Scattered ruins ash grey all sides
true refuge long last issueless.

- Samuel Beckett, "Lessness"

Music in our time has clearly lost the innocence we should like it to have. It has become impossible to whistle or to beat time to. It has become introspective and difficult and feels obliged to justify itself. It no longer soothes and comforts us. We find it disturbing and disquieting.

This essay proposes to examine some of the changes in the musical lnaguage during this century. "Musical language" is a largely metaphoric expression without any linguistic justification, signifying the body of experience, both inherited and individual, which is the composer's vehicle of expression. To the composer the musical language looks like the material itself, and the word "language" indicates that the material - the sounding stuff of which music is made - seems to obey laws of its own.

In this century all the important developments in the musical language have ultimately been destructive. Music in this century began with the recognition of the weakness of the inherited tradition. But no sooner had one generation apparently succeeded in shoring up the weaknesses of its inheritence than a great rift opens elsewhere, caused by the very act of repair one undertook so conscientiously. Each reformulation of the language cut off a possible line of retreat into the past.

It is important at the outset to have a sense of the dialectic tension between the conscious forming the material by the composer and the newly formed material's influence on the composer's subsequent way of hearing music. For example, Arnold Schoenberg avoided using chords and melodic combinations which would remind one of traditional harmony in a number of works written shortly before 1910. Here he consciously formed the material, forcing himself to move away from a past which was still only too meaningful for him. The music written under this pressure however was so compelling that it became impossible for those who heard it to find traditional harmony significant or meaningful for their own work. The form the material took was of such brilliance and lumnosity that it changed drastically the sensibility of those who came in contact with it. This change was by no means intellectual or willful; it was immediate and unexpected, and it reached into the uttermost regions of experience of those whom it touched, impossible to escape, impossible to forget. The development of music in this century shows many such insights, masquerading as the way into the future; in fact, they only cut off any refuge in the past.

Clearly such insights in music can only be so destructive where a seemingly strong surface disguises basic and fundamental material weakness. In fact the material of the musical language was extraordinarily weak around the turn of this century. What was the nature of this weakness and where did it come from?

From our vantage point late in the century the weakness of the musical language around 1900 might be described as too great

malleability, noncommittalness of harmony and melody, extreme generality and too great familiarity of the material, making it difficult to coax from it unjaded expression. The developments which led to this weakness are most complex and can only be hinted at here.

During the 19th century there were two forces influencing the general musical language. The first was the radical technical development of the music of Liszt and Wagner around the middle of the century. The most obvious attribute of this development was increased harmonic complexity. The rather limited chordal vocabulary of Beethoven was stretched to include many new "complicated" chords which did not clearly belong to any specific key. The harmonic ambiguity of the chords made it easy to modulate to distant keys. The net result of this increased complexity however was that individual chords lost much of their strength to define a particular harmonic context, the ease of modulation eroded the individual character of a specific key change, and harmony ultimately lost its power to give structure to music.

The music of Liszt and Wagner saw one other important technical development. In the first part of the 19th century, a motive and its affective gesture were inextricably linked. Tension between moods was tension between different motives, and the nature of this tension and its eventual resolution depended to a large extent on how the technical problems raised by the material were worked out. With Liszt, and later with Wagner however the same motive or the same intervallic material can take on many affective

guises (for Wagner this is less true of the Baedeker-like use of the Leitmotiv in the Ring than of the more thoughtful motivic writing of Tristan). This separation of affect and material was new to music. Ultimately it brought about a weakening of the formal strength of music, for Wagner could give his music shape and movement by attending far more to the affective gestures than to more abstract formal demands. Thus, as the profile of the harmonic language rapidly eroded, no new formal language grew up to compensate for the loss of harmonic definition. Music's dependence on rather crude means of building tension and achieving release - long crescendi, increasingly rapid figuration, frequent climactic cadences - made it inevitable that the language would fall apart once the associated affective gesticulation disappeared.

Besides the "advanced" developments of Liszt and Wagner, a second force influenced the general development of the language, eating away at music's self-assuredness and innocence. By the beginning of the 19th century music had a well-developed vocabulary. But this very normalization of vocabulary and gesture threatened to render expression banal. Music had two alternatives: force the language on beyond the clichés in which it found itself, or turn the language back upon itself, changing the meaning of the clichés. Liszt and Wagner chose the first alternative, Schubert and Mahler the second. Neither latter composer is ever eerier, more frightening or sadder than when he is purporting to be cheerful, writing what might pass for trivial music.

