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Submitted by Mark Peter Wyatt Lockett
as a thesis for the degree of Doctor of Philosophy

The City University

Department of Music

May 1988
<table>
<thead>
<tr>
<th>Section</th>
<th>Page No</th>
</tr>
</thead>
<tbody>
<tr>
<td>I  List of Figures</td>
<td>3</td>
</tr>
<tr>
<td>II List of Recordings</td>
<td>5</td>
</tr>
<tr>
<td>III Acknowledgements</td>
<td>9</td>
</tr>
<tr>
<td>IV Abstract</td>
<td>10</td>
</tr>
<tr>
<td>V Text. Chapter 1</td>
<td>12</td>
</tr>
<tr>
<td>Chapter 2</td>
<td>55</td>
</tr>
<tr>
<td>Chapter 3</td>
<td>107</td>
</tr>
<tr>
<td>Chapter 4</td>
<td>161</td>
</tr>
<tr>
<td>Chapter 5</td>
<td>212</td>
</tr>
<tr>
<td>Chapter 6</td>
<td>249</td>
</tr>
<tr>
<td>Chapter 7</td>
<td>286</td>
</tr>
<tr>
<td>VI Bibliography</td>
<td>295</td>
</tr>
<tr>
<td>VIII Appendix 1</td>
<td>Selected Discography</td>
</tr>
<tr>
<td>Appendix 2</td>
<td>Biographical Notes</td>
</tr>
<tr>
<td>Appendix 3</td>
<td>Index of Names</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

## CHAPTER 1

<table>
<thead>
<tr>
<th>Figures</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figures 1 &amp; 2</td>
<td>15</td>
</tr>
</tbody>
</table>

## CHAPTER 2

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1</td>
<td>66</td>
</tr>
<tr>
<td>Figure 2</td>
<td>67-68</td>
</tr>
<tr>
<td>Figure 3</td>
<td>69-70</td>
</tr>
<tr>
<td>Figure 4</td>
<td>75</td>
</tr>
<tr>
<td>Figures 5 &amp; 6</td>
<td>76</td>
</tr>
<tr>
<td>Figure 7</td>
<td>77</td>
</tr>
<tr>
<td>Figure 8</td>
<td>77-78</td>
</tr>
<tr>
<td>Figure 9</td>
<td>78</td>
</tr>
<tr>
<td>Figures 10 &amp; 11</td>
<td>80</td>
</tr>
<tr>
<td>Figures 12 &amp; 13</td>
<td>81</td>
</tr>
<tr>
<td>Figures 14 &amp; 15</td>
<td>82</td>
</tr>
<tr>
<td>Figures 16 &amp; 17</td>
<td>84</td>
</tr>
<tr>
<td>Figure 18</td>
<td>86</td>
</tr>
<tr>
<td>Figure 19</td>
<td>88-89</td>
</tr>
<tr>
<td>Figure 20</td>
<td>96-96</td>
</tr>
<tr>
<td>Figure 21</td>
<td>98</td>
</tr>
<tr>
<td>Figure 22</td>
<td>98-99</td>
</tr>
<tr>
<td>Figure 23</td>
<td>100-101</td>
</tr>
<tr>
<td>Figure 24</td>
<td>102</td>
</tr>
<tr>
<td>Figure</td>
<td>Pages</td>
</tr>
<tr>
<td>--------</td>
<td>-------</td>
</tr>
<tr>
<td>Figure 1</td>
<td>114</td>
</tr>
<tr>
<td>Figure 2</td>
<td>115</td>
</tr>
<tr>
<td>Figure 3</td>
<td>116-117</td>
</tr>
<tr>
<td>Figure 4</td>
<td>117-118</td>
</tr>
<tr>
<td>Figures 5 &amp; 6</td>
<td>119</td>
</tr>
<tr>
<td>Figure 7</td>
<td>120-123</td>
</tr>
<tr>
<td>Figure 8</td>
<td>125</td>
</tr>
<tr>
<td>Figures 9-11</td>
<td>126</td>
</tr>
<tr>
<td>Figure 12</td>
<td>127</td>
</tr>
<tr>
<td>Figure 13</td>
<td>127-128</td>
</tr>
<tr>
<td>Figures 14 &amp; 15</td>
<td>129</td>
</tr>
<tr>
<td>Figure 16</td>
<td>131-132</td>
</tr>
<tr>
<td>Figures 17 &amp; 18</td>
<td>136</td>
</tr>
<tr>
<td>Figure 19</td>
<td>139</td>
</tr>
<tr>
<td>Figures 20 &amp; 21</td>
<td>140</td>
</tr>
<tr>
<td>Figure 22</td>
<td>142</td>
</tr>
<tr>
<td>Figure 23</td>
<td>143</td>
</tr>
<tr>
<td>Figures 24 &amp; 25</td>
<td>145</td>
</tr>
<tr>
<td>Figure 26</td>
<td>146</td>
</tr>
<tr>
<td>Figure 27</td>
<td>151</td>
</tr>
<tr>
<td>Figures 28 &amp; 29</td>
<td>152</td>
</tr>
<tr>
<td>Figure 30</td>
<td>155</td>
</tr>
<tr>
<td>Figure 31</td>
<td>156</td>
</tr>
</tbody>
</table>
### CHAPTER 4

