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Sofia Gubaidulina's compositional strategies in the "String Trio" (1988) and other works

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SOFIA GUBAIDULINA'S COMPOSITIONAL STRATEGIES IN THE STRING TRIO (1988) AND OTHER WORKS

by

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Preface

"...Odd, like all her things, and needing more intensity than it got here to project its instrumental bickering---"[1] is the half-sentence with which New Yorker reviewer Paul Griffiths addresses and dismisses the piece Quasi Hoquetus by Sofia Gubaidulina, performed in a concert entitled "The European Mystics," held at the Brooklyn Academy of Music in November, 1993. (Griffiths had devoted previous lengthy, probing paragraphs to the music of Giya Kancheli, Henryk Górecki, and Arvo Pärt, performed in the same concert.) This dismissal is symptomatic of Gubaidulina's slower rise to critical acclaim and public attention in this country than that of some of her compatriots from the former Soviet Union, despite her European and Russian success.

When the period of her American exposure began, John Rockwell, in a New York Times article, had foreseen a different reception, also linking her to Pärt: "Some listeners of her recent music have been reminded of the quiet ecstasies of the Estonian mystic Arvo Part [sic]. But her work is...more accessible for the general listener."[2] But this general accessibility has unfortunately not yet led to a popularity for Gubaidulina like that of Pärt, or of Górecki or Alfred Schnittke. Boston Globe critic Richard Dyer, differing with Rockwell, cites one possible reason for her limited appeal: "She is a composer in the line of Fauré in that she writes music that will always appeal to a small number of sophisticated listeners.... Gubaidulina is a great composer, but she's a connoisseur's composer."[3]

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[1]Paul Griffiths, "Mystics in Brooklyn," The New Yorker, November 29, 1993, p. 155.

[2] John Rockwell, "A Soviet Composer Awaiting Discovery," The New York Times, January 24, 1988, p. 24.

[3]Quoted in Philip Kennicott, "Russian Composer Gains Ground in US," The Christian Science Monitor [date unknown], 1989, p. 13.

Poor publicity may also contribute to her relatively low profile in this country. Her recent (February, 1994) visit to this country for two American premieres yielded a single misstatement-filled article in the New York Times and a short review in the Washington Post. The program booklet of the concert of the American Symphony Orchestra at Lincoln Center that she shared with Schnittke featured a biographical article about him--the concert came at the end of a week of Schnittke concerts--but did not mention her.

Although a feminist analysis of the situation might point at this juncture to an obvious reason for the disparity, it is not clear to me that Gubaidulina's gender is in fact the major cause of the limit of her success. Gubaidulina herself seems to dismiss with humor the possibility that gender discrimination has been a factor, at least in her earlier career.

> In Russia, women composers never complained about discrimination. It was equally miserable for everyone.[4]

> Nobody took much notice of me. They could always dismiss what I did as simply female eccentricity. It was much harder for the men.[5]

The attempt in this country to market her as one of the "Mystical Minimalists" may instead be unsuccessful because her music is actually quite different from theirs. Although she has a strong personal religious sensibility, her music does not possess the same simple, diatonic, neo-medieval qualities as that of Pärt and Górecki. In fact it is often acerbic and complex, with stronger influences of the European avant-garde of the sixties and seventies than of medieval music. Programming her with Schnittke may be another miscasting, an effort to emphasize a common Russian heritage which

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[4]K. Robert Schwarz, "From a Land of Equal Opportunity, and Misery," The New York Times, February 13, 1994, p. H:27.

[5]Gerard McBurney, "Encountering Gubaydulina," Musical Times, March 1988, p. 121.

is, for Schnittke, quite overtly traceable to Shostakovich, with programmatic, diatonic, even neo-romantic allusions. Gubaidulina's musical vocabulary has a different pedigree; she claims Webern and Bach as her main influences, though her music sounds like neither. The composer Luigi Nono likened her musical ideals, though not her actual sounds, to those of the early twentieth century Russian composer Skryabin. Her uses of some aspects of serialism and extended instrumental techniques make her music most compatible with such composers as Boulez, Stockhausen, Berio, Nono, Babbitt and Carter; coloristically it also has affinities with Ligeti, Lutoslawski and Penderecki.

A wider critical reception of Gubaidulina's music will depend on more performances (with adequate publicity) in which she is not miscast as a minimalist or a Russian nationalist, and on the development of a body of analytical writing about her music and its place in contemporary composition. (To date there has been only one book about her, in Italian, the first half of which is a biographical interview, the second a series of short and consequently superficial analyses of her pieces by the Russian musicologist Valentina Cholopova. A few short journal articles, primarily biographical and descriptive, by Cholopova, music historians Laurel Fay and Gerard McBurney and a few others, complete the current Gubaidulina bibliography.)

I have chosen to make a start toward expanding this body of critical literature about Gubaidulina because her music has impressed me with its immediacy and dramatic impact. She is a mature composer deserving of such attention, with a large body of compositions in every genre except opera. The publisher Sikorski's catalogue of her music reveals major symphonic works (Stimmen...Verstummen...[1986], Stufen [1972] and others), the violin concerto Offertorium [1986] and other concerti, large works for voice and orchestra (Night in Memphis [1968], Rubayat [1969], Hour of the Soul [1974]), many

chamber works, including four string quartets and a number of pieces for percussion, and choral works (Hommage à Maria Tsvetaeva [1984] for *a cappella* choir, and Alleluia [1990] for choir and orchestra).

Serious analysis, even of one piece, should allow the reader/listener a more concrete and detailed awareness of her practices than has heretofore been available. Armed with this knowledge, one may then approach other pieces comparatively to see how they confirm or extend the practices observed in the first piece. This detailed understanding should furnish the reader with the ability to hear with more discrimination any of her music, including works she may write in the future. And most crucially, it will allow perception of sharper distinctions between her music and that of other composers, particularly the compatriots to whom she has been erroneously likened.

I shall not undertake the latter task in this study, but concentrate on one piece in detail, following it with a shorter comparative examination of three other pieces. The String Trio [1988] seems a good point of departure. Its instrumentation is more manageable than that of a work scored for larger forces, and its three movements offer three different formal schemes and coloristic conceptions as models, but with motivic interrelationship among them. It is a short work of great power, with a degree of cumulative tension in each movement beyond the expectations aroused by its often minimal means. My method will be to examine the Trio from a variety of musical vantage points. For each movement, I shall first sectionalize and classify the form, and then proceed to examine the work according to several musical parameters: pitch--both large-scale matters and details; rhythmic organization and surface; and playing modes and coloristic techniques.

The defect of this method is the musical interrelatedness of all issues. How can one undertake a discussion of form separate from pitch or from

large-scale rhythmic proportion? Such a study must allow overlapping of topics, and even a certain redundancy: material may fit into several different headings. The reader will not emerge with a chronological view of the piece, of what happens in it moment by moment, but rather with a topical view of the compositional procedures in Gubaidulina's work.

I shall use the following analytical conventions: Pitch classes will be labeled by integers according to semitones, with 0 as C, 1 as $C^{\#}$, etc., except when indicated otherwise. I shall use John Rahn's conventions of bracketing pitch classes and intervals.[6] Curly brackets { } will indicate pitch and pitch-class sets, with commas between the members of the set. Straight brackets [ ], also with commas within, will indicate prime forms of T_n/T_nI types. Angle brackets < > will surround ordered pitch intervals, with interval direction given by plus and minus signs; unordered pitch intervals will not have these signs within the angle brackets, but will use commas between the integers. Angle brackets without commas or plus and minus signs will be used in discussing pitch contour. In that case, 0 within the bracket refers to the lowest note, 1 to the next-lowest, and so forth.

The translations of all foreign-language texts are mine.

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[6]John Rahn, Basic Atonal Theory (New York: Schirmer Books, 1980).

Introduction

To provide a context for this study, I shall first briefly sketch Gubaidulina's biography and offer a summary of the environment in which she developed, allowing her and her colleagues to speak as much as possible in the first person, from film scripts and interviews to which I have had access. Sofia Asgatovna Gubaidulina (the accent is on the third syllable) was born in Chistopol in the Autonomous Tatar Republic of the Soviet Union in 1931, and spent her childhood and first stage of musical study in the city of Kazan. Her father, an engineer, was of Muslim heritage--his father had been a *mullah;;* her mother was ethnically Russian. In an interview, Gubaidulina reveals her early resourcefulness at dealing with both material and musical poverty.

> It was out of the question to buy toys of any kind or any books...it was an absolutely grey, boring life. I sat in that bare yard, with a rubbish dump in the middle...I looked up at the sky, and I began to live up there.[7]

> [Referring to the little piano pieces she was made to play] They were in two octaves...very poor compared to the possibilities of the instrument. So once again, out of poverty, I developed the wish to compose. If humanity was so barren, I would start composing myself.[8]

Her success in Kazan brought her to the Moscow Conservatory in 1954, where she studied composition with Nikolai Peiko, a pupil of Shostakovich, and later with Vissarion Schebalin.

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[7]Barrie Gavin and Gerard McBurney, The Fire and the Rose (London: BBC 2, June 10, 1990), p. 4.

[8]Ibid., p. 8.

The political repression in the Soviet Union during Gubaidulina's formative and subsequent years requires no recapitulation here. Its impact on Russian musical life, on the studies and development of composers, and on Gubaidulina in particular was considerable and multifaceted. Composers had virtually no alternative to living with state support for their art; this required a willingness to "toe the line," at least externally, by writing music that was officially acceptable. Gubaidulina fulfilled that exercise by writing music for a number of films. As for her "own" music, she describes approaching the Soviet Ministry of Culture for a grant for a piece that had been performed abroad [Night in Memphis, 1968].

> I arrived with my score and record. A bureaucrat said, "Your music pleases us, but what is meant by the text, 'O night, give me peace and I will offer you peace'?"
>
> "The most elevated poetry," I replied. "The Egyptian Book of the Dead, translated by one of the greatest poets."
>
> "You don't understand! We need texts that exalt socialist happiness. Compose the same music concerning the next Party Congress and we will pay you." [9]

Twentieth-century western music was forbidden to be taught, discussed or performed, with Prokofiev and Shostakovich the only serious modern composers that students were allowed as models. The composer Edison Denisov, speaking of the 1950's, said,

> It was a dark time for all our art...and in particular our music. For just mentioning Debussy, Ravel and Stravinsky you could be dismissed from the Conservatoire.[10]

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[9]Bernard Mérigaud, "Des notes surgies du silence," Télérama N°2247, (February 3, 1993), p. 57.

[10]Barrie Gavin and Gerard McBurney, Think Today, Speak Tomorrow (London: BBC 2, May 27, 1990), p. 7.

Scores and records were occasionally smuggled in. Gubaidulina speaks here of the attitude of her deprived generation when such an object appeared:

> We had no information at all about the world. Everything was hidden from us. If you went to the library to read a book you wouldn't get it for some stupid reason. Here, you couldn't have this, there you couldn't have that. So when a record or book was somehow available, you'd jump on it with an enthusiasm unimaginable to people who had everything.[11]

The Composers' Union, headed continuously from 1948 until recently by the composer Tikhon Khrennikov, was the official organ of government control over composers. Although Khrennikov has in recent years offered a "Schindler defense" of his own actions,[12] and has even specially recognized Gubaidulina,[13] he was, during most of his career, antagonistic to the cause of modern western-influenced music. In 1979, at the Sixth All-Union Congress of Composers, he even singled out for criticism Gubaidulina and six other composers subsequently known as the "Khrennikov Seven," an arbitrary selection of Soviet composers from those whose music was performed at a Cologne festival of "unofficial Soviet composers." Khrennikov denounced

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[11]Ibid., p. 10.

[12]After an interview with him in 1990, Seppo Heikinheimo concluded, "In Soviet circumstances it is no mean achievement that, since 1948 when Khrennikov came to power, not one Soviet composer has been shot". [Seppo Heikinheimo, "Tikhon Khrennikov in Interview," Tempo, 173 (June 1990), p. 20.]

[13]"We have many gifted composers, above all Sofia Gubaidulina. I am happy to confess that Oleg Kagan's performance of her fine violin concerto in Helsinki in 1948 [sic--1984?] really opened my eyes to her talent." Ibid., p. 19.

the seven as sensation-seeking and ungrateful "members of our Union whose music is played in this country more frequently than it deserves."[14]

Not only contact with western music and the use of other than socialist themes was forbidden, but also western avant-garde techniques and unacceptable philosophies as a basis for music, including all religion. Gubaidulina experienced a strong, private religious identity from her early years, and speaks vehemently now about the need for a religious basis for music; many of her pieces have an overtly religious programmatic aspect. The following are two of her many comments about this matter:

> I've always explored in the personality of instruments the metaphors of life. When I see the manner in which the finger of violinist Gidon Kremer is concentrated on the point of contact with the string, I read in that a gift of self, an offering, an artistic sacrifice, a religious act.[15]

> I think that transfiguration is what we most desire in the creative process because this transfiguration into something completely different is what unites us with our creator.[16]

She was strongly influenced by the Russian mystical philosophers Vladimir Solovyev (1853-1900) and Nikolai Berdyaev (1874-1948) at a time when contact with overtly religious material was denied her. All who describe her music point to its tendency to transcend the purely musical in favor of the symbolic. It often contains or connotes a ritual action; even its structure may refer to something extramusically religious--for example, the form of the cross.

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[14]Boris Schwarz, Music and Musical Life in Soviet Russia. Enlarged Edition, 1917-1981 (Bloomington, IN: Indiana University Press, 1983), p. 622.

[15]Bernard Mérigaud, "Des notes surgies," p. 57.

[16]Barrie Gavin and Gerard McBurney, The Fire and the Rose, p. 2.

Gubaidulina may be especially forthcoming on religious matters, yet a religious element is perceptible in the music and statements of many of her colleagues as well.

> [Alexander Ivashkin]: For many years we weren't allowed to speak or show what we thought. And consequently a strange thing happened. When something came into the open, part of it stayed hidden...so symbolism became very characteristic of Russian music...An interval, sound or rhythm became a symbol with which the listener could fantasize. Music became the bridge to a thought or philosophical concept rather than an end in itself.[17]

> [Elena Konshina]: I discovered the words of the German mystic artist Caspar David Friedrich, a wonderful artist, who said, "An artist's moral worth stems from the religious core of his soul."[18]

> [Vladimir Tarnopolsky]: ...Religious music was suppressed for a long time and therefore became more attractive for us.[19]

> [Leonid Grabovsky]: And generally speaking, these elements of Christianity [Eastern Orthodoxy and peasant pagan rites] have never completely disappeared from our perception of the world despite seventy years of violence against it and oppression of it.[20]

> [Tigran Mansuryan]: Unfortunately,...in the world I live in, I cannot write the music of paradise. This is my fate.[21]

The repression of basic freedoms nevertheless indirectly conferred certain benefits on Soviet composers. Although they longed for the ideological shift which finally began in the late '80's under *perestroika*, they were among

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[17]Barrie Gavin and Gerard McBurney, Think Today, p. 32.

[18]Barrie Gavin and Gerard McBurney, Giving Voice (London: BBC 2, June 17, 1990), p.25.

[19]Ibid., p. 26.

[20]Ibid., p. 24.

[21]Ibid., p. 29.

its chief victims, deprived of the perquisites--commissions, freedom from having to undertake regular work, subsidized trips abroad, two months a year in artists' colonies--that had automatically accrued to all composers willing to follow the dictates of the government, even if simultaneously pursuing their private musical life with secret concerts and gatherings--"our real life," as Gubaidulina called it.[22] Their economic security has been decimated by the collapse of government support for the Composers' Union; most now live in exile, including Gubaidulina. As she put it in an interview, "In Russia we no longer have to endure ideological restrictions, but censorship for material reasons. That's the sad destiny of this country."[23]

In the face of a common enemy, strong friendships and solidarity among composers flourished. For Gubaidulina, there was a close-knit group of composer friends in Moscow with whom she formed the group Astreia in 1975, specializing in improvisation on Asian percussion instruments. She describes the group in an interview:

> It wasn't just a music group but a spiritual school. We had a desire for new musical sensations, to obtain through sound a state of meditation, to unite individual consciousness by the concrete practice of oriental instruments, without the intermediary of the performer.[24]

Most nurturing of all during the period of repression was the handful of visits from foreign composers and performers who brought precious information about western music. Luigi Nono was welcomed to the USSR in 1963 because of his Communist allegiance, but he surprised the young composers with whom he spoke by his immersion in avant-garde techniques.

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[22]David Drew, Dmitri Smirnov, and Viktor Suslin, "Herschkowitz Encountered," Tempo, 173 (June 1990), p. 40.

[23]Bernard Mérigaud, "Des notes surgies," p.57.

[24]Ibid., p.56.

Stravinsky also came in the '60's, performing his own music in Russia for the first time in decades. Viktor Suslin recalled, " He had to explain even elementary things...It was a great lesson for us."[25] Glenn Gould appeared, and dismayed the organizers by not playing a classical program. As Denisov recollected,

> Glenn Gould was unknown to us...He asked for...a meeting with students...For us, it was probably the crucial event in discovering the Second Viennese School...[He] played and analysed for several hours the compositions of Berg, Webern, Schoenberg and Krenek.[26]

Nikolai Karetnikov added, "None of us imagined such music could exist. It forced us to think and draw conclusions."[27] In 1967, Boulez managed to come with the BBC Symphony, again attracting an avid student following.

> [Leonid Grabovsky]: We perceived new things, re-evaluated. We found a new attitude to sound, to aesthetics: an idea of what is, and what is not, possible in music today.[28]

One other representative of western musical practice secretly conveyed crucial information to almost all of Moscow's young composers, including Gubaidulina. Philip Hershkovitch [Gershkovitch in Russian] was a Viennese pupil of Webern who had been uprooted to Moscow during the war and subsequently forbidden to leave, to teach or to join the Composers' Union, because of the supposed bourgeois decadence of his music and theoretical writings. He lived in poverty in Moscow, composing, analyzing, and secretly in-

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[25]Barrie Gavin and Gerard McBurney, "Think Today," p. 15.

[26]Ibid., pp. 17-18.

[27]Ibid., p. 18.

[28]Ibid., p. 25.

troducing his unofficial students to serialism and western-style analysis. Viktor Suslin assesses his importance as follows:

> I'm sure that without Gershkovitch we would not have had such interesting compositions as the works of Schnittke, or of Gubaidulina. ...He was like a seed...an apostle sent by Webern to work among the barbarians. Not that Russians were barbarians but in relation to the mid-European German culture...then what was happening in the USSR in the mid-fifties can be described in one word--barbaric.[29]

For Gubaidulina and her colleagues, gaining an acquaintance with western techniques through the occasional smuggled score, foreign visitor, or midnight meeting with Hershkovitch conferred the possibility of a certain freedom of attitude and eclecticism toward these techniques. These new ideas represented tempting options brought from afar, to be sampled and adapted, rather than stylistic dogmas or schools to be strictly followed. This may explain the stylistic diversity and eclecticism of her compatriots, and her own disinclination to write strictly serial music. The atmosphere of fear, repression and occasional nourishment from the outside world also generated a certain hothouse intensity, and pride in the particularly Russian ability to respond emotionally and spiritually to music, despite the technical superiority of the visitors from the West. Composer Yuri Kasparov summarizes this attitude:

> We had no freedom, so we developed in a different way. We didn't have the chance to develop our technique so we're amazed by what they can do, and we can't. But as far as the...content goes...ideas...the guts...here we have an advantage because we had to go through it all quickly and the 'Idea', the 'Concept' is more important to us than technique.[30]

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[29]Ibid., p. 12.

[30]Barrie Gavin and Gerard McBurney, "Giving Voice," p. 17.

Hearing Gubaidulina's music in light of all these influences, one can expect a meeting of opposites, a synthesis. This may be more explicitly true for her than for her compatriots. Even the titles of many of her works make opposition a fundamental element: Garten von Freuden und Traurigkeiten, Light and Darkness, Stimmen...Verstummen...., Pari e dispari. Yet it is not an element foreign to the thinking of Soviet composers in general, reared as they were in the communist ideology of dialectic, of thesis and antithesis. Cholopova enumerates some of the binary oppositions to be encountered in Gubaidulina's music:

> Strict intellectual structuring with deeply intuitive procedures, a tendency toward exact calculation concurrent with the inspiration of creative spontaneity, thought in philosophical dimensions along with feeling for the most delicate coloristic nuance. And in her music the art of East and West are organically united.[31]

All of these opposing forces and influences at work in her music make detailed scrutiny of it essential in order to define her hallmark. The following analysis of the String Trio is intended to serve as a paradigm for that definition. Both the analytical methods used and the findings that emerge from using them should be in some way applicable to her other works in order to confirm the nature of that hallmark or signature; I have included short comparative studies of three other pieces in this analysis for that purpose. However, the explication of details alone does not inevitably allow the reader to extrapolate the essence of a work or of a composer; we shall also need to step back from the aural canvas intermittently to consider the general impact and implications of the work.

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[31]Valentina Cholopova, "Synthese von Westeuropaischem und Orientalischem," Musik und Gesellschaft, 10 (1988), p. 527.

I. First Movement

A) Formal Classification

The form of this movement emerges from a series of contrasting passages separated by pauses. This form intrinsically implies a certain discontinuity, atomism, non-linearity in the deployment of musical material in time--formal qualities that are sometimes identified as the central way modern music has defeated traditional goal-orientation and linearity. Each section is heard as a separate moment--almost as a miniature composition. Jonathan Kramer calls this kind of form "moment form," defined in the following ways:

> The piece doesn't really begin, but seems already to be in existence, as if we just happened to tune in. Moments in the piece may be related but are not connected by an ongoing line.[32]
>
> Form in moment time pieces come from the proportions or consistencies of the moments. Cumulative listening to the moments makes them add up to a convincing whole.[33]
>
> Not even the return of old material creates deep-level articulation, because it is never preceded by large-scale anacrusis.[34]
>
> [Quoting Stockhausen's discussion of moment form] These forms do not prepare the listener to expect a climax.[35]

Such a form does not evoke a sense of line or continuity. If continuity is identified with anticipation or expectation, then in music where there is no ability to anticipate the future, there is only a series of present moments.[36]

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[32]Jonathan D. Kramer, The Time of Music (New York: Schirmer Books, 1988), p. 50.

[33]Ibid., p. 52.

[34]Ibid., p. 113.

[35]Ibid., p. 201.

Such a mystical evocation is particularly tempting to apply to any piece of Gubaidulina's, given her preoccupation with spiritual matters. But it may not be an accurate assessment of the aural effect of this or any piece; the listener, if not the piece itself, may inevitably supply connection, which Hasty suggests is a result of comparison:

> The apprehension of difference, far from separating discrete events, requires that we bring events together into a relation, otherwise we could not be aware of difference. This bringing together is the mark of continuity.... [37]

He questions Rochberg's assertion that connectedness is a function of predictability; expectation may not be "a determination of what can be but an openness to the possibility of relating events."[38]

If this suggestion has validity, it requires a method of analyzing the form of this movement that will seek or create connection among the rhythmically discrete and seemingly discontinuous sections of the piece while recognizing that classifying labels may depend on, and change according to, the time-frame of the analysis. This is necessary in a work in which the classification of sections according to degree of relatedness and contrast is ambiguous (which cannot be said of the steady-state form of the second movement or the predictably-recurring *ostinato* of the third).[39] The first

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[36]This view is echoed in an article about succession and time, in which Christopher Hasty quotes George Rochberg's invoking "a pure presence, the realm of eternity." [Christopher Hasty, "On the Problems of Succession and Continuity in Twentieth-Century Music," Music Theory Spectrum, 8 (1986), pp. 59-60.]

[37]Ibid., p.60.

[38]Ibid., p. 62.

[39]Such a method is detailed in David Lewin's article "Music Theory, Phenomenology and Modes of Perception," Music Perception, III: 4 (Summer 1986), p. 361. Lewin reminds us that we may modify our perceptions in the course of the work, denying old ones, and may also do so in the course of repeated listenings.

hearing involves a different task from subsequent exposures. With subsequent hearings, connections, expectations and memories will have formed. At the first hearing, though, one can only impose some interpretation on the data of the sections and their content as they occur. Doing so from the beginning sets up expectations even for later parts of the first-heard piece. Repeated followings of A by B at the beginning cause expectation that future A's will also be followed by B's. An interpretation may also retroactively change as the piece progresses--A and B seemed so different as they went by, but upon hearing C, A and B seem much more similar, requiring reinterpretation of the previous experience, perhaps in this way: ABC (first hearing); AA'B (second hearing).

I shall attempt to classify the formal parts of this movement on a moment-by-moment basis, re-classifying retroactively in light of further information and events, using the following list adapted from Lewin's model. Doing this will reveal not only that the sections are related to each other and that a longer line or plan is in evidence despite the segmentation, but also that the degree of contrast between the segments is not random, but incremental. For each event (E) on the list, there will be an identifying bar number, a description (D), revision of past perception (R), prediction of the next event(s) (P), and cumulative classification (CC).

E1: Bars 1-2. **D**: reiterated B4, *mf* to *ff*, distributed among 3 instruments in single and paired attacks separated by rests. A piece, so far, about a monotone with *staccato* attacks. **R**: none. **P**: more of the same, or something new. **CC**: cell "a".

E2: Bar 3. **D**: up and down a semitone (<±1>) from B4 in *col legno* ricochet *glissandi*. **R**: no longer exclusively on B4, because of the *glissandi*, and no longer a single playing mode. **P**: another contrasting mode of presenting B4, a cell with new pitch(es), or return to "a". **CC**: cells "a" and "b".

E3: Bars 4-6. D: return and expansion of "a". R: establishment of a pattern of alternation of two playing modes and two rhythmic treatments of B4. P: cell "b" to follow. CC: aba.

E4: Bar 7. D: return of "b", with added cello *glissandi* <+7> and <-6> from B4. R: none. P: continuation of alternating pattern. CC: abab.

E5: Bar 8-15. D: continued alternation of "a" and "b," with rhythmic expansion and contraction. R: none. P: another "b" to follow at 16. CC: ab ab ab ab a.

E6: Bars 16-18. D: longer *sul tasto glissandi,* without ricochet, to further destinations. Probably too different to be called "b." R: This piece now seems to be a set of variations of playing mode and rhythmic treatment of B4. Expectation of "b" was foiled by a new, contrasting variation. P: further variations, or return to "a" and "b," or eventually breaking away from B4 into something new. CC: ab ab ab ab ac.

E7: Bar 19-20. D: larger contrast; new material. Polyphony, introduction of wide pitch range. Some elements of previous section conserved: in cello, *col legno* ricochet *glissandi* from "b," though not on B4; in viola, decoration of B4 by previous auxiliary pitches of "b," not particularly audible until other two instruments finish. R: What was called "c" above seems retroactively close enough to "b," compared to this section, to retroactively re-name it as b(var). The piece may no longer be defined as merely variations on a monotone. P: continuation of this, return to first section, or another new cell. CC: ab ab ab ab ab(var) new c. Possibly previous section of "ab" pairs can now be called "A" [abababababab(var)] and this new "c" is actually "B."

E8: Bars 21-37. D: total contrast. Dance-like, homorhythmic chords with D4 persisting. R: Revoking of possibility that "new c" above (E7) is a new section, B-- now heard as still part of A, with this section as B; in retrospect the previous material all seems related.[40] P: further development of this material, or another new section, or return of earlier cells. CC: A [ab ab ab ab ab(var) c] B.

E9: Bars 38-51. D: some connection with Section B through the C#4 held over from it. But clearly a return of Aa, though a variant using the tritone

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[40]Valentina Cholopova [in Enzo Restagno, ed.,Gubajdulina (Torino, Italy: Edizioni di Torino, 1991), p. 235] suggests the similarity to sonata form, with these bars as the second subject of the exposition and the material from 38 onward as development. I find the imposition of a traditional form on this material inappropriate and inadequate.

simultaneity G-C# in different registers, and in a 12/8 meter. Ab also returns, with the same tritone, a more assertive dynamic (*mf*), and an unvarying five attacks per instrument in each of its occurrences. One expects and receives the alternation of "a" and "b" found in section A, for a total of six rounds plus one extra "a." **R**: structural overview available only now, with a varied return of A. What has happened through the Events prior to this one is an incremental level of contrast. That is, Events 2, 6, 7, and 8 each initially seem sufficiently contrasted from what has come before to warrant separate classification, but become retrospectively associated with what came before, compared to the greater contrast of what followed. **P**: return of B. CC: A' [ab ab ab ab ab ab a]'.

E10: Bars 52-60. **D**: Tempo marking and C#-D4 recall bar 21 and E8. D4 prolonged here throughout viola as it was in violin at E8, with violin ending <+11> from D4, as cello at E8 ended <-11> from D4. More distinct from original B than A' was from A: dance-like rhythm not sustained, not chromatic but diatonic (Phrygian) ascent. Variant of B. **R**: none. **P**: further repetition of A unlikely. Possibly new material. CC: AB A'B'.

E11: Bars 60-89. **D**: Music from 60 to the end is "one thing," overlapping phrases of movement and stasis, with the violin reaching chromatically upward, the cello downward, without the previous articulation through pauses. Continuation of E10 in some respects--no closure, continued emphasis on held open strings. But also separate from and greatly expanded from E10, with several separate developed motives. Perhaps it does for B' what E7 did for A, taking the workings but not the surface from the foregoing material and extending it into a more expansive statement. **R**: ambiguity in degree of articulation between E10 and E11 makes for uncertainty about whether this is a distinct section. Previous B' perhaps to be considered B'a, with E11 as B'b. **P**: expectation of continuation. CC: B'[ab].

E12: Bars 90-104. **D**: coda--registral extremes have been attained and are held, motivic figures simplified. **R**: the sense of coda retroactively confirms the weight of E11, as the only substantial, unsegmented and climactic part of the movement. **P**: conclusion. CC: B'[ab coda].

The idea of "moment form," proposed in the preceding sections to describe the independent phrases isolated by pauses and proceeding from one to the next with incremental contrast, is one way to look at the form of this movement. Other aspects of the form contradict this approach, evoking a di-

alectical tension between non-linear and linear aspects. The return of the A material as A' with two notes rather than one implies connection, not isolation; the large-scale chromatic wedge of E11 above echoes earlier phrase shapes in a linear and progressive way. This sense of coherence throughout the movement denying "moment form" is not a matter of rhythmic connection, given the pauses between phrases, but rather a retrospective sense of relatedness of material in which the element of pitch plays the largest role.

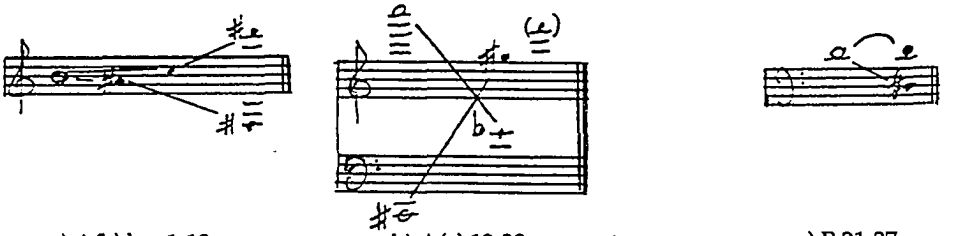
B) Pitches

In discussing pitch in this and the subsequent two movements, I shall at times be addressing aspects of pitch usage that primarily determine or reflect the form, but at other times, those that principally affect the surface. In this movement, the difference between these two aspects is the difference between pitch procedures that clearly cross the boundaries of the pauses between the musical events (contributing to the sense of continuity mentioned above) and those that do not.

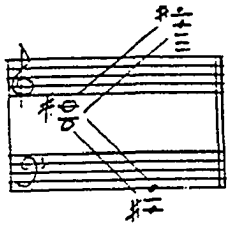
1) Expansion, contraction and symmetry

The first aspect of pitch usage, one with structural implications, is the choice of register and pitch space, particularly the tendency of the initial pitch(es) of each of the sections to expand outward or contract inward in a wedge shape, shown in the figures of Example I.1. That each section consists of a different wedge shape contributes to non-linearity, but that each passage consists of such a shape at all is a unifying, coherence-inducing element.

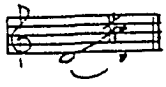
Example I.1. Wedge shapes of each section.



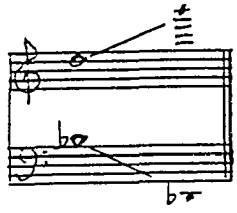
a) A(b) bar 1-18 b) A(c) 19-20 c) B 21-37



d) A' 38-51



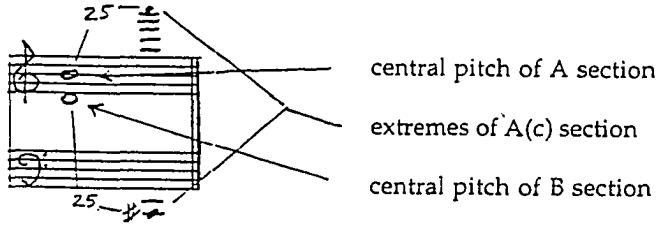
e) B'(a) 52-59



f)B'(b) 60-104

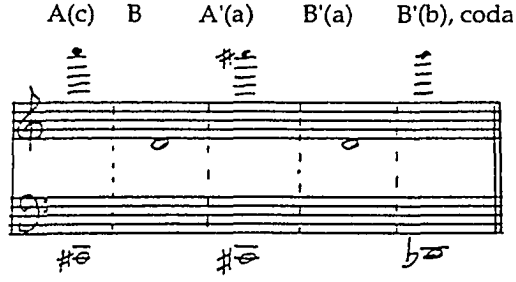
None of these wedge shapes is exactly inversionally symmetrical except for the one from bar 60 to the end (Example I.1f above). However, other types of symmetry <u>are</u> observable, in three situations. First, the sections we called B (Example II.1c) and B' (Example II.1e) are inversionally symmetrical, one going <u>up</u> and the other <u>down</u> eleven semitones from the pitch D4. This further supports my earlier formal association of these two passages. Second, the initial pitches ($C^{\#}2$-C7) of the wedge shape of bars 19-20 (Example I.1b above), although they contract inward and cross, also represent an <u>outward</u> inversionally symmetrical expansion from the axis B4 (the primary pitch of the A section from 21-37) and D4 (the primary pitch of the B section) (Example I.2). Because this A(c) section had seemed some ways related to the previous sections, in some ways highly contrasted with them and transitional to the next (B) section, this axis of symmetry between the initial pitches of A(c) and the primary pitches of the two surrounding sections seems to summarize vertically the formal ambivalence of the passage.

Example I.2. Axis of symmetry between A, A(c) and B sections.



Third, the pitch C#(Db)2 is deployed in three crucial moments defining the shape of the movement (in the summarizing and transitional Ac section simultaneously with C7, in the A'a section with C#7, and at the end of the piece with B7). These three moments present a roughly retrograde symmetry, as they are interpolated by the two B sections fanning out from D4 (Example I.3).

Example I.3. Symmetry of C#2 with B and B(a) sections.