Mahler heard how ridiculous and how cheap the most moving

folksong, the bombastic climaxes of a large orchestra, or the overripe chromaticism of his day could be. Basically conservative in spirit, he chose to work with the remnants of the language rather than to attempt to renew the language altogether. He collected the shattered fragments he found about him into pieces of striking and moving irony. The fragments themselves - melodies, harmonic progressions, etc. - are of great beauty, but Mahler put them in a context which demonstrates that the material of music can no longer be taken absolutely seriously and at face value. His works are one last farewell to music as we have known it. The music's greatness comes from Mahler's certain knowledge that he would be the last to partake so fully of the tradition. The degree of reflection in Mahler's music is so great that no subsequent music can allow itself the innocence of Mendelssohn or Bruckner, the sense of double meaning so strong that ever after straightforward musical utterances arouse suspicion of meaning something else, unless they sound too obvious and banal to be of interest. Here is the beginning of the "difficulty" of contemporary music: the sensibility of Schubert, Hugo Wolf, and Mahler, which heard the cheapness and dishonesty of the musical idioms of their times, and which discovered a deeper layer of meaning behind the clichés. But, true to the dialectical nature of the development of the musical language, this sensibility at the same time destroyed the possibility of ever returning to simple, unadorned music. The only movement remaining was forward into greater complexity.

Here then are the two forces which weakened the music of the 19th century to the point of total collapse: first the weakening at the technical level, in terms of both the harmonic language and of the degen-

eration of formal structure due to the separation of affect and motive; and secondly the loss of straightforwardness and simplicity, of naiveness and innocence which music had hitherto possessed.

If Mahler marks the end of traditional music, Arnold Schoenberg, a generation younger and deeply attached to the older master's music, presided more or less single-handedly over the birth of the new music.

Schoenberg's earliest music is altogether in the style of post-Wagnerian, central European tradition, bombastic and overripe, adhering strictly to the rules of late 19th century harmony. The "Gurrelieder", written for the most part in 1900 are a good example of such music, composed in the euphoric naiveness of the very young, quite oblivious of any weakness in the traditional musical edifice. Very soon however Schoenberg must have realized how jaded and worn out this idiom had become. The First Chamber Symphony (1906) already shows a much more sharply critical view of the past. The work reflects simultaneously the four-movement shape of the classical symphony and the characteristic pattern of the sonata-allegro form. Themes retain the outer appearance of the tradition, but are made grotesque by large melodic leaps and by sharp dissonances. The texture is very densely contrapuntal, showing both that Schoenberg had clearly realized traditional harmony's inability to articulate more than local structure and that he was shy of presenting the motivic material in an all too obvious way. Here Schoenberg seems to sense the immanent structural weakness of the idea of the melodic motive.

In the "Buch der hängenden Gärten" (1909), fifteen songs for soprano and piano on texts by Stephan George, Schoenberg for the first time consistently avoids the use of traditional harmonic relationships. In their place he substitutes specific intervallic relationships, chords having the same vertical structure as the horizontal line of the melody, and specific pitches as points of orientation to which the melody returns. Later pieces saw extensions of these techniques. This willful avoidance of traditional harmonic relationships stemmed from Schoenberg's realization of the structural inadequacy of the harmonic language at the beginning of the century, weakened as it was by the rampant chromaticism of the 50 years before. However, the exclusion of traditional harmony presented certain difficulties. It was necessary not only to avoid obvious chord progressions, but also to avoid any usage which might serve as a substitute for key, particularly too outspoken repetition of chords or of pitches. Schoenberg writes that at the time he often found himself keeping track of the pitches he used in a small section of a piece in order to avoid repetition of any note as long as possible. But it was not until 1921 that Schoenberg devised a systematic means to exclude such repetition, his famous Method of Composing with Twelve Tones which are Related Only with One Another. The method consisted of choosing for each piece one or more fixed successions of the twelve notes of the chromatic scale, which then provide the entire tone material for a piece, a movement, or a section of a piece. Schoenberg's avowed purpose in using his method was to systematize the chromatic nature of his music, to ensure that all reminiscences of tonality were eliminated. Therefore in the succession of notes no pitch was to be repeated before

all eleven others had been heard.

Schoenberg sought more than mere systematization of chromatic melodic and harmonic structures; he saw in the twelve-tone method a way of achieving a musical coherence to replace the coherence dependent on traditional harmony. In fact, however, the method did not prove to be the panacea Schoenberg had surely hoped it would be. In the first pieces written using the twelvetone method he invents structural relationships which are largely or entirely dependent on the presence of a fixed series of notes. Later, however, he chose not to investigate in great depth the structural possibilities inherent in the tone-row. Instead, as the use of tone.rows in composition became seemingly easier Schoenberg's later music receded back closer and closer to the models of his youth: long, expressive melodic lines, chord progressions, often with clear traditional implications, both with the same pattern of climax and release as at the end of the 19th century. Most strikingly of all, the rhythmic structure of Schoenberg's music did not undergo the same radical transformation as the melodic and harmonic language. From the First Chamber Symphony on, Schoenberg's music is characterized by a remarkable inconsistency between tonal and rhythmic languages. This may be a clue to the often violent opposition of audiences to Schoenberg's music (opposition which has by no means completely disappeared): much of his music acts like music one knows well - Wagner, Brahms, Mahler. The dimensions are often similar, dramatic structure and phrase construction are intimately familiar. Melodic and harmonic structure on the other hand are totally strange, and the dissonances between all-too-familiar and altogether strange sound at least as loud in audiences' ears as the

acoustical dissonances of the harmonies.