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1</td>
<td>164</td>
</tr>
<tr>
<td>Figure 2</td>
<td>179</td>
</tr>
<tr>
<td>Figure 3</td>
<td>183</td>
</tr>
<tr>
<td>Figure 4</td>
<td>193</td>
</tr>
</tbody>
</table>

### CHAPTER 5

<table>
<thead>
<tr>
<th>Figures</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figures 1 &amp; 2</td>
<td>213</td>
</tr>
<tr>
<td>Figures 3 &amp; 4</td>
<td>214</td>
</tr>
<tr>
<td>Figure 5</td>
<td>214-215</td>
</tr>
<tr>
<td>Figure 6</td>
<td>216</td>
</tr>
<tr>
<td>Figure 7</td>
<td>217</td>
</tr>
<tr>
<td>Figure 8</td>
<td>218</td>
</tr>
<tr>
<td>Figure 9</td>
<td>228</td>
</tr>
<tr>
<td>Figure 10</td>
<td>231</td>
</tr>
<tr>
<td>Figures 11-12</td>
<td>234</td>
</tr>
<tr>
<td>Figure 13</td>
<td>238</td>
</tr>
</tbody>
</table>

### CHAPTER 6

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1</td>
<td>252</td>
</tr>
<tr>
<td>Figure 2</td>
<td>253</td>
</tr>
<tr>
<td>Figure 3</td>
<td>260</td>
</tr>
<tr>
<td>Figure 4</td>
<td>261</td>
</tr>
<tr>
<td>Figure 5</td>
<td>263</td>
</tr>
<tr>
<td>Figure 6</td>
<td>264</td>
</tr>
<tr>
<td>Figure 7</td>
<td>269</td>
</tr>
<tr>
<td>Figure 8</td>
<td>278</td>
</tr>
<tr>
<td>Figure 9</td>
<td>280</td>
</tr>
</tbody>
</table>
LIST OF RECORDED EXAMPLES

Chapter 1

Cassette 1 Side A
1. Ornette Coleman: "Free Jazz" (excerpt 2:50).
5. Lennie Tristano: "Intuition" (2.22).
6. Lennie Tristano: "Digression" (3.00).

Cassette 1 Side B
11. Herbie Nichols: "Hangover Triangle" (3.55)
12. The People Band: (excerpt - 2:07).

Chapter 2

15. Bill Evans Trio: "My Foolish Heart" (4.50).
16. Cecil Taylor: "Song" (excerpt 1:08) Fig. 1.
17. Cecil Taylor: "Luyah! The Glorious Step" (6.25) Fig.2-3
18. Cecil Taylor: "Conquistador!" (18:00) Fig.4-18.

Cassette 2 Side A
19. Alex Schlippenbach: "The Hidden Peak I" (8.34)
20. Alex Schlippenbach: "The Hidden Peak II" (8.09) Fig.19
21. Alex Schlippenbach: "Payan" (6:33) Fig.20.
Chapter 3

22. Howard Riley: "Returning" (6.25) Fig.1-4.
23. Howard Riley: "Deflection" (excerpt - 2.40) Fig.5-7
24. Cecil Taylor: "Crossing - Part I" (8.30) Fig.16.

Cassette 2 Side B

25. Cecil Taylor: "Unit Structures/As of Now/Section (16:05) Fig.8-15.
26. Fred van Hove: "Onheil" (1.12).
27. Fred van Hove: "Twee Hoog" (2:43) Fig.19
28. Fred van Hove: "Old Maid in a Drawing Room" (1.55).
29. Fred van Hove: "Hoofd-Bij-En Nevenzin" (3.37) Fig.20.
30. Fred van Hove: "Ballade Terug" (1:50) Fig.22-23
31. Irene Schweizer: "Rapunzel...Rapunzel..." (11:34) Fig.24-26
32. Guus Janssen: "Zwart Wit" (3:44) Fig.27.
33. Guus Janssen: "Metro oom" (3.34) Fig.28-29

Cassette 3 Side A

35. Guus Janssen: "Fifth's Avenue" (5.13).
36. Guus Janssen: "Kinheim" (4.47) Fig.30.
37. Guus Janssen: "Brake" (excerpt - 0:35) Fig.31

Chapter 4

39. Ran Blake: "The Ballad of Hix Blewitt" (1.23) Fig.2
40. Paul Bley: "Closer" [Carla Bley] (excerpt - 2:12) Fig 3 also Chap.5 Fig.2-3
41. Karl Berger: "Tuning/Timing" (7.28) Fig.4.
42. Borah Bergman: "Horizons" - LH Alone (excerpt 1.00).
43. Borah Bergman: "Uncharted Rivers Flow Forever" (7:56).
Chapter 5

44. Ran Blake: "Doktor Mabuse" (4:07) Fig. 1.
45. Paul Bley: "Ida Lupino" [Carla Bley] (excerpt - 4:45) Fig. 4-5.

Cassette 3 Side B

47. Keith Tippett/Louis Moholo: "Zimbabwe is Free" (excerpt - 2:10).
48. Don Pullen/Milford Graves: "P.G.III" (8:30).

Chapter 6


Chapter 7

50. Ronald Shannon Jackson: "Bebop" [Dizzy Gillespie] (0.49)
51. Kahondo Style: "Last Minute Jingle" (1:12)
52. Cecil Taylor: "3 Phasis" (excerpt - 4:50).
53. Misha Mengelberg/Han Bennink: "Einepartietischtennis" (12:08)

For full details of recordings, see Discography
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M.P.W. Lockett.