2) Additive series

Noting the range in the course of a passage or measuring the extreme pitches of a wedge shape, one comes upon another way that Gubaidulina's pitch and registral choices influence formal design, a technique also applied, as I shall discuss later, to rhythm. This technique is the use of the values of additive numerical series, especially but not exclusively the Fibonacci series, also identifiable as the **(0, 1)** additive series. (In this series, which begins with 0 and 1, each value represents the sum of the two previous ones: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89...etc.) It would be absurd to discuss a composer's use of the lower values of the series, so frequent is any piece's reliance on the values 0, 1, 2, and 3. Rather, one must look for exclusive or at least preferential use of higher values from the series. Gubaidulina chooses freely from among these higher values of the series--not in incremental order--for both vertical and horizontal intervallic distances. The values from this series in the pitches in the course of the movement are 13 (the extreme points in the ricochet

glissandi of the A(b) segments), 34 (the extremes of the *glissandi* in the b(var) segment at bar 16-18), and 21 (the ascent from the first violin note (D5) and descent from the first cello note ($B^{\flat}3$) of the B'(b) section from bar 60 to the end). Gubaidulina uses numerical series other than the Fibonacci series as well. She discusses other series as being dissonant, with the Fibonacci as consonant, as follows:

> I was told about this by Peter Nikolaievich Meshchaninov [a Russian theorist]. He is very interested in the question of numerical series. Other than the Golden Section [Fibonacci series] which he calls consonant, there exist other numerical series he doesn't consider consonant....I think it is interesting to play with consonant and dissonant series, and find a friction developing between them.[41]

She says this in the course of a discussion about rhythm; it is not evident that she applies the same values of consonance and dissonance to numerical series used to derive pitches. In this first movement there is evidence for pitch choices based on another additive series I shall call **(1,6)**: that is, 1, 6, 7, 13, 20, 33, 53.....etc., used concurrently with the Fibonacci series. The two series share the value 13; the second series appears in the following instances: in the A(b) segments, the interval of 13 is divided into sub-intervals of 6 and 7. In the A(c) section (bars 19-20) the range of the violin is 33 semitones, and of the cello, 53.

3) Voice-leading

The presence of large-scale voice leading, of a possible long line or "melody" of sections rather than of individual pitches, is yet another argument for aspects of linearity and progression in a work whose immediate surface seems discontinuous and non-linear, with discontinuity emphasized in the registral and pitch contrasts between sections at bars 18-19, 20-21, 51-52,

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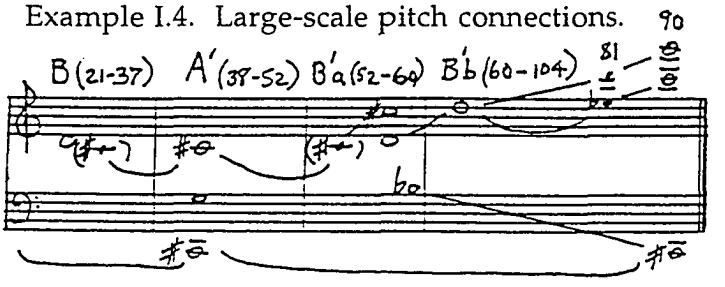
[41]Original unpublished uncut Russian-language version of interview for Barrie Gavin and Gerard McBurney, The Fire and the Rose, p. 16.

and 59-60. In Example I.4 are the instances in which large-scale pitch connection does occur. (I have already discussed the way the B4 of the A section and D4 of the B section find a symbolic connection in the symmetrical relation to the extreme pitches of the wedge shape of bars 19-20). The B section from bar 21 is the point in the piece where linear chromatic movement begins, a tendency strongly developed in the long concluding section from bar 60 [B'(b)]. D4, retained as the upper boundary pitch throughout the B section, is always joined by its lower neighbor C$^{\#}$. It is this C$^{\#}$4 that serves as a link between sections, becoming the initial pitch (with a lower tritone G3) of the A' section. Although by the end of the A' section the tritone is no longer in the 4th octave, C$^{\#}$4 remains in the immediate memory, to return at bar 52 and revert to its upper neighbor of D4 for the B'(a) section. By the end of this section, at 59, the C$^{\#}$ has been displaced up an octave to C$^{\#}$5. D4 also becomes displaced to D5 at the first entries of the violin and viola in the final section, at bar 62. From this point, one can trace the upward chromatic trajectory of those pitches, until the succession of simultaneous <11>'s leading to the final C6-B6. For the cello, a long-term pitch connection mentioned earlier is the C$^{\#}$2, occurring at key points throughout the piece. The pitches it has at the beginning of the final section, B^{b}-A-G$^{\#}$3, do not emanate directly from what has come before. Rather, these pitches, which also lead along a chromatic trajectory (to the final C$^{\#}$2), seem to mirror the crossing of the open D string by the lower and higher semitone double stops in the violin and viola at 52-53.

Example I.4. Large-scale pitch connections.

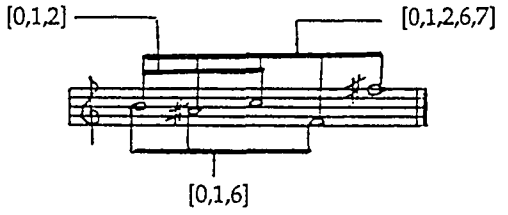


4) Set use

The highly consistent use of trichordal and even hexachordal material is perhaps more a result of consistent interval practice, motivic design and conservation of material than a deliberate end in itself. Such harmonic consistency is yet another antithesis to the discontinuity and segmentation of the rhythmic figurations and contrasting motives.

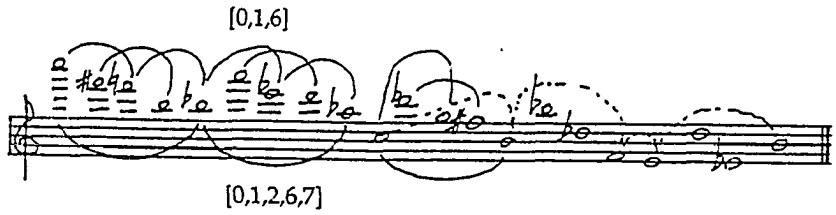
The undermining of the monotone B4 by the half-step forays in either direction from bar 3 introduces what will be the ubiquitous trichord-type [0,1,2], implicit in the A(b) phrases in the ricochet *glissandi* from B4 to $A^{\#}$ and C. Its particular intervallic projection here, <±1> from a central pitch, remains the important one also in later sections. As the ricochet *glissandi* gather momentum in bar 7, the B4 eventually expands to $F^{\#}5$ and F3, as well as to its immediate chromatic neighbors. The pitch intervals <-6> and <+7> from the central B4 form a shape which assumes motivic identity in both the second and third movements; as pitch classes, they form another trichord-type frequent in the rest of the movement, [0,1,6]. Finally, the five pitch classes together form the pentachord [0,1,2,6,7], lacking one pitch class of the later-used hexachord [0,1,2,6,7,8]. Example I.5 below shows these five pitches with the collections derived from them.

Example I.5. Pitch-class sets in the A section.



The application and dissemination of the above sets is observable starting with the section I have called A(c) at bar 19. While the viola simply reiterates the opening pitches and the cello traces a symmetrical collection to be discussed in Chapter III, the violin, in the line of Example I.6, expounds freely on the above collections. Saturation with the [0,1,6] trichord-type and frequency of the [0,1,2,6,7] pentachord-type are evident.

Example I.6. Violin line, bars 19-20.

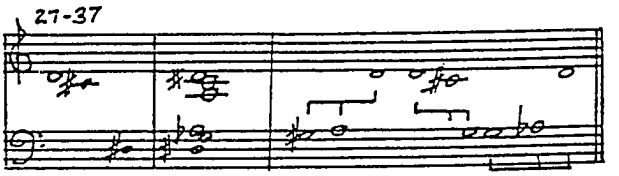


The surrounding of B4 with its semitone neighbors in the trichord-type [0,1,2] finds an analogy with D4 in the B section from bar 21. D4 is surrounded by its lower semitone neighbor $C^{\#}4$ and (by bar 27, as a result of expansion <-11>) the upper semitone $D^{\#}$ as well (though $D^{\#}3$, the appropriate pitch class but not actually the upper semitone pitch interval). In addition to this [0,1,2] projection, the final simultaneity of the section includes three inner pitches to form the heralded [0,1,2,6,7,8] hexachord-type. That this hexachord happens to be the complement of the one suggested in the first section (T_3) follows automatically from the fact that the neighbor-surrounded pitches of the two sections, B4 and D4, are <3> apart.

This B section is saturated with [0,1,6], as was the previous A(c) section, because of the following conditions: in the almost universal double stops in each instrument, one of the two notes is invariably an open string: D in the violin, D and then G in the viola, A in the cello (a configuration which will find further exercise in the B'(b) section). Also invariable is the presence of at least one (usually more) semitone neighbor(s). From these two conditions

inevitably follows a third: the guaranteed vertical presence of the trichord-type [0,1,5]--rarely--or [0,1,6], almost always. Thus all the sets of the A section are present in the B section, shown in Example I.7 below, though in a different pitch and gestural environment.

Example I.7. Pitch-class sets in the B section.



[0,1,2] [0,1,2,6,7,8] [0,1,6]

I earlier mentioned the pitch movement from D4 to its lower chromatic neighbor $C^{\#}4$ in what I call the A' section at 38, the return to the reiterated monotone, at T_2 from the original B4. Because this $C^{\#}$ is accompanied by the G below in its ricochet *glissando* excursions to the tritones a half step above and below, it constitutes the familiar hexachord-type [0,1,2,6,7,8].

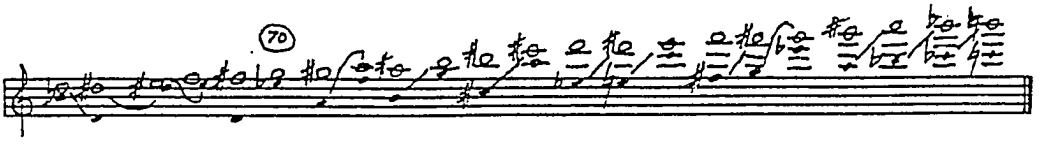
The long section I call B'(b), from bar 60 to the end, is the only continuous section of the piece, with several separate motivic figures contrapuntally unfolding, and the building of intensity through the chromatic expansion in opposite directions of the outer voices. Here the set [0,1,2] is omnipresent, not only horizontally in the course of numerous three-pitch chromatic segments, but also vertically: the gesture in section A (in which the note B4 was surrounded by its neighbor semitones) is transferred to the realm of double stops, with an open string sounding simultaneously with the semitone above and below, as in bar 60.

5) Counterpoint

True polyphony is not Gubaidulina's strongest aim in this piece, but of all of the sections of all of the movements, B'(b) (bar 60 to the end) presents the most convincingly contrapuntal surface. The harrowing pulling in oppo-

site directions of the chromatic lines of the outer voices creates a continuous tension, not resolved until the coda at 90. The double stops in each instrument also generate separate contrapuntal patterns within each line. In the violin, as Example I.8 indicates, there is note-to-note counterpoint between the two lines, with the upper note in chromatic ascent, and the lower generally at the interval of <4> or <11> below. From bar 70, where the pattern becomes regular, appears a pitch-class-conserving chain: the lower note of the interval <11> becomes the pitch class of the higher one in the next simultaneity, in a different octave. She makes the chain partial (and more varied) by alternating <11>s with <4>s until bar 85, where she includes only <11>s.

Example I.8. Pitch preservation in violin, bar 62-90.



The viola occasionally takes on the contrapuntal technique of the violin, but generally displays a second approach: using a prolonged drone of an open string as one line, and counterpointing against it either an extended chromatic line or a figure like the one described above in bar 60 in which--if we call the open string "1" of an {0,1,2} pitch set--either of the following occurs: {0,1,2} or {2,1,0}, while 1 is prolonged.

Evidently there are two ways to have contrapuntal lines within the double stops of a single instrument in this section from 60 to the end--either note-to-note with <11>s and <4>s under a rising chromatic line, as in the violin in Example I.8 above, or a chromatic line above, below or around an open-string drone, as in the viola. The cello is not always in double stops, but when it is, it follows the second procedure. The above figures are not only demonstrations of contrapuntal techniques but are also motivic figures, used

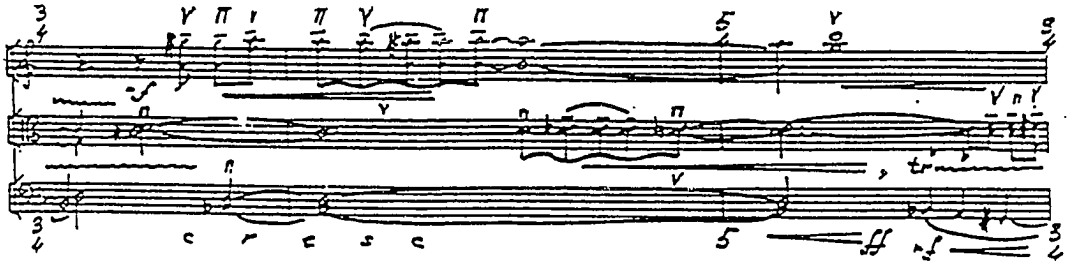
contrapuntally with several others to create alternating states of chromatic tension and repose.

6) Tonal centricity and diatonic references

Although this movement can in no way be said to be tonal, it does not lack a centricity of tones or a preferential ordering from the chromatic collection. I have spoken already about B4 and D4's respective centricity in the A and B sections. There are also occasional references to diatonic collections. The first of these seems to me to occur in section B'a (bar 52-60). Remembering that the first B section featured the curious breathing effect reminiscent of the folk accordion, one awaits the possibility of a similar exotic effect here, and finds it in the leaving out of half steps to display the Phrygian series [0,1,3,5,7,8,T] at T_2--that is, built on, and projected above, the open string of D. Although this tonally-suggestive moment is integrated into the rest of the movement, with both the reiterated double stops and the return of the D4 taken from the earlier B section, it still momentarily registers a distinctly tonal flavor. The extensive B'b section from 60 does not carry on this Phrygian suggestion, but has its own suggestion of a D tonality in the constant use of the open strings. Not all of them are used; there is a fleeting use of the violin's open E, and no use of either the viola's or cello's C string. D is the most frequent string and pitch used, with A and G functioning in an auxiliary manner somewhat analogous to the dominant and subdominant of the key of D. Although this D loses its primacy momentarily at bar 80--for an instant there are in fact no open strings sounding--it recovers it by bar 85, and persists in its "obligatory register" of D4 in the coda, the only open string remaining. In a completely non-tonal context, discussion about conflict between chromatic tones or de-stabilizing of arrival pitches by chromatic additions would not be pertinent. Here, though, such conflicts and de-stabilizings are part of

the language. For example, at bar 77-79 (Example I.9 below) appear pitches associated not only with making D a tonal center but even with a "D minor" tonality--the A, the $B^{\flat}$, the F--alternately asserting themselves and being undermined.

Example I.9. "D minor" asserted and subverted, bar 77-79.



This playing with tonality is subtle and limited. Entirely a function of the use of open strings as a timbral and motivic resource, it is not prominent in hearing of the piece, at least an initial hearing. Conflict and wrenching are what is prominent, intensified by rhythmic pull. But repeated hearings reveal this underlying centricity as a pole of stability against which the conflicting elements sound all the more harrowing and de-stabilizing.

C) Rhythm

1) Structure and Proportion

For Gubaidulina, the details of rhythmic surface are often quite separate from her considerations of rhythmic structure and proportion. Preoccupation with proportion is a natural consequence of the composition of what Kramer calls "moment form." Of this preoccupation he remarks:

> Thus the predilection of certain moment-form composers to plot out durational schemes prior to composing the music that fills them is not a quirky or artificial compositional technique. It is a reasonable strategy for creating music which demands attention to present perception

> even while generating its form primarily from large-scale remembered proportions. [42]

These remarks clarify some of Gubaidulina's own statements about her work with what she calls "rhythmic form," statements that might otherwise seem obscure or excessively mystical. In an interview for a BBC film, Gubaidulina speaks of the evolution of her interest in rhythmic form and proportion, using the analogy of a tree to show the elements of music evolving throughout history.

> You could liken it [musical structure] to the idea of a tree, where different aspects of music are represented by different parts of the tree: one aspect is represented by the roots, another by the trunk, another by the leaves and the fruit. The roots are the idea, the trunk is the realization of that idea, and the branches and leaves are a sort of musical transfiguration.
>
> And if we look at history this way, we see that in the beginning we had the linear period... And we see that linear culture is a vocal culture. In essence, the rhythm of the word defines the form. The rhythm emerges as the trunk of the tree. What are the leaves? The leaves are the suggestion of harmony.
>
> If we move on to the homophonic period, we realize that the seeds fell to the earth. They created the root of the tree, the roots become harmony. Everything springs from this harmonic essence. What then is the trunk? The line, the linear development of the theme. But what are the leaves now? The leaves are rhythm. In this case the transfigurative function is performed by rhythm.
>
> From these two pictures, I deduced a third, which was an enigma to me. What is happening in the 20th century? Then I saw it was the same process all over again. The leaves have fallen to earth and created a new root. That is rhythm. And the roots become the trunk. That is, everything harmonic, vertical, to do with pitch has become the trunk. And the transfiguration of the leaves? At this stage, it is melody.

---

[42]Jonathan D. Kramer, The Time of Music, p. 219.

> And now I knew which direction I should take. I should create a technique with the help of rhythm. I shouldn't try to artificially create a technique using pitch. So for five years I've been working with rhythmic forms. Finally I came to this question of rhythm.[43]

She invokes the concept of consonant and dissonant rhythmic series mentioned earlier.

> The audience told me afterwards that they felt quite uplifted...and that the day after they were soaring. I believe this is to do with architectonic proportions, consonant proportions.[44]

Gerard McBurney summarizes Gubaidulina's distinction between rhythmic form and rhythmic surface as follows:

> In conversation she is most keen to stress that she cannot accept the idea (a frequent post-serial one) of rhythm or duration as the material of a piece. She draws here a fundamental distinction between the generating principle of a piece of music and its material, which she insists must be something quite separate. To her, rhythm is nowadays a generating principle as, for instance, the cadence was to tonal composers of the Classical period; it therefore cannot be the surface material of a work. What she might mean by this becomes clearer when she expresses her impatience with Messiaen, whose use of rhythmic modes to generate local imagery, she feels, restricts the effectiveness of rhythm at an underlying formal level of the music, and restricts the listeners' ability to perceive the proportions of the whole. [45]

In her replies to my questions, Gubaidulina said that this Trio was an etude or experiment in her work on proportion, and that she cannot recollect all of her decisions about it.[46] Some of her practices in this domain, however, readily reveal themselves in the music:

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[43]Barrie Gavin and Gerard McBurney, The Fire and the Rose, p. 15-19.

[44]Ibid., p. 24-25.

[45]Gerard McBurney, Encountering Gubaydulina, p. 123.

[46]Gubaidulina replied to my questions on February 25, 1994 in conversation with Laurel Fay, who transmitted her replies to me.

1) Proportions are derived from extramusical numerical values--two additive series in this movement, other kinds of number series in other pieces.[47]

2) Only metered sections usually "count" for treatment by a numerical series, except in sections where the number of attacks is being used, rather than duration, as in bar 20.

3) The number of attacks, beats, bars or seconds in a section may be subject to numerical series constraints.

4) Values from the Fibonacci or other series are chosen freely, not necessarily in increasing or decreasing order.

5) The total number of beats or attacks in a section may represent the multiple of two values from the numerical series in use (e.g., 68, which equals 2x34, both values from the Fibonacci series).

The above principles emanate from the following observations of series-derived beat counts or attack counts in the first movement, shown in Table 1:

Table 1. Series-derived beat and attack counts.

Fibonacci Series [may be called **(0,1) Additive Series**]

A(b.var) Section: [bar 16-18] 5x3 attacks (both Fibonacci numbers)

A(c) Section: [bar 19-20] 21 violin, 8 cello attacks

B Section: [bar 21-27] possibly 8+8+5+(2x3) attacks
[bar 28-37] 34 beats, subdivided into 13+21, also 21 attacks

A'(a) Segments: [bar 38] 5 attacks [45] 6 (=2x3) [51] 2
[40] 8 [47] 2
- [42-43] 15 (=3x5) [49] 2

A'(b) Segments: [bars 39, 41, 44, 46, 48, 50] each 5x3 attacks

B'(b) Section: [bar 61-104] tendency toward motivic groups of 5 or 8 attacks.

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[47]In Alleluia, for example, she derives rhythmic values from numbers associated with the refraction of different colors of light.

(1,6) Additive Series (1,6,7,13,20,33...)

A(a) Section: [bar 1-2] 7 attacks
[bar 4-6] 13
[bar 8] 6
[bar 10] 6 attacks
[bar 12-15] 20

A(c) Section: [bar 19-20] 20 viola attacks

B'(a) Section: [bar 52-60] 20 violin attacks
33 viola
13 cello

It is difficult to reach conclusions based on insufficient data about these series. That they are part of the composer's intention is evident; that she cannot completely reconstruct her decisions about them leaves the analyst to guesswork and assumptions that may be incorrect. Because in this movement the series apply mainly to attacks (which are quantifiable but have no duration), one cannot properly speak of resultant durational proportions, but only of sections in which the number of attacks are drawn from two different additive series having extramusical associations for the composer for consonance and harmonious properties, in the case of Fibonacci, or dissonance in the case of (1,6). Gubaidulina's music is dramatically powerful, and "works" at the level of pacing and proportion. Whether this "working" is due, as she believes, to the choice of values from her number series is very difficult to assess.

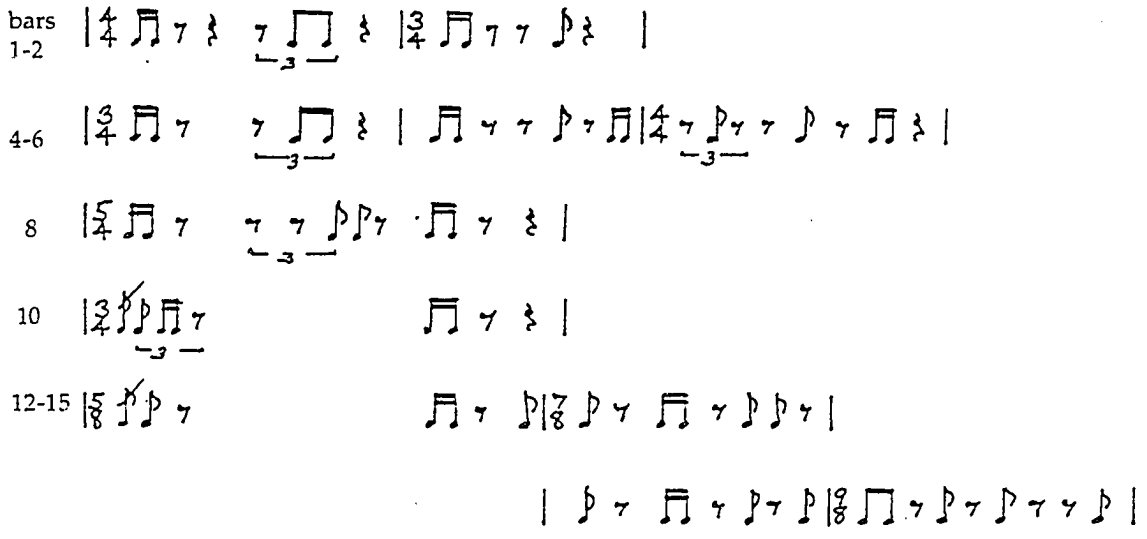
2) Surface

The A(a) segments of this movement (bars 1-2, 4-6, 8, 10, 12-15), with their sporadic-sounding attacks on a single note, have a proportional purpose I observed earlier: the number of attacks in each segment seem to be values in the additive series (1,6). But these values are compatible with many ways

of grouping the attacks in each segment. Why does she use these particular groupings of attacks?

The notes of these segments seem grouped predominantly into pairs, with occasional larger groups or single attacks. The rhythms of the segments, written below in Example I.10, are related to each other, and it is apparent that the segments undergo compression or expansion from the initial one by means of the addition or suppression of notes and rests.

Example I.10. Rhythms of the A(a) segments.



If the large-scale form of this movement is about phrase-grouping ambiguity--assigning formal articulations according to degree of contrast, with shifting classification as the sections unfurl--something of this same ambiguity may be found on a small scale within these A(a) segments. The grouping into pairs or other units is not a function of any obvious metrical accentuation. Instead, notes come to seem to be members of a rhythmic pair or other group through context. Even if they are of unequal duration or unequal intra-attack duration, they may still be perceived as a pair if the surrounding notes and rests make them retroactively adhere. Some of Lerdahl

and Jackendoff's rules for rhythmic grouping, although derived from tonal contexts, apply to the above patterns:

> Groups tend not to consist of only one event.
> Notes close together in time...or not separated by a rest tend to be grouped together.
> Similar patterns tend to form separate groups.[48]

Because the context--the rests and subsequent notes that retroactively make notes group together--is time-dependent, the same ambiguities and potential for reevaluating grouping in light of subsequent information exists here as found earlier regarding large-scale structural articulation.

The same problem, with different causal factors, is apparent in the section I have called B, from bar 21 to 37. The rhythms are written in tentative groupings in Example I.11 below. Groupings are again contingent on context, and on the vantage point in time from which they are being observed. In this section, unlike A(a), there are no rests to articulate groups. Grouping is provisionally assigned according to the appearance of a repeating pattern or one that seems a variant of a previous one, and by the occurrence of a longer duration that marks the group's boundary. In neither A(a), with its single note, nor B with its steadily downward-expanding pitch compass, can analysis lead toward more than a provisional assignation of grouping, for there are no independent harmonic, contrapuntal or dynamic factors to support one or another grouping interpretation. In fact, in section B, from bar 28, she even assigns a mechanical contrast of dynamics on alternating notes that seems to subvert any duration-derived grouping pattern.

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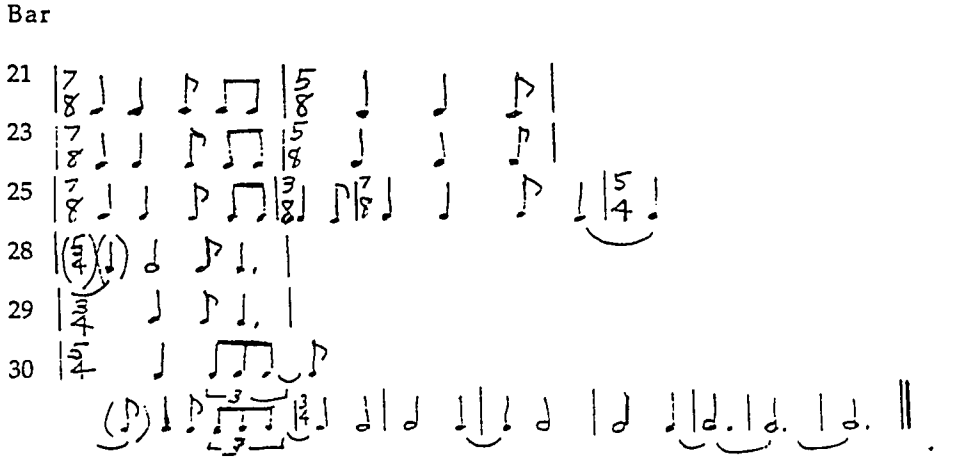
[48]Fred Lerdahl and Ray Jackendoff, A Generative Theory of Tonal Music (Cambridge, MA: MIT Press, 1983), pp. 43-55, summarized in Kramer, The Time of Music, p. 111.

Example I.11. Grouping in the B section.



The "harmonic rhythm" of the B'b section from bar 60 is the most complex of the movement. This section is marked by a rhythmic continuity absent from the previous segmented phrases, matching the long rending of the slowly expanding chromatic wedge. In this section, Gubaidulina alternates motives of moving pitches with those of held or reiterated notes, with a resulting interplay of pulling toward ever-increasing divergence of upper and lower lines with stasis, the latter prevailing in the coda. (She maintains extreme harmonic tension even within the pitch stasis by the nature of the simultaneity of the coda.) The dry, spasmodic iteration of a single pitch of the opening A section has yielded in the last section to what one might consider its opposite--the cumulative tension of an unbroken expansion.

D) Performance Mode and Color

For most composers, the indication of modes of performance (*col legno, sul tasto, pizzicato*, etc.), are a matter of decoration and expression. For Gubaidulina, these indications also have structural potential; if assigned to particular sections or motives, they can amplify the articulation of form conveyed by rhythmic figures and pitch and registral distinctions. The following table lists the sections according to my earlier classification with their bar

numbers, and then describes the use of playing modes and other coloristic details. Obviously, those sections that repeat, or are closely related to, previous ones share the same playing mode. More interesting are the coloristic connections between the sections connected analytically though different from each other. The use of *sul tasto* with accents and a distinguishing exotic expression in the B and B'(a) sections and in the B-like motive of the final section is an example, or the connection between the *col legno* ricochet *glissandi* of the cello in A(c)with the A(b) segments. Also noteworthy are the ways she creates slight differences among similar sections, to avoid the possibility of exact repetition: the A'(b) segments, for example, not only are different in pitch from their predecessors in A(b), but are marked *mf* rather than *piano.*

Table 2. Correlation of sections with playing modes.

Sections	Playing Modes		
	Ordinario	Col legno	Sul tasto
Aa (bars 1-2,4-6, 8, 10, 12-15)	up bows only, dynamic increase in each segment, minimum *mf*		
Ab (bars 3, 7, 9, 11)		ricochet *glissandi*, down-bows, *p*	
Ab(var)(bar 16-18)			*glissandi, molto vibrato*, down bows, each note *p crescendo*
Ac (bar 19-20)	violin-*p* to *ff*, *crescendi* and *decresc.* viola up bows, *f cresc.*	cello--ricochet *gliss*, down bows, *f cresc.*	
B (bar 21-27	accents, p cresc. to *f*		
(bar 28-37)			*p* alternates every other note with ord. *f.* "Bayan"
A'a (bars 38, 40, 42-43, 45, 47, 49, 51)	up bows, dynamic increases in each segment.		
A'b (bars 39, 41, 44, 46, 48, 50)		ricochet *gliss., mf*	
B'a (bar 52-56)			accents in vln, vc, *p.* Phrygian
(bar 57-60)	*cresc.* to *mf*		
B'b (bar 60-end)	all, with one exception:		
(bar 61, 71, 72-74)	-		accented motive reminiscent of B

II. Second Movement

A) Formal Classification

Like the first movement, the second uses pauses as means of separating phrases and sections. In the first movement, the music is rhythmically and materially discontinuous (though with strongly linear and coherent aspects), and the pauses contain a high degree of uncertainty about what is to follow; this is not so in the second movement. Once the viola enters with its harmonics in bar 8, the music is subsequently consistent in terms of general material, if not specific pitches and rhythms (at least until near the end of the movement, when the viola's music begins to change character in an unexpected way)--a "steady state," albeit articulated by pauses. The pure steady-state music described by Kramer as "music in vertical time" should probably not have as much formal shaping as does this movement in its sense of cadence evoked by moments of return and by an ending reducing the material to the repetition of two tones. Elements of his description, however, are apt:

> A vertically conceived piece...does not exhibit large-scale closure. It does not begin but merely starts. It does not build to a climax, does not purposefully set up internal expectations, does not... build or release tension, and does not end but simply ceases....[It] defines its bounded sound-world early in its performance and stays within the limits it chooses.... [49]

Kramer's description does not deny the possibility of contrast. There are four types of material in the movement, with as much contrast among them as in the first movement, but this contrasting material is presented simultaneously in the different instruments rather than sequentially. The

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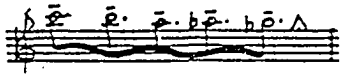
[49]Jonathan D. Kramer, The Time of Music, p. 55.

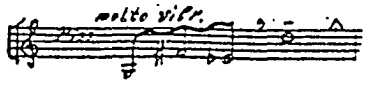
first three types of material are to be found in the violin and cello pitches, which are grouped into two or more notes with the playing instruction *pizz, molto vibrato.* Although these three types merge and could be considered three ingredients of <u>one</u> musical surface, I hear them as separate pitch collections that sometimes intersect, rather than as one that sometimes diverges. The collections are octatonic (Type 1), chromatic (Type 2), and free, with generally larger than whole step intervals (Type 3). Type 4 is played by the viola, and is additionally distinguished from the other Types rhythmically and by playing mode. (I had found the latter element a significant way of articulating contrast in the first movement.) Type 4 consists of soft (from *ppp* to*p*) long *arco* notes on high artificial harmonics, using the intervals <+6,+7> and their inversion, with intervals of <11> or larger negotiated by *glissandi.* In Example II.1 are instances of each of the four Types.

Example II.1. The four musical Types in Movement 2.

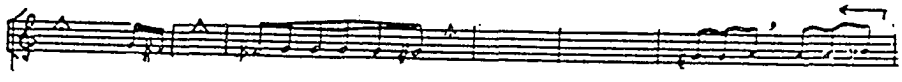
Type 1. Octatonic, vln, bar 36.



Type 3. Free leaps, vln, bar 1-2.



Type 2. Chromatic, vln, bar 18-23.



Type 4. Harmonics on <+7-7-6+6>, vla, bar 8-15.

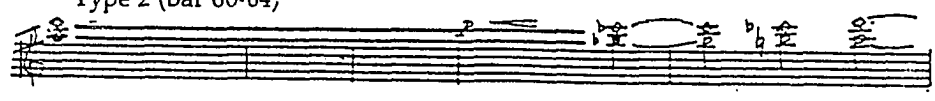
The way the viola material of Type 4 interacts with the material of the other instruments may be described as a dialogue with overlapping. (At times, the viola continues to play, holding one note, while the other instruments have their say; at times it begins its new entry while they are finishing a phrase.) This interaction may be considered a textbook example of a particular compositional process, the three steps of which are classified by Edward

Cone as "stratification," "interlocking" and "synthesis."[50] Several strands of musical material are identified as separate and independent *strata* (the four Types, or particularly Type 4 versus the rest of the material). They have a tendency to alternate so that the continuity of one is kept waiting while the other makes its next statement, which Cone calls "interlocking." Finally, one of the types (4) seems to assimilate the characteristics of the others and to unify the previously separate strata, a tendency close to Cone's "synthesis." This appropriation of the other types by Type 4 is evident in Example II.2.

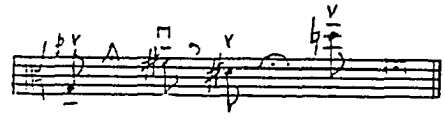
Example II.2. Viola assumes the character of the other Types.

Type 1 (bar 51-55)

Type 2 (bar 60-64)



Type 3 (bar 77)



Kramer, however, objects to one aspect of Cone's analysis. While Cone, in the piece he analyzes (Stravinsky's *Symphonies of Winds*) maintains that the separate strata have linear, ongoing musical arguments alternately interrupting the other (thereby creating a tension of waiting) Kramer's interpretation of that piece suggests that the interrupted segments are non-linear moments, not goal-directed or arousing listeners' expectations that are then frustrated by the discontinuity.[51] This objection seems accurate also for

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[50]Edward T. Cone, "Stravinsky: The Progress of a Method," in Perspectives on Schoenberg and Stravinsky, ed. by Benjamin Boretz and Edward T. Cone (New York: W.W.Norton & Company, Inc., 1972), p. 156-158.

[51]Jonathan D. Kramer, The Time of Music, p. 279-281.

this movement of Gubaidulina's, and in keeping with its characteristics of "vertical time."

Looking now at Type 1 and 2 in detail, one finds that the following rules generally hold, creating a uniform practice throughout the movement:

Both Type 1 (octatonic scalar fragments) and Type 2 (chromatic scalar fragments) occur primarily in the violin.