The inconsistency was particularly disturbing because the models soothed and lulled their audiences. Before the First World War this music reassured its listeners of the intactness of their world; after 1918 it comforted them that not everything of real and lasting value had vanished. Schoenberg's music was meant as - and was - a provocation to this cosy, self-satisfied middle-class smugness. It must have been particularly annoying to the rabblerouser couch his blasphemies is a seeming parody of the idiom nearest to their hearts (it would take two more generations before the virulence of Mahler's criticism - couched exclusively in this idiom and therefore so hard to recognize - would be clearly realized). In fact, it may be that the reason for Schoenberg's not adopting a more radical rhythmic language was the sharp edge which the inconsistency between rhythmic and pitch languages gave his music.

Schoenberg changed absolutely irrevocably the musical language of his time. At a technical level he broke consciously with the central tenet of Western music since polyphony - not merely with functional harmonic structure, but with the idea of the contrast between consonance and dissonance altogether. It was this polarity which had determined both melodic and harmonic structure for a millennium. It was the dialectical movement between dissonance and consonance both melodic and harmonic which allowed music to escape the mere flow of chronological time, to form time into recognizable shapes, to let the beginning extend beyond the physical start, to indicate the approach of the end before the music stops. Schoenberg must surely have realized the import of

what he spoke of as the "emancipation of the dissonance". To be sure, he chose not to follow the consequences of this emancipation (this seems to have been a more conscious decision than one might suppose - he wrote once that it required great effort for him to resist the influence of Webern's abstraction), and it is perhaps only taday when the vision of unified musical language can clearly be seen as an illusion that we can properly assess the radicality of Schoenberg's break with the past.

Schoenberg's two most gifted pupils were Alban Berg and Anton Webern. Berg has had less direct influence on the development of the musical language than has Webern, not because he is the less interesting composer, but rather because the solutions which he found to technical and aesthetic problems were such a personal combination of contradictory elements as to resist any attempt to render them exemplary or paradigmatic. The contradictions are manifold: in the later pieces extreme complexity and abstraction in the use of the twelve-tone method against extreme plasticity and direct sensual impact of the music; speculative commitment the the renewal of the musical language against emotional commitment to the music of the past; extreme objectivity in musical analysis against extreme subjectivity in musical apperception. Despite the contradictions at both the technical and the aesthetic level, Berg's music does not convey to the listener the same sense of discrepancy in the choice of the material as does Schoenberg's. Berg's allegiance to the post-romantic idiom is clearer than Schoenberg's, his use of the series less consistent, more arcane. If there is in Schoenberg's music enormous tension between the emancipation of the dissonance" and the paraphernalia of the centural European tradition of which the rest of the music is

composed, particularly between two levels of the material (pitch and rhythm), there is equally as much tension in Berg's music between the material itself and the way it is treated. But because the technical discoveries and achievements of Berg are not notably congruent to the inherent possibilities of the material he employed - or rather because the old material is not congruent to the technical demands made on it, except in the framework of Berg's personal vision - his music found few imitators.

Anton Webern, who was almost completely ignored during his lifetime and known only as the composer of a few ridiculously short pieces, proved to be the composer whose influence both technical and aesthetic was the greatest on the following generation. Webern was a shy, modest man, who shared none of Schoenberg's interest in being a radical renewer of music. He was also a gifted conductor, whose performances of Schubert, Brahms and Mahler made an indelible impression on those who heard them. It was Webern who realized most clearly - if perhaps not entirely consciously - the crisis of the early 20th century. It was he who drew the most radical consequences both from the breakdown of the traditional musical language and from Schoenberg's "discovery" of the twelve-tone method. It was he who pointed the way into the future for the generation of composers who began writing after the Second World War.