- 9 -
ABSTRACT

The jazz avant-garde of the 60s and 70s has often been depicted as a movement that signalled the end of jazz as we had come to know it, a movement of unbridled musical energy and passion without the essential restraining influences of formal guidelines and reverence for traditions. With the benefit of hindsight, from observing the almost neoclassical stance of jazz in the 80s, the notion that this music signified the genre's Armaggedon was patently a misconception. This thesis argues that free jazz was as much a style, concerned with finding its own voice and technical vocabulary, as any other period of jazz history.

As an analytical and critical study of pianists and their use of the piano in free jazz and improvised music, this survey is designed to fill a gap in musicological research of this important artistic movement, which hitherto has been primarily concerned with biography and with related sociological issues. The study traces the piano through the turbulent years of radical experimentalism in jazz and the subsequent refinement in free improvisation in Europe and the U.S. through the work of pianists central to the movement. Rather than adopting the chronological approach, this study considers the music under broad headings specifically related to technique; the
instrument's position within the group, and the generation of form, motivic structure and 'language'.

Chapter 1, by way of introduction, outlines the argument of what constitutes the 'freedom' in free jazz and looks at the early development of the avant garde as it arose in opposition to the prevailing traditions of bebop and contemporary notated music with special reference to three influential pianists: Herbie Nichols, Lennie Tristano and Thelonius Monk. Chapter 2 is concerned with new concepts in overall form, while Chapter 3 takes a closer look at the smaller components, or motifs, of modular improvisatory structure. Chapter 4 examines the physical nature of piano tones, their unique qualities of sustain and resonance and their changing patterns of distribution in this music; looking at 'space' firstly in the sense of the piano's natural resonance and the pianists whose work has explored this particular characteristic, and secondly, the physical space involved in the act of playing, the sense of movement or kinaesthetics. Chapter 5 will concentrate on the dynamic and percussive approach to free jazz piano. Chapter 6 turns from the physiological to the psychological processes of improvisation; how the opposing forces of habit and originality assert themselves in the improviser's art. Chapter 7 will form a brief conclusion.
 CHAPTER 1

There is always a danger in using such etymologically loaded words as 'freedom' that definitions become blurred. In discussing the development of piano style and technique in the field of free improvisation or free jazz (which, even, some would argue, have become mistakenly synonymous terms for distinctly separate genres) it will be necessary to get a clear idea of what sort of freedom we are dealing with in terms of this music. The source of philosophical worry about freedom has usually been the troubling issue of responsibility. In the free will v. determinism debate philosophers in general are hoping to make some room in the world for whatever degree of constraint is required within 'freedom' for holding people responsible for their actions. The problem of responsibility is more associated with ethics and morality, but the question of degrees of freedom is central to the present study. In working within an artistic genre which has acquired the label 'free' one must have in mind (a) what are the constraints whose absence is being signalled and (b) what it is from the artist that is being allowed free expression.

Complete freedom would be the freedom to decide or to do anything at all. Sartre's extreme libertarian view upholds that all our actions are spontaneous and that absolutely any decision is possible for any given
situation. This sense of freedom with regard to free improvisation is an anomaly. As Howard Riley put it in conversation:-

"With people who don't like the idea of improvising without any guidelines you sometimes find this attitude; 'Well if it's free I can play anything; so I'll play I Do Like To Be Beside the Seaside.' That's all very well but personally I'm not interested in playing I Do Like To Be Beside The Seaside!"

Bertrand Russell's powerful remark that however free we may be to do as we please we are not free to please as we please makes just this point. Free jazz with a capital F is now a standard term used to denote certain post-1955 developments in the jazz art, and while other terms such as 'avant-garde', 'the new thing' and 'outside' have also been used, Free jazz (first used as as title by Ornette Coleman for a 1960 record which became a seminal influence on the whole movement) is the one that stuck. Just like Swing or Dixieland, Free is a style, and the very fact of it being a style indicates that there are certain boundaries and limitations.

It will often seem that in most things there are choices to be made, and these choices are usually among a limited number of alternatives. In the art of improvisation these choices may be limited by logic, aesthetics, unimaginitiveness or other criteria, and the freedom is
therefore incomplete. This is not to imply that this is in any way an unsatisfactory or an inadequate sort of freedom, on the contrary, the limitation of options (self-imposed) with an absolute freedom of decision within those options is a radical type of freedom which is at the heart of this music.