They are interspersed among the Type 3 (free leaps) material in the cello and intersect it at times.

Type 1 tends to descend, and Type 2 to ascend.

Type 1 and Type 2 usually occur in simultaneity with Type 3, but Types 1 and 2 are never simultaneous.

Type 2 allows the immediate repetition of notes, as in the chromatic passages in the first movement.

The opening and/or closing notes of two simultaneous violin and cello figures are often (vertically) chromatically related (by a semitone, major seventh, minor ninth, etc.) This holds at every such passage except 36 and 58. The cello thereby participates vertically in chromatic intervals, even though it does not play horizontal Type 2 material.

One other kind of musical material, employed by the viola, occupies a cadenza-like climactic function in the movement. The passage from the C of bar 64 through bar 72 utilizes a special symmetrical intervallic pattern that appears in other parts of the Trio, to be discussed in Chapter III.

B) Pitches

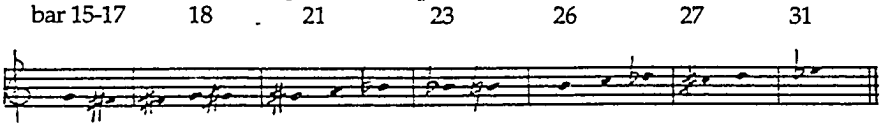
As well as projecting a "steady state" quality referred to earlier, this movement also sounds somewhat improvisatory, even explicitly like the desultory plucking of a guitar in upward arpeggiated passages like bar 26 or 57. Yet there are structural underpinnings to the work that belie its casual sur-

face, practices that convey an underlying unity or that serve to articulate whatever formal divisions a "steady state" piece is capable of. As in the first movement, I will discuss both pitch practices fulfilling these structural functions and those that delineate the surface.

1) Large-scale line

One practice contributing to a sense of unity and contradicting the atomistically separate motivic figures is the large-scale line. By this I mean the use of consecutive notes in the same register in semitones or whole tones, creating a sense of long-term linear movement. Two of these are in evidence: the upward chromatic line of Type 2 notes and the bass line. The Type 2 passages that are part of a larger line from bar 15 to 37, shown in Example II.3, start with G-$F^{\#}$-G^{4} at bar 15-16, then rise over the next five passages to D^{5} at bar 27, and to $D^{\#}$-E^{5} at bar 34 (the only Type 2 figure accompanied in the cello by another chromatic figure, also an upward semitone). This upward-driving chromatic line is reminiscent of the last part of the first movement. As in that part, immediate repetitions of pitches are allowed--in this case, to a maximum of four iterations. Further upward movement of the chromatic scale does not occur; the line comes down with a Type 1 figure to $C^{\#}5$ at 39, then to C5 at 44, retraces some of its earlier ascent at 46-47, but does not continue to project a scalar line in one register through the end of the movement, although chromatic fragments do continue to occur.

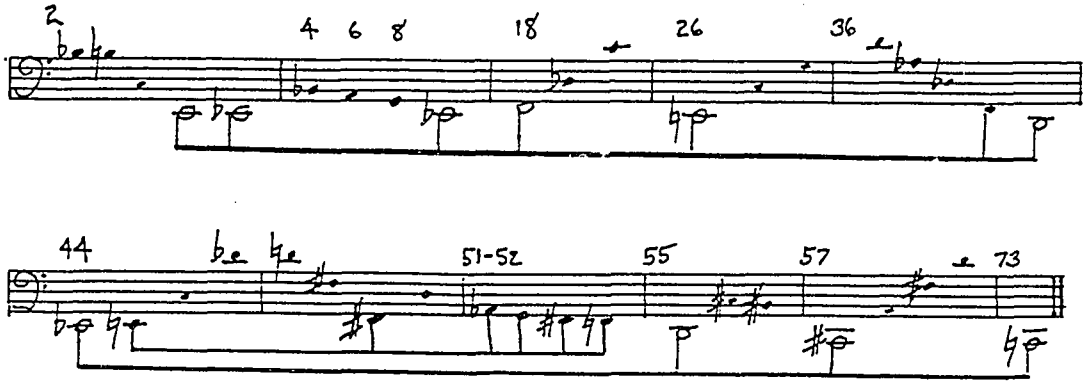
Example II.3. Large-scale upward chromatic violin line.



The tendency toward the use of an ongoing line in the bass is also evident. (By "bass line" in a non-tonal context, I mean, in this case, lowest-

sounding notes in a single register, often separated from each other by several bars of music in other registers, which nevertheless seem to cohere or connect, particularly by use of movement in intervals of one or two semitones.) In Example II.4, I have extracted the lowest pitches of the note groups containing notes in the "2" register. $E^{\flat}2$ is established as the lowest initial pitch, immediately following E2, occurring in bar 2 and reiterated in 8. It rises to F at 18, and after a long gap, descends to E at 26, to D at 36, and back to $E^{\flat}$ at 44. In one sense (shown in black notes) this $E^{\flat}$ moves immediately upward, to E, $F^{\#}$, and through the Type 2 $A^{\flat}$-G of 51-52, down to F. But that direction seems structurally secondary to considering the $E^{\flat}$ as prolonged until the D of 55, the $C^{\#}$ of 57 and the final C of 73, indicated in white notes.

Example II.4. "Bass line." (White notes are primary, black connected notes are secondary, line.)



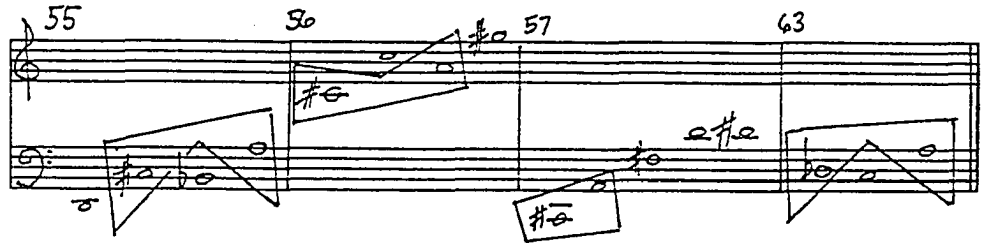
The form of this second movement unfolds subtly, without dramatic structural developments or changes, but there is a correlation between the subtle local changes that do occur and the major events of this "bass line" described above: the intense juxtaposition of Type 2 and Type 3 music at 18 with the arrival on F2; the beginning of the guitar-like arpeggiation with the arrival on E at 26; the coincidence of the highest and lowest point at 36 when D is introduced; the return of the upward arpeggiation at 44 with $E^{\flat}$; the

return of an important motive at 55 with the D; and the arrival on the low C at the cadential point where the viola finishes its downward descent. The compositional intention here is clearly both structural and coloristic--to underline the important events by low pitches, and to connect those pitches and create a sense of progression from one to the next.

2) Pitch preservation

Another technique providing connection, common to all the movements, is the preservation, transference, or survival of pitches from one simultaneity, cell or section to the next. This strategy can reduce the variety of pitch class offerings or provide unity by projecting a familiar element into an unfamiliar context. A good example in this movement is the preservation of C$^{\#}$to A at <+8> in various octaves four times in the course of bars 55-64, shown in Example II.5 below, undoubtedly adding to the sense of intensification of the *stretto* effect initiated at bar 55-56 by the double statement of what I shall call Motive "A."

Example II.5



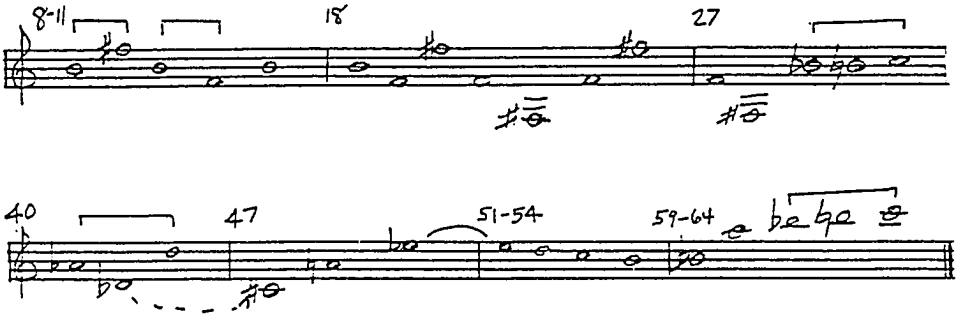
The score shows many other pitch preservations. What is of interest here is not the immediate repetition of pitches within a note group--for example the violin in bar 18--but rather the transfer of a pitch from one note group to the next, often though not always in the same octave: the G^{b} at bar 4 and 5, the G4 at 15-18, the E-C$^{\#}$ in 13 and 16, the two G's in 26, the F$^{\#}$'s of 27 and 31, the E^{b}-D$^{\#}$ of 31 and 34, the E's of 33-34, the D's of 36, the repeated G of

38-39, the C's of 44, the repeated D, F# and A of 45-46, the D#'s of 57-58, the B's of 60-62, the A of 64-65, and the A♭'s of 73-75. The effect of this prolongation of pitch from one note group to another is often (especially when the register is conserved) to provide a sense of linkage, of an unchanging pivot around which other pitches alter.

3) Dialogue of Types 1, 2, and 3 with Type 4

I referred to the structural relationship between the music of the viola and of the other instruments as an overlapping dialogue. The particular nature of that dialogue is to some extent dependent on the pitches Gubaidulina has chosen. In Example II.6 are the pitches of the viola part without rhythmic values, up to the symmetrical pattern at 67, to be discussed in Chapter III.

Example II.6. Viola pitches without rhythm, up to 67.



In Type 4, she has made an obvious connection to the first movement, with the asymmetrical fanning out from B4 upwards to F#5, downwards to F4. These notes are repeated, and expanded downward from the F4 to F#3, at 18. The delineation of intervals of 6, 7, 13 and 11 is also familiar from the first movement, as is the trichord projection on B♭-B-C in bars 29-30, the basic trichord-type [0,1,2] of the first movement. That these three notes complete a section is evident by the long ensuing viola tacet, by a number of proportional details to be discussed in the section on rhythm, and by the fact

that the same three notes, an octave higher, recur in bar 64 at what also seems the end of a section. These viola notes do not yet have much to do with the Type 1, 2, and 3 pitches going on around them. They are harking back to another movement, and seem oblivious to the *pizzicati* around them, although the three Types that comprise the *pizzicati* do interact with each other.

The Type 4 phrase at 40 is responsive to its environment for the first time. Choosing T7I of the original pitches generates A^{b}, D^{b} and D, allowing identification with the immediately preceding four pitch classes of the previous violin and cello figure. Its ending on D allows the half-step relation with the violin and cello notes that follow it, a practice I noted earlier between those two instruments but unprecedented in the viola. Type 4 has become less isolated, more sociable, a trend that continues in the next Type 4 phrase at 47. The D^{b} has now become $C^{\#}$, its previous upward intervals now stretched by half steps to A and E^{b} instead of $A^{b}$and D. This allows the interaction of the A with surrounding half steps in the other instruments, and the arrival on E^{b} at 47 begins Cone's process of "synthesis," the appropriation of the material of the other Types, discussed earlier.

This dialogue is not of two equal musics in alternation, but two different and shifting planes, figure and ground. In the first part, the *pizzicato* notes have established themselves as foreground before the viola comes in. Its entry, at *ppp* and at a durationally-indefinite point, is almost negligible; it only becomes noticeable when the *pizzicato* notes disappear. The viola's only precise attack in the first part is on the B^{b}-B-C at 29-30. The viola's greater engagement in the pitch material of the other instruments in the second half finds an analogy in its coming toward the foreground dynamically and rhythmically. At 40, it enters after a beat of silence, a very different quality of entry than its previous covert beginnings in the midst of *pizzicato* notes. At 47 it

moves in notes of precisely-notated duration during the ending of a *pizzicato* phrase, rather than just holding a long but metrically unspecified note as before. The long $E^{\flat}$ that it holds from 47 remains in a time signature as it continues, thereby taking control of the rhythm of the Type 3 figure. It moves further toward the foreground with dynamic increase at 52, to the point at 65 where it is more prominent at *mf* than the stammering remains in *piano* of the Type 3 material; it reaches the foreground dynamically and otherwise with its solo "cadenza" at 67.

The beginning of the "cadenza" passage represents the highest note (C8) of the movement. Achieved by upward chromatic steps and considerably prolonged, it prepares to some extent the release of the "cadenza." The two other instruments, in bars 65-66, also add a sense of preparation and intensification; the cello reaches its highest pitch (E5), and both violin and cello engage in reiteration of single pitches (the cello E5 five times, the violin F5 eight times--both Fibonacci numbers). Such reiteration had a precedent on a smaller scale when the violin had Type 2 notes, but this is more clearly a cadential gesture (related to the reductive intensification figures to be discussed with respect to the next movement). In a longer view, it foreshadows the final reiterations of the movement on $A^{\flat}$-G3 in bars 75-77, but most immediately, it prepares the viola solo "cadenza" passage. From a steady state of desultory plucking in the outer instruments--sometimes going back to familiar material, sometimes not--concurrent with the high, suspended harmonics of the viola, a rhythmic and gestural intensification has suddenly emerged, readying the listener for the descending viola solo, finally reaching the "terra firma" of the reiterations of 73-77.

4) Pitch use in Type 3

Two of the four musical Types in the second movement consist of

scalar patterns that do not require a more detailed examination--the octatonic and chromatic segments of Type 1 and 2. I have discussed the motivic antecedent in the first movement for the main motive of the viola's Type 4, and the way the viola also appropriates the three other Types. It is in the variety of the pitches of Type 3 that Gubaidulina's richness of technique most reveals itself and demands closer study. I shall approach this material in several ways. First, by abstracting sets of pitch and interval classes from the actual pitches and observing these throughout the movement, one can extract a table of frequencies of their use and note why some are more prevalent than others. This will lead to a consideration of the actual pitches and intervals, and their motivic use. Finally, one can observe the intervallic contours, detached from specific pitches.

a) Use of sets

Observing the intervals Gubaidulina has selected for Type 3--counting from note to note in the piece but ignoring the material of Type 1, 2 and 4--one can ascertain the frequency not only of the six possible interval-class dyad-types (two unordered pitch classes), but also of trichord-types (three contiguous notes in the music, abstracted to an unordered pitch class set) and tetrachord-types. (There seems little point in going beyond this number, as the articulations are usually groupings of three or four notes.) It is evident that this composer presents a wide variety of interval and set choices. At least in this movement, there is no exclusive use of a single trichord- or tetrachord-type. But a closer look at this list shows some clear preferences, with certain intervals and collections favored, others untouched. Among the dyad-types, <3>, <4> and <1> are the favored interval classes. <6>'s are rarer, and <5>'s and <2>'s are almost unused. This is particularly noteworthy when contrasting this Type-3 preference with the other Types. Type 4, the

viola ostinato, features the intervals <6> and <7> (the latter a member of interval class <5>). Type 2 uses octatonic scale fragments, and therefore has the interval class of <2> (a whole tone) every other interval!

Table 3 lists the contiguous trichord-types in their frequency of use throughout the piece, and the number of times Gubaidulina uses each.

Table 3. Trichord frequency.

[0,1,4]	52	[0,3,6]	8
[0,1,5]	20	[0,2,6]	6
[0,3,7]	19	[0,2,5]	4
[0,1,6]	17	[0,4,8]	2
[0,1,2]	13	[0,2,4]	1
[0,1,3]	8	[0,2,7]	0

Several things are noticeable in this list. The low-use set classes include two that feature the interval classes <2> and <5> found to be sparse among the dyad-types: [0,2,7] and [0,2,5]. The set featuring two instances of interval class 2--[0,2,4]--is similarly unpopular. More surprising is the avoidance of [0,4,8], a set containing only the interval class 4, found to be frequent among the dyad-types. This is explained by the fact that there are only two instances of consecutive interval class 4's, both involving encroachment of Type 2 material into Type 3. Among the most frequent trichord-types, [0,1,4] is an overwhelming favorite, not surprising in light of the prevalence of the three preferred interval classes 1, 3 and 4 in its interval vector. The second most frequent trichord-type, [0,1,5], contains class 1 and 4, and [0,3,7], the third, has 3 and 4. The frequency of [0,3,7] also points to a preference, reflected at the level of actual pitches, for "major"- and "minor"-sounding triads.

The tetrachord frequency may be seen below in Table 4.

Table 4. Tetrachord frequency.

[0,1,4,7]	16	[0,1,5,7]	6	[0,1,2,3]	0
[0,1,2,4]	13	[0,1,3,6]	5	[0,2,3,5]	0
[0,1,4,5]	12	[0,1,4,6]	4	[0,2,4,6]	0
[0,2,3,6]	10	[0,1,5,6]	4	[0,2,4,7]	0
[0,1,2,5]	9	[0,1,5,8]	4	[0,2,4,8]	0
[0,1,3,4]	9	[0,2,3,7]	4	[0,2,5,7]	0
[0,1,2,6]	8	[0,1,3,5]	2	[0,2,6,8]	0
[0,1,4,8]	8	[0,1,3,7]	2	[0,3,5,8]	0
[0,3,4,7]	8	[0,2,5,8]	2	[0,3,6,9]	0
[0,1,6,7]	7	[0,12,7]	1		

Unlike the trichord-types, one set class is not so overwhelmingly favored here, yet there is clearly a gradation of preference. All the four most-used tetrachord-types have as a subset the trichord-type [0,1,4]. This is not merely a function of a tetrachord's having one note added to the preferred trichord-type [0,1,4], for the three pitches from the set class [0,1,4] have a fifty-percent chance of not being contiguous in any given tetrachordal projection (given that there are three of them but four "places" in the tetrachord). It instead suggests a fundamental interest in the consistent use of the intervals of [0,1,4] even in non-contiguous circumstances. The five next-preferred sets also contain either [0,1,4] or [0,1,5], the second-preferred trichord-type. The only little-used tetrachord-type containing [0,1,4] is [0,1,4,6].

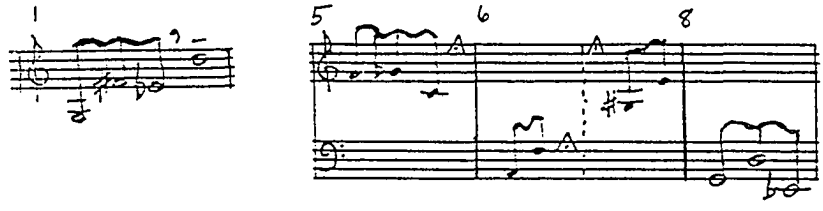
One other aspect of the use of sets and interval classes should be mentioned here: the presence of <u>non</u>-contiguous sets that are strongly heard as a group through registral position or voice-leading implications. I have surveyed these for their sets as well. Deciding which to include is of course much more subjective than looking at contiguous pitch classes, but my findings show a spread of choices similar to the set tables above.

b) Motives

There are groups of notes in the piece that act like motives in that their

function is to recur in recognizable form later in the piece, and cells whose purpose is to provide raw material for later transformation. (The later occurrences bear only some partial resemblance--of profile, pitches, intervals--to the original.) In Example II.7 are instances of the literally-recurring motivic elements, labelled because of their order in the piece as "A" and "C" (the latter divided into three parts--"Ca," "Cb," and "Cc"). Motive A (bar 1) returns in 37 (T_3), and in a quasi-*stretto* at 55 (T_7) and 56 (T_6). Motive C (bars 5-7) returns in 48-51 at T_1, and in 60-63 at T_6. (It is tempting to note that the opening set of "Ca," [0,1,6], is embedded in the opening pitches of the three instances of its occurrence. This practice, however, is not quite extended to motive A's occurrences, which spell out the set [0,1,4,7] rather than the [0,1,4,5] of the motive itself.)

Example II.7. Motives "A" and "C."



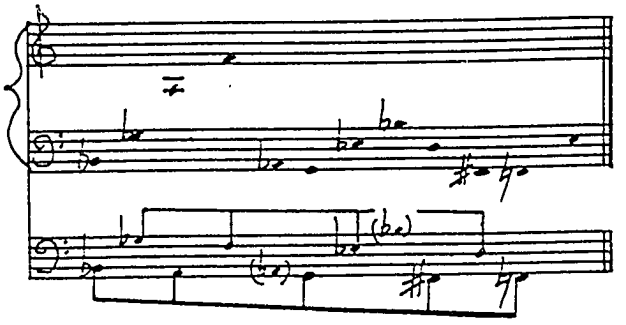
The technique of motivic return creates another polarity in the structure. As well as the contrast between the ethereal harmonics of the viola and the plucked, sporadic pitches of the other instruments, there is also a contrast between departure into new material and return to the familiar, between groups of pitches that seem like motives, because they do return in recognizable form, and groups that do not recur literally but give rise to later variants.

"A" is a projection of the tetrachord-type [0,1,4,5], its intervals arranged symmetrically as <+11,-3,+11>. I have discussed the location and transposition of its literal recurrences. Although not as important, there are also sev-

eral non-literal variants of "A." What is allowably called a variant is debatable (everything ultimately being like everything else in some way); I suggest bars 13-15, preserving three out of four pitches, might qualify, and that bar 31, with all the pitch classes of "A," certainly does. Another variant of "A" is the last four notes of 44 (T_6 of "A"), although the profile has been altered by dropping 15 instead of 3 half steps from the second to the third pitch.

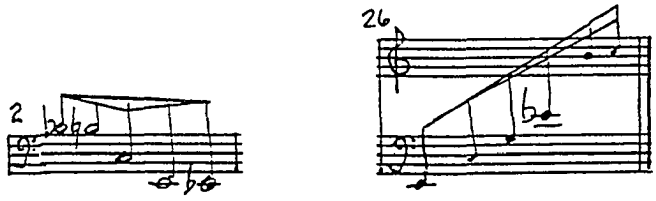
Examining group "C" in Example II.7 above reveals that "Cb," like "A," is a member of [0,1,4,5]. Like "A" it is symmetrical, with intervals <+8,+3,+8>, and in fact is identical to "A" in pitch in any given transposition, only differing in the reversal of the two inner pitches. It sounds different, though, making tonal and voice-leading allusions to be discussed later. Its independence from "A" is confirmed by its always occurring after "Ca" (and in the same transposition as "Ca" in its recurrence). "Cc" is an unstable element not that does not recur literally. The three "Cc"s do have a common purpose, however: to continue a line of downward chromatic parallel <8>'s set up earlier in "C." I have shown one of these descending double lines below the actual pitches in Example II.8. The intruding Type 2 pitches in the cello at 51 and 52 actually play a role in this linear descent. As well as the literal recurrences, several variants of "C" are evident in the course of the piece. Bars 10-12 spell out the pitches of "Cb" from bar 6-7, with the addition of one note and octave shift of one pitch; obviously, this uses material of "Cb" but is not close enough to evoke it as does, say 50-51. The same is true for the possible "Ca" variants in 16 and 39.

Example II.8. Downward chromatic parallel <8>'s, 49-53.



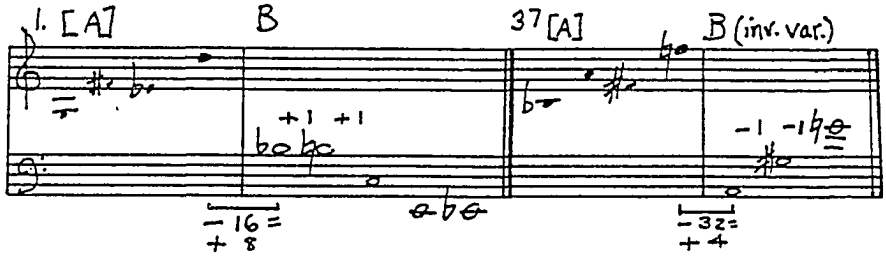
The note group "B" shown in Example II.9 below, not called a motive since it does not literally recur, may be described as a collection from the trichord-type [0,1,2] arranged as <+1,-11>, followed by a leap of <-8> (from E to C), followed by a <-1>to $E^{\flat}$. This intervallic rather than pitch-class description allows a search for later material that recalls the original "B" or a part of it. Bar 31 imitates its profile, though the pitches are derived from "A." The last note of 37 and three notes of 38 are T_7I of the last note of the original "A" leading into the first three notes of "B." Bar 43 recalls the profile of "B"; 44 sweeps through the last three pitches of "B" in retrograde, before derailing to become T_6 of "A." Bar 73 offers a retrograde variant of the "B" profile, ending with the [0,1,2] and using the same tetrachord-type [0,1,2,6] that "B" does. These are not literal recurrences of the original "B" in the way the recurrences of "A" and "C" are literal; their use, however, indicates an intention of economizing material in the span of this work. The same can be said of "D" and its variants, also shown in Example II.9 below. The upward arpeggio at 26 is striking for its triadic associations, utilizing the set [0,3,4,7] to present a simultaneous "major" and "minor" triad. Although Gubaidulina uses other sets in the arpeggio variants later in 26 and in 36, 43, 46, and 57, she continues to make explicit triadic references.

Example II.9. The note-groups "B" and "D."



Example II.10 shows an inversional variant of "B," different from the original "B" as follows: the last note of the original "A"-- D5--moved <-16> (an ordered pitch class interval of <8>) to B♭3, then followed the sequence <+1,+1>. The equivalent note, F5 in bar 37 moves <-32> (an ordered pitch class interval of <4>, the inversion of the <8> above) to A2, then proceeds with the first three notes of "B," also in inversion--<-1,-1>.

Example II.10. Original "B" and inversional variant.

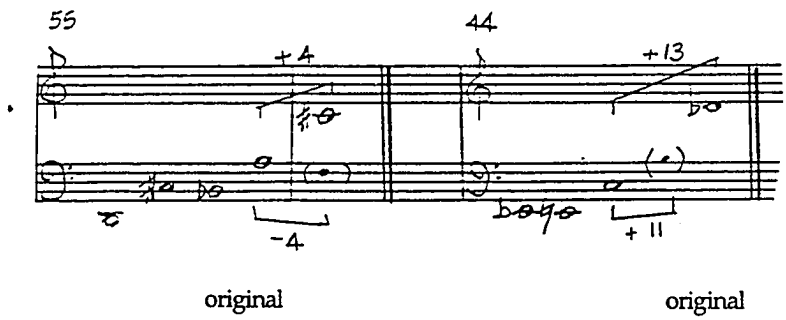


This arbitrary inversion of a single interval in the course of a note group is a common practice for transforming motives and as a means of arriving at unexpected goals. Two other instances are offered in Example II.11 below. At bar 55, (II.11a), if the return of the "A" motive at T7 had continued according to the original model in bar 1-2, the first pitch class of 56 would have been F (<-4> from A) but instead is C♯ or <+4>. In bar 44, (II.11b), the first three notes in the cello, E♭-E-C, are the first three notes of the retrograde of the "B" cell. The next pitch class "should be" B, but instead has been inverted to D♭. This process, which I call "capricious inversion," is some-

what similar to the rotational relationships identified by Jonathan Bernard in Varèse's music as "infolding" and "unfolding" [52] and by David Lewin as FLIPEND and FLIPSTART.[53] Bernard and Lewin are referring to the inversional rotation of one pitch around a stationary pivot in a three-note collection, creating a derivative collection. Gubaidulina's capricious inversion is less restrictive--a reversal of intervallic direction at any point in a note group of any number of pitches, and without necessarily proceeding with the interval pattern of the original after the inversion. Her intention is thus not necessarily to form a derivative collection, as Bernard and Lewin suggest Varèse's is, but rather to use an initially familiar base for new unexpected directions or material.

Example II.11. Capricious inversion.

a) "A" at T7, bar 55. b) "B" retrograde, bar 44.



There are also note-groups that are not identifiable with the basic four groups discussed above. Some are combinations of significant intervals of more than one of the four groups, producing hybrids. To be consistent, I shall call this practice "capricious concatenation." At bar 18 is an example, de-

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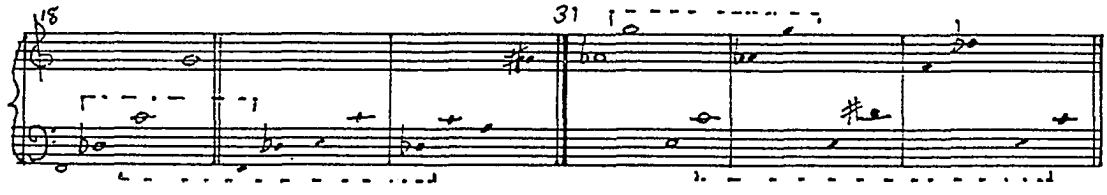
[52]Jonathan W. Bernard, The Music of Edgard Varèse (New Haven: Yale University Press, 1987), p. 74

[53]David Lewin, Generalized Musical Intervals and Transformations (New Haven: Yale University Press, 1987), p. 189.

tailed below in Musical Example II.12a. F to $D^{\flat}$ is the <+8> which, if followed by <+3, +8>, would have been motive "Cb," with the pitches E3 and C4. Or, if the $D^{\flat}$ had been the first note of the group, followed by C (<+11>), it could have been the beginning of motive "A," followed by A3 and $G^{\#}4$. But by combining these two familiar initial-interval options, Gubaidulina produces a note-group which belongs to neither of those motives. A similar example is the group starting on $A^{\flat}$ in 31 (II.12b). An "A" motive variant is predictable until the fourth note, C; instead of the expected symmetrical <+11> to $D^{\#}$, it has the <+8> of motive "Cb"!

Example II.12. Capricious concatenation.

a) "Cb" at T_8 "A" at T_6 b) "A" variant "Cb"



The interval of <19> (octave plus perfect fifth) occurs frequently as the structural boundary of a note group. Despite the fact that the interval-class 5 (of which <19> is a member) proved to be very rare in my examination of adjacent pitches (dyads), it is in the interval vector of Gubaidulina's most frequently used tetrachord-types. This frequency is caused, in part, by the fact that the "A" and "Cb" motives share the boundary interval <+19>. This span is divided in both cases into the pitch set {0,8,11,19}, even though "A" has the two inner pitches reversed to make {0,11,8,19} and therefore a different interval pattern. Remarkably, this fundamental <19> persists even in note groups other than "A" or "Cb." In bars 2 (B3 to E2), 18, 27, 57-58 ($F^{\#}3$ to C5) and 73, she not only uses <19> but even manages to maintain one of the two inter-

vallic divisions of the above motives (not both or there would be identity with the motives) of <+ 8, +11>. With different inner-interval divisions, <19> also occurs at 2 ($B^{\flat}3$ to $E^{\flat}2$), 46, 57 (A2 to E4), and 66.

A tonal center in a general sense is suggested in this movement by the lengthy return of the opening G3 in the last bars of the piece, a factor which may influence Gubaidulina's calling the final section a tonic. Otherwise, there is none of the playing with tonal centers and their implication of stability found in the first movement. But in terms of harmonic color, local tonal references abound. I have mentioned the triadic arpeggios as being particularly explicit in momentarily evoking tonality. The segments of the octatonic collections she uses also have this power. But the most tonally evocative motive of all is probably the "Cb" motive, with its chromatically downward-resolving parallel <8>'s, as in Example V.2 above. The accomplishment of the *pizzicato* notes in this movement is the blending of tonal, chromatic, octatonic, and atonal elements that both retains their separate coloristic possibilities and creates a unified sound world in opposition to the viola *flautato* notes.

c) Pitch contours

Another way of looking at the pitches of the note groups of Type 3 is to consider them as high or low notes in a contour rather than as specific pitches.[54] (Earlier I mentioned note-groups that were variants of "B" and "D" because of similarity of profile.) Table 5 below lists the note-groups according to their bar number and contour segment, with 0 representing the lowest note, 1 the next-lowest, and so forth, the pitches remaining undefined. One

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[54][A technique suggested by Elizabeth West Marvin and Paul Laprade, "Relating Musical Contours: Extensions of a theory for Contour," Journal of Music Theory, XXXI: 2 (Fall 1987), p. 225-267.]

can think of the contour segment as also having an inversion, retrograde, and retrograde inversion. [The inversion may be found by subtracting the number assigned to each pitch in the segment from the total number of pitches in the segment minus one. Thus, if there are five different pitches, and their order in the contour segment is <34210> as in motive "B" in this movement, the inversion is found by subtracting from 4 (=five pitches-1) the numbers 3, 4, 2, 1, and 0, producing <10234>. The retrograde and its inversion are the contour segment and its inversion in reverse order.][55] Listing the motivic groups according to category of contour reveals similarities and relationships that are not obvious when looking at the specific pitches themselves. Motive "A" displays the contour <0213>, shared by no other note-group. The closest contour to it is the note-group just preceding the "stretto" arrival of two "A"s at bar 55: at 52, the two pairs are reversed to <1302>. This relationship becomes audible once it is perceived, despite the Type 2 interruptions in 52.

"Cb" displays the contour <0123>, surrounded on either side by "Ca" and "Cc," both with the contour <120>. "Cc" has its contour inverted in the recurrences at 52 and 63--at 52 there is an added note as well. This relationship of inversion is probably more immediately audible than the way the pitches of these two recurrences relate to the original "Cc." Two other note-groups come to seem related to "Cb" from a contour standpoint: bar 18 and by inversion, bar 43. Concentrating on the pitches obscures their similarity.

The motive "B" at bar 2 has a multi-directional contour, with another occurrence at 31. But there are other long multi-directional figures listed in the table below, of which "B" could be considered the paradigm. Among

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[55]Elizabeth West Marvin and Paul Laprade, "Relating Musical Contours: Extensions of a Theory for Contour," Journal of Music Theory XXI: 2 (Fall 1987), p. 231.

these are several relationships of contour: the bracketed part of the figure at 44 is the retrograde inversion of the bracketed notes of 27, and the last seven notes of the figure at 45 share a similar, though not identical, contour with the last seven notes of 27. The upward triadic arpeggio motive called "D" has the same contour, of course, as the "Cb" motive and other upward figures that are not particularly triadic. (The distinction between them, which Gubaidulina reinforces rhythmically, is obscured by observing merely the contour.) The variant of going down instead of up, describable as either inversion or retrograde, is visible at 36 and at 43 (also included in the "Cb" list). There are two four-note groups that don't fit into any of these categories, the <1023> at 13-14, and the <0132> at 16, one being the retrograde inversion of the other. Pitch-wise, I have spoken of the former as a hybrid generated by capricious concatenation, the latter as a variant of "Ca."

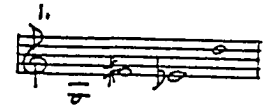
Table 5. Contour Categories in Type 3.

Motive "A"

bar 1: <0213> ——————————

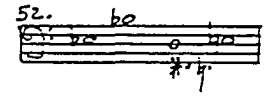
37: <0213>

56: <0213>



52 <1302> (variant) ——————————

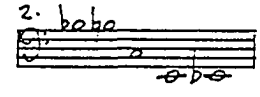
(F#-F intrude from Type 2.)