In general, Webern's music is short, soft and extremely expressive. It is most probably this heightened expressivity coupled with extreme reticence - soft dynamics, fragmentary phrases, brevity of work - which caused the laughter Webern's music frequently occasioned

when first heard. Even in his earliest pieces Webern moved away from the models of his generation, Bruckner and Mahler. In the first place he compressed their long, expressive melodic lines into a measure or two, thus placing climax and release, rise and fall in the same breath, almost in the same note. Secondly, he ignored the upper-voice orientation which was the norm for his time, setting in its place counterpoint in the tradition of the 15th and 16th centuries. (Webern held a doctorate in musicology; his thesis had been on Heinrich Isaac, an important Austrian composer of the Renaissance. He also edited and published a cycle of motets by Isaac.) In this counterpoint Webern was less concerned with large-scale harmonic structure than with the elaboration of dense motivic relationships between individual voices. This liberation from the top-heavy compositional norm in force since 1600 also meant a liberation in the formal and finally in the aesthetic realms from the music of the past. The gestures and the movement of the music of the late 19th century, which are so manifest in Schoenberg's music, clearly have no place here - Webern was free to investigate truly new ways of achieving musical coherence.

Webern began using the twelve-tone method soon after Schoenberg had formulated it, but there is virtually no difference between the technique of his first piece using the method (the Three Folktexts, op.17) and that of the works immediately preceding. There is no trace of key or classical harmony in any of the works, all are of similar length, all consist of the polyphonic elaboration of very short motives. Webern grew naturally into Schoenberrg's method; at the same time he used it in a much more consistent way than did Schoenberg. Schoenberg claimed that the series of his pieces were always melodically inspired.

Whether or not this is so hardly matters, but it is interesting to notice how important it was for Schoenberg to defend the spontaneous melodic origin of his tone.rows against the all too frequent attack that the twelve-tone method was artificial and intellectual. Webern on the other hand constructed his rows very carefully, almost always limiting severely the number of different intervals to appear and giving the succession of twelve pitches some sort of structure of its own (for example, the intervals between the first six notes might be repeated in opposite order in the remaining six). Webern's sketchbooks show how carefully he chose the forms and transpositions of this rows, seeking always clear relationships between rows (for example that the first four notes of two forms of the same row might be the same, but in quite different order). In comparison to either Schoenberg or Berg, Webern seems extraordinarily ascetic in limiting his pieces to so few notes. But in this sparse landscape the individual pitches take on enormous importance. Webern's later music requires rather elaborate technical analysis to make its inner structure clear, but no one who listens carefully to the music can fail to hear that a strong and beautiful logic is at work. More than the music of any other composer of the century, Webern's present itself to the listening ear. Never before or since has the elementary material of music - the pitches - been given such weight and importance.

Webern's care in organizing the pitch structure of his music is only one aspect of a more general phenomenon which was to have immense repercussions on the language of music. For Schoenberg, as for all music since about 1600, a musical idea was a combination of several factors

pitch, rhythm, dynamics, timbre. A theme presented itself to Schoenberg as to Beethoven at least partially formed in each of these respects. There was a certain amount of freedom for each factor, but a change in one usually implied a change in another. Webern in his middle and late pieces broke down this unity of factors by treating pitch, rhythm and duration of note, dynamics, and generally instrumentation as well independently of each other. The model for this procedure may have been the vocal polyphony of the 15th century, where melodic and rhythmic evolution of individual vocal lines follow quite different paths. At the same time it seems likely that Webern's delicate and altogether unrevolutionary sensibility sought to avoid the dissonance between melody and rhythm manifest in Schoenberg's music. This led him to the explicitly separate treatment of what had implicitly been rent assunder by Schoenberg.

Schoenberg and his pupil Webern present the strongest contrasts imaginable. Apart from all the differences of character and of material fate, there is a sort of complementary symmetry which holds between them within their music. If Schoenberg's music was apparently radical only in its pitch structures but not in line and phrase, in formal concept or dramatic movement, by its very refusal to be concerned about this discrepancy, by refusing in the middle and late works to be pretty or decorative, by demanding of his music a sort of truth far exceeding the merely aesthetic, Schoenberg in fact remained radical in showing the insufficience of aesthetic concerns for contemporary music. Webern on the other hand never called this aesthetic framework into question, but the cost of remaining within was the fragmentation of the musical language and the necessity to find new technical means to render the material coherent.

Needless to say, Schoenberg and his pupils were not the only composers of note in the first half of this century. But of the many others, only Stravinsky was of real importance for the development of the language. Most composers felt and reacted to the general dissolution of the traditional language around the beginning of the century, but their solutions were for the most part idiosyncratic and personal and did not lend themselves to generalization or further development. The clearest example of this idiosyncracy in a first-rate composer can be seen in Bartok, where the use of folk melodies and Balkan dance rhythms, and the substitution of other chordal relationships than those of traditional harmony are most convincing in the setting in which Bartok put them; one cannot imagine being able to generalize the use of these elements in another context sufficiently to avoid the impression of imitation.