The fact that its roots in jazz and avant-garde music are clearly discernible have led some to criticize improvised music on grounds of unoriginality - just a chaotic mish-mash of former styles. While there can be no doubt of the importance of these influences I would argue that these are not a direct cause of the evolution of free jazz but only an influence towards it. The distinction is a subtle one. If often seems irresistible to regard the artistic mind as a sort of field in which operates feelings, desires, motivations to which it is subjected, and that artistic output is the simple resultant of the various forces converging upon it. Let us consider the following hypothetical model:-
This is a model which gives rise to psychological determinism. Now in this model there might be some distinction between influence and cause, but the distinction would be a shallow one. The cause of the act might be identified as the strongest of the forces acting upon one, while the other would be just influences. There would be no qualitative difference between the two - just a difference in strength.

The model I would propose is such that these forces never converge on one point and do not give rise to direct resultant action. Rather they are kept in abeyance by an overriding self-motivation and are allowed to filter through at a pace at which they can be absorbed and digested:

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-15-
The artist is aware of these influences but they do not cause him to do anything. Rather he causes himself to act in certain ways in the knowledge of the forces that act upon him. The creative motivation comes from within.

The identity of free jazz as a movement owes its existence to radical developments which began in the mid 50s when a handful of musicians recognised the need to react against the dominant tradition of bebop which was by then past its prime. The process of finding new, alternative means of expression was a gradual one. Around this time there was a proliferation of new personal jazz idioms from Miles Davis' modalism to John Coltrane's "sheets of sound" to Ornette Coleman's harmolodics. Liberated from various traditional harmonic, melodic and rhythmic constraints these musicians and others set about establishing alternative workable frameworks for themselves. The freedom from the routine frameworks of bebop was not a species of randomness. This would indicate that the freedom was a purely destructive impulse. Freedom from these well-worn limitations cannot be just plain uncausedness, any more than the seemingly aimless meanderings of electrons are really 'free'. The question is this: what qualification must be added to uncausedness to produce freedom in an acceptable definition which could apply here?
What I am concerned to argue is that improvised music as a genre is not completely 'free' any more than it is a victim of rigorous causal determinism. The range of alternatives in a given musical context may be in some sense determined (stylistically) but which one we choose among the range is not. Therefore it is up to the soloist or the improvising group to map out a working vocabulary.

Apart from minor variables, known as interpretation, the musical score is a complete art work ready to be 'realized'. Now the idea of finished product is an anathema to free music. While free improvisation has borrowed stylistic elements from the avant-garde - its liberated approach to rhythm, pitch and timbre - fundamentally it is quite different. It is more like a continuous 'work in progress' and far more unpredictable and volatile than its notated counterparts. The renaissance of improvisation in Europe and the U.S.A. has taken place on many levels from the professional, international scene of improvising musicians, to the proliferation of amateur music collectives in the U.K. which provide platforms for local musicians and open participatory events. Common to all the different social/economic levels is the underlying wish to restore creative process as a thing of greater value than consumable product (commercial recording or published score). In group improvisation there is an attempt to
restore the lost communality of spontaneous invention absent from notated music - to make music once more in the sense of a non-verbal social intercourse.

The new improvised music has emerged as a result of various influences that have converged on the contemporary music scene. We can identify these influences under three broad headings:

1. Jazz and other popular forms of black American music.
2. European and American avant-garde art music.
3. The growing awareness and involvement with other world musics.

While free improvisation in part represents a breaking down and fusion of the various genealogical strains which separate contemporary movements in music, for the sake of clarity I shall consider these three lines of development separately.

1. The quest for freedom appears as the very beginnings of jazz and reappears at every point of change and transition in the music's history. The earliest jazz musicians asserted their independence of the melody, form, rhythm and expression of the turn-of-the-century musics that surrounded them. In the late 20s Louis Armstrong forged the concept of the soloist which has remained
fundamental to all jazz ever since. In the 1930s the Count Basie Band revolutionized the jazz rhythm section. In the 40s, when the previous swing era was largely exhausted, the new music of Charlie Parker, Dizzy Gillespie and Bud Powell introduced yet more new freedoms to jazz.

Bebop emerged during the national despair of World War II, when jazz was only surviving as a social music in a vicious atmosphere of racial and economic exploitation. It is a technically complex music of desperation and emotional extremes requiring a co-ordination of muscle and intellect that pressed human agility and creativity to their outer limits. John Litweiler sums up the experience:

"Bop was an exhilarating adventure; in Gillespie's dizzying trumpet heights, in Powell's hallucinated piano excitement, a deadly fall to earth is ever possible. The vividness of Parker's alto saxophone lyricism made him bop's central figure, and his rhythm tumult is the tumult of complex, fleeting emotions. The brokenness of his phrasing, the swiftness of his passing emotions, from cruelty to tenderness, suggest a consciousness that was itself disrupted by the panic of alternating drug ingestion and withdrawal that, he said, was his life's continuity". (1)

Toward the end of the 40s, the unrest and nervous excitement of bebop were more and more replaced by the calm and smoothness of 'cool' jazz, a movement led by Miles Davis and John Lewis, and the earthier, 'funkier'
style of bop called 'hard' bop with groups under the leadership of drummers Max Roach and Art Blakey and the pianist Horace Silver.