Group "B"

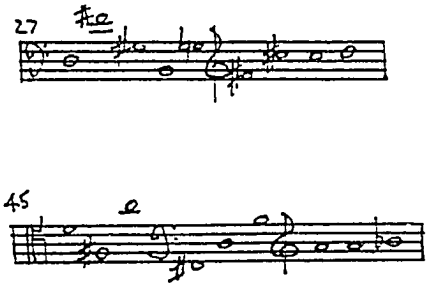
bar 2: <34210> ——————————

31: <34210>



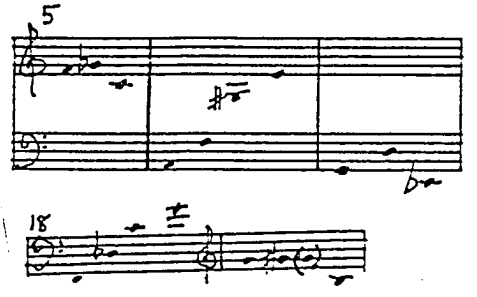
Other multi-directional figures

bar 10: <01423>
27: <14{3024556}>
44: <{012463}5>
(Bracketed numbers related by RI.)
45: < 42{5013556}>
(Bracketed contour similar to bracketed part of 27.)
31-33: <340112>



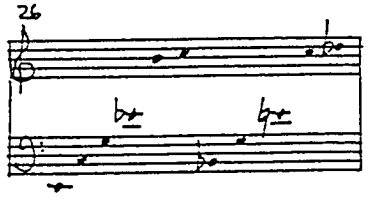
Motive "C"

	"a"	"b"	"c"
bar 5:	<120>	<0123>	<120>
48:	<120>	<0123>	<1(3)02> =I
60:	<120>	<0123>	<102> =I
18:		<0123>	<1220> (var.)
43:		<3210> =I or R	



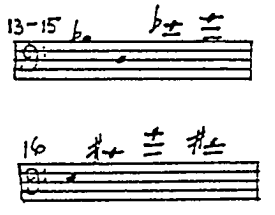
Group "D"

bar 26: <012345--01234>
57: <01234>
58: <0123>
73: <01234>
36: <43210>



Hybrids

bar 13-14: <1023>
16: <0132>
(Related by RI)



C) Rhythm

1) Proportions

Although there are deliberate choices of durations and number of attacks in this piece, a system is not obvious, and Gubaidulina does not remem-

ber the nature of her choices, except for a return to the Fibonacci series at bar 77 with 34 notes in the violin and 21 in the cello, a point which she calls "tonic."[56] Table 6 presents the number of attacks in each section, by bar number.

Table 6. Attacks per section, by bar number.

1) 9 + 15		=24
11) 13 + 10		=23
21) 10+ 7+6 (overlapping)	=23	
6+5+12	=23	=40 total
31) 10+8		=18
36) 10+13		=23
43) 15+15+5		=35
49) 15		=15
55) 8+5+7		=20
60) 10+8		=18
66) 12+6		=18
73) 10+5+8		=23
77) 34+21		=55

Clearly the number of *pizzicato* notes in the various phrases is not random. Certain numbers recur frequently: five and its multiples, 18 and 23. One could say that the non-Fibonacci numbers--10, 15, 18, and so on--are products and sums of Fibonacci numbers, but in fact any number can be obtained by a combination of adding and multiplying low-level Fibonacci numbers, so this is not an adequate derivation. It is likely that, as in the first movement, some other series or numerical procedure is in use, one that is "dissonant" to the Fibonacci's "consonance" or "tonic."

Another source of numerical data is the number of metrical beats during which the viola plays. These too are divided into phrases, and in light of the viola's hazy background entries in *ppp* and with unmetrical durations,

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[56]Conversation with Laurel Fay.

ignoring the entry and exit notes and just calculating the precise durations to which they are tied is justifiable. These are shown in Table 7.

Table 7. Viola's precise durations.

9-11	15 beats
19-20	10
22-25	18
28-30	15 (including the rest following the note)
40-42	10 (not including the rest preceding the note)
47-51	25
52-59	18
64	7
67-72	34 (counting the rest in 72)

More numbers of a similar ilk appear here: five and its multiples, the recurring 18, and the Fibonacci member 34. Whatever the series underlying them, these numbers do, in any case, add up to the possibility of a large-section proportion between viola beats and pizzicato notes. An interesting relationship becomes evident in dividing the piece at bar 37 where the first return of the "A" motive occurs. Although, according to Kramer's notion of "vertical time," there is no reason to assume any major divisions in the movement, there is also no reason not to allow a minor articulation at this point. Doing so reveals 58 measured viola beats in the first half and twice that, or 116, *pizzicato* notes. Similarly in the second half, there are 98 viola beats and exactly twice that, or 196, *pizzicato* notes. The latter division is particularly fascinating when considering the often casual-seeming repeated *pizzicato* notes, and then realizing the composer may have precisely calculated the number of these attacks in order for them to be proportional to the viola beats. Another potential large-scale proportion is apparent in adding together the viola durations from 67 (the "cadenza") and all the subsequent attacks, a total of 116, (the same as the *pizzicato* notes of the first section). Unfortunately, the inner section (37-67) of this potential tripartite division does not quite add up, with 119

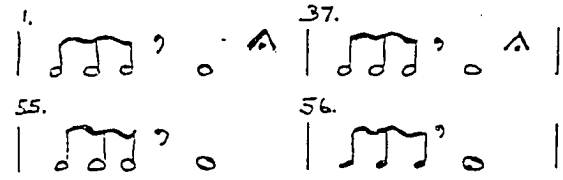
pizzicato notes instead of 116, and 60 viola beats. The purpose served by such correlations is, as in the first movement, primarily extramusical, not necessarily explaining the piece's dramatic pacing.

2) Notation

There is an obvious attempt in the second movement to distinguish the various Types and motives not only through their pitches but also through rhythmic notation. Many of the *pizzicato* groups are notated in an approximate rhythmic notation indicating relative rather than absolute duration, but with differences of values and articulations. Examining the details of these notations, particularly to see how the notation of each of the motivic cells evolves through the piece, sheds some light on Gubaidulina's conception of the overall form and the distinctions between groups. I shall present the notations of each of the major note groups and discuss them.

Among the "A" instances shown in Example II.13, there is clearly a high degree of consistency of rhythmic notation, as there was in pitch and profile; as something of a motto of the piece, "A" requires stability. The *crescendo,* comma, white notes, and accent on the whole note are common features. An exception is at 56, at a moment I identified as a quasi-*stretto,* with two "A" statements immediately adjacent. The first three notes of the second statement are to be played faster.

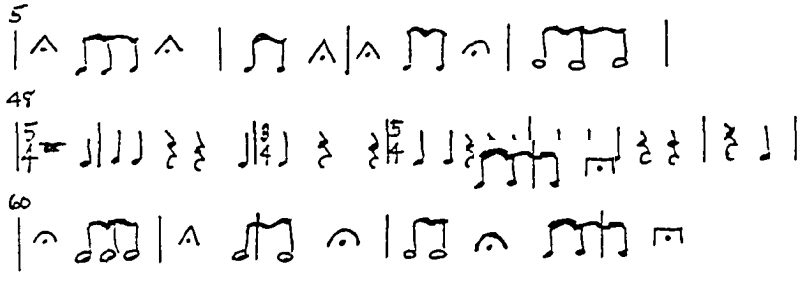
Example II.13. Rhythmic notations for motive "A."



The "C" cell was found to be more varying in its intervals than "A"; this is also true of its rhythmic notation, shown in Example II.14. Its middle

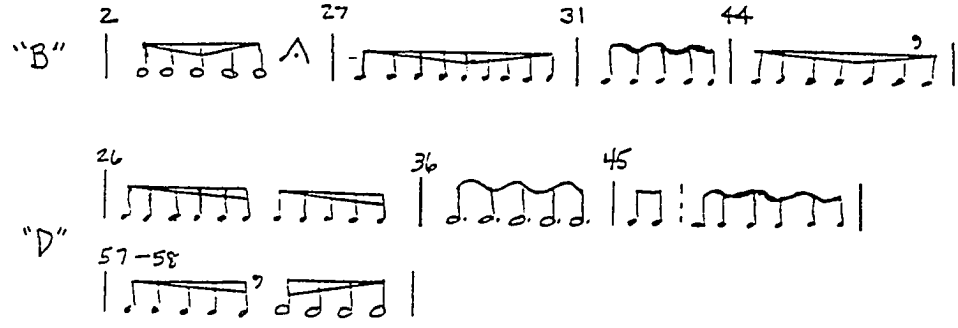
statement at 48 is notated metrically, and thereby displays up- and down-beats differing from the up- and down-beat implications in the earlier instance at 5. Yet a third accent distribution is suggested in the barring at 60. White notes occur for the first time in this instance. (The middle part of the piece, at 43, intensifies into a more or less consistent use of black notes, with the more leisurely white notes returning at 55 with the return of "A.")

Example II.14. Rhythmic notations for motive "C."



Cell "B," at bar 2, is notated with the slow-to-fast-to-slow notation, with white notes, shown in Example II.15. Other instances of this occur at 27 and at 44, but both with black notes. Other groups related to "B"--for example 31 in the cello--do not preserve the same notation. This is consistent with the fact that in terms of pitch, "B" is not a motive with a stable interval identity, but a cell subject to transformation. The same is true for "D"; its variants also manifest a variety of rhythmic notations, (also shown in Example V.7).

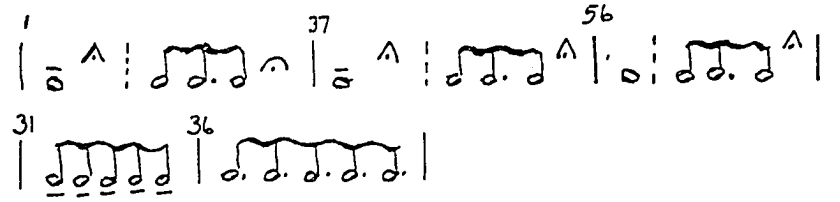
Example II.15. Rhythmic notations for cells "B" and "D."



Within the Type 1 (octatonic) passages a certain rhythmic identity is also evident. The three instances that follow the "A" motive, shown in Example II.15, are identical--the "whole note" is followed by a "half," "dotted half," and "half." Of the other two, one (at 31) is all "half notes"; the other (at 36) all "dotted halves." The Type 2 (chromatic) passages often but not always share with "B" the slow-fast-slow figure.

Example II.16. Rhythmic notations for Types 1 and 2.

Type 1)



Type 2)

For the performer to interpret precisely such imprecise but apparently meaningful rhythmic notations as the ones shown above is one of the great challenges of this Trio. Yet it is clear that these rhythmic surface details confirm the distinctions of Type and motive that Gubaidulina has established with pitch, and are therefore not to be ignored by the performer.

D) Performance Mode and Color

With respect to color and playing mode as an articulator of structure, I have noted earlier that the contrasts in this movement are mainly vertical, distinguishing the two members of the dialogue from each other, but not contributing to major horizontal formal distinctions. An exception is the descent of the viola from the C8 artificial harmonic of bar 66. Artificial harmonics are abandoned from bar 68, although the three notes of 68 could have been

produced by using them. Although only a detail, this departure from the previous viola color seems indicative of Gubaidulina's wish to make this passage coloristically and symbolically transitional from the previous viola music, leaving the ethereal sphere in favor of the earthly (with a dynamic increase to *forte* to support increasing earthliness). Cholopova, in a description probably appropriated from Gubaidulina, calls this the "descent of the Holy Spirit."[57] That the viola has taken on the terrestrial nature of the other instruments while maintaining its distinction in *arco* is playfully suggested in its four final pitches in bar 77: it plays in identical register the violin's opening motive "A," but in *arco* rather than the violin's *pizzicato*.

[57]Valentina Cholopova, in Enzo Restagno, ed., Gubaidulina, p. 236.

III. Third Movement

A) Formal Classification

The third movement is the most extensive of the three on paper though not necessarily the longest, given its extremely fast tempi. Hearing it through entails a revision of the hearing of the previous movements, for Gubaidulina has sought to preserve material from them in new contexts in this movement; the material from the previous movements that seemed most important to her, or at least most worthy of transferring to this one, is retroactively visible. Later in this chapter, I shall consider the relationship of the three movements to each other.

Because of the tempi, there is a considerable disparity between what is visible on the page in the way of detail in the fast sections and what is actually audible, unlike in the other movements.[58] This is not to say that the details are lost and make no contribution to the larger gestures. But the intricacies of the treatment of the central motive and its transformations are food for an analysis that is not easily confirmable by listening. On the other hand, the large, dramatic gestural sweep, the connections and articulations between sections, even the large pitch relations, <u>are</u> audible. I shall examine these audible macro-elements here, as they are what defines the structure.

If Pierre-E. Barbier's description of the alternating styles of the <u>Trio</u> has validity ("...polyphonic writing in its couplets, instrumental and monodic in its refrains"[59]) it surely refers primarily to this movement. Unlike the first,

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[58]This poses a special compositional question: how do composers derive their notes and rhythms in passages where textures and large gestures predominate, rather than individually audible pitches? In Gubaidulina's case, in this movement, the same careful procedures and consistencies are evident in the former situation as in the latter.

[59]Pierre-E. Barbier, "Etre Soi-Même," Philips CD recording 434 041-2 booklet, p. 17.

in which the form can only be deduced retroactively by noting the degrees of contrast among the various sections, or the second, in which formal articulation is minimal and a steady-state "vertical time" prevails, this movement includes clearly demarcated and predictably recurring "couplets" and "refrains." Cholopova organizes it into five strophes, each starting with the basic *ostinato* motive or subject, composed of "a recitative-sermon, then an expressive intermezzo (hinting at the expressive forms of the first movement) and then a polyphonic 'comment' (like a reply played by the instrumental ensemble)."[60] Such a precise formulation seems to me to falter early in the piece; Gubaidulina does not seem to adhere to consistent application of any formulae. Specifically, the first of what Cholopova would have us believe is a "comment" (30-37), after the first "intermezzo" at 29, is followed, not by the beginning of the second strophe, but by another "intermezzo" with borrowing from the first movement, at bar 38. Therefore, I shall use Barbier's more reliable bipartite, rather than Cholopova's tripartite analysis (his refrain corresponding to her intermezzo), although I shall point to the distinction between two kinds of couplets which gave rise to Cholopova's perception--couplets using a strict version of the *ostinato* motive, "(S) couplets," and those based on the motive in a freer way, "(F) couplets." Example III.1 shows an example of both of these, and of a refrain.

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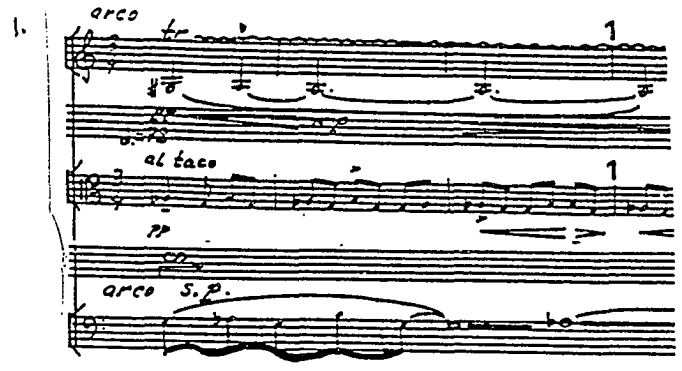
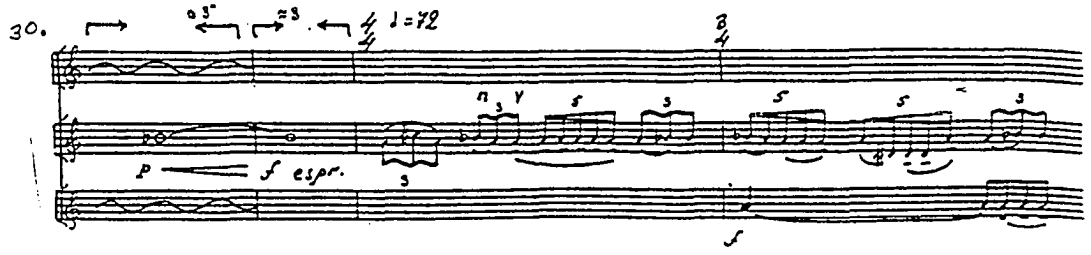
[60]Valentina Cholopova, in Enzo Restagno, ed., Gubajdulina, p. 237.

Example III.1. Beginning of (S) couplet, (F) couplet, and refrain.

(S) couplet



(F) couplet



Refrain

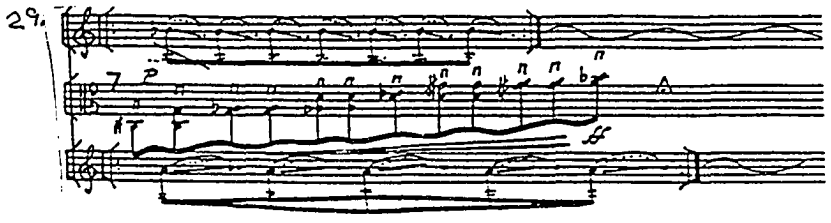


Table 8 below classifies the formal sections.

Table 8. Sections classified as couplets and refrains.

Bar 1-28) Couplet 1 (S)	Bar29) Refrain 1
Bar 30-38) Couplet 2 (F) overlaps	Bar 38) Refrain 2
Bar 39-59) Couplet 3 (S)	Bar 60) Refrain 3
Bar 61-69) Couplet 4 (F)	Bar 70) Refrain 4
Bar 71--98) Couplet 5 (S) with double subject	Bar 91-96) Refrain-like material in cello (5?)
Bar 99-127) Couplet 6 (S)	No refrain
Bar 128-137) Couplet 7 (?) climax	Bar 138-148) Free material, loosely related to refrain ideas (6?)
Bar 149-174) Couplet 8 (F)	Bar 175) Refrain 7
Bar 176-183) Couplet 9 (S)	

Several anomalies in form are evident in this list. The alternation of strict and free couplets breaks down after Couplet 5, which is itself an anomaly, having a double subject (in the cello on G at 71, then in the violin on E^{b} at 81). Discrete sections are not inevitable in this movement: in bar 38 a refrain begins while the couplet is still going on; in bar 91-96, refrain-like material occurs in one instrument during a couplet. Couplet 6 leads straight to another couplet with no refrain, and Couplet 7 follows neither the pattern of the strict nor of the previous free couplets, but offers a climactic homorhythmic unchanging polychord with the motive on top. Because the refrains increasingly stray from identity with the first-movement-derived first refrain, the application of the label "refrain" to the material of 138-148 becomes particularly tenuous, used only for the sake of consistency; familiarity does return, however, with Refrain 7.

In this movement, unlike the previous ones, the element of building a climax is central to the composition. All the three parameters I have explored in previous movements--pitch, rhythm and color--have a bearing on the following questions: how does Gubaidulina build toward a climax? How is the climax itself defined? How does she create closure (remembering that in the previous two "moment form" movements, real ending is not a primary goal)? I shall answer each of these with reference to each parameter.

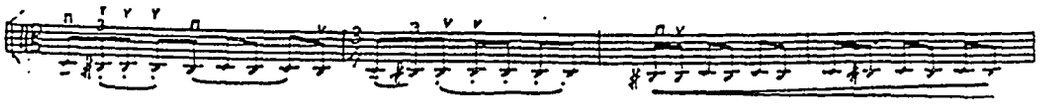
1) Building towards the climax

In the first movement, the last section is where tension accumulates, with the insistent repeated chromatic notes pulling in opposite directions. In the second movement, the building of tension seemed a less significant aim than the creation of a "steady state" music, with only the solo viola's descent after it reaches its highest notes providing a dramatic focus to the movement. In the third movement, this matter of building and pacing is a more complex compositional problem, posing basic questions about how the piece works and how momentum is defined. With a number of motivically similar, varied but closely related musical strophes, how can momentum build toward a climax in the movement? Within any given section, by what means will the *ostinato*-like quality of the motive become driven enough to complete a section and move on to the next? What designates a section as pre-climactic, post-climactic, or climactic?

The first step is to note the techniques for transition from one section to the next. Narrowing of registral compass with rhythmic intensification is the technique used to move from couplet to refrain. The end of the first couplet at 25-28 contains a repeated intensifying figure in the viola, accompanied by trills on $B^{b}4$, the highest register achieved so far. In this music in Example III.2 below is a narrowing in rhythmic variety to become a

five-fold (a frequent number in figures with such a function) alternation of the two pitches with a *crescendo*. Such narrowing makes inevitable the movement to a new section.

Example III.2. Narrowing of registral compass, viola, bar 25-28.



Overlap is the preferred technique when moving from a refrain to a couplet, as at 30, where the refrain material continues in the outer instruments as the viola relaxedly begins the motivically improvisatory section. Overlap works also at the end of the next refrain, with continuation of the refrain material while the violin starts the new motivic entry at 39. This couplet, like the first one, ends with a five-fold intensifying figure at 55; overlap is again the rule in joining refrain to couplet at 61. The end of the refrain of bar 70 brings a third device for transition: silence and thereby complete articulation. I earlier showed the ambiguity of the couplet and refrain structure in the section from 71, with 91 showing some refrain aspects, and 98 a new (S) couplet, not interpolated as before by an (F) one. The narrowing and intensifying device previously used to lead from couplet to refrain occurs here after the refrain-like material at 97 (again five units of two neighboring half steps) as a transition to the next couplet at 98.

The narrowing figure is the most intense of these transitional figures and therefore the most likely choice for transition to the climax. What can be done to make it more preparatory, more intense, for this special moment? Gubaidulina chooses to have a double intensifying figure: five units of five notes from 121 and then five units of three notes at 126. The end of the most extreme part of the climax, at 138, classified as refrain-like, is marked by a

short articulation, indicated by commas, a silence balancing the one at bar 70. Overlapping is the only method of transition used from 139 to the end.

As well as the means of transition discussed above, registral choices are also important in preparing the climax. The registers of the initial pitches of (S) couplets display A^{b}3, D4, E^{b}4 (in the violin at 81, in the same section as the G2 entry in the cello), and A4, an ascent (and one that also incidentally embeds in transposition the profile <+6,+1,+6>, a version of the basic motive). The F5 at 128 is registrally the culmination of the motivic entries, and proves to retain that title except for the very high B^{b} at 176 (more a color than a structurally significant entry).

The two motivic entries immediately preceding the climax must fulfill certain requirements in order to lead toward it. The couplet from bar 71, with its double, fugue-like statement of the motive in the cello and in the violin at 81, is more extensive and contrapuntally elaborate than any of the previous entries. If this is the penultimate pre-climactic section, what can follow that leads even more ineluctably to the climax but is not yet climactic? The next section at 99, as I said before, has the highest motivic entry so far, on A4. The cello's accompaniment in *fortissimo* double stops in a *tessitura* that would sound neutral on the violin or viola but is acutely penetrating on the cello adds intensity. As I said earlier, the double narrowing figure in the viola at the end of the section from 121 is the longest yet. The intensity, as before, seems a function both of the repetitiveness of the figure and of the reduced and tightly chromatic pitches it contains. The simultaneous trills on E-F5 (violin) and D-E^{b}5 (cello) heighten this intensity.

From a rhythmic point of view, two elements play a role in building toward the climax. The repetitive narrowing figures mentioned above involve not only reduction of pitch but also of rhythmic figuration. In contrast

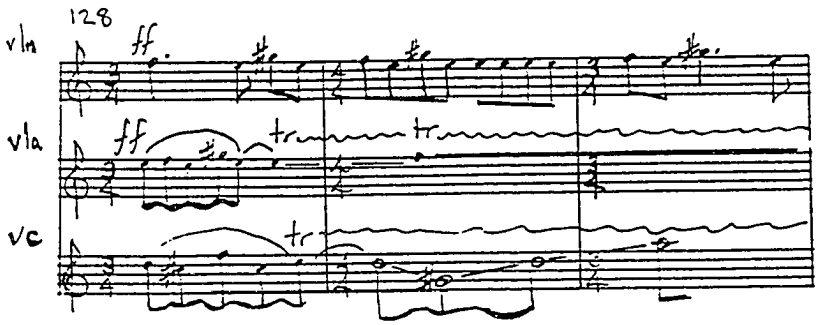
to the rhythm of the motive, always in flux, the narrowing figure involves a very short and unvarying rhythmic cell. The reduction of the cell from five notes to three in the double narrowing figure at 121-127 is crucial in signaling an increase of intensity and anacrusis. I also see the rest before the couplet at 71, the first in the piece, as critical for separating the opening from the large internal event of the piece. (The only other articulation, the commas at the end of 138, seem to perform an analogous function of separating the central event from the end.)

Dynamically, the route to the climax is marked by generally low levels, particularly of the (S) couplets, so that the *forte* in the couplet at 99 marks a departure and signals building and increase. The high *tessitura* in the cello and *crescendo* in the course of the narrowing figure from 121 further this impression.

2) Defining the climax

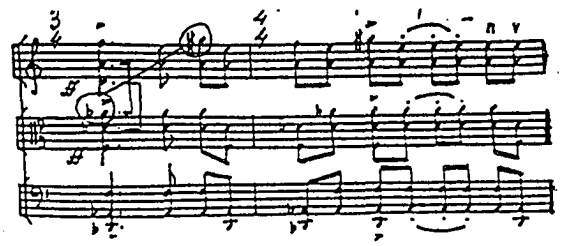
Ultimately, only in retrospect is the structural weight of each entry apparent. Establishing what is penultimate and ultimate and what is the climax itself can only be done after the fact. A less successful composition might have presented something like Example III.3 at 128, arguably still climactic in the register of the motive and in the dynamic, but too much like the previous entries, so that the distinctive blast of 128 is missing. One would have had the sense of "more of the same;" one more of the cadential narrowing figures like those of the examples above would have seemed superfluous.

Example III.3. Alternative, inferior climax.



The music from 128 instead grips one with its novelty as well as its dynamic force. It states the motive, but now all the instruments are homorhythmic, with double and triple stops. Paradoxically, it is the most harmonically static section--static in the sense of repeating continuously--yet far from at rest as a vertical harmony. As Example III.4 shows, a D minor and D^{b} major triad are superimposed into a polychord, creating simultaneous half steps on D^{b} and D, A^{b} and A, with F belonging to both triads, and the $G^{\#}$ in the motive casting a double meaning on the A^{b}. If stasis characterizes this first part of the climax, its consequent at 138 is anarchy--plunging and roaring double stops with deliberate unrelatedness among the three instruments. The climax is describable as bipartite, corresponding to the earlier bipartite structure, with the motivic climax at 128 and the refrain climax at 138. Each represents a culmination, a maximally intense version, of its respective source. The letting up afterward, from 149, retroactively confirms the climax. Not only the return to *piano* and the relaxed quality of the rhythm but also the unanimous ascent to a new registral height from 170 provides a sense of ethereal peroration and the foreshadowing of the piece's ending.

Example III.4. Climactic polychord with semitonal relations, bar 128-129.



The climax is also defined proportionally: the section from 128 that seems climactic for other reasons also comes at a fraction of the work about two thirds of the way along, close to the Golden Section point where climaxes often take place. The homorhythmic texture contrasts so sharply with the rest that it too serves as a marker. In terms of dynamics, the level of all the previous music is surpassed by the triple-stop *fortissimo* notes at 128, and the subsequent refrain-like section at 138. Since the subsequent sections recede in volume, they mark the climax section in retrospect as having been the pinnacle.

3) Creating closure

The final couplet, from 176, does not fit any previously established paradigm. The motive, reduced to a simple *moto perpetuo*, is dutifully executed in the violin, using the B^{b}-A of the previous refrain as its starting point. But the two other instruments end the movement with entirely independent material. The cello has one further instance of the symmetrical pattern we will discuss subsequently in this chapter. The viola turns to *pizzicato* groups typical of the second movement, some new, some from this and the previous movements. The cello and viola end on a final half-step conflict of D^{b}-C, of which Cholopova says,

> The C sharp of the viola, brusquely dissonant with the C of the cello, changes gradually from *piano* to *fortissimo*, finishing in a Bartók

> *pizzicato* with heavy strokes of the string on the fingerboard. As Gubaidulina herself says in such cases, "Here once more we have a question, and everything has to start all over."[61]

Rhythmically, the ending from 176 is a curious completion of this movement. To reduce the motive to a *moto perpetuo* as she does from 170 in some way negates the previous relatively contrapuntal aspect of the motivic treatment, in favor of the "steady state" music of the second movement. This reversion to "vertical time" is confirmed by the return in the viola to the *pizzicato* notes of the second movement, an extensive passage but one that does not seem to "go anywhere." Is this second-movement-inspired stasis "earned" by the rest of the movement? In a sense, it may be demanded. Perhaps only wrenching out of the previous linear procedures of the movement into the static techniques of the second movement can provide the necessary brake on the momentum of the motive; a true motivic statement in this final section--taking off yet again--rather than the truncated *moto perpetuo* version would not have achieved this braking. But Gubaidulina cannot resist subverting this stasis at the very end, with her *crescendo* to the Bartók *pizzicati* and the conflict between the viola $D^{\flat}$ and cello C. The presence of vertical contrasts earlier in the Trio are confirmed here at the end, with the simultaneous high *staccato* iterations of the violin, the *pizzicato* of the viola, and descending *piano vibrato legato* notes of the cello. The simultaneous *crescendo* of the viola and *decrescendo* of the cello at 183 are emblematic of this continuing search for contrast. The almost violent nature of the viola's *crescendo* complete the piece with what seems to be more than Cholopova's new "question" referred to above. It seems rather to imply a new disruption, unease,

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[61] Ibid.

absence of resolution--a contradiction to the earlier tendency toward an ethereal and rarefied ending.

B) Pitches

1) Structural aspects

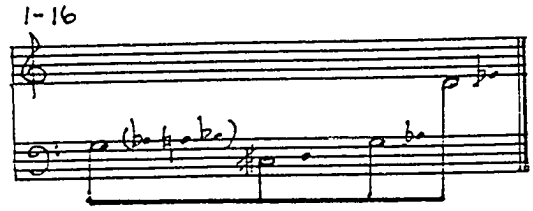
Having defined the articulations of the form, one can address particular structural issues pertaining to pitch: what defines a couplet and a refrain? Are there any large-scale pitch connections between the couplet-refrain sets?

a) The couplet

Leaving aside for the moment the pitches of the *ostinato* motive in the viola, I shall focus instead at the general pitch structure of Couplet 1, especially the "accompaniment," since in any case, aurally, it overwhelms the motive. What audibly defines this section is, initially, a general trilling, buzzing sound covering the area G-B3. Emerging from this texture are higher, sustained violin trills and cello notes even more intense than those of the violin in the same *tessitura*. The large pitch movement is from the opening cluster upward to destinations of (D and E^{b})4. As this upward movement occurs in the violin and cello, the "bass" of the G-A^{b} of the viola motive shifts downward a tritone at bar 16 to $C^{\#}$-D3. Because rhythmically, D3 may be considered a neighbor to $C^{\#}$and E^{b}4 a neighbor to D, the basic pitch movement can be said to follow the interval profile <0,-6,+6+7>, with a neighbor "ghost" a half step higher than each of these pitches, as Example III.5 indicates. This profile is identical, except in transposition, to the *flautato* viola notes of the second movement in bars 8-12. Both have a common ancestor in the first movement, with the tendency of the primal B4 to descend to F and ascend to

F#, in bar 7 or 16. This design continues to structure the pitches of subsequent couplets in the third movement.

Example III.5. <+6+7> profile of couplet 1, with neighbor "ghosts."



b) The refrain

The refrain in Example III.1 above is the first one, and may be considered paradigmatic. It displays ricochet *glissandi* in the violin and cello reminiscent of the first movement. Simultaneously, the viola has down-bow double stops tracing the interval profile of the couplet described above. Clearly, this refrain is distinguished from the couplet by its absence of a linear motive unfolding in time; here we have only reiteration and the upward movement of the double stops, a "steady-state" texture. Whether the two are also distinguished in terms of degree of polyphony versus hetero- or homophony is more debatable. Even in the couplets, Gubaidulina seems loath to write polyphony in the western sense; several analysts of Russian music have claimed this to be a general difference between Russian and western music, with true polyphony present only as a western import. If anything, the designation of heterophony, in Charles Seeger's sense, might best describe the textures of both couplet and refrain, with independent material vertically juxtaposed.[62] (The ricochet sections of the first movement are more homogeneous, not having the double stops.) One might expect the highest probability of "real" polyphony in the couplet section from bar 81, in

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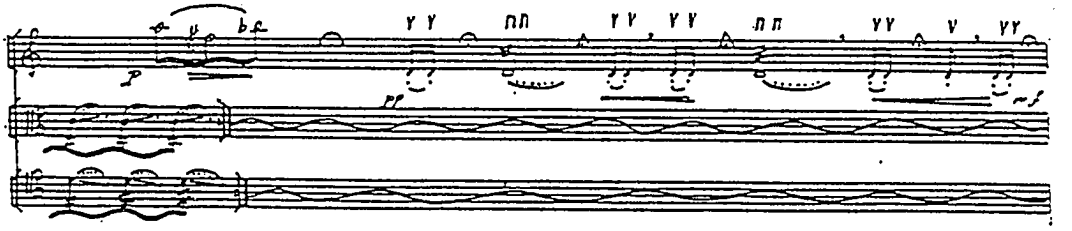
[62] Charles Seeger, "On Dissonant Counterpoint," Modern Music, VII: 4 (1929-30), p. 25.

which the cello motive on G is joined by another motivic entry in the violin on E^{b}, potentially the best opportunity in the piece for "real" counterpoint. Although there are indisputably two moving lines at this point, Gubaidulina subverts the possibility of a coordinated relationship between them by assigning different time signatures and marking the cello with the sign ↷ (meaning it should play in its own free tempo), thereby emphasizing independence rather than coordination of the lines.

The second refrain, at 38, omits the double stops, and instead presents another element from the first movement along with the ricochet notes--attacks on a monotone in pairs and single notes, as in Example III.6. The double stops come back in the third refrain, extending into the next couplet.

Example III.6. Monotone attacks from first movement in refrain 2.



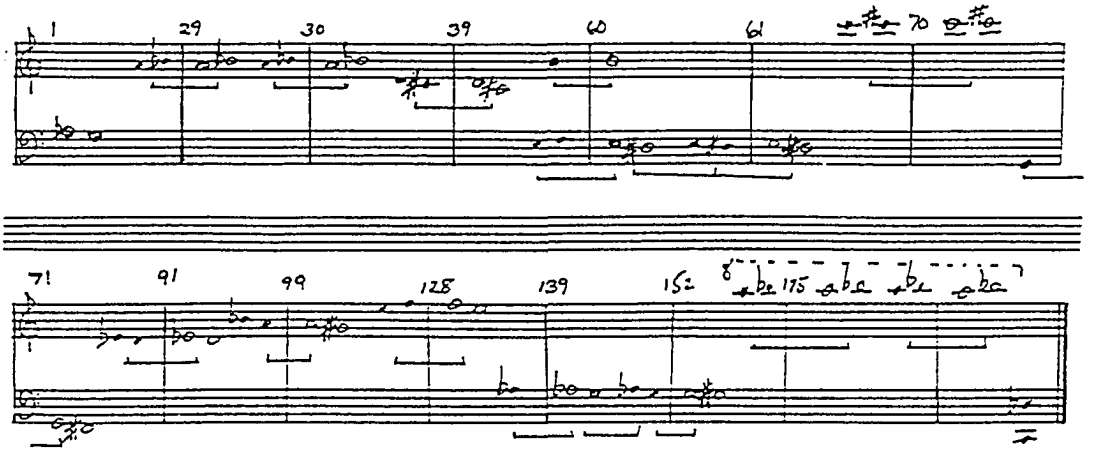
At 70, refrain 4 has lost most of the first-movement elements; the ricochet *glissandi* are still there, but are not emanating from a single notes, but rather from the symmetrical pattern of pitches to be discussed later. As noted in the list in the previous section, Refrain 5 strays even further from the paradigm, occurring during a couplet, with only the double stops, and only in the cello. At 138, it is difficult to decide what extremes should be allowed under the rubric "refrain." The double and triple stops in all the instruments do not follow the intervallic pattern of the previous double stops, yet--coming where they do after the climactic couplet, and marked

down-bow as they are--one tends to associate them with former refrains. The final one, at 175, is closer to the paradigm, of the same type as the second one.

c) Pitch relations among the sections

Exploring the possibility of large-scale pitch relations in this movement requires study of the initial pitch of each section, since it tends to serve as "tonic" to that section, and also inspection of the final pitch or pitches. The structure seems to be a continuous chain; whatever pitch or pitches (often two adjacent semitones) end a section become the beginning of the next one. In Example III.7, the initial and final pitches of each section are displayed in order to show this chain.