Stravinsky influenced the course of music twice, in very different ways. It seems fair to say now from a perspective of 50 years that Stravinsky's attempt to graft contemporary idiom onto forms and gestures of the past - neoclassicism is a term Stravinsky never used himself - was at best a very limited personal success and that it brought nothing to the development of the general language. However, about the same time as Schoenberg wrote such important pieces as "Erwartung" , "Pierrot Lunaire" and "Three Pieces for Piano" opus 11, Stravinsky laid the groundwork for a momentous change in the way of thinking about rhythm. Since 1600 at the latest rhythmic movement was thought of as deriving from a long note value divided into a number

of equally long shorter notes (usually the measure divided into two, three or four beats). The beginning of this long note was generally marked by an accent. These long units were grouped into more or less regular patterns (e.g. the eight-measure phrase divided into two groups of four each). From about 1910 on however Stravinsky began conceiving of rhythm not only as the result of division of a large note value, but also as the result of the addition of small note values. Here the music no longer has a regular pulse, but only a rapid note value common to all groups. The lack of a coordinating pulse and the systematic structural use of combinations of short note values clearly separated this music (Sacre du Printemps, Les Noces, Histoire du Soldat) from that of the 300 years before.

The extent to which Stravinsky on the one hand and Schoenberg and Webern on the other had transformed the musical language was immediately evident to the young composers rediscovering their works after the Second World War. The generation of Pierre Boulez, Karlheinz Stockhausen and Luigi Nono saw immediately the importance at the technical level of the work of Schoenberg and particularly of Webern, who became a kind of hero for them. The significance of Schoenberg's work for the aesthetic realm, the impossibility of writing decorative, pretty music for the concert hall was less immediately apparent. As it was, for a long time these young composers had only technical interests and goals: each of their compositions purported to solve a technical problem. It was not until the early 1960's that the basic questions of treating the new material were sufficiently well answered to allow

one to think carefully about the aesthetic significance of what had been written.

For this generation of composers there was no question that the tradition could offer nothing of interest for the future. The task of renewing the musical language did not seem inordinately difficult to them. The sense of the bankruptcy of the past, which was not simply a vagary of adolescent rebellion but an aesthetic truth which the most sensitive of this generation knew and sensed at a level much deeper than mere intellectual knowledge, turned them immediately towards Webern, in particular to the twelve-tone pieces. In their eyes only Webern had brought the idea of the tone-row into any kind of congruence with the stylistic and formal aspects of his music - Schoenberg's "inconsistency" in using a tone-row to write expressive, post-romantic music seemed like heresy to them - and their vision was to generalize ideas they found in or read into Webern's music in order to construct a unified musical universe. If the tone-row as a concrete succession of pitches could provide the tone material for an entire piece, the row as the measure of distance between the pitches, or even more generally as the succession of numbers representing the measures, could be made to control dynamics, instrumentation, mode of attack, density, duration, in fact any aspect of music which could be viewed as consisting of discontinuous alternatives. One series could thereby be used to engender and watch over an entire piece. Music in which series of pitches or numbers are used to provide much of the material is often called serial music. One of the earliest serial pieces was written - strangely enough - by Olivier Messiaen:"Modes de valuers et d'intensités" (1949).

Here four different series control attack, intensity, pitch, and duration of notes, whereby the different length series are allowed to run off in a very mechanical fashion. A more interesting work using these techniques is the first volume of "Structures" for two pianos by Pierre Boulez. Only the first of three sections of the piece is totally determined by serial methods; in the other two the composer's personal prerogative becomes more and more important. A similar piece for several instruments is "Kreuzspiel" (1951) by Kalrheinz Stockhausen.

For Schoenberg and Webern, the tone-row resulted in systematic chromaticism. All twelve notes of the scale were present all the time. Generally speaking, there were no longer more and less important pitches. In music where a series controls more than just pitch, this chromaticism, now in a figurative sense, is transferred to all those aspects which the series influences. The result was usually complicated texture where the ear had few aids in distinguishing primary from secondary. Loud and soft, high and low, fast and slow were often mixed indiscriminately, without clear predominance of one over the other, yielding a texture both overly colorful and uniformly grey. Understandably there were very few works written using such primitive serial techniques; ironically enough the very introduction of serial techniques precipitated a move away from these virtually statistical textures: the chromaticization of so many aspects of music immediately led composers to seek techniques to lead away from such anonymous complexity.