Silver developed a style of playing from bebop with a fuller left hand often playing cluster-like chords in the lowest registers. With the emphasis on slow to medium blues he would play aggressively, on the beat, with a feeling and expression more reminiscent of older blues and boogie styles. It is to Silver that we owe the new meaning of the word 'funky'. In his compositions he strove to retain the basic format of bebop but give it new life and structural variety. Thus he might use two 12-bar blues phrases, followed by an eight bar bridge taken from song form, and then repeat the blues phrase to end, and so combine blues and song form in a 44-bar structure; or he might combine a 15-bar main theme with a 16-bar interlude, and so on, in an unprecedently liberated approach to schematic ordering.

Far more radical experiments in jazz form in the mid-50s were carried out by Charles Mingus. He wrote music without foundation in pulse ("Getting Together"), he used dense ensemble polyphony and texture ("Eulogy for Rudy Williams") and also experimented in lengthening chord changes over many measures, thus foreshadowing styles of modal jazz. "Pithecanthropus Erectus" contains only the
vestiges of song form in its ABAC structure of the theme. However, only A is composed; B is an improvised saxophone duo, and C is an open-ended collective improvisation over one chord with no fixed tempo. The pianist plays a chordal motif which signals the entry of the next strain. The theme statement is the first block in a pyramidal structure; the next block is the tenor sax solo, the piano solo is the pyramid's apex, and the descending side is the alto solo and the final theme statement. The improvisation builds to a frenzy towards the middle of the performance and the harmonic structure of the solos is quite static i.e. modal. In "Tijuana Moods" the shorter pieces are pyramid forms packed with different events and dense ensemble textures constantly in motion. Of the two longer cuts, "Ysabel's Table Dance" is quite loosely structured, with collect improvisations which alternate over harmony that is static (modal) and mobile (chord changes). The "Tijuana" suite, recorded in 1957, was followed by other compositions demonstrating a multiplicity of experimental ideas; gospel music imitations, riff-based blues, parodies of 20s and 30s styles ("Boogie Stop Shuffle", "My Jelly Roll Soul") and completely abstract 'pure sound' improvisations ("Passions of a Man"). Although often regarded as an outsider to the mainstream currents of jazz development, Charles Mingus's compositions led the way in a gradual breakdown of the clearly differentiated roles of soloist and ensemble.
background prevalent in Swing and Bebop; the lines that rubbed against and crossed each other wildly and freely recalls much more the older styles of New Orleans but without those strict harmonic conventions. The breakdown of traditional harmonic schemes, whether through the free atonality of Cecil Taylor, or through simply removing any harmonic basis to the music as in the early trio recordings of Ornette Coleman, was followed by a new rhythmic conception, characterized by absence of metre and symmetry. Far from rendering the music 'rhythmless', this move gave rise to more subtle nuance and group empathy, perhaps because of a previous common background in jazz rhythm. Particularly in free collective improvisations which relied heavily on the front line brass, a spirit of empathy is felt by the flexible and natural method of compatible respiration. They breathe and hence play as an organic unit with no recourse to the tensile synchrony of bebop. This ethic of total freedom, ecstatic communion and the spirit of black consciousness in the early 60s (2) (the continuing struggle for true racial equality in American society, anger, and the recognition of African ancestral roots) resulted in music of an emotional intensity which was quite unknown up to that time.

As a harbinger of free jazz, which he disliked and despised ("I used to play avant-garde bass when nobody else did. Now I play 4/4 because none of the other
bassists do", he said in 1974). Mingus nevertheless introduced advanced ideas to rhythm section accompaniment in 1956/57, with spontaneously changing tempos, dynamic levels and rhythmic patterns behind the soloists. He employed some highly original and innovatory pianists; among them Mal Waldron, whose uniquely sparse, blues-infused harmonic style came into its own in later trio recordings, and Don Pullen who became a central figure of free jazz piano in the mid-60s in his duo recordings and performances with percussionist Milford Graves.

But the innovations in piano style and technique in the free jazz movement owe much to the work of three pianists active in the late 40s to early 50s: Lennie Tristano, Thelonious Monk and Herbie Nichols.

Tristano focused on the more relaxed and romantic aspects of the bebop idiom, engendering a style which became known as 'cool' jazz. While bop's harmonies, for all their extensions and substitutions, are rooted in blues and the 32-bar song form, Tristano was creating more fragile, open-ended structures in his search for a looser, more lyrical idiom. In May 1949 he recorded the LP "Crosscurrents" which included two cuts: "Intuition" and "Digression", without theme, fixed harmonic structure, or fixed tempo. Each piece begins with Tristano's piano improvisation. Then alto sax player Lee Konitz joins in,
improvising on the piano phrases, followed by the rest of the sextet. Main and supporting roles in the collective improvisation slip effortlessly from instrument to instrument. Tristano and his group sometimes included such experiments in free form in their nightclub sets, though over subsequent years none of these musicians returned seriously to free playing. Lee Konitz felt that these recordings were of considerable influence in the free jazz movement, as he explained to Ira Gitler:-