Example III.7. Initial (white) and final (black) pitches of sections.



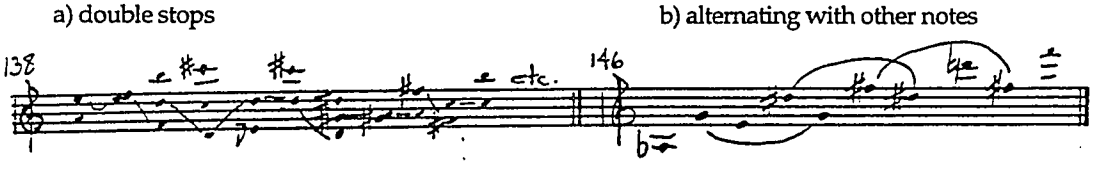
This chain allows study of the pitch choices for the sections in detail. Most of the beginnings and endings feature a vertical semitone; of all the semitone pairs, C-B and G^{b}-F are missing. (I place the higher pitch first as that is the normal order in the motivic entries.) Sampling the frequency of use of each of the twelve pitches in these strategic positions, $F^{\#}$ and B occur once (losing the centrality they had in movements one and two), C, D and F occur twice, $C^{\#}$, $D^{\#}$ and E, three times, A^{b} four times, and G, A and B^{b} five times.

One notes with admiration the fact that despite pitch stasis throughout entire sections, especially refrains, Gubaidulina creates a sense of pitch movement by means of this chain.

The connection between the A^{b}-G of the first couplet and the A^{b}-G at 139 and at 152 suggests the possibility of a point of (non-literal) return. The pitch classes of the refrain at 175, B^{b}-A, affirm this possibility, since they are identical with those of the first refrain, as the couplet pitches are with the first couplet. Motivic or rhythmic considerations do not confirm an important structural sense of return, however; all the motivic recurrences, even with transposed pitches, seem to exert a greater sense of connection to the opening couplet than does this moment without motivic reference where the initial pitches happen to match.

The technique of pitch preservation seen as a linking mechanism in the second movement is also visible in the third movement, not only in the large-scale structure of the above chain, but also on a more local level, with figures in which a pitch class is carried from one sonority to the next as a member of a double stop, and figures in which pitches are reproduced in alternation with new ones. The violin in bar 138 gives an example of the former, and in 146, of the latter practice, both demonstrated in Example III.8.

Example III.8 Pitch preservation in violin, movement 3.

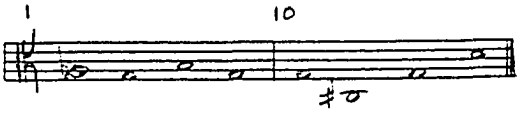


2) The motive

In discussing the structural aspect of pitch, I earlier avoided the motive and its transformations. Consideration of this motive now in detail, starting at bar 1, reveals a rhythmically changing dance-like ostinato on the pitches

A^{b}-G-B3 in the viola. At bar 10, G moves <-6> to $C^{\#}3$, then in bar 11, back up to G and <+7> to D4. Example III.9 presents this motive in reduced form. I have labeled two separate parts to the motive--the opening three notes (Part A) and the descent and ascent (Part B). Part B is, as I said earlier, a transposed version of the *flautato* viola notes of the second movement and the pitches in the expansion from the primal B4 in the first movement.

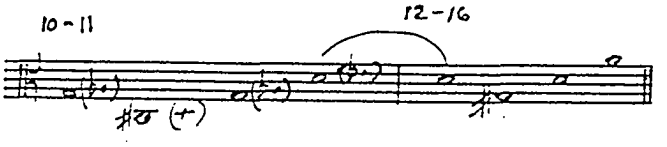
Example III.9. The *ostinato* motive.



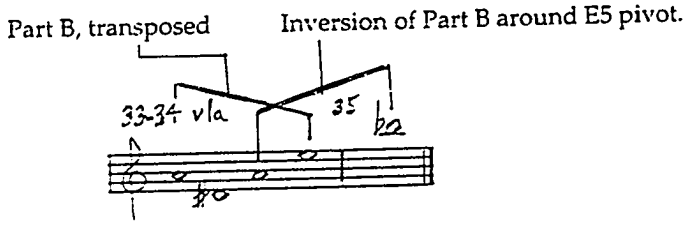
Given the many motivic couplets, it is fortunate for the sake of variety in this movement that both parts of the motive undergo transformation, and that the identities of both are called into question as the piece progresses. Looking first at what happens to Part B, one technique for developing and changing it is present in the first couplet: the creation of a "ghost" with upper half-step neighbors: A^{b}, always present with G, D introduced as a neighbor to $C^{\#}$ in bar 16, and E^{b} as a neighbor to D beginning in bar 12. This was indicated above in Example III.5. At bar 13 (Example III.10) a second transformational technique--extension--is used in the violin: D becomes the pivot for a new transposition of Part B, with a [-6] descent to $G^{\#}$, now respelled from its previous ghost function as A^{b}, and an ascent [+7] to A.

Example III.10. Extension of Part B with new pivot.

Part B with semitone "ghosts" Transposed Part B on D4 pivot



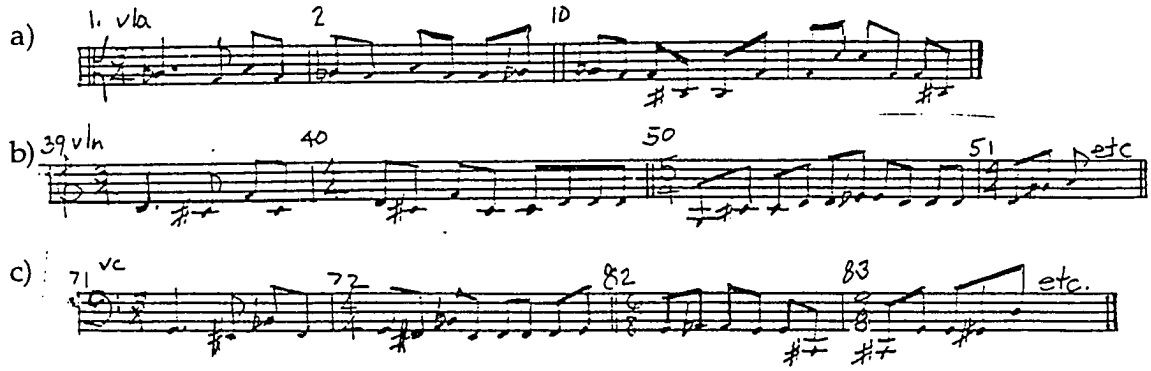
The extension technique can reach a different goal than <+7> from the pivot note if an inversion of Part B is used around the pivot, as in the second couplet at 32, shown in Example III.11. Part B is inverted around E5, the new pivot note in the violin, so the intervals around the pivot are [-7] and [+6], rather than the original [-6] and [+7]; $B^{\flat}$ rather than B is the highest note.



Gubaidulina continues to exercise the transformational procedures of ghosting, extension and inversion of Part B in the course of the movement. The treatment of Part A of the motive is possibly even more virtuosic. She explores the tonal implications of the motive, suggesting that one of the two notes is the structural pitch, the other a neighbor, but with some ambiguity from couplet to couplet about which is which. Although such implications are not aurally prominent in the trilling and buzzing of adjacent semitones, they do seem to have independent rhythmic confirmation, and to affect the choice of pitches for Part B. I have listed three Part A entries in Example III.12. In III.12a (bar 1), $A^{\flat}$, the upper pitch, has a neighbor-note, Phrygian aspect because of the spelling and the rhythmic weight given to the G in bar 2; the $A^{\flat}$ seems like a flattened second or sixth scale degree. G is the "structural" pitch also in the sense that it is the one from which the Part B descent and ascent are taken. III.12b (bar 39) is more ambiguous. The spelling makes $C^{\#}$, the lower pitch, seem like a neighbor, a leading tone, with D, the upper pitch, as the "tonic." This impression also seems confirmed rhythmically in the following bar. She takes Part B from the $C^{\#}$, but uses an added-note

version of Part B occasionally encountered earlier in the piece, <+6,+1,+6>, the added note being D! In III.12c (71), the spelling and rhythm seem to agree on G, the upper pitch, as the structural one, with F# the neighbor, and this time there is no ambiguity: G is the basis for the Part B extensions, which ignore F# completely.

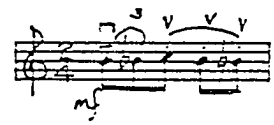
Example III.12. Tonal implications of the motive.



As well as playing with its tonal implications, Gubaidulina also subjects Part A of the motive to several pitch mutations. Simple permutation of the three pitches of Part A creates decorative commentary on the original, as in the cello at bar 1 and the viola at 42; rhythmic improvisation on the pitches produce the non-strict (F) couplets at bar 30 and bar 61 . But there are more radical deviations from the motive in which the intervals change (though retaining some relation to the original) and generate their own local development. Examples include the viola from bar 16-28 (reducing the motive to two pitches) and the figure from 55-59 in the violin, displayed in Example III.13 below, which keeps the same contour (<10201>) as the original motive but reduces the interval profile from <-1+4-4+1> to <-1+2-2+1> (thereby altering the trichord-type from [0,1.4] to [0,1,2]).

Example III.13. Mutation of motivic intervals.

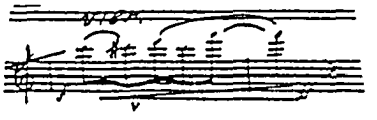
violin, bar 55



With a motivic figure as simple as Part A, with a semitone down and a leap of <4> up and down, many other figures could be considered variants of it. One of these is the figure in the violin in bar 68 in Example III.14 below. Here the three pitches have been joined by an additional half step below to form the pitch intervals <+1+1-1+4>; the last two intervals,<-1+4>, recall the motive. This figure, to reappear later in more extended form, is for the moment only echoed in the viola at T_1, in bar 70. I shall call this figure M^a.

Example III.14. Motivic mutation M^a.

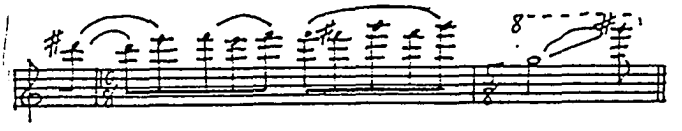
violin, bar 68



A differently mutated figure occurs twice in the violin at 147, the second at T_2 from the first. This is identical to M^a except for the last interval. Instead of <+1+1-1+4>, there is now <+1+1-1+1>, shown in Example III.15. A slight mutation has distanced this figure from the motive by removing the characteristic leap of <+4>. It seems to be a hybrid of the first-movement-derived figure at 139 and the motive-derived M^a. I shall call it M^b.

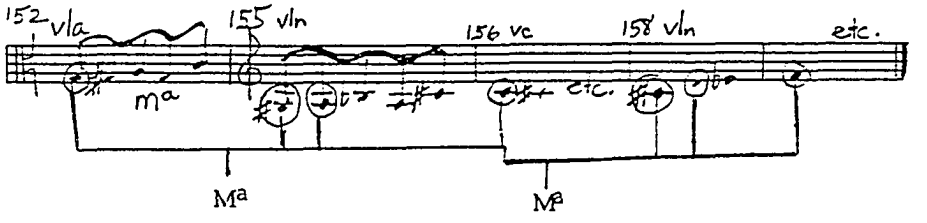
Example III.15. Motivic mutation M^b.

violin, bar 147



At 152, the viola's first-movement figure changes to M^a, and shows successive entries <1> and then <4> higher than the first, as in Example III.16, in a loose sense embedding its intervals in the next hierarchical level.

Example III.16. Embedding of M^a in motivic entries.



Gubaidulina is not content to remain with M^a throughout the section from 152 to 175. At 166 she creates another mutation, M^c (<+1+4-1+1>). Comparing it with M^a, we see that the <-1> preceding the <+4> from the original motive is gone. (Example III.17a) The upward half steps that begin and end M^c allow for the truncated concatenation of M^c found in the violin at 167 (Example III.17b). Free combinations of the three forms among the three instruments occur as the section reaches its highest register at 172-174.

Example III.17. Motivic mutation M^c and its concatenation.

a) viola, bar 166-167

b) violin, bar 167-169.

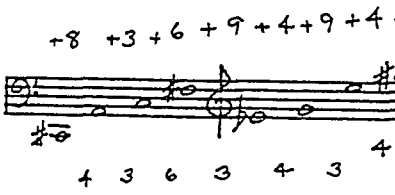
By constantly questioning the nature of the motive--its tonal implications and its intervallic and pitch content--and by allowing it to extend and transform itself through the pivotal, inversional and neighbor techniques discussed above, she averts the potential repetitiousness of an *ostinato* motive that occurs in nine strophes, instead making every entry fresh and with unexpected consequences.

3) The symmetrical pattern

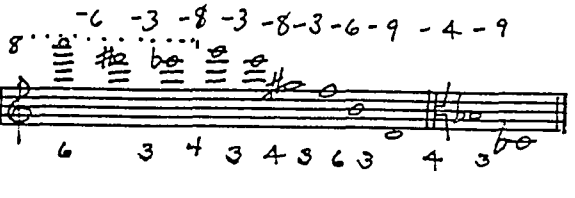
Six times in the course of the Trio, Gubaidulina uses a unique pattern of notes with little resemblance to the other pitch structures of the work. Only in the second movement, with the viola solo "cadenza," does this pattern have prominence, yet in some ways it permeates the whole work as an unnoticeable theme. Because four of its six occurrences are in this movement, I shall examine it at this juncture. In Example III.18, we see the six instances of the pattern.

Example III.18. Six instances of the symmetrical pattern. (Interval classes below, pitch intervals above.)

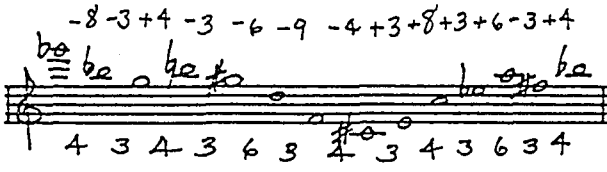
a) movement 1, bar 20, cello.



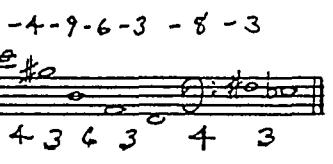
b) movement 2, bar 67, viola.



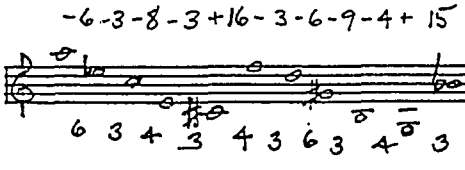
c) movement 3, bar 36, violin.



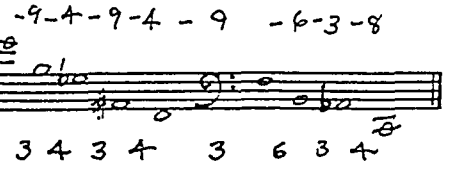
d) movement 3, bar 70, cello.



e) movement 3, bar 73, viola.



f) movement 3, bar 182, cello.



The interval classes, shown below the notes, are the simplest way to describe the pattern. Each of the instances is a segment drawn from an infinite palindromic series: [...34343 6 34343 6 34343...], which is why I call it a symmetrical pattern. Since interval classes are non-directional, many different pitch sets can be derived from this series. In terms of intervallic direction, Gubaidulina's six instances show variety--the instances are ascending, descending, or multi-directional. But only certain pitch choices are allowed. Look-

ing at the directional intervals, written above the notes in Example III.18 above, reveals that they may be reduced to any of the following equivalent infinite interval series, all of which result in the same pitch classes, (though with some changes in register depending on which series is chosen):

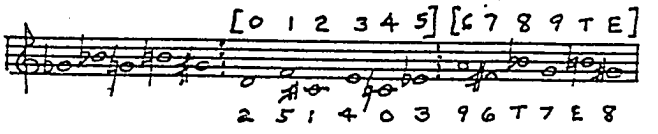
a)...[6] <+3+8+3+8+3> [6] <-3-8-3-8-3> [6] <+3+8 etc.>
b)...[6] <+9+4+9+4+9> [6] <-9-4-9-4-9> [6] <+9+4 etc.>
c)...[6] <-3-8-3-8-3> [6] <-9-4-9-4-9> [6] <-3-8 etc.>
d)..[6] <+3+8+3+8+3> [6] <+9+4+9+4+9> [6] <+3+8 etc.>
e)...[6] <+3-4+3-4+3> [6] <-3+4-3+4-3> [6] <+3-4 etc.>

Directionality has not been assigned to the tritone, since its pitch class is not contingent on direction. In series (a) and (b), the interval pattern remains constant--threes and eights or nines and fours--but the direction changes with every boundary tritone. In (c) and (d), the direction remains constant but the interval pattern changes with every tritone. This latter pair accounts for the surface pitches in the single-direction instances. The multi-directional examples are more difficult to describe using one of these succinct series. But since the aim is to determine pitch class rather than pitch in a particular register, one can substitute equivalents in a multi-directional instance like Example III.18c above: if <+4> yields the same pitch class as <-8>, <-4>=<+8>, <-3>=<+9>, and <+3>=<-9>, then the actual pitch intervals can be reduced to series (c) above and yield the same pitch classes. Series e) is a constant pattern of alternately-directed intervals <3,4>, that switch direction with every boundary tritone. This series works for all of her instances if one allows the equivalents mentioned above.

The pitch classes generated by any of these series produce chromatic hexachords bounded by the tritones and complementary with their contiguous ones (T_6), shown in Example III.19, using Example III.18c above as a paradigm. Aggregates of two such complementary hexachords could theoreti-

cally be formed from any segment of this pattern with at least twelve notes, beginning on the second note of the tritone, although Gubaidulina does not choose to pursue this option. She does, however, strictly retain the pattern in all the instances, causing me to question the D♭5 in the viola in bar 81 of the third movement, which does not work in the pattern. It is corrected in Example III.18e above to B♭4, which does work. Gubaidulina has confirmed my correction.[63]

Example III.19. Chromatic hexachords generated by symmetrical pattern, using Example III.18c. (Pitches written within the octave.)



C) Rhythm

1) Structure and Proportion

Leaving aside for the moment the rhythmic structuring of the motive, the main question about structural rhythm again concerns the possible use of proportions. The use of Fibonacci-inspired durations in this movement is evident and more consistent than in the previous ones. Table 9 below displays the ways that series-derived values are used in the course of the movement, with less important series references, like the number of notes in a given section, indented. Because the (F) couplets utilize unmetered rhythm at times, Gubaidulina does not generally choose to include these in her series assignations. Because of the consistency of use, this is the only movement in

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[63]Conversation with Laurel Fay.

which one can speak of real durational proportions, at least among the (S) couplets, where Fibonacci series values are assigned consistently--to beats, not attacks. (Among the incidental values, like the fact that the cello happens to have 34 attacks during the couplet, one finds simply more evidence, as in the earlier movements, of Gubaidulina's desire for an extramusical source of numerical values, in music that seems--on the surface--casual, uncalculated. A slightly different number of cello attacks would not have made a fundamental difference.) Her unit of duration can change in the course of a section, as in Couplet 6, with 55 quarter notes followed by (21 x 4) eighths. There seems to be no large-scale "meaning" to these proportions, other than to create connections between sections of identical durations. Since the actual duration of the work also includes unmetered sections, these are <u>partial</u> proportions for those sections she chooses to have "fit" the series, not affecting the whole work.

Table 9. Use of series-derived values.

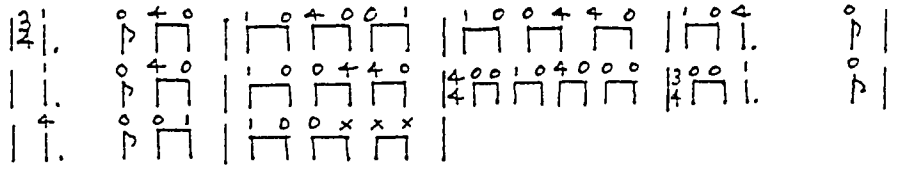
Bar 1-28) Couplet 1 (S) Bar 29-31) (refrain)	89 beats 8, 3, 3 seconds
Bar 30-38) Couplet 2 (F)	8, 3, 3 notes in viola figure
Bar 39-59) Couplet 3 (S)	68 beats (34 x 2)
Bar 61-69) Couplet 4 (F)	
Bar 71--98) Couplet 5 (S) with double subject	34 beats from bar 71-81 (to violin entry) 55 beats from violin entry to bar 99 55 eighths in cello from bar 81-91
Bar 99-127) Couplet 6 (S)	55 beats to bar 116 84 (21 x 4) eighths from 116 through 127 34 cello attacks
Bar 128-138) Couplet 7	34 beats 68 (34 x 2) eighths in end of climax (bar 140-148)
Bar 149-174) Couplet 8 (F)	
Bar 176-183) Couplet 9 (S)	13 *pizz* notes on viola D^{b}3 in 183.

2) Rhythmic groupings

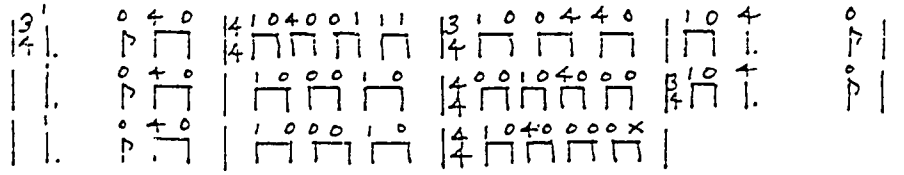
The rhythmic groupings of the seven strict entries of the motive are indicative of both the unity and flexiblity of Gubaidulina's motivic conception. In Example III.20, the entries are arranged in columns according to rhythmic periodicity, allowing observation of both aspects. Each note's membership in the motive's three-note pitch set {0,1,4} (the actual pitch of 0 being moveable and dependent on the transposition of the motive) is written above the rhythmic notation).

Example III.20. Rhythmic groupings in the (S) couplets.

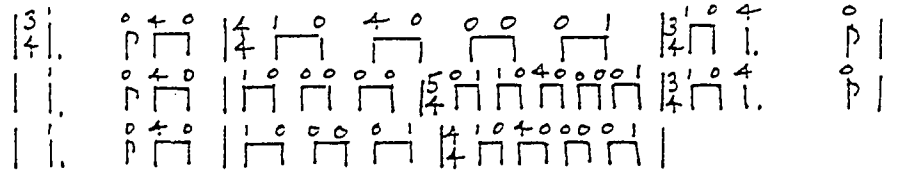
bar 1



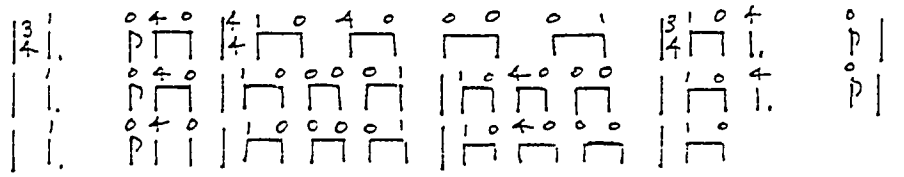
bar 39



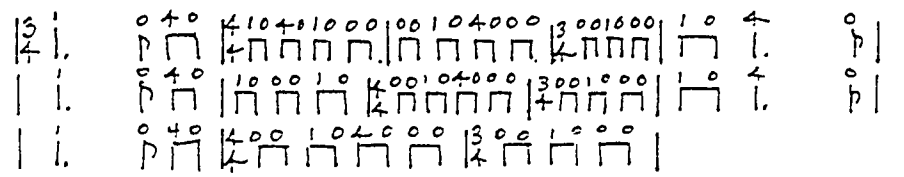
bar 71, cello



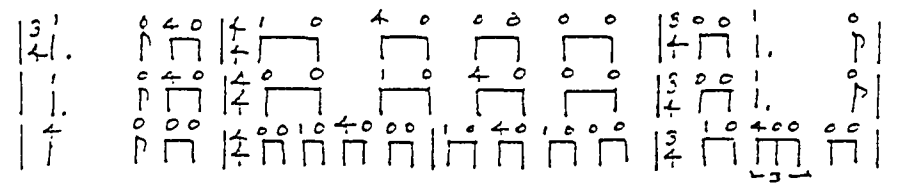
bar 81, violin



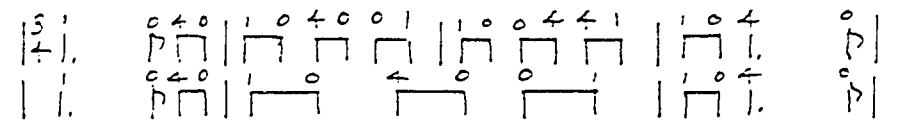
bar 99



bar 128



bar 174



From this table, several unvarying rules can be adduced:

The motive always begins with this rhythm in the first bar: | ♩. 𝅗𝅥 |
Subsequent occurrences of the above rhythm, most often (though not always) on the same pitches, are always preceded by a bar with the following rhythm: | 𝅗𝅥 ♩. 𝅗𝅥 |

The pitches for this are always {1,0,4,0} except in the climactic section starting at 127, which has several pitch deviations.

The initial bar of the cycle is always followed by one or more bars of eighth notes, with a total of as few as 6 or as many as 22 eighths.

Within these constraints, as is evident from the table, the *ostinato*-like motive has opportunity for rhythmic extension and compression. If the first two couplets, bar 1 and 39, can be considered paradigmatic, the first instance of compression occurs in the third couplet, the cello *ostinato* at bar 71, where four pairs of eighth notes in the second bar replace six or seven in the previous couplets. This trend persists in the violin entry at 81. This compression has two possible causes: first, as was found in the study of proportion, the number of beats in this section are calculated to provide Fibonacci numbers. Second, the cello entry needs to be trimmed because there is another entry coming in the same couplet, and the violin entry must not be too expansive, or the whole couplet will be disproportionately long. The viola entry at 99 marks the couplet preceding the climax. Here expansiveness in dynamics and register was important in preparing the climax; temporal expansion serves the same function.

D) Performance Mode and Color

I have noted the use of distinct playing modes in the other movements to demarcate sections or musical types. Similar distinctions occur in this third movement. One does not mean to imply that Gubaidulina is thinking,

"I shall apply some different playing mode directions here in order to distinguish my various materials." Rather, she seems to hear her various materials as having intrinsically varied and distinct sound colors. The strict entries of the motive, except for the high violin version at 174, are all marked *al taco*, presumably a misspelling of *al tacco*, "at the heel," a strong and definitively attacked sound, even in *piano*. Interestingly, she does not offer this direction in the more improvisatory-sounding (F) couplets, as at 32, 61, or the violin at 72. Contrasted with this "*al taco*," from bar 1, are the violin *sul tasto*, a less focused sound, and the cello *sul ponticello*. Providing two different playing modes emphasizes independence rather than merging in the two accompanimental instruments. They do merge to become *ord.* by bar 24, where long trills on overlapping pitches are meant to blend.

The violin and cello at 29 are not (but probably should be) marked *col legno*, evoking the memory of the similar figure in the first movement. I assume they should be because she does mark *col legno* a similar passage at 38 and others at 60, 70, and 175. In the second couplet, at 42, the viola has adopted the figure played in the first couplet by the cello, and the cello that of the first couplet violin. The playing modes are changed appropriately, remaining associated with the same figures as before. Register also plays a role in her distinctions of sound color, the use of very high notes for the last motivic statement at 174 creating the same stratospheric, disengaged quality as the high *flautato* figure of the second movement, a disengagement heightened by the descending series in the cello terminating in the low open C string, with the *pizzicato* in the viola a further "autistic" register not offering any mediation between the two extreme instruments.

E) Relation of the Three Movements

The study of how various elements work together within a given movement ignores one other aspect of the composition--the way the three movements relate and become one musical work. I have noted elements common to all three movements: the motive <+7-7-6+6> and its variants, the trichord-type [0,1,2] and larger-scale chromatic lines; and the symmetrical pattern discussed in III.B.3 above. I have also found quotations from one movement in another. Consistency among the movements is evident at the level of compositional procedures--pitch choices, uses of tonality, motivic treatment, and other features.

However, identifying these common aspects does not address the differences between the movements and the way they work together. Assessment of the impact of the work as a whole is a function of interpreting the play of tension and resolution, of rhythmic, dynamic and registral intensity, of gestural shaping throughout the work. Although subjective, such interpretation probably inevitably leads to the conclusion that the three movements "fit together," and are in the only possible order. The opening of the first movement, with its maniacally repetitious yet tentative single note, is a quest, an opening into the unpredictable, that could not readily follow another movement. The harrowing tension that concludes the movement finds resolution in the rarefied, delicate, suspended quality of the second movement. The slow tempo, the use of *pizzicato*, and the low dynamic level of the second combine to dissolve the intensity accrued in the first, though as I have shown, the second movement itself manages, despite its "vertical time," to intensify toward a climactic "cadenza." In terms of registral space, the middle movement, with its relatively modest compass (disregarding the pitches of the viola harmonics, which seem to be of another unrelated sound

world) buffers the extremes of the two surrounding movements, as does the special reduced dynamic of *pizzicato*. The final movement (beginning, significantly, with the same A^{b}-G3 with which the second movement ended, as if continuing the preceding movement but with the new impetus of a fast tempo and of *arco* instead of *pizzicato*) is appropriately the most developed and climactic of the movements, and summarizes the previous ones in its quotations of them. The problem of how to complete the third movement, discussed above in III.A.3, is compounded by considering the ending also as the completion of the whole piece. The events of that ending--the use of the symmetrical pattern, the cello descent to C2, the quotations of the second movement's *pizzicato* motives, the dyadic conflict between viola and cello--all have greater meaning in light of that latter function.

IV. Comparative Study

All mature composers pursue related preoccupations from piece to piece, exercising long-established habits and preferences that make for similarity among their pieces, the degree of similarity varying from composer to composer. Of some composers, it may be justly said that they write the same piece over and over again, exploring musical issues that are sufficiently related and generating surface details that are sufficiently similar from one piece to the next to result in highly similar pieces. For other composers, striking out into new territory each time is more important than repeated research into the same musical issues. Gubaidulina cannot be situated at either extreme of this continuum. Her recent pieces do share obvious similarities of a surface nature, particularly in matters of color and gesture. Her coloristic use of harmonics and *pizzicato*, of upward chromatic scales, short chromatic motives and extended instrumental techniques are immediately recognizable hallmarks. Underlying preoccupations are also common to recent pieces: the delineation of large-scale rhythmic form using numerical series, an interest in musical polarities, the use of extramusical symbolism, and the projection of an intensity which finds its source in mysticism and spiritual transfiguration. These similarities do not deny the diversity of her recent pieces. Three American premieres in early 1994 (*Alleluia* [1990] for chorus and orchestra, with an on-stage instrument producing colored lights, *String Quartet No.4* [1993], with small balls bounced on the strings, and *Dancer on a Tightrope* [1993] for violin and piano, with the pianist using a glass tumbler inside the piano) bespeak an imagination for color and sonority that requires each new piece to be in some sense an experiment, a new departure.

Since my aim has been to identify her general vocabulary and musical hallmark, finding consistency of language and technique from one piece to another is more crucial than identifying differences from piece to piece, although inventiveness and explorativeness are part of her compositional personality. The value of the foregoing study of the String Trio as a paradigm increases if one can demonstrate that at least some of the identified compositional techniques also appear in her other pieces. One would then have the vocabulary to trace her hallmark and set of compositional strategies in any of her music, even in works yet to be written, of course with modification as the sample grows. The listener equipped with this vocabulary can ultimately widen the circle even further to distinguish Gubaidulina's music from that of her compatriots and other contemporaries, with concrete technical understanding replacing the vague generalizations and subjective descriptions that have characterized (and limited) her reception, at least in this country.

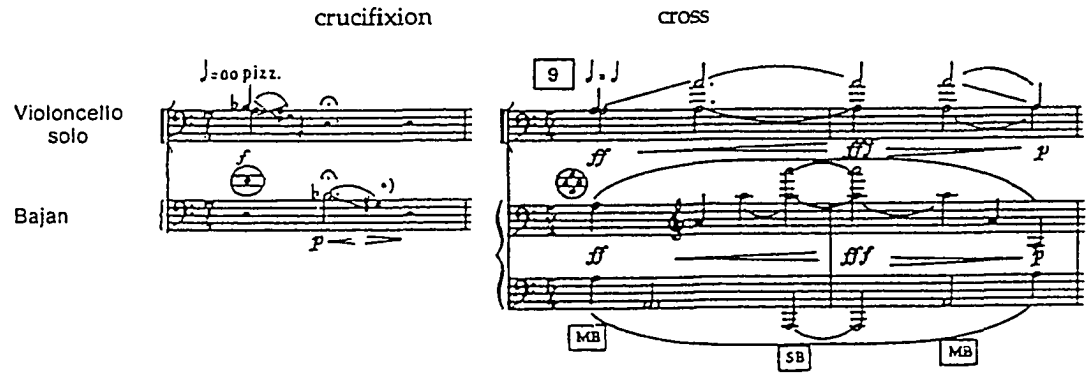
In this section I shall take the first step in the extension of this study by briefly examining three other works, not analyzing them in detail as independent pieces but finding in them extensions or modifications of at least the most obvious of the techniques observed in the Trio. I have chosen pieces that, like the Trio, were written in the 1980's and (for ease of comparison) feature strings: Seven Words for cello, *bayan* [button accordion] and strings [1982], 'Montys Tod' (the culminative movement from Perception for soprano, baritone and strings [1983]), and the String Quartet No.3 [1987]. I shall relate their techniques to those of the Trio according to the parameters I applied to its movements: formal classification, pitches, rhythm and playing mode.

A) Seven Words

1) Formal classification

Each of the seven movements of this work is headed by a biblical verse referring to the stages of the crucifixion story. Homage to both Haydn's and Schütz's treatment of the same story is evident in the work. The movements are not thematically separate, as are the three movements of the Trio. Each consists of the variation, concatenation and mutation of a few motives, all of which are presented in the first movement and recur in the subsequent ones. Having heard the motives presented in the first movement, one is not likely to find unpredictability or incremental contrast in their further presentation, as were found in the first movement of the Trio; one is listening instead for variations of what is known. The movements' boundaries are open; movement 3, for example, begins with identical material, at T_1, to section 8 of movement 2, as if the material of the intervening sections of movement 2 were an interruption to an ongoing idea. The first two motives, shown in Example IV.1, which Cholopova calls the "crucifixion" motive and "cross" motive respectively[64], resemble material from the Trio.