Besides the greyness of serial textures, there was a second

problem inherent in these techniques: unwanted relationships kept creeping into the music and breaking down the serial structure. The situation is easy to understand. Imagine a succession of single tones, some longer some shorter, some high some low, some loud some soft. Presented with such an apparently chaotic situation, the ear will try to extract some sort of order. It may hear the low notes as belonging together, it may hear the loud notes as belonging together, or it may choose yet another relationship. In any case the relationship construed by the ear will very likely not be the one intended by the composer. This in itself may not be of any importance - the best music has always contained more than the composer thought he put in - but from the point of view of the composers who were concerned with bringing as much order as possible to music it must have seemed essential that the listener be discouraged from hearing accidental relationships over which the composer exercised no control. Here a very simple rule obtained: in general the tighter the structural constraints imposed by the composer, the greater the tendency for accidental, virtual relationships to make themselves evident.

In the early fifties composers had been concerned with deriving the materials of their music from a single source, usually a tone-row. It soon became clear that much more sophisticated methods were required to render the material usable. Apart from the problems of statistical grey and of virtual relationships, there was the largely unexplored question of temporal ordering. Rhythmic structures were degraded to groups of durations by the serial techniques; the connection of accent with rhythmic grouping (the traditional accent at the begining

of a measure, still in force in Stravinsky and largely with Webern) was lost, making it difficult to build rhythmically meaningful phrases that would assure any sort of tension and release (except through the external means of creating a vague sense of tension by writing shorter and shorter notes, release by writing longer and longer ones). This meant that the music could exist only in the present and could not point towards the past (coming from ...) or to the future (going to ...).

Two theoretical works of particular importance, one published in 1958, the other in 1963, concerned themselves with the enrichment of serial techniques. The earlier was the essay "...wie die Zeit vergeht..." by Karlheinz Stockhausen, the later the book "Penser la musique aujourd'hui" by Pierre Boulez. Brief consideration of these two works will give some sense for the preoccupations of these years.

Stockhausen in his article attempts to unify the concepts of sound and time by remarking that sound only exists as a function of time: only by means of vibration, that is of physical motion in time, can sounds be produced. Above a certain frequency of vibration / the ear fuses pulsations together to the sensation of pitch; below that frequency one hears individual pulsations. Stockhausen conceived of a continuum of vibration, at one of whose extremes would be the highest frequencies the ear can perceive, at the other very slow individual pulses. Stockhausen proposed that it should be possible to treat the entire continuum by the same processes, thus giving the idea that the same serial procedures could be used on such varied aspects of music as pitch, duration, tempo and timbre its first theoretical apology. In his piece "Gruppen"

(1957) Stockhausen makes use of this theory. In its basic form the piece may be thought of a twelve rows of pitches, each pitch having a specific duration and a specific timbre (i.e. a specific pattern of overtones). These pitches are transposed down (i.e. lowered in range and slowed down in duration) so that each of the "overtones" can be heard as regular note values. All of the elements of the work are determined serially, and in fact the piece is perhaps the most radical example of serial writing still having any musical interest taday. As it turned out, Stockhausen's article was not so influential as he had certainly hoped it would be, not at all giving rise to imitation, but its concern for unifying the intractably disparate elements of music, and its quasi-scientific tone (much of the terminology is rather ill-chosen) are characteristic for the 1950's.

Boulez's book is much more ambitious, attempting as it does to speak of general aesthetic problems as well as about questions of specific musical technique. Just as was Stockhausen, Boulez is concerned with developing a unified view of the musical universe. He presents a highly generalized group of operations which can be applied to any of a number of aspects of the material, and he takes great pains to illustrate the operations' specific applications in the realsm of pitch, duration , dynamics and local form. That Boulez's book did not have the influence which he had surely hoped it would is perhaps surprising: one can hardly imagine a more brilliant, more conscientious, or more visionary project than this extremely technical book. From a distance of almost 15 years it seems rather that it is the musical material itself which has resisted the structuring Boulez

sought.

By the beginning of the sixties serial techniques and methods had begun to loosen their hold on this no longer so young generation. However, the extreme technical demands of using serial techniques in composition and of bringing them into some sort of congruence with one's own musical visions had made a deep impression on both the composers concerned and upon music itself. The emphasis on building musical complexes by new means had finally divested music of the last remnants of tradition; there was no danger of slipping accidentally into an unwanted idiom of the past. But fusing the fragments of the language together into a coherent whole had proved decidedly more difficult than anyone would have thought in 1951 or 1952. It was not that the material was intractable. On the contrary, it turned out to be quite malleable. But it seemed to be differently structured than the operations performed upon it: the complex procedures of the 1950's and early sixties left too little trace on the infinitely rich material. Deriving complex musical building blocks was child's play; differentiating them sufficiently from one another so as to achieve a complex syntax was immeasurably more difficult. Given a sufficient chromaticism no two chords of six notes sound surprisingly different, or rather they differ as their respective ranges and spacings differ, not in terms of pitch. Complex rhythmic figures lose their aural complexity quickly, in fact they lose their whole rhythmic shape, becoming mere appearance and disappearance of sound. The complex operations which gave rise to the chords or the rhythmic figures leave too little mark on the acoustical result.