"Lennie said 'Let the tape roll for three minutes', and we played this intuitive thing. Barry (Ulanov) was to signal one of us at the end of two minutes.... I don't know what it means, except that we did do that kind of playing, and it was a great feeling. We did it once at a concert in Boston, and it was very exciting. It was difficult for us to do it in a club, as it was even to just play tunes, so we didn't play together any more for quite a few years. We really goofed. We had a lot of things going...No one in all this talk (referring to the free jazz of the 60s) hardly ever mentions that. And you know damn well that these cats have heard that record somewhere along the line. It just doesn't come from no place." (3)

That these short but prophetic recordings spawned the whole free jazz movement of the 60s is a highly questionable assumption, but they were nevertheless indicative of the bold experimental spirit that would eventually liberate jazz from the closed structures of bebop.
Although esteemed as a 'musicians' musician' and a great teacher, Thelonius Monk worked in isolation for most of his creative life. His records were ignored and his personal style and technique ridiculed by the press, though later in his life his music proved accessible to a wider audience, long before intransigent critics recognised its extraordinary originality. Gary Giddins, puzzled by this long struggle for recognition, writes:-

"Monk isn't merely accessible; he's almost gregarious in his desire to entertain, as long as the listener is willing to be entertained on Monk's terms. By this I don't mean to suggest that Monk's music is lightheaded or lighthearted, though on occasion it can be both, but that everything he did was designed to heighten the listener's response to melody, rhythm and harmony. His tools were traditional and his craftsmanship impeccable. Monk relished swing and the blues and the freedom to do with them as he pleased (his motto was: 'Jazz is freedom'); he pursued his muse with dauntless concentration, impressive faith, and an almost childlike glee. This, after all, was the musician who more than anyone else transformed the minor second from a mistake to resource." (4)

In his quartet recordings from 1948 he created a rhythm section sound through his style as far removed from the quickened nerves and the smooth harmonic relationships of bop as was possible. There is a feeling of space both in the economy of his interaction and in the wide, sparse intervals he offered as harmonic colour and support. During other solos he would often withdraw completely, or just make very occasional interjections. Space is the crux of this new rhythmic style: pulse and line are
separated, and the unprecedented rests generate an intense feeling of suspense as each piano interjection is highlighted by the conspicuous absence of 'comfortable' harmonic relationships.

Like Monk's compositional output of the 40s, and Mingus's of the 50s, the music of Herbie Nichols had little impact on his contemporaries. In fact, Nichols had no noticeable influence on jazz at all, even though he is one of the greatest composer-pianists of the early 50s. In his youth he had been the house pianist at Monroes, where he played with Lester Young, Dizzy Gillespie and others in the late 30s Harlem jam sessions out of which bebop grew. He served in the army from 1941 to 1943, after which his story, as A.B. Spellman (5) recounts, grows steadily more pathetic, until his death in 1963 from leukaemia, at the age of 43. He made his living by playing with a succession of mediocre Dixieland and r and b bands, and almost never had the opportunity to play his 100 unique compositions for audiences. Thelonius Monk introduced him to Mary Lou Williams who recorded two of his tunes in 1952, earning him a modest reputation as an unusual composer. But apart from this he was ignored by the bebop culture - only freaks survived, anyway, was Nichols sad assessment. However, the wit and vigour of his music has not the least suggestion of his life's course of poverty and creative isolation. He led six recording sessions
between 1952 and 1957. In the first he improvises in a pastiche of different styles and the music is full of abrupt contrasts, disjunct phrases, substitute chord changes, and cliff-hanging rests. Most of his recordings are in medium to fast tempos for purposes of clarity and boldness.

Rhythmically Nichols plunders a variety of styles from stride and swing to bebop. Most of this themes are based on call-response patterns and he punctuates his own lines with isolated chords, clusters or runs. His 1956 recordings attracted a couple of promising reviews in the jazz press. Larry Gushee wrote in Jazz Review:-

"....certainly an original stylist, he plays as if conversing with himself. That is to say, he'll play a short phrase of the tune, interpose an angular, rather dissonant motive, combine this with an elusive mumbling in his left hand. Herbie likes to build his tunes around emotional situations that are attractively heartfelt and natural.....He has the advantage of richness of experience and varied musical contrast...."(6)

In these recordings he stretched pop song form almost to breaking point; the 32, 16 and 12-bar forms of conventional jazz had become useless to him. "The Gig" has a 67-bar chorus, suggesting a transition from certainty to the chaos of a modern jam session. "Query", like Ives' "The Unanswered Question", is a question in musical notes. A tense, emphatic call rises, and the
response is a mundane, half speed falling sequence. But when this unsatisfactory rise and fall begins a fourth time, a strong minor chord is interjected, followed by a long dumbfounded silence. Then a different query in the same shape receives a less evasive reply until at the end the initial query, now inverted, is followed by a cadence of satisfaction.

