 9; (0246) is the thirty-second notes in measure 16; and (012468) is the left hand

triplet sixteenth notes in measure 21 [Example 12].

Example 11. (012369) and (01236) in grace and thirty-second notes.

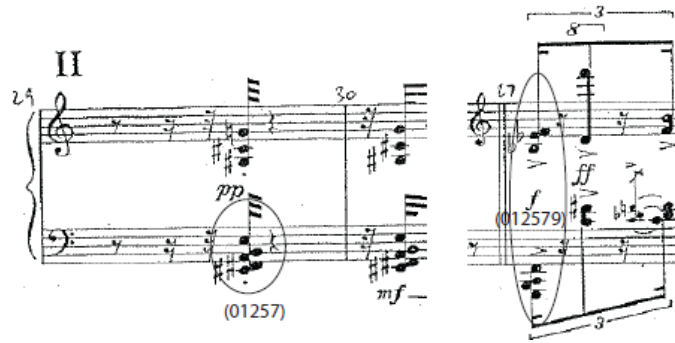


Example 12. Subsets of (012346) used in fast, horizontal notes.



(01257) and (012579) appear near the juncture of Parts I and II. (01257) is the left hand chord in measure 29 and (012579) is the chord between both hands at the downbeat of measure 27 [Example 13]. (01257) is also present in the right hand grace notes in measure 7 [Example 14]. A subset of both, (0125) is present but not highly conspicuous in measure 2 and appears in the right hand grace notes in measure 10 [Example 15].

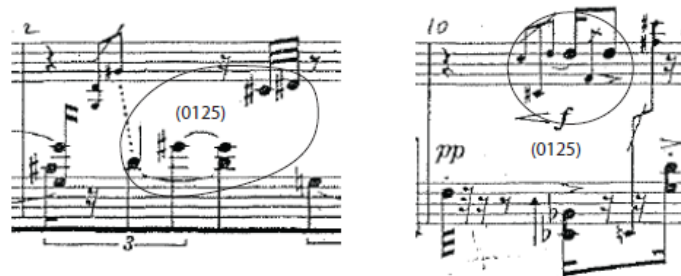
Example 13. (01257) and (012579) near the juncture of Parts I and II.



Example 14. (01257) in grace notes in measure 7.



Example 15. Occurrences of (0125), a subset of (01257).



Though the latter sections of Part I do not have the same set class cohesion found earlier, these are examples of how some sets are used throughout Part I in a musically consistent way. Examination of these sets along with an investigation into issues such as pedaling, articulation, and dynamics provide a fuller picture of the piece and its important components.

Since many of the *Rounds'* most consistent features are present both in the beginning and later on in slightly different forms, it is plausible that they evolved from ideas set out in the beginning. The diatonic collection is represented strongly both in the first

three sections of the *Rounds* and throughout. For example, the closely spaced, mostly diatonic chords found first in measure 3 perhaps eventually give birth to the chromatic clusters, similar in aural effect, that appear beginning in Section 3. (016), the set formed by the first three pitches heard, is both diatonic and also present in most measures of Part I. Finally, perhaps the heavily accented notes in the opening three sections are reflected in lesser accented notes later on, such as the *fortissimo* C-sharp in measure 21, the B at the downbeat of measure 22, and the *forte* D in measure 24.

General features of the piece suggest a continuous trajectory or evolution from the opening. C-sharps, which occur mostly between the staves and most obviously in the opening sections, remain present in every measure but become less and less conspicuous as Part I progresses. Naturally, they return to the forefront during Part II. As I mentioned earlier, the range of the keyboard expands around the initial C-sharp of the piece, roughly system-by-system between measures 1 and 31: from G3 to C5, E2 to A6, B2 to B7, A2 to D7, D2 to D7, and G1 to F7. Three measures into Part II, the range expands even further to A1 in measure 30 and F7 in measure 31, these being equidistant from C-sharp in pitch class space. Finally, it can be observed that at the opening of the piece Berio indicates the quietest dynamic marking (*ppp*) and measure 31 the loudest (*fff*). Granted, these dynamics are used sparingly elsewhere, but this fact gains significance when viewed alongside the expansion of the range of the keyboard. All of this evidence supports the idea that *Rounds* evolves from rather than directly repeats ideas set out early in Part I.

Fascinatingly, the last two examples cited draw our analysis slightly outside of the limits of Part I. While measures 28 and 29 lie on either side of the junction of the two parts,

the scope of the expansion in dynamics and range of Part I overlaps into Part II until measure 31. If we again consider the piece as a series of circles represented by each section and a larger circle represented by the ABA form, when Part I ends for the second time, this expansion is not fully carried out and in a sense the “circle” remains open.

Rounds is based on both a continuous evolution of ideas and on the concept of circular repetition on several levels. The notion suggested by the title is manifested in the “circular” ABA form of the piece, the retrograde inversion of Part I in Part II, the fixation on C-sharp, and repetition of (016) and the diatonic collection. It is unified as a whole by these representations as well as the more global features which evolve within it, such as the accented notes, chords and clusters, sudden dynamic changes, and some consistent use of sets. If we think of *Rounds* as a series of circles which are at once static in their shape yet constantly evolving in their content, we can see how the music elegantly reflects the idea suggested by the title.

Appendix

Table 5.

Section	Sets under the pedal when not accompanied by crescendo
2	(01245689)
3	(016), (0234679), (012369), (0127)
4	(012345678T), (01235), (01348)
5	(0123456789)

Table 6.

Section	Pedal Length
1	8 grace notes; 1.5 beats
2	.75 beats; 1 beat plus 1 32nd (1.125)
3	2 beats; .8333 (5/6) beats; 1.5 beats; .6666 (2/3) beats
4	.75 beats; .3 beats; 3 beats; .6666 beats
5	1.75 beats; .6666 beats; 1.5 beats