Nor had the "serial experience" left the composers unchanged. The total chromaticism of serial music had had an addictive quality about it. One was wary of simple relationships in every dimension of musical context. Too obvious repetition of anything - notes, chords, rhythms, whole sections of pieces - was not telerated. Simple note patterns, simple chords, simple forms lost their integrity. The very desire for greater coherence and structure in the musical language which prompted the development of complex serial techniques in the end was responsible for conditioning composers' sensibility not to accept anything which might appear on the surface like structure. The very composers who so advocated new kinds of structures in music found themselves confronted with an apparently insoluble aesthetic problem: their intelligence, their experience and their appraisal of the musical situation led them to believe that music is a medium which supports, in fact invites abstract structuring on many levels simultaneously, and accordingly they tried to impose structure on the material they inherited. But at the same time their ears became more and more sensitive - and more and more allergic - to any obviously recognizable musical structure.

This contradiction remains unsolved in a general context even today. Each composer found his own personal solution. Early in the 1960's Stockhausen began writing pieces concerned more with processes that with acoustical results. "Plus-Minus" (1963) is such a piece, where the relationships between successive segments are minutely described, but where there is considerable liberty in the actual nature of the segments. At the end of the 1960's mysticism became more important

to Stockhausen as a source of and justification for his music.

Luigi Nono had long been drawn to political texts ("Intolleranza" was written in 1960), but it would seem fair to say that with "la fabbrica illuminata" (1964) he began to see his activity as a composer largely in a political light. Both Nono and Stockhausen have found refuge from pruely aesthetic problems by settling their music in a region beyond the aesthetic framework.

Finally only Pierre Boulez of the Darmstadt triumvirate has resisted extramusical temptation. The alternative in his case has been to have written considerably less music since 1964 than the other two.

Two other currents in comtemporary music have been of great importance. The first is the development of electronic music, whose beginnings are directly related to the problem of restructuring music. Well before the Second World War composers had dreamed of producing sound by other than conventional instruments, particularly by electroacoustical means, but it was not until after the war that tape-recorder technology was sufficiently developed to allow sounds to be stored. Electroacoustic music started about the same time in Paris around Pierre Schaeffer and in Cologne at the studios of the Westdeutscher Rundfunk. Both studios sought to provide a substitute for the degenerate traditional language of music, their orientations however were very different. Schaeffer's group worked largely with concrete, existing sound, whic they transformed by acoustical means into something no longer clearly recognizable. This music had an acoustical complexity from the very start, although the composer did not have a great deal of control over

the sounds or their evolution. The studio in Cologne chose to build up sounds from their individual components (overtones), a procedure whic apart from being enormously tedious offered a great deal of control over the microstructure of the sound, but which by and large produced sounds of disturbing simplicity and similarity. During the almost thirty years of its life electroacoustic music ahs become most commonplace. There are innumerable studios large and small all over the world, but at present the work in electronic music does not seem to have affected strongly the mainstream of the musical language. To be sure, electronics has offered a possibility of transforming both speech and music in very powerful ways, but for the most part the sound quality of electronic music has been so poor that much of its most effective use has been as a contrast to natural sound. It may be however that the introduction of the computer as a sound-producing instrument will change this situation.

The other development has also been outside the mainstream of comtemporary music and concerns the music and thought of John Cage. Cage, an American, was student of Schoenberg's in California. He seems to have realized clearly what a shambles western music was after the Second World War, but he drew the opposite consequence from his observations as those who elaborated complex serial methods. Cage sensed very early the inability of the musical material to bear any meaningful order, shape or form whatsoever. The insight led him not to devise compositional means to achieve structural order, but to invent ways

in which to write music without having recourse to means which would adulterate the material by making it seem to be what it is not. Most of the compositional decisions in Cage's music are made by chance procedures like tossing coins, and his influence on the technical development of music has been accordingly small. His vision of the "meaningless" of the musical material is rather poetical than musical, and his writings have been much more influential than his music. Cage's insight into the nature of the musical material came at a time when very few musicians listened to him. Now, when the impossibility of structure in music is more than just a vague possibility, Cage's writings of the last 20 years take on greater and greater immediacy.

The attempts of serial music to structure the material and the conviction of Cage that music can bear no meaning are the two extremes within which contemporary music exists. Several other paths have been explored, all of which are stoutly championed by their proponents, none of which however would seem to have more than anecdotal interest. These alternatives suffered the same fate as serial techniques: ultimately they contributed more to the destruction of the language than to it reconstruction.