This, like many of his other compositions, have a programmatic content, and his art of portraiture is full of fantasy. In "House Party Starting" the quiet tonic triad at the opening "speaks of grave and silent doubts as to whether there is really going to be a party, whether there is going to be lots of fun. There is supposed to be a rising crescendo as more people enter the shindig to the accompanying noise of broken glassware and shuffling feet."(7)

"Hangover Triangle" is a nervous, panicky, intensely chromatic portrait of events observed from a park bench one summer night. "The site was really no more than an open triangle formed by converging streets. Everyone around me seemed determined to have a ball far into the night. Too many drank too deeply of the revelry, resulting in a lot of comic antics which, at least, inspired a very funny title." (8)
Nichols' whimsical titles disguise a seriousness and dedication to his art as composer and pianist. He drew inspiration from many sources: Bartok, Stravinsky, Villa-Lobos, Thelonius Monk and Jelly Roll Morton ("Jelly was an honest extrovert who used the freedom of jazz piano to tell the story of his love of life and the historic times in which he lived") (9). A prototype of the 1960s outcast musician, Nichols embodied classic and modernist jazz attitudes in a one-man tradition that bypassed bebop altogether.

2. Improvisation in art music was a much more radical departure from tradition. In their efforts to set up alternative performance frameworks amidst the complexity and sterility of serial compositional procedures in the early 50s, composers turned to improvisation, though not often in a thoroughgoing sense. It was found that the aural effects of complex notational methods could also be achieved simply and effectively through controlled use of improvisation. Naturally this raised thorny issues of exactly whose music was being played, as rigorous notational practise had reduced the role of the performer to little more than automaton. However, despite these more philosophical problems, elements of proportional and graphic notation; one or three-line staves for melody instruments, and rapid flurries of unspecified grace notes are typical of the Italian composers of that time; among
them Berio, Maderna and Nono. These indeterminate elements were not generally used in a structural way, but were rather an outgrowth of the tendency towards intricate detail and ornament. As a rule they were not interested in gesture with all its theatrical ramifications and emotional immediacy than in the 'purer' serial abstraction and precalculated precision. Far more radical experiments in sound exploration and performance structures were some of the contemporaneous developments in the U.S.A. John Cage, Morton Feldman, Christian Wolff and Earle Brown were all pioneers of new notational systems which put greater degrees of responsibility on the performer. Cage's use of random and chance procedures for making compositional decisions was a logical outcome of his studies with the Zen master Suzuki, who was instrumental in formation of Cage's philosophy of non-involvement (at that level of decision at least). Cage wanted "to let sounds be themselves rather than vehicles for man-made theories, or expression of human sentiments." (10). Cage's approach to indeterminacy, however, was concerned solely with pre-performance decisions, and not with improvisatory freedom. The form, once decided upon, would be just as binding for that performance as that of any conventionally notated work.

Christian Wolff, on the other hand, was evolving another type of indeterminacy in which the decisions were to be
made actually during the performance. In pieces such as Duo for Pianists II (1958). For Five to Ten People (1962), and In Between Pieces for Three Players (1963) he sets up specific conditions and systems of cueing, controlling the response of one player to another. This idea was taken up later by Stockhausen in Plus-Minus, Prozession and Kurzwellen (1968) before he renounced all composer control in the text-derived "intuitive" pieces.

Many of Morton Feldman's early pieces were written on graph paper in simple pitch x time schemes. By dividing an instrument's range into broad areas of high, middle and low, he was able to dispense with logical connections and justifications for the movement from one note to the next, and thus "project sounds into time, free from a compositional rhetoric" (11). In Earle Brown's notational systems, players gauge their entrances and relate to each other according to graphic indications that imply concurrent counterpoint and patterns of reciprocality. Brown also pioneered aleatoric and invertible scores, as well as non-specific graphic notation open to free interpretation.

In the early 60s Lukas Foss formed an ensemble in Los Angeles called "The Improvisational Chamber Ensemble" which attempted to offer a listening public a 'serious' counterpart to jazz improvisation, evolving very minimal,
functional notation systems through rehearsal and self-analysis. While these structural frameworks could more or less guarantee interesting musical results in Foss's terms, it was essentially an exercise in group composition rather than improvisation. He felt too entrenched in compositional method to get immersed in the unfamiliar territory of free improvisation. This attitude is made clear in his article "Composition v Improvisation" (12), where he describes spontaneous ideas as 'raw material, 'exposed' rather than 'composed'......a fertilizing influence on composition."

Greater acceptance of the validity of improvisation per se is found in the New Music Ensemble led by the composer Larry Austin at the University of California, Davis, in the early 60s. This group avoided such safety mechanisms as used by Lukas Foss and gave public performances with nothing more decided than a brief description of the length and spirit of the end result. The historical significance of this ensemble, and others to which it gave rise such as Nuova Consonanza and Prima Materia in Rome, lies in its criteria of accessibility to a discerning listening public and its unwillingness to achieve this through 'safe' pre-composed structures.

Another improvisation ensemble working in Rome in the mid-60s was "Musica Elettronica Viva". They had a more
experimental and less studied approach than the groups previously mentioned, due in part to the diversity of interests and backgrounds of its individual members. Frederic Rzewski, Richard Teitelbaum and Alvin Curran represented the academic composers-turned-improvisors, Franco Cataldi and Ivan Coaquette had little previous musical experience and were self-taught, and Steve Lacy was a well-established avant-garde jazz musician. Alvin Curran describes the experience as it was in 1968:

"....the music hopped, writhed, flew, floated, soared, crashed in a kind of dialectical aleatory which left everyone at the end physically exhausted. We were dangerous and we knew it." (13)

Whereas other collective improvisation groups of this period worked out their vocabulary through a process of exclusion and were often hidebound in their imitation through improvisation of the types of sounds that had come to be expected of avant-garde 'serious' music, Musica Elettronica Viva had an ethic of all-inclusiveness which they considered to be more important than accessibility of stylistic considerations. This inevitably led to a conflict of interests: to continue to explore the fruitful areas of mutual interest within such a diverse group of musicians, or whether to open the group up to other musicians, non-musicians or even audiences. This
principle of inclusiveness and breaking down the divisions of musicians, non-musicians and listeners was behind Curran's "Soup - A Recipe" (14) and Rzewski's "The Sound Pool" (bring your own sound and cast it in). A British counterpart to these experiments was the Continuous Music Ensemble which formed in 1965 in Wood Green. The group later changed its name to The People Band achieving a certain notoriety and also making a record under the patronage of Rolling Stones' drummer, Charlie Watts. (15)

As improvisation was a very new thing to a tradition which had previously relied exclusively on notation as its first means of expression, attention was focused on the micro-world of sound exploration, rather than extending the boundaries of style and structure, as in the case of free jazz. In 1965 Cornelius Cardew (who later co-founded an amorphous, anarchic ensemble, The Scratch Orchestra, which also experimented with free improvisation) joined a group of four musicians in London who gave weekly performances of what they called "AMM" music. Cardew writes of this experience:-

"AMM music is supposed to admit all sounds but the members of AMM have marked preferences. An openness to the totality of sounds implies a tendency away from traditional musical structures towards informality ..... Informal 'sound' has a power over our emotional responses that 'formal' music does not,
in that it acts subliminally rather than on a cultural level. This is a possible definition of the area in which AMM is experimental. We are searching for sounds and for the responses that attach to them, rather than thinking them up, preparing them and producing them. The search is conducted in the medium of sound and the musician himself is at the heart of the experiment." (16)

3. A profound influence on both jazz and art music has been the growing awareness and access to world music - the numerous and varied traditions of folk, court and ritual musics. The increased knowledge and contact with Oriental music, for example, and its effect on John Cage, Henry Cowell, Harry Partch and Lou Harrison, has made it a seminal influence in the development of twentieth century American music. Indeed, the contemporary art music of the West Coast, for all its technological sophistication has, in general terms, more in common with the East in its approach to restrictive tonality, non-developmental harmony, performance ritual, combined art forms and extended time spans. David Reck writes of this Western preoccupation with Eastern music:-

"It is a curious irony that the two power factors in the destruction of indigenous cultures and their musics - the European colonial empires and the modern age of advanced communications and technology - have also given us the hope for their preservation. It was through the hundreds
of thousands of European adventurers, administrators, and missionaries who fanned out across the globe (and wrote about what they saw and experienced) that we in the West first became aware of other cultures....the tape machine has made it possible to record and preserve and transport music over thousands of miles so that we may listen to much of our earth's music on the spot where we stand, in our own two shoes." (17)

It is not surprising that many improvisers have taken to playing a variety of non-Western instruments, or that their playing techniques have been influenced by ethnic musics to which improvisation is central. Don Cherry and Nana Vasconcelos both occupy a middle ground between jazz and a type of eclectic primitive music (of mainly African and Latin American derivation) which is reflected in an expressed concern with "naturalness" in musical ideas and a spirituality which is part of their approach to improvisation.

The Art Ensemble of Chicago, formed in 1965, were also a part of the same movement which draw ostentatiously on world music as an inspiration. They sported the slogan "Great Black Music: Ancient to the Future", and to underscore their ecumenical ambitions they surrounded
themselves with dozens of primitive instruments, occasionally dressing up and painting their faces in accord with African custom. That most of their material can be traced to various periods in the history of jazz is unquestionable, but even if this outweighs considerable borrowings from European atonality, Asian scales and African rhythms, the result is a modern American selectivism.

John Coltrane, in his later years, was drawn to world music as source of inspiration. Many have commented on the similarity of his soprano saxophone style with the nasal timbres of Middle Eastern and North African reed instruments and their music. In June 1965 Coltrane collaborated with Juno Lewis, a drummer, drum maker and singer from New Orleans, to record Kulu Se Mama. Lewis, intensely proud of his African ancestry, conceived the piece as a dedication to both his natural and his earth mother. Nat Hentoff describes the performance as "an absorbing, almost trance-like fusion of tenderness and strength, memory and pride. And fitting its ritual nature the singing and much of the playing by the horns have the cadences of a chant." (18) Other non-western influences become more prevalent in Coltrane's late music, in his approach to ensemble texture. He said of that period, "I always thought using two basses sound like an African water drum." (19). Both in the concern with stasis as
exemplified in much tribal music, and the sustained textural density and intensity typical of the free jazz movement, the listener, in a sense, guides himself on a selective path rather than being more or less compelled to hear things in a certain way by the emergent articulation of contrasts.

In a recent interview, Cecil Taylor acknowledged certain world music influences on his early development:

"An important element in my own development came when I heard the Balinese Orchestra in New York, for their conception of compositional space, and then Kabuki Theatre, for the idea of what they did with vocal timbre, and with movement." (20).

While both free jazz and art music retain firm links with