Example IV.1. "Crucifixion" and "cross" motives.



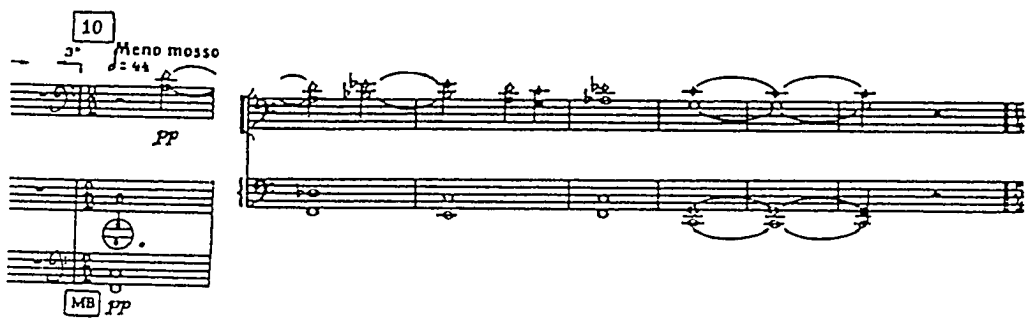
[64]Valentina Cholopova, in Enzo Restagno, ed., Gubajdulina, p. 184.

The "crucifixion" motive involves the simultaneous sounding of a (usually open-string) pitch with a *glissando* between the semitone above and below that pitch. (The *bayan* performs an operation with keys and bellows to create an analogous sound.) This motive is a projection of the trichord-type [0,1,2]; various figures throughout the piece utilizing that trichord-type may all be considered to belong to the same motive. It is identical to the motive in the Trio in the first movement at bar 60 and beyond, borrowed in the Trio's third movement at bar 139.

The "cross" motive consists of a number of rhythmically different unison passages, and also passages moving through various octaves of the same pitch class. It is related to the obsessive monotone entry of the pitch B4 in the first movement of the Trio. Because these motives are associated with programmatic *topoi* in this work, one might be tempted to read such programmatic elements into the use of the same motives in the Trio or elsewhere.

Two other motives are not connected with material of the Trio. At Section 10 of the first movement, shown in Example IV.2, she selects material from a source external to the piece, (not atypically, though something not done in the Trio), quoting the passage in Schütz's The Seven Last Words that sets the text "mich dürstet."

Example IV.2. "Mich dürstet" motive

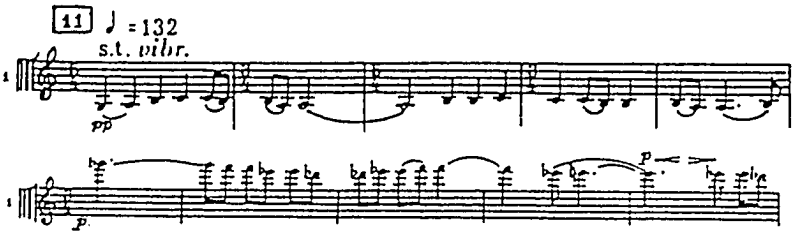


The melody of this motive presents the following interval sequence: <+1,-1,-2,+1,-1>; despite its initially diatonic accompaniment, it becomes a source of variation and development later in the piece along purely chromatic lines. The other motive, representing a celestial contrast to the crucifixion drama, is the chant-like diatonic section played by the fifteen strings, built on scalar passages with alternately contrary and parallel motion between the top and bottom instruments. The eventual adaptation of the more chromatic motives by the initially diatonic strings (the same technique of synthesis found in the second movement of the Trio when the viola, its role became progressively blurred, leaves its own musical Type for those of the other instruments) serves the purpose of climax-building. In Example IV.3, one can compare the first violin's diatonic chant-like melody in Movement 1 with the strings' adaptation of more chromatic material in the climactic Movement 4. Movement 6 returns to the diatonic material.

Example IV.3. Strings' chant-like motive.

a) Mvt 1-- diatonic

b) Mvt 4-- chromatic



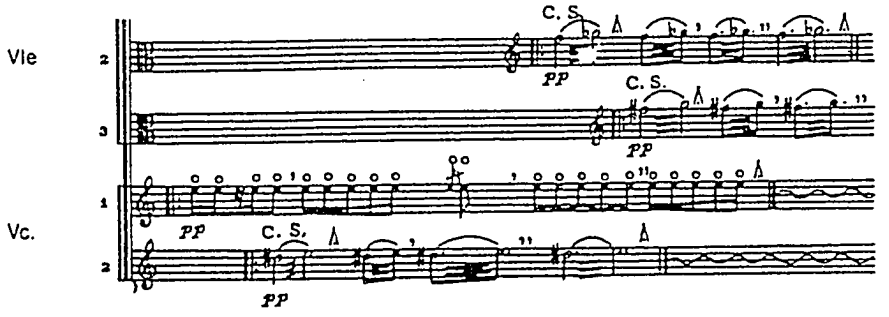
The first three movements have discrete phrases articulated by pauses, as do the first and second movements of the Trio. (In this case, unlike in the Trio, the pauses are measured in seconds, usually a number from the Fibonacci series.) But except for one such pause in movement 4, the latter four movements are not thus articulated. Their continuity is another means to

achieve intensification, the pauses between the movements providing a few major articulations in an otherwise continuously-sounding texture.

2) Pitches

The use of pitches in Seven Words is more radical yet simpler than in the Trio. It is radical in the sense of departing more readily from notated and/or discernible pitches. Much of the accompanying string music other than the diatonic chant passages consists of dense chromatic clusters (sometimes with harmonics), made available by the large number of string parts. At times she notates these clusters with improvisatory repeated rhythmic figures in the manner of Ligeti or Lutoslawski, for example in the cadential sections 4 through 6 of the last movement, of which an excerpt is shown in Example IV.4 below. The solo instruments are at times required to play sounds of unspecific pitch: for the *bayan*, clusters and air sounds; for the cello, free *glissandi* and a series of "vibrating chords."[65]

Example IV.4. Repeating rhythmic figures, Mvt 7, Sec. 4.

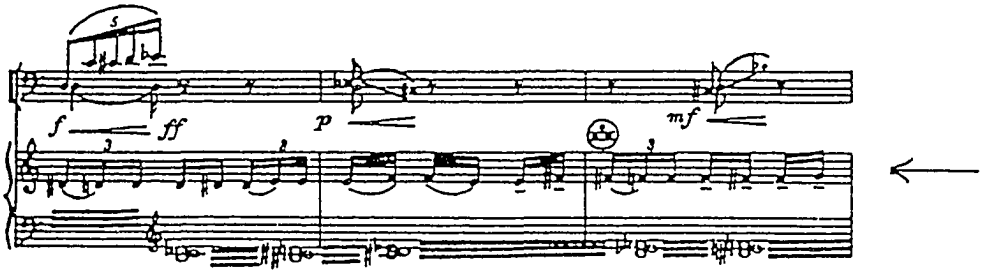


The greater simplicity than the pitch use in the Trio inheres in the fact that a single pitch class or transposition of the [0,1,2] trichord-type (or at most, the movement from one pitch to a neighboring tone or semitone) seems to define the underlying pitch structure of most of the movements. Pitch vari-

[65]Invented by cellist Vladimir Toncha, produced by combining varied finger pressure on the string with *tremolo*.

ety and a sense of apparent change within the movement is nevertheless feasible, often by means of the same large-scale chromatic lines found in the Trio in the long concluding section of the first movement and in the Type 2 passages in the second movement. Such a line may be used to intensify, as in the strings' sounding a slow upward chromatic scale, one note per bar, to punctuate the more active solo parts from section 13 to 15 in movement 4. Or it may be part of a gradual melodic rise, in a version of the "crucifixion" motive that seems only to be going up and down in a chant-like intoning, but actually gradually rises. Example IV.5 from the second movement is an extract of such an ascent.

Example IV.5. Gradual melodic rise in intoning figure, Mvt.2, Sec.7.

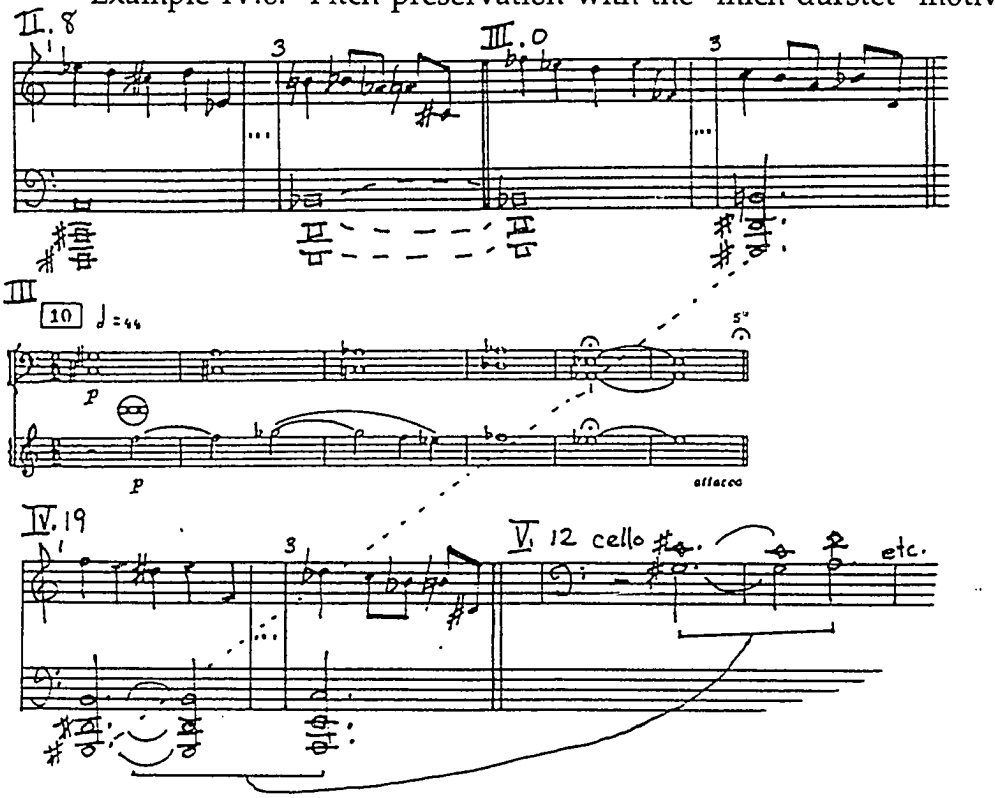


The motivic character of such a passage, in which minimal means--ascending and descending semitones--are spun into long melodic strands, is similar to the motivic treatment in the third movement of the Trio.

The preservation of material from one context to another, a technique she uses in the Trio both in large-scale pitch chains between sections and locally, also comes into play here, linking sections and motives. An example of the preserving technique on a large scale is the treatment of the "mich dürstet" motive, as in Example IV.6 below. In the second movement, a variant of the motive is accompanied by two minor triads rising a semitone, from F# to G. The same figure occurs at the beginning of movement 3 a semitone higher than the first time and therefore beginning with the G minor triad and

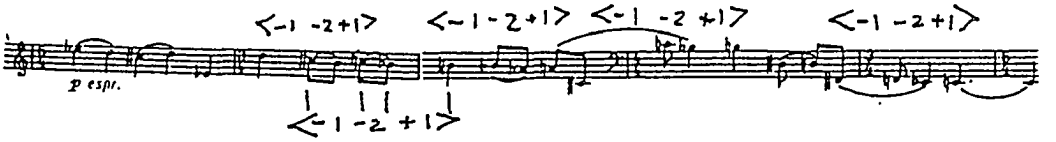
rising to G# minor. "Mich dürstet" comes again in the movement at section 10 in its original Schütz form, ending on A♭ (G#). When the variant occurs again in section 19 of movement 4, again accompanied by two minor triads a semitone apart, she begins with the G#. In a simplified variant of the motive at section 12 of movement 5, the G# (now in the "5" octave instead of in the bass) has become the starting point for the melody.

Example IV.6. Pitch preservation with the "mich dürstet" motive.



A more local example of this chain procedure is in the details of the "mich dürstet" variant, first presented at section 8 of movement 2. Here the chaining is of the motive, not of a specific pitch. The intervals of the motive, <+1-1-2+1-1>, are replicated at various transpositions, usually without the initial "up-beat" <+1>, and always without the final <-1>; in Example IV.7 each transposition has been labeled with the same interval series.

Example IV.7. Chaining of the "mich dürstet" motive, Mvt.2, Sec.8.



Since the difference between the "mich dürstet" and the "crucifixion" motives is only a matter of a single semitone, there is considerable opportunity for mutation from one motive to the other by changing it, a technique utilized in the third movement of the Trio. Example IV.7 above, which actually begins with the three consecutive semitones of the "crucifixion" motive, is an example of such a mutation. Verticalization of previously horizontal material is a technique found occasionally in the Trio. In Seven Words it occurs most prominently in the strings. The "crucifixion motive" from the beginning of movement 2 (the trichord [0,1,2] at T_1, or [$C^{\#}$-D-$E^{\flat}$] is transposed up a further semitone at the end of the movement and made into a simultaneity in the strings: [D-$D^{\#}$-E]5. In section 2 of movement 3, the following pitches are played simultaneously in the strings, verticalizing several transpositions of [0,1,2], (from the bottom upward): B3-C4-$D^{\flat}$-D-$E^{\flat}$-E-F-$G^{\flat}$-G-$D^{\flat}$5-D-$E^{\flat}$-$A^{\flat}$-A-$B^{\flat}$.

3) Rhythm

The rhythmic figurations and interpolating of metrical and non-metrical sections are entirely consistent with the Trio. The use of the Fibonacci series as an organizing principle is not only evident here but more developed than in the Trio. Not all the sections are subject to organization by a numerical series, but those that are demonstrate certain patterns. The irregularly cumulative pattern shown in Table 10 below is found in the first movement. The section numbers are bracketed, and the motives abbreviated as follows: "crucifixion" as "cru," "cross" as "css."

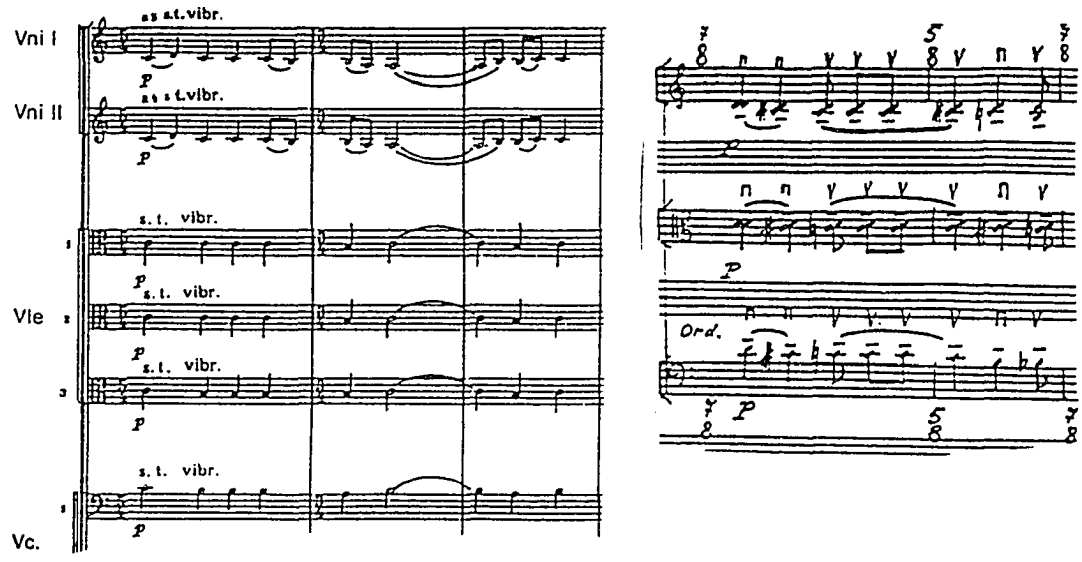
Table 10. Fibonacci durations of motives.

[0] cru 5 beats, 2 beats rest.
css 5 " pause 3" [1] cru 5"
[2] css 8" pause 5" [3] cru (no value given, probably 8" intended)
[4] cru 8" [5] cru-css 13" pause 8"
[6] css 13" pause 5" [7] cru-css 13"
[8] css 13+5 attacks
[9] css 5x2 beats

In the second movement a different cumulative Fibonacci pattern is present in the statements of the intoning version of the "crucifixion" motive, excerpted in Example IV.5 above. The length in bars of these intoning statements, interpolated with other music, is as follows: 3, 5, 8, 21. By leaving out the value of 13 from the series, she avoids (as she did in the Trio) using the series in a regularly increasing fashion.

The subsequent movements demonstrate the same interplay of un-metered, unspecifically notated rhythmic values, metrical sections, and pauses and other durations marked with Fibonacci numbers in seconds. In the last movement, for example, there are two solo sections, marked 8 and 21 seconds, followed by a metered interruption, followed by further sections of 13, 13, 8, and 13 seconds. Less of the work than the Trio has metrical rhythm, since the solo parts are primarily non-metrical. The chant-like music of the strings is metrically notated, and bears a more-than-casual relationship to the "B" section (from bar 21) in the first movement of the Trio, not only in its homorhythm but also in its irregular beat structure, repetition of patterns and *sul tasto*. Excerpts from both in Example IV.8 demonstrate the similarity.

Example IV.8. Chant-like motive, Mvt.2 Sec.9, and Trio Mvt.1 Bar 21.



4) Playing modes and color

In the Trio was a tendency to emphasize articulations and motivic distinctions by the use of different colors, dynamics and playing modes. This is not the case in Seven Words. In the first movement, for instance, the "crucifixion" motive occurs both in *pizzicato* and in *arco*, the latter sometimes *sul tasto*, sometimes *ordinario*, with many different dynamic levels. The homophonic, diatonic string chant section shifts midway through from *sul tasto, vibrato* to *ordinario*. The palette of coloristic effects in the piece is actually much broader than in the Trio, the solo cello at times using effects at the limit of playability. But Gubaidulina has deemed the identity of the motivic material to be sufficiently differentiated without requiring coloristic consistency to define it further. In terms of texture, the homophonic and heterophonic textures of the Trio also prevail here. There is one place in the piece, at sections 5 to 13 of the fourth movement, where a truer sense of polyphony develops between the solo instruments than was evident in the Trio. She subverts this tendency by simultaneously invoking

the string ensemble in a homophonic passage, separated rhythmically and in every other way from the two solo instruments, another instance of Seeger's heterophony.

The dramatic impact of this work has a certain affinity with elements of the Trio, especially the tension-accumulating last part of the first movement. Using minimal pitch means, she creates over a number of movements in Seven Words the same progressive sense of anguished tension.

B) 'Montys Tod' from Perception

1) Formal classification

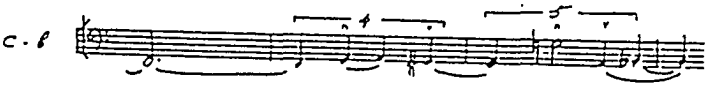
The culminative movement of one of Gubaidulina's most significant works, 'Montys Tod', like the other movements, is a setting of poems by Francisco Tanzer, with whom Gubaidulina engaged in lengthy correspondence and dialogue concerning the nature of the opposition of self and other, man and woman, God and human. This study does not allow an analysis of the vocal writing or text setting, but fruitful comparison with the Trio is possible at the level of structure and rhythmic and pitch detail. The sections for solo baritone and seven strings are literally strophic, each strophe beginning with the word "Monty" (the name of a horse whose death is the subject of the poem). Interpolated among these are sections to which are added taped strata of music from earlier movements of the piece, (an extreme example of the technique of verticalizing previously horizontal material found in the Trio and Seven Words). This interpolation of stratified and non-stratified music makes for an affinity with the couplet-and-refrain structure of the third movement of the Trio.

There are twelve of these alternations in this twelfth movement of a thirteen-movement work. The number of separate levels in the taped-strata segments, including the "live" baritone and strings, generally but irregularly increases, a tendency typical of her structures: 2,3,5,3,4,7,4,5,8,5,7,12. During the playing of these simultaneous strata, when coherence gives way to the ultimate "heterophony" of various different musics playing simultaneously, she allows the "live "stratum a point of repose and resolution of its previously separate polyphonic lines on a momentary unison. (The unison, as we have seen, also plays important structural roles in the Trio and Seven Words). With a different unison pitch chosen for each of the twelve segments, she actually presents an aggregate in the course of the movement--E-B^{b}-A-C-D^{b}-G$^{\#}$-B-D-E^{b}-F$^{\#}$-G-F--which happens to be comprised of two inversionally-combinatorial hexachords. Like the combinatorial hexachord that results from the symmetrical collection throughout the Trio, this is a compositional resource she does not choose to develop in the course of the piece.

2) Pitches

The opening of this movement, with the repetition of the pitch classes F-G^{b}-F-E, foreshadows the reliance on the same chromatic trichord-type [0,1,2] as in much of the Trio and Seven Words. This three-pitch set is often projected in the course of the string melodies into long contrapuntal chromatic scalar segments, with octave changes breaking the scalar direction. A second projection of the same trichord-type is the filling in of the whole tone by the intervening semitone, first presenting itself three bars before section 4 as in Example IV.9.

Example IV.9. Filling in of whole tone by semitone.

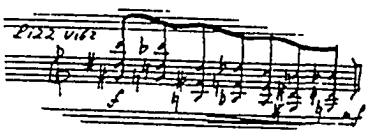


These two chromatic cells account for most of the string writing in the movement, approximating the "crucifixion" and "mich dürstet" motives of Seven Words. A real counterpoint, more than in the Trio or Seven Words, is created by the proliferation and rhythmic staggering of these chromatic lines among the instruments. An overall, irregular ascent from F2 to F7 through the course of the movement marks the trajectory of these lines, building the same intensity and sense of transcendence that characterize the gradual ascent of the pitch of the motive in the third movement of the Trio and the rise of the string chant in Seven Words from G3 in the first movement to G5 in the sixth.

The music of several of the taped strata invokes gestures similar to those found in the Trio and Seven Words. The *pizzicato* chords shown in Example IV.10(a) (one staff indicated here from among seven simultaneous ones) call to mind the double-stop chords of the climax in bar 138 of the third movement of the Trio. Example IV.10(b), also showing one instrument of seven, foreshadows the *col legno* ricochet *glissandi* of the first movement of the Trio. Another of the strata, Example IV.10(c), is an intoning motive related to the motive of the Trio's third movement and the "crucifixion" figures in movement 2 of Seven Words, shown in Example IV.5 above.

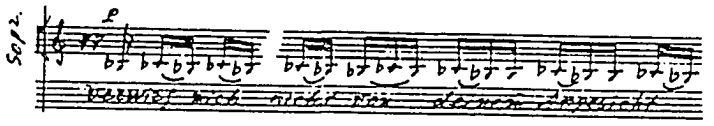
Example IV.10. Taped strata segments related to Trio passages.

a)



b)

c)

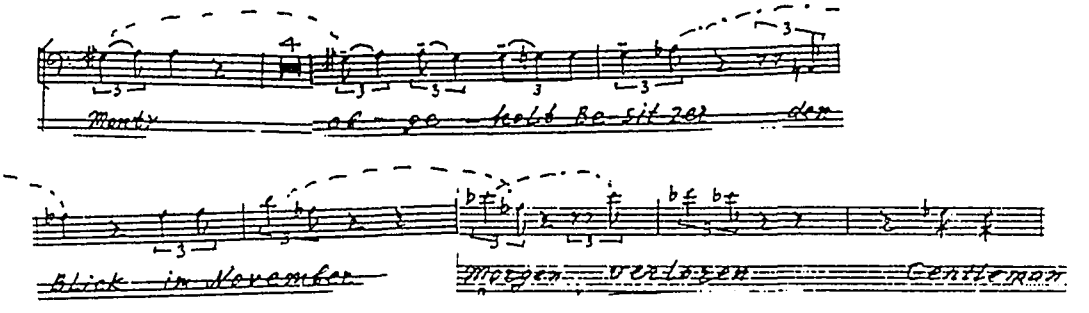


Gubaidulina clearly strives in this movement for maximal "autism," unrelatedness, heterophony among the strata. The *col legno* ricochet stratum

delineates a single major triad or triads moving in parallel motion, concurrently with the welter of differently-moving minor triads in the *pizzicato* stratum and the chromatic intoning voices, all found in Example IV.10 above, and juxtaposed with the intense chromatic lines of the "live" strings. The fact that all the strata are from earlier in the piece makes them unified by familiarity.

The technique of preservation of material from one context to another, seen in the Trio and Seven Words, has limited application in this piece, given the fact that the string ensemble part is so continuous that there is no articulation in order for a "new context" to be established in which something from an old context can be preserved, and given the repetition of the taped strata. The preservation practice does benefit one part, the "live" baritone line, for it offers pitch-anchoring cues to the singer. As Example IV.11 below indicates, the voice line, after a rest of several bars, is often assigned the same pitch with which it finished the previous phrase.

Example IV.11. Preservation of pitches in voice line, Sec. 38-42.



3) Rhythm

Unlike the turbulent rhythmic surface of the Trio or Seven Words, the rhythm of the strings in the "live" stratum proceeds in an implacable 3/4 meter at one metronome marking throughout the movement. There are no rests in any of the instruments except on the rare occasions when she needs

only the lower strings or the higher ones, nor are there articulations of phrases; only the gathering together into unisons during the taped-strata sections allows a sense of breathing. The purpose of this technique is obviously to pose a unified texture against which the disparity of the taped strata seems all the more dramatic. Within the "live" stratum, however, there is rhythmic disparity between the strings and baritone. The voice part remains in the 3/4 meter, but almost always with triplets, effectively a 9/8 against the strings, with a more discontinuous texture and more leaping melodic contour, as depicted in Example IV.11 above.

Fibonacci proportions provide an underlying control to the taped-strata sections in the number of bars allotted to the top stratum of the "live" strings; the other strata may have different tempi and therefore a different numbers of bars, or no bars at all. The number of bars in these stratified segments, 3,5,8,5,3,5,8,5,3,5,8,5, forms a pattern of consistent increase and decrease along the series. An attempt at proportion between the top stratum and the taped ones seems, if I understand her notation correctly, an arithmetical error and a matter of wishful thinking. She provides a duration indication in seconds for the non-metered taped strata, always one Fibonacci number higher than the number of bars in the simultaneous "live" stratum. But at the indicated tempo of dotted half equals 46, 3 bars in the "live" stratum equal 3.9 seconds, not 5; 5 bars equal 6.5 seconds, not 8; 8 bars equal 10.4 seconds, not 13.

She seems to have had the initial intention of a certain adherence to the Fibonacci series also in the sections without strata, the first one consisting of 55 bars before the first taped-strata entry. The durations of the next three sections show a pattern of subtracting a descending Fibonacci number +1 each time. Thus, the second section (55-[21+1])has 33; the next (33-[13+1]) has 19, and the next (19-[8+1) has 10. But the pattern, as in other Gubaidulina struc-

tures, does not continue to hold predictably; the durations in bars for the remaining sections are 6, 10, 6, 8, 18, 32, 18, 24, and 10.

4) Playing mode and color

Vertical coloristic distinctions are sufficiently strong in this piece that inflections other than dynamic change within the individual strata are unnecessary. In any case, there are no separate motives in the "live" string parts to be articulated by distinctions in playing mode or color. (The voice part does go through coloristic changes, beyond the scope of this study.) Two performance directions in the "live" strings do have a consistent function throughout the movement. One is a general *crescendo* leading to the taped-strata sections (or occurring once the taped strata have begun, in two of the twelve segments). The other is the direction "*molto vibrato*," occurring during the taped-strata sections when the "live" strings are playing in unison at a high dynamic level. This occurs in all but two (the seventh and the last) of these sections. No cancellation of this direction is offered; one assumes it is to last through the unison bars, and perhaps through the whole taped-strata section.

C) String Quartet No.3

1) Formal classification

Composed a year before the Trio, the Quartet shares more of the Trio's musical and technical preoccupations than do Seven Words and Perception from several years before, with their more monolithic, extramusically referential intent. The piece is in one movement, articulated by playing mode into two parts, the first of which is *pizzicato*, the second, *arco* (at section 43). The first part is further subdivided into an unmetered section for ordinary *pizzicato* with the left hand and a metered section, at section 19, marked "*con*

le dita" (with the fingers of the right hand). As well as having these formal divisions according to playing mode, the work is also unified and permeated by a single epigraphic motive, made of the initials S.G. (Sofia Gubaidulina), E.D. (Edison Denisov) and A.S., or sometimes A.SCH. (Alfred Schnittke), the three composer colleagues constituting the so-called Moscow triumvirate. With the letter "S" derived from "Es" or E^{b} and "H" equivalent to B natural, all of the initials have pitch equivalents. She uses these without mixing the initials of the individual composers, though with reversals within each individual name, and permutations of the order of the names allowed. Because it undergoes many permutations, the collection is less a motive than a source of particular intervallic figures.

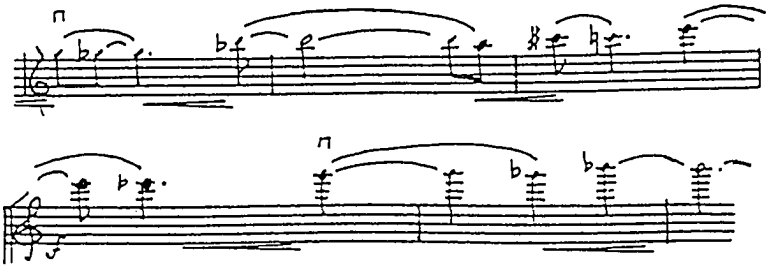
Articulation is achieved by pauses as well as by playing mode, as in the first and second movements of the Trio. The first sub-section within the first part, with natural harmonics constantly underlying sporadic other pitches that finally come together in all the instruments at section 10, is followed by a slight pause before a new figure begins at 11. Pauses separate the note groups in 12 through 16, strongly resembling the groups of the second movement of the Trio. From then on, there are no breaks in the texture until the end of the climax section at 48, in the *arco* section, when Gubaidulina puts a pause bar of five seconds. Another pause separates a free *col legno tremolo glissando* section at 51 from the beginning of the polyphonic development of the motive at 52. The polyphonic section becomes metrical, its initial short phrases separated by rests, but then gathers momentum to the point where there are no further pauses until the end of the piece. While the work does not have the degree of atomism and discontinuity that resulted from the independent phrases surrounded by pauses in the first movement of the Trio,

Gubaidulina does generally introduce its changes of motivic figuration and playing mode after a pause rather than with overlap.

2) Pitches

The nature of the epigraphic motive, more a source of intervals than an invariant melodic or rhythmic pattern, lends a certain underlying unity and identity to the pitch material of this piece that is not available in the Trio. Gubaidulina derives most of the work's melodic figures from the intervals obtainable from the three composers' initials: <2> for E.D., <4> for S.G., <6> for A.S.. Additional intervals are available when the initials are connected in the various possible ways, and even more when the collection is concatenated with versions in transposition or inversion, but the identity of the basic intervals is paramount. For example, what would otherwise merely seem like a chain of alternating <+4>'s and <-1>'s in Example IV.12 below becomes (in light of the motivic association of that interval) a motivic chain of "S.G."'s soaring in different transpositions toward the highest pitch of the section.

Example IV.12. Chain of "S.G." motive, Sec. 67.



Although availing herself of opportunities for permutations and transformations through serial operations, Gubaidulina does not utilize the possibility of mutation (interval change of the motive) noted in the third movement of the Trio. (More technically, the interval vector of the septachord-type [0,1,2,4,5,7,9] (S.G.,E.D., A.[S].C.H) or the pentachord-type [0,1,2,5,7] (S.G.,

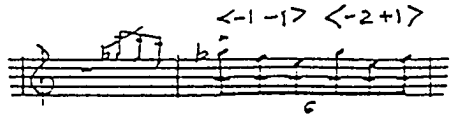
E.D., A.[S].) is much more inclusive than the intervals she actually allows herself, in order to maintain the identity of the epigraph.) Several of its derivatives are identical to motives of the Trio and other pieces: for example, E-D-S offers the same <-2+1> pitch intervals as the "mich dürstet" motive in Seven Words, and E-D-S-G offers the same pitch intervals, though in a different order, as the version of the motive in the third movement of the Trio that I called M^a, comprising the intervals <+1+1-1+4>.

One intervallic displacement Gubaidulina does allow, found in the Trio, is what I referred to as "capricious inversion," arbitrarily reversing a motivic interval's expected direction. (This "expectedness" emanates from a comparison with an earlier, paradigmatic version of the motive or series.) For example, a collection from the prime form of the motive-derived series occurs in the first violin from section 53: {G-$D^{\#}$-E-D-($E^{\flat}$)-C-B-A}. The second violin at 62 begins this series at T_1I with {$G^{\flat}$-$B^{\flat}$-A-B}. The next expected pitch "should be" <B-1> or $B^{\flat}$ to match the earlier version and remain true to the epigraph, but is instead <B+1> or C. Several other instances of this practice occur in the contrapuntal section from 52. Gubaidulina treats the various allowed permutations of the epigraph serially throughout the *arco* contrapuntal section from 52 to the end. This practice is of course quite different from the pitch material of the other works, in which ongoing serial procedures are rare.

Other than the epigraph, the most important source of harmonic and melodic material, common to all the pieces studied, is the chromatic scale and segments of it. The opening three pages of the work are an interplay of plucked natural harmonics, horizontal dyads from the epigraph and vertical semitone dyads. Chromatic tetrachords ({$F^{\#}$-G-$A^{\flat}$-A} and {$A^{\#}$-B-C-$D^{\flat}$}) provide *ostinato* figures underlying the sections from number 11 and 17 respec-

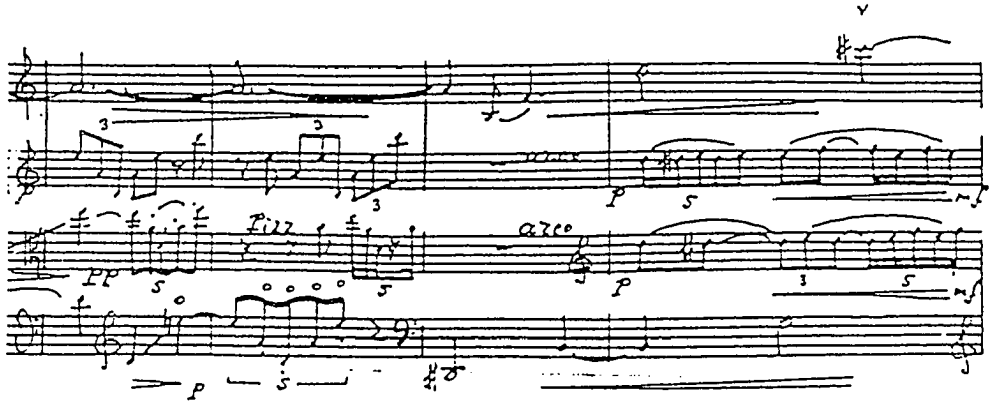
tively, the former strongly reminiscent of the intoning figures in the other three pieces studied. The section from 19 marked "*con le dita*" is divided into Fibonacci-length phrases alternatingly derived from the epigraph and from chromatic fragments, either dyads or trichords. A vertical chromatic trichord at 43 announces the arrival at *arco*. In a significant detail, Gubaidulina has the viola enter after the other instruments play this simultaneity, with the same pitches displayed horizontally as in Example IV.13 below, first in chromatic scalar order, then in the order <-2+1> as if from the epigraph.

Example IV.13. Viola detail, Sec. 43.



In the polyphonic developmental section from 52, the material subjected to serial and contrapuntal treatment is ostensibly determined by the epigraph. But here too, the chromatic collection plays an important ancillary role. In Example IV.14 below, is an epigraph-derived line in the first violin part, but the other parts consist of chromatic and other "filler." The effect is contrapuntal, but the material, as was also found in other works, is not inevitably "real" polyphony.

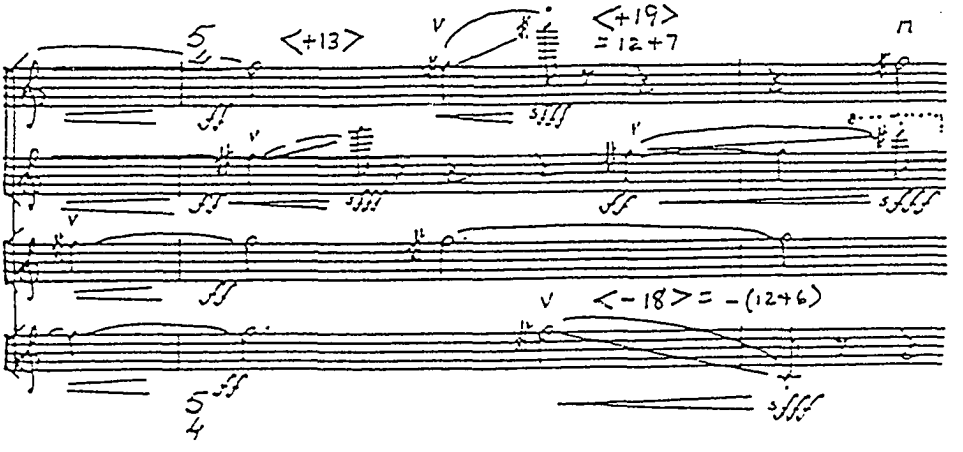
Example IV.14. Partial polyphony, Section 63.



Finally, the rising long-scale chromatic line is as important an ingredient of climax-building within certain sections in this piece as in the other ones studied.

The climax point at 48, with its loud, whistle-like *glissandi* from F#5, shown in Example IV.15, has several elements in common with bars 16 through 18 of the first movement of the Trio, in which there are *glissandi* from B4. There is a connection, in very different contexts, between the two passages, not only with the *glissando* gesture itself, but also with particular arrival pitches--the violin <+19> (<+[12+7]>) balanced by the cello <-18> (<-[12+6]>). (The <+7>, <-6> design is of course motivically fundamental in the Trio.)

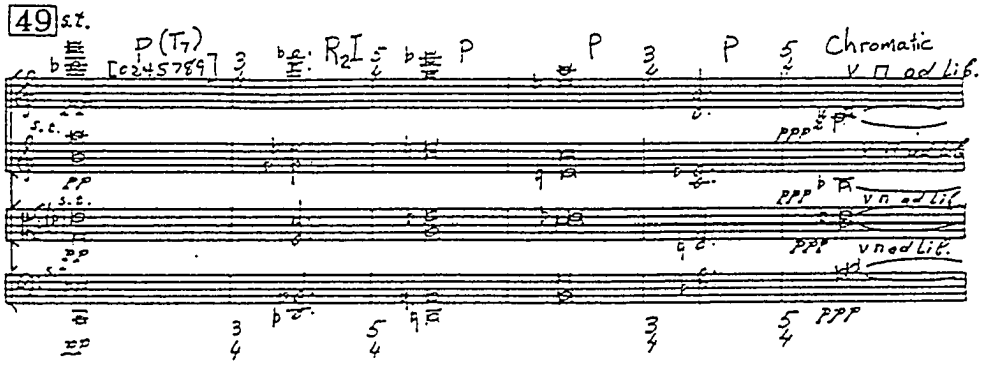
Example IV.15. Climax at Sec.48, with intervals related to Trio.



The section immediately following the climax, at 49, shown in Example IV.16, also conveys certain Gubaidulinian qualities already familiar from the Trio and the other works. The pitches of these simultaneities (registrally forming a wedge shape foreshadowing the phrases of the first movement of the Trio) are all verticalizations of the pitch classes of the septachord version of the epigraph {C-D-E^{b}-E-G-A-B}, or in the case of the second chord, {D^{b}-D-E^{b}-F-G^{b}-A^{b}-B^{b}}, related to the prime form of the others by retrograde inversion).

Only the last simultaneity is comprised of a chromatic collection. The verticalization of previously horizontal material is already a familiar technique from the other works. It comes at a point in which repose is needed, a point of stillness in an otherwise active texture. This reversion to homorhythm, found in the Trio in the "B" section of the first movement and at the climax in the third movement, and in Seven Words with its chant-like diatonic string sections, is also a crucial ingredient in others of her pieces. When a shift toward diatonicity accompanies the reduction to homorhythm, implying a chorale or chant, (not in these simultaneities, but in other pieces), the piece acquires a layer of stylistic diversity, although the purpose of such moments of reduction seems more in order to indicate arrival or as a moment of rhythmic stasis, rather than primarily for the sake of stylistic pluralism.

Example IV.16. Static simultaneities, Sec. 49.



Because Gubaidulina has spoken explicitly of the connection between religious transfiguration and harmonics and high notes, it is not surprising to find the ending of this piece exhibiting both, as does the ending of Seven Words, with the high notes in both pieces *ostinati* like the final violin notes of the Trio, perhaps implying transcendence not only through register but also by perpetual repetition.

3) Rhythm

As in the other pieces, there is an intermingling of metered and free rhythm, though no mixing within a given section. The shift from *pizzicato* to *con le dita* at section 19 marks the transition to metrical rhythm. As I said earlier, it is at this point that the Fibonacci series is called into play in this piece, with alternating Fibonacci-length sections of leaping passages from the epigraph and climactic sections of a single repeated semitone or trichordal collection. The transition between them is marked each time by a *crescendo* into the climactic chromatic section and *decrescendo* from it to the following epigraph-derived section. Table 11 below shows freely-selected and varied values from the Fibonacci series in the number of bars, with no apparent intention of some larger-scale durational relationship, especially since the number of beats in a bar actually changes from two to one at section 27, which does not affect her Fibonacci count of bars.

Table 11. Fibonacci series in numbers of bars, sections 19-42.

epigraph	climax	epig.	cli.
2/4 21	3	8	5
13	2	13	5
1/4 13	5	(8 notes)	
8	3	21	13

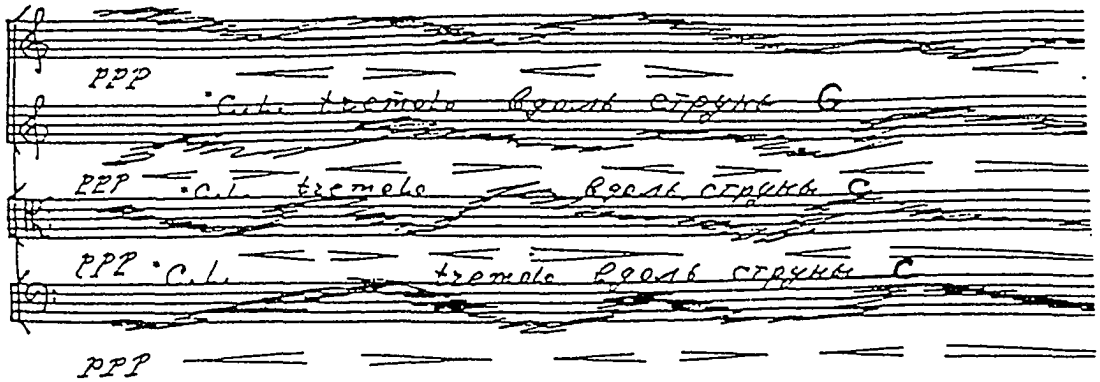
It is not possible in this study to examine in detail the rhythmic flow of the contrapuntal section from section 52, which does not operate according to the Fibonacci series and is not particularly related to the rhythmic structures of the Trio. Yet the rich permutations of the motive, the varying of simple rhythmic cells and the sensitivity to the motive in its rhythmic setting invite further study, and make it a passage emblematic of Gubaidulina's mastery.

4) Playing mode and color

In this work the use of a variety of playing modes and instrumental

color is fundamental to the structure as well as enlivening to the surface. I have discussed the major formal articulations that depend on playing mode. Within each section's playing mode, she offers a veritable catalogue of effects, though never with variety for its own sake. The sound colors are wedded to the dramatic requirements of the work, the ideas seeming to require certain effects and colors in their proper dramatic sequence. In the opening section, are *pizzicati* associated with harmonics, *glissandi*, *vibrato*, *tremolo*, and Bartók plucking. The *arco* section is similarly rich, with the instruments initially vertically contrasted with each other, somewhat as in the last movement of the Trio, with the violins in *sul tasto*, the cello *col legno*, and the viola *sul ponticello*. Despite the careful working out of pitch structures, including motivic permutations and serial treatment, this piece (much more than the Trio) includes many sections in which, at the level of audibility, the impression of textures and effects predominates rather than that of individual pitches. The free *col legno tremolo* section in Example IV.17 below represents the extreme aspect of this tendency.

Example IV.17. Free *col legno tremolo*, Sec. 51.

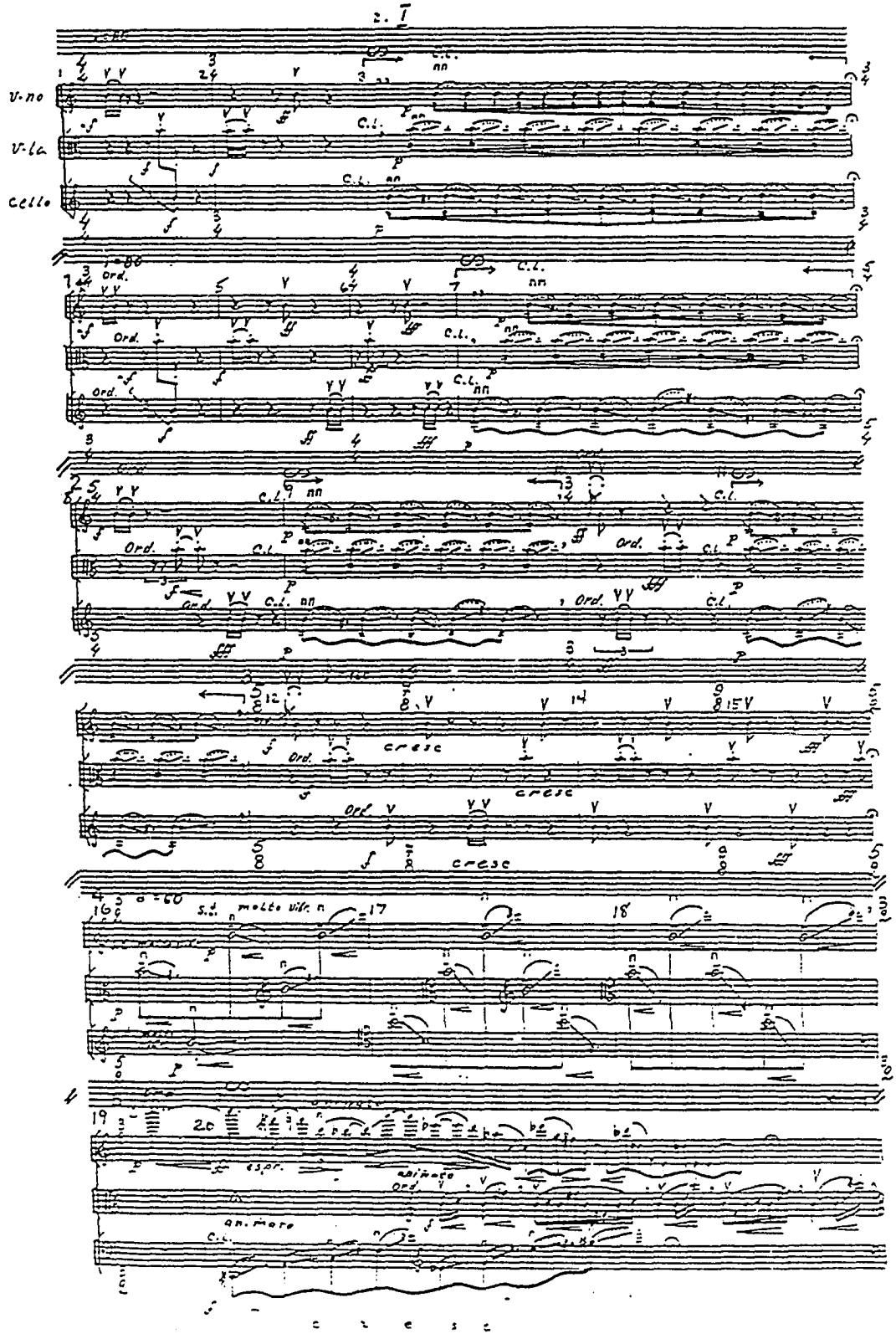


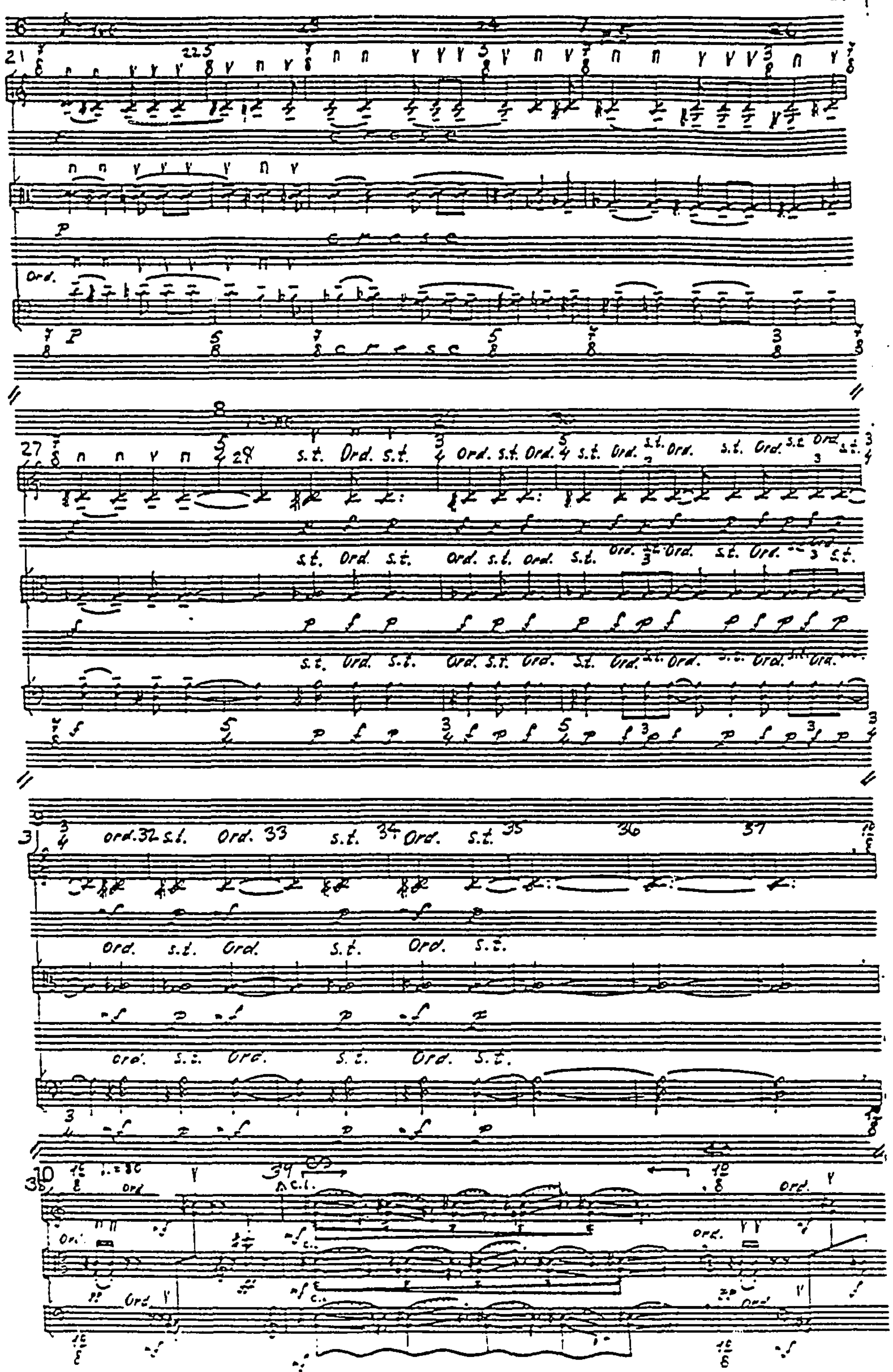
* col legno tremolo up and down the string (G - Vl.I & II, C - Vla. & Vc.)

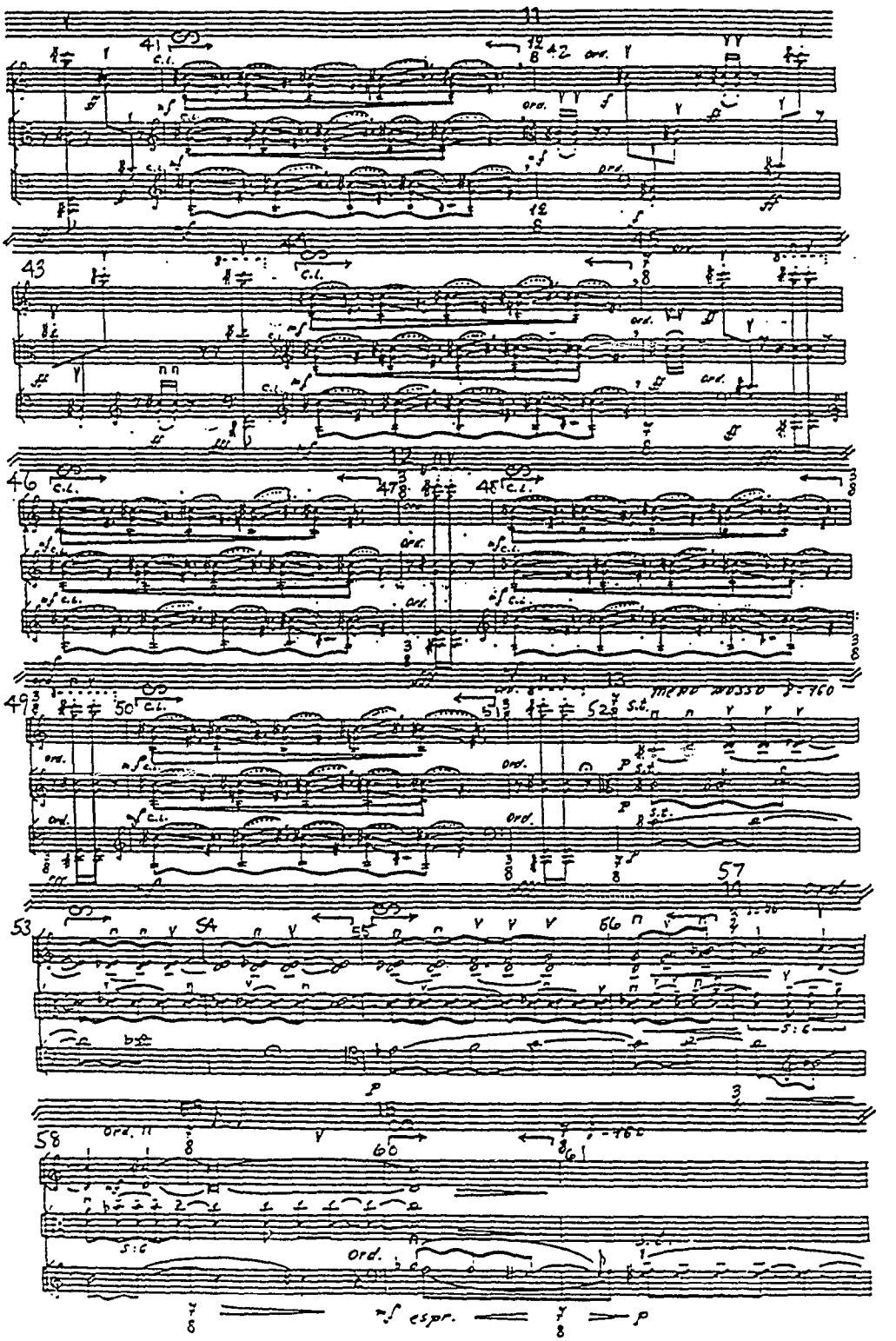
Conclusion

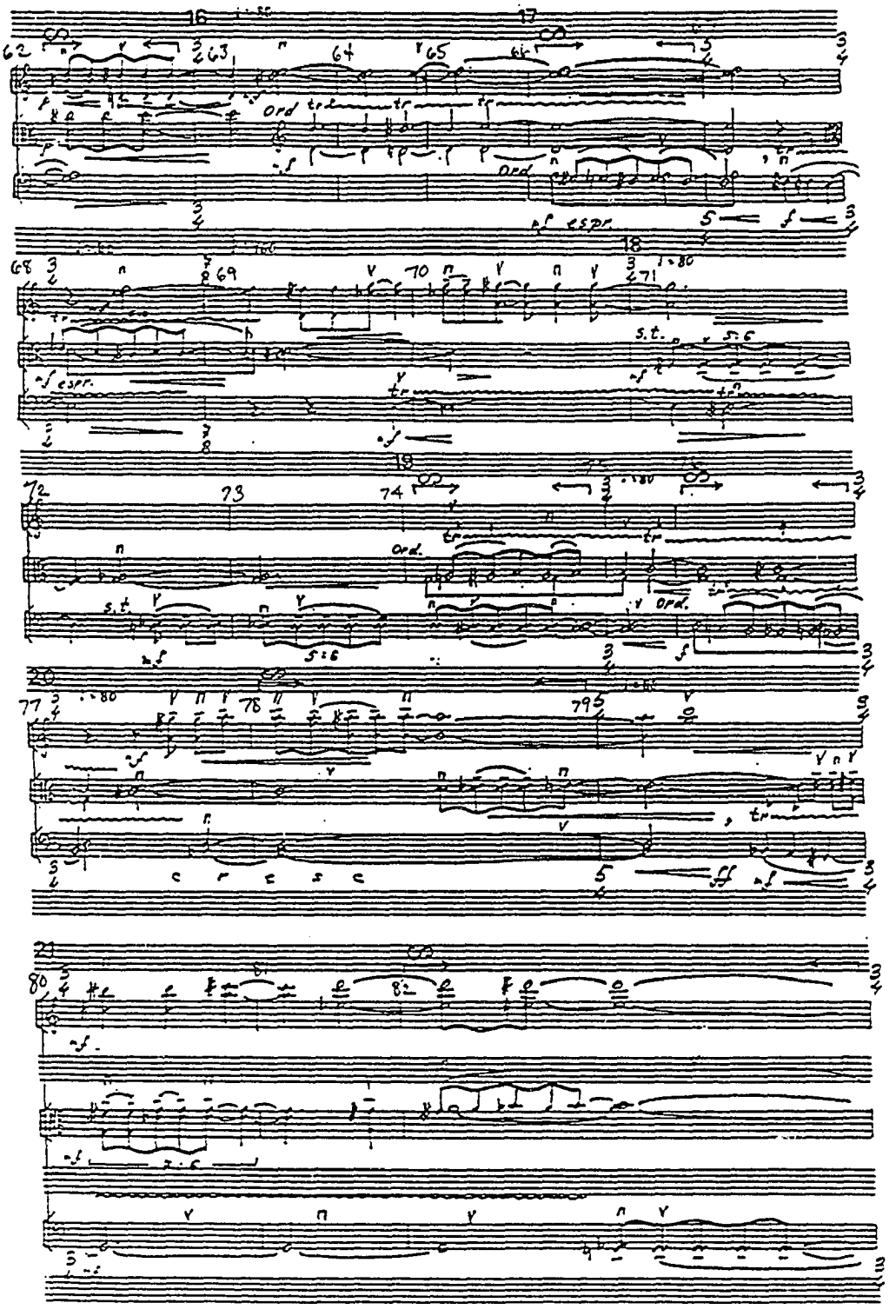
The foregoing study of the String Trio and comparison with other works has taken as a presupposition the premise that the music "works" and has a particular dramatic quality and sense of urgency and intensity. I have not sought to prove this, but instead to identify details of, and make distinctions among, the compositional procedures that lead to those ends. I have undertaken this study in the belief that one may be able to hear more acutely the drama and power of Gubaidulina's work by being able, for example, to identify the trichord-type of which a harrowing *glissando* crossing an open string pitch is a projection, or to extract an underlying number series from a seemingly casual arrangement of attacks. Although ultimately this music, like any other, may derive its effect from factors beyond the detailed choices underlying compositional strategies, a recognition of those choices is at least an initial step toward appreciating the impact of the music. It seems important to remain with the details in their complexity and particularity; to simplify them into generalizations would have been contrary to the nature and purpose of this study. Attention to these details should enable the listener also to approach other pieces by Gubaidulina more informedly, and to hear more accurately distinctions between her work and that of other composers.

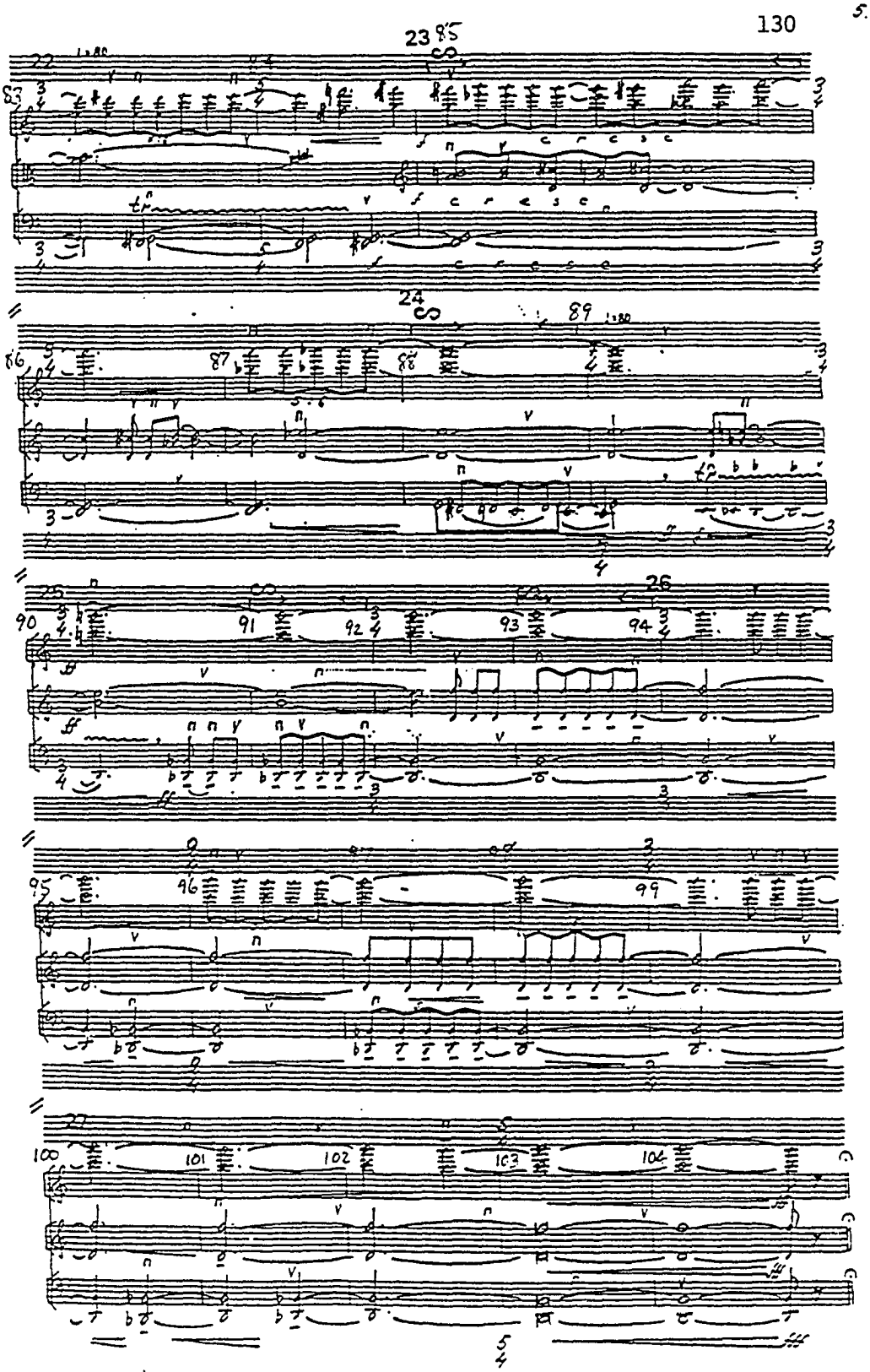
String Trio (1988)--Sofia Gubaidulina (1931-)

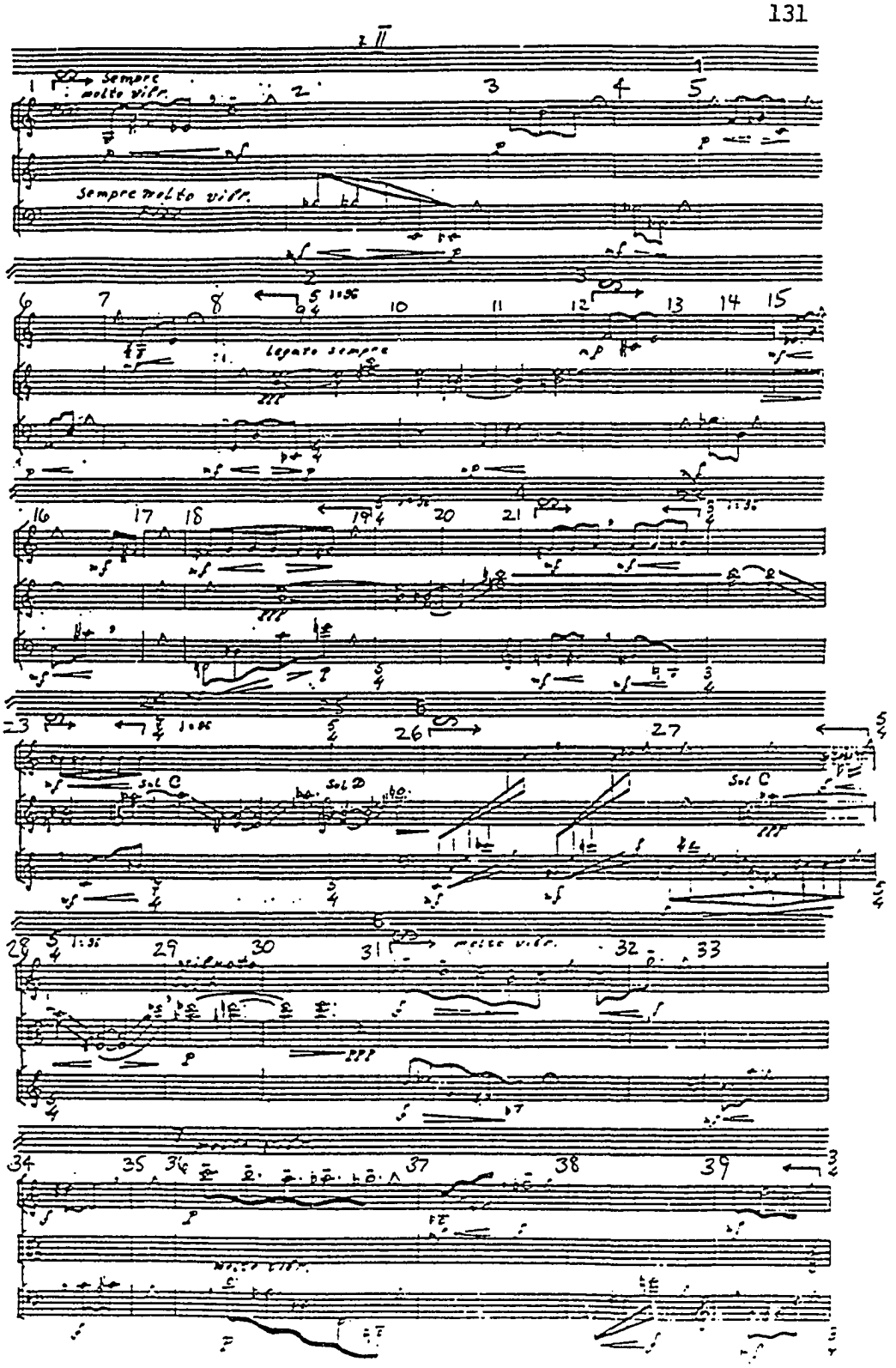


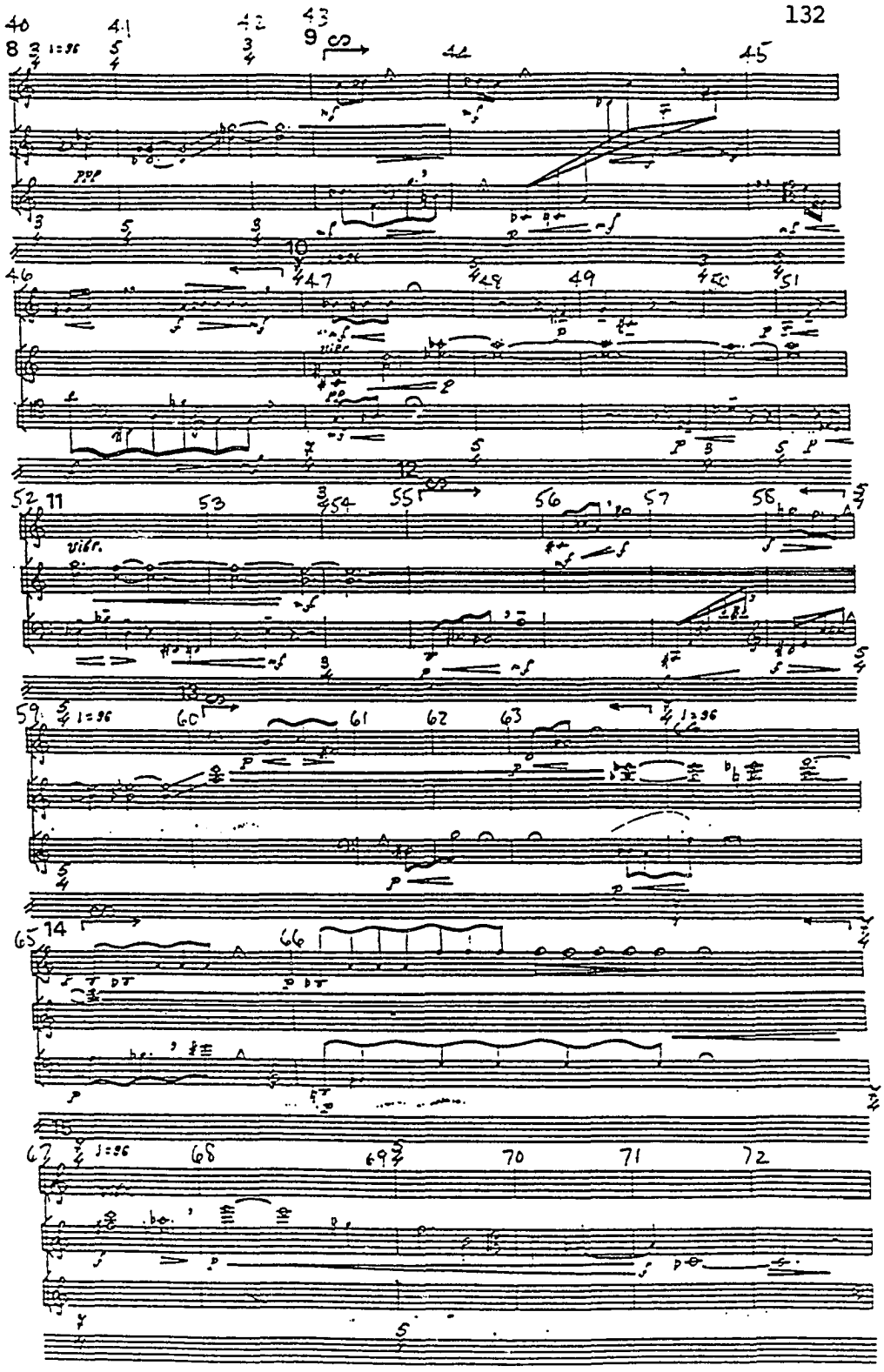


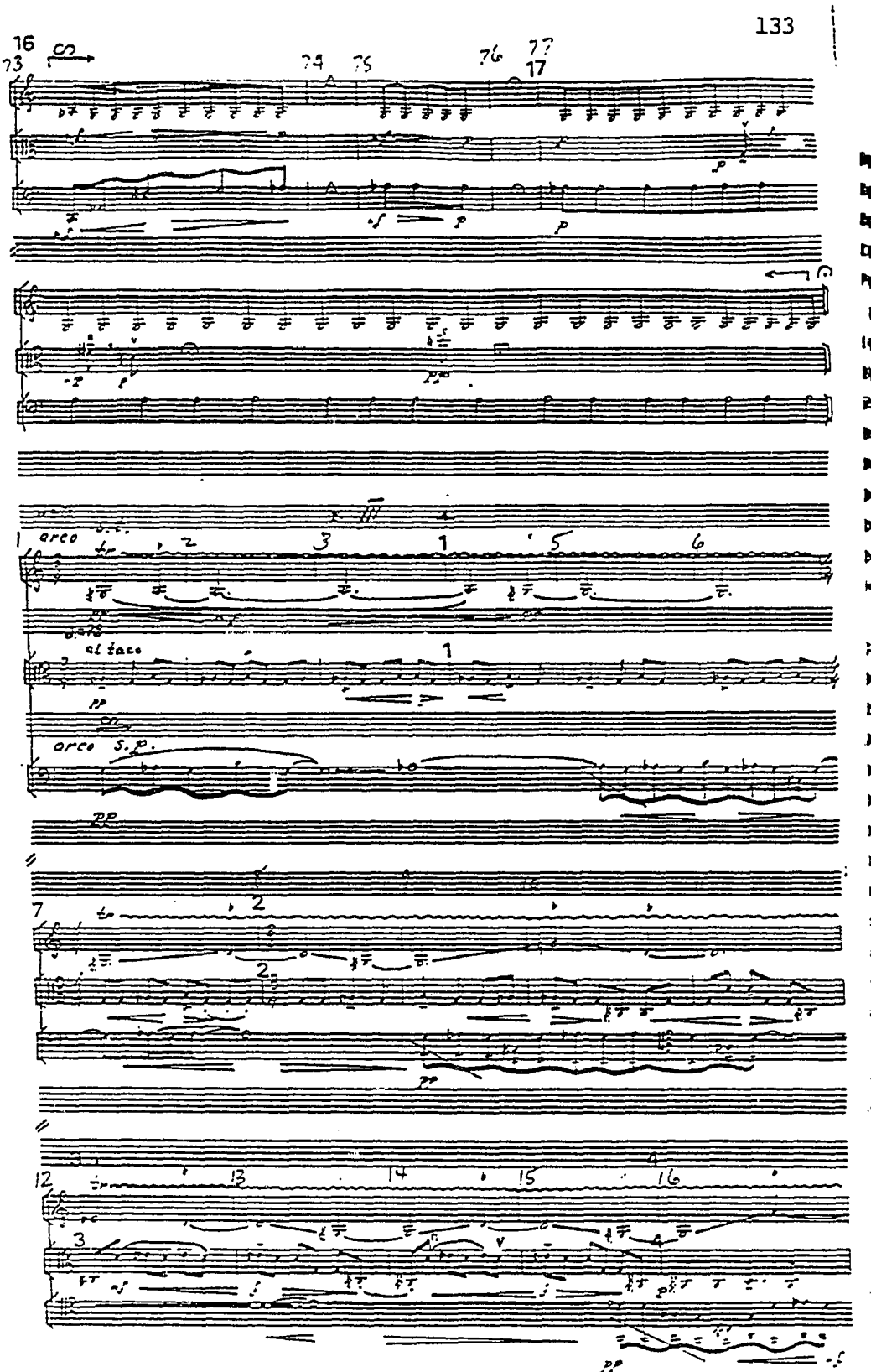


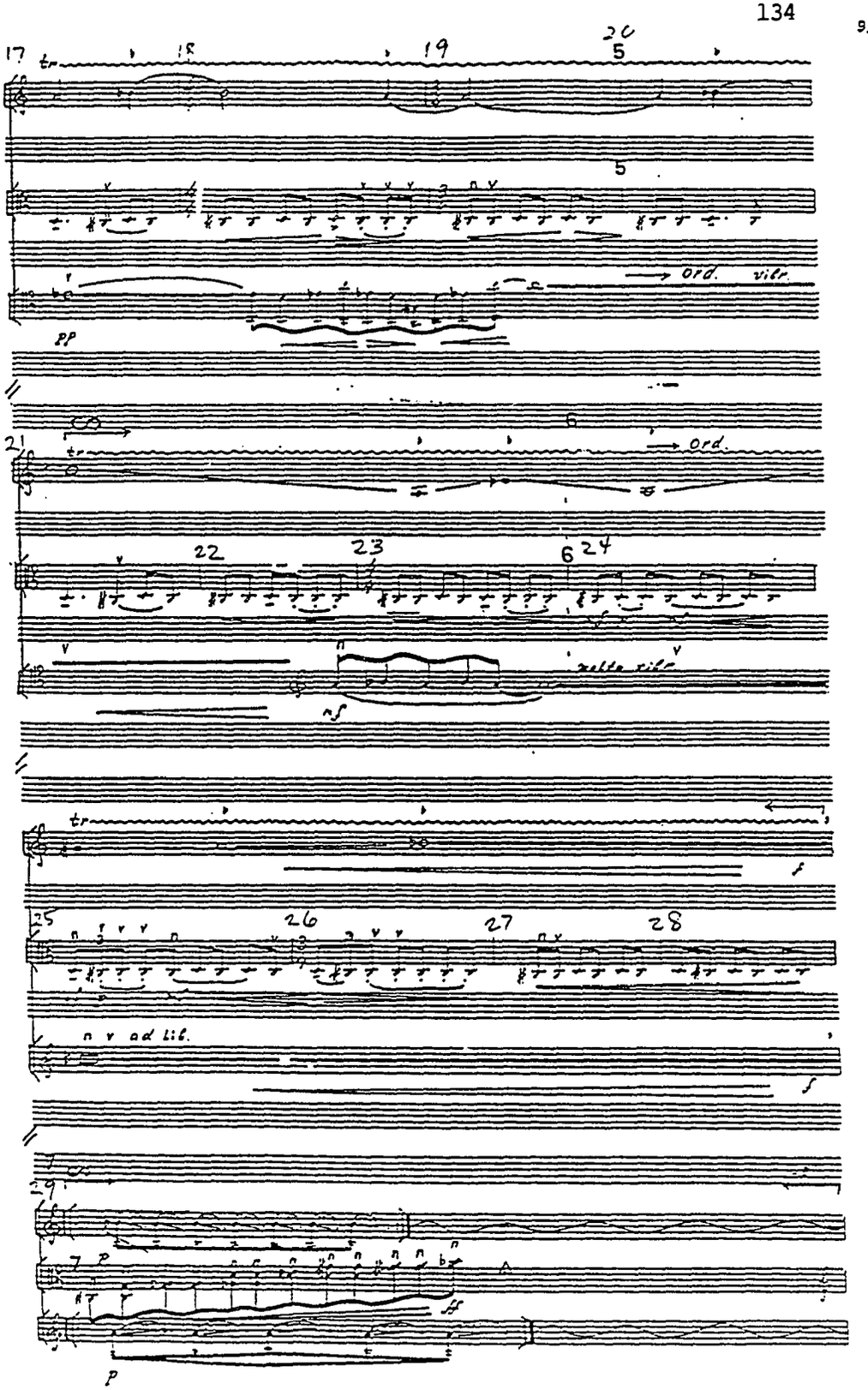


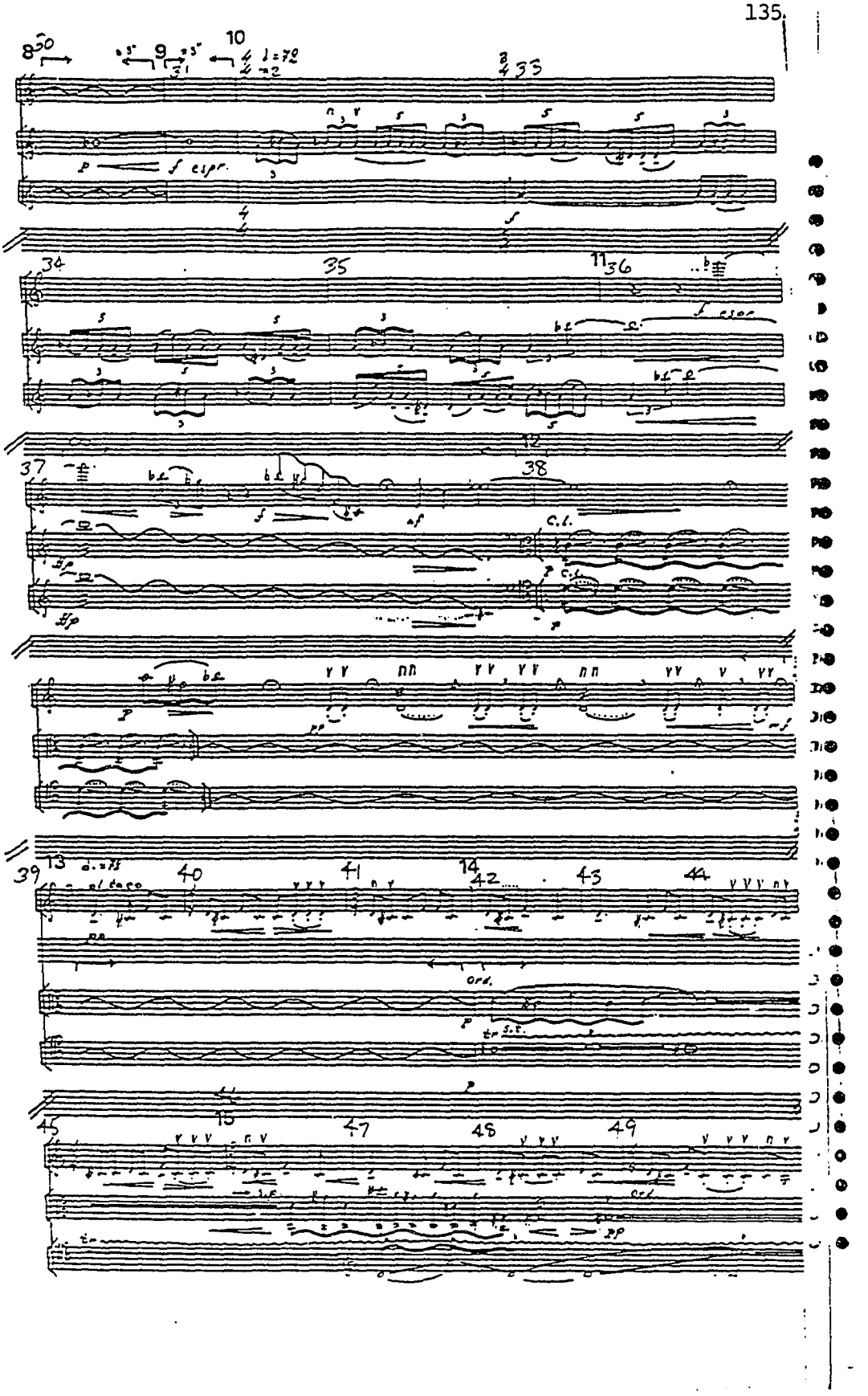


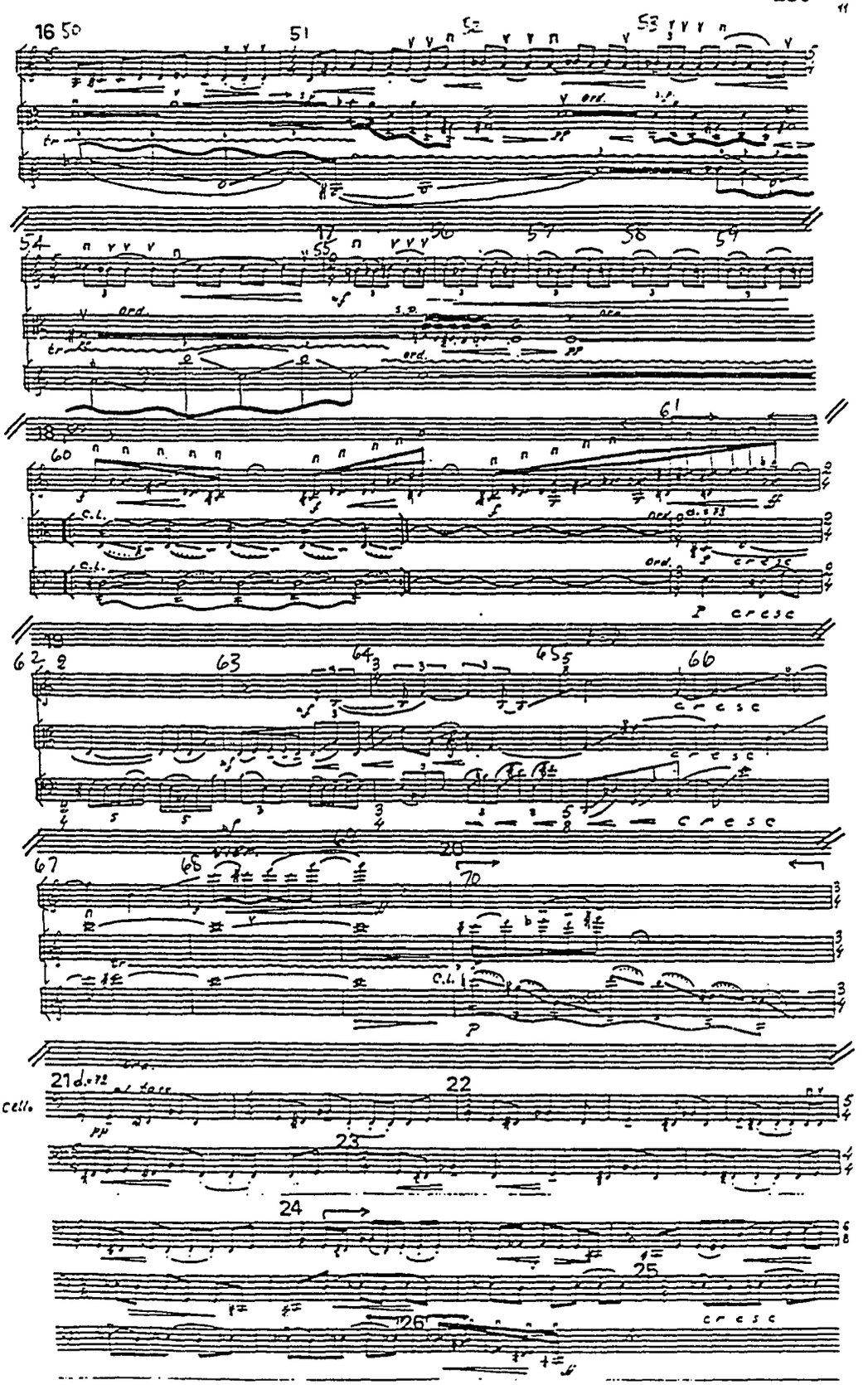


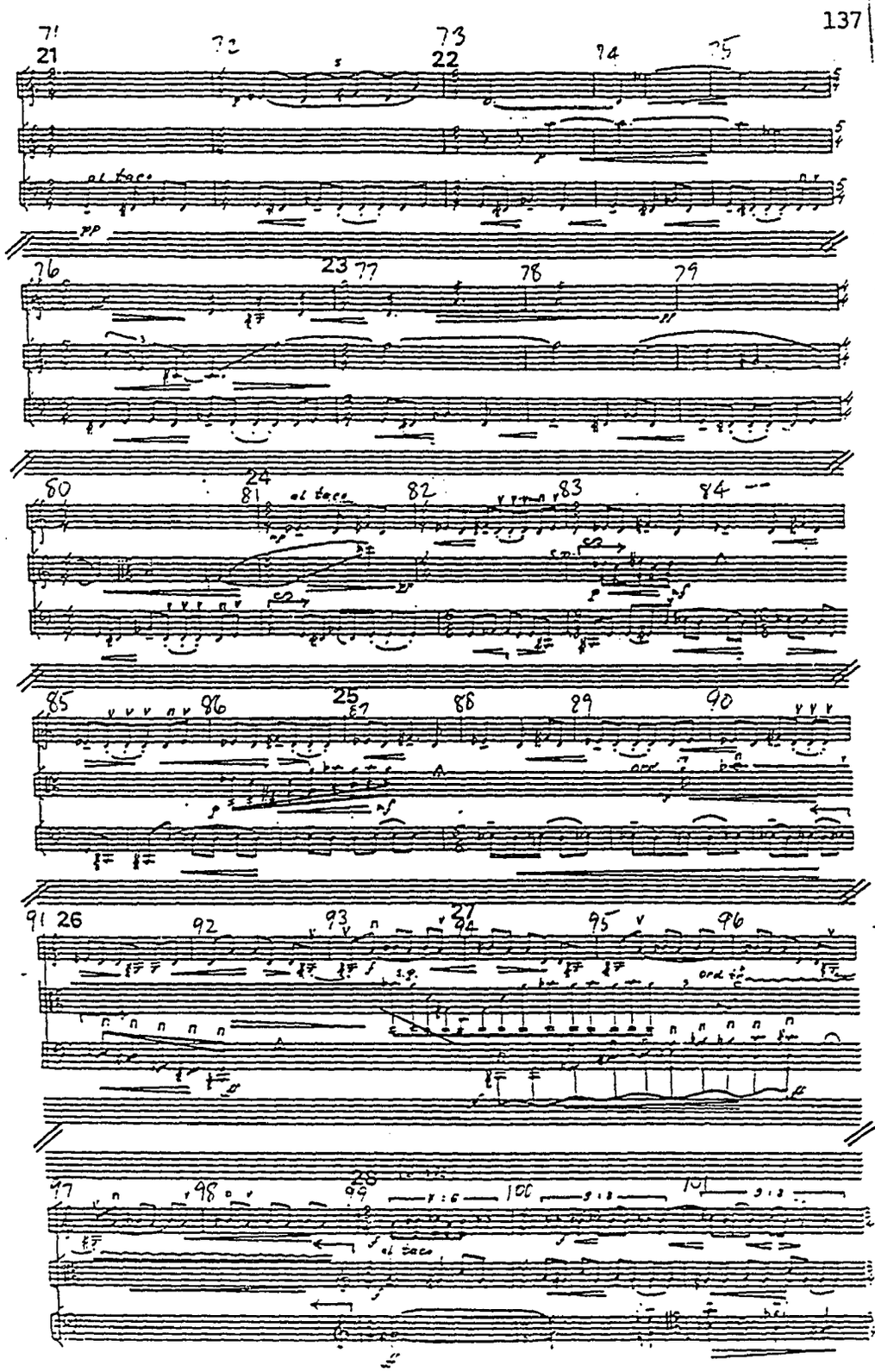


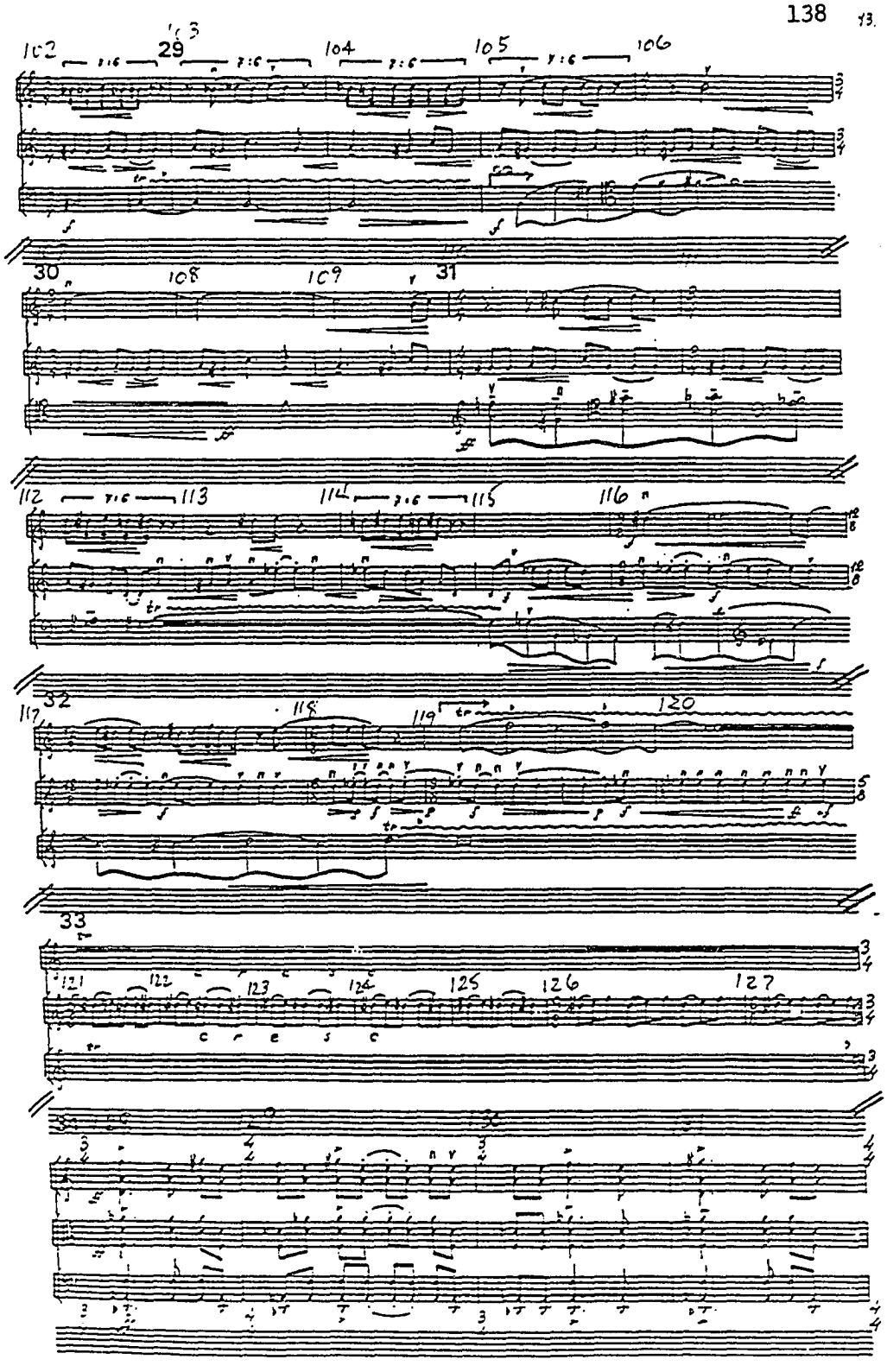


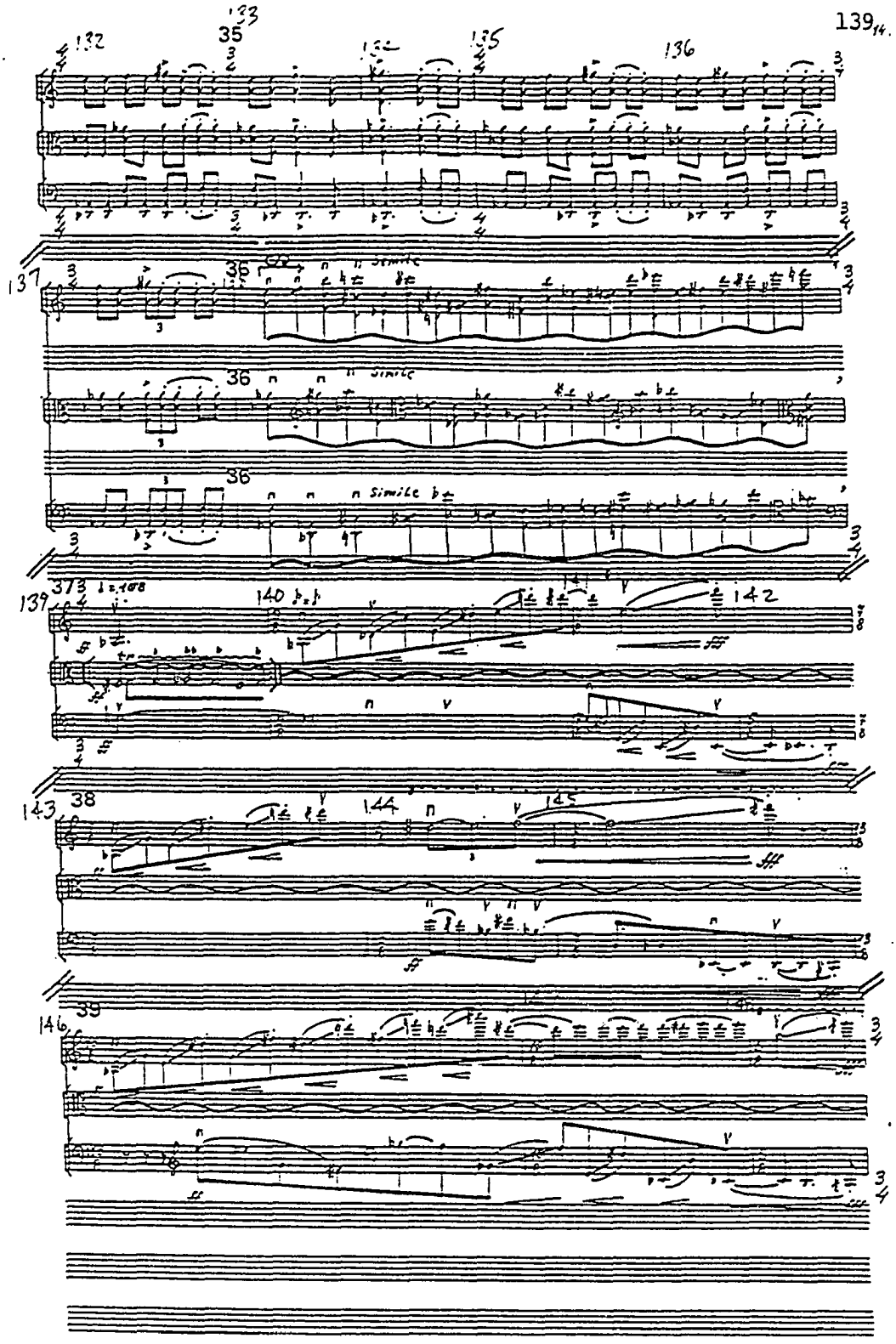


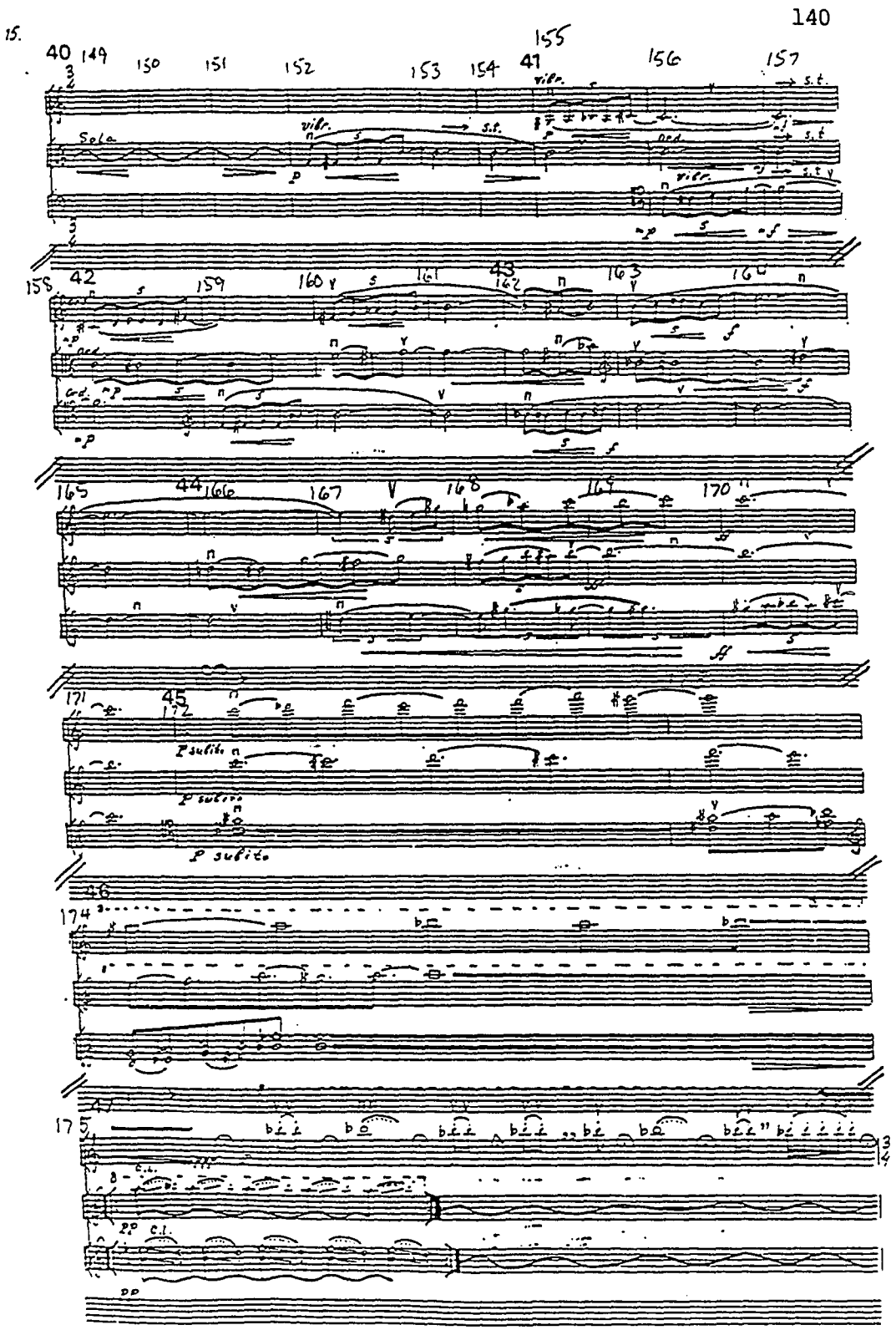


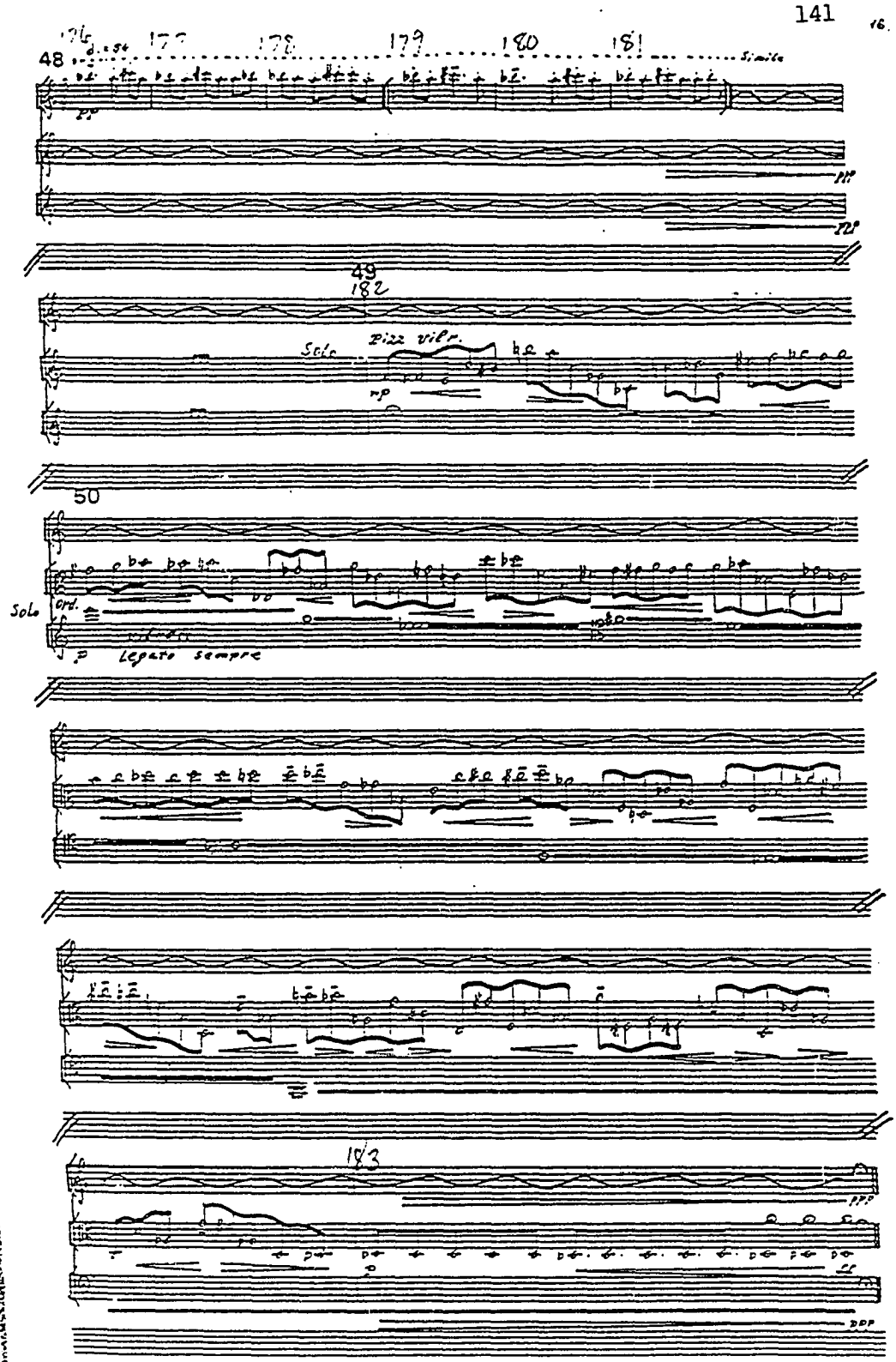












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