In general two different methods have been employed to achieve renewal of the language. The one was to act on the musical material so as to form it according to a musical logic inherent in the material itself. Both serial music and electroacoustic music show this concern for treating the material solely on its own terms. An attempt to form the material without the constraints of serial techniques can be seen in the prodigious development of virtuoso instrumental techniques, particularly in the wind instruments, beginning in the early 1960's.

By forcing their instruments to produce new and unusual sounds, instrumentalist-composers hoped both to escape the clearly doomed universe of serial music and at the same time to give their music some expressive profile, if only through the strain put on the instruments to produce the sounds. Precisely because they were most frequently formed by exerting strain on the instrument however, these sounds were for the most part static, rigid and inflexible. Of some interest for a few years, they were hardly the rich, supple material one had been looking for.

The other method employed to achieve renewal of the language took many forms, but its strategy was to treat the material by processes other than those usually applied to music. The musical theory of Iannis Xenakis is a good example of this strategy. Xenakis realized very soon (already in 1954 he published an important article in the "Gravesaner Blätter" of Hermann Scherchen entitled "La crise de la musique sérielle") the weaknesses of serial techniques. His solution was to submit the musical material to quasi-statistical operations, for that seemed the only mode of meaning left that one might impose upon the material. Apart from the profound criticism of statistical structures in the perceptual realm inherent in Noam Chomsky's proof that language contains relationships which cannot be generated by statistical processes, it hardly seems reasonable to choose probabalistic techniques to deal with music, considering that these techniques take into account none of the specific acoustic or psychological properties of music.

Another example of this strategy is the widespread tendency

to couple music with other activities to lend to music the persuasive force of some less abstract medium. The clearest indication of this is to be seen in the large amount of contemporary music written using text. Works combining music and film, music and movement, or music and theater all are proof of this tendency. A more problematical aspect is the marriage of music with ideological, moral, social or political concerns. This union is certainly not new, but use and misuse of ideologies are particularly encouraged by the inadequacy of the musical language to support meaningful structure. A further example of the attempt to impose another mode of order on music is the graphic score, where the performer is left greater or lesser freedom in translating the visual signs into the acoustical realm.

Some composers have felt is important and necessary to impose as little structure on the material as possible and have devised techniques which seemingly let the material speak for itself. Here often a verbal score suggests and inspires: the actual sounding realization is left altogether to the player. Stockhausen's "Aus den sieben Tagen" is a very convincing example of this technique. Here as with pure improvisation the danger is great that, far from letting the material speak for itself, sociological rules will take over in the absence of clear musical guidelines and will force the material into complete subjection. The music risks becoming collective narcissism. Furthermore, since there is virtually no possibility of generalization or abstraction of such techniques, it seems doubtful that this approach will prove capable of breat enrichment.

Where then do we stand? Let us review what we have seen. The aesthetic point of departure for the music of this century was formulated by Mahler. By showing the hollowness of the musical clichés of the 19th century and by giving these clichés a meaning at odds with their soothing appearance, Mahler made it for ever impossible to return to simple, naive music. Schoenberg formulated the break with the past explicitly and mercilessly in the musical language, at the same time offering technical possibilities of reformulation so promising that it took three generations of composers to work out fully their implications. Webern's structuring of several aspects of the material in parallel was of profound significance for music, but at the same time it too destroyed an important bridge to the past: after Webern it seemed impossible to write phrases where melody, rhythm, dynamics and instrumentation all evolve together and serve to express the same thing. The development of serial techniques extended this fragmentation even further, destroying simple straightforward relations and eliminating the possibility of any recognizable repetition, making it difficult to write any music whatsoever of clear profile without the risk of banality. Since the subsequent disillusionment with serial techniques, many attempts have been made to resuscitate the language. Each in turn has ultimately weakened or destroyed some further aspect. Finally, the linking of music to other interests to strengthen music - for example to ideological intention - has formulated explicitly what in Schoenberg and Mahler was still subcutaneous: the inadequacy of aesthetic categories for meaningful expression.

With the crumbling of its very foundations, music as we have known it in the past is dead, despite the sale of phonograph records, cheering concert audiences and the ubiquitous flowering of musical education for the very young. Nevertheless, unquestionably great music has been written during all this seemingly so destructive development. How was this possible? What are the roots of the destruction?

On the one hand that which we experience as destruction is certainly the natural and organic end of a long historical development. At the same time, in a world where the art of the past is made as safe for consumption as possible and where moments of most intense artistic and spiritual vision serve only to relax one after a hard day at the office, it would seem that only the destruction of our idea of music can save the reality of music from complete prostitution. Only by wiping out the inheritance of the past - that which made possible the degredation of music in the first place - can music remain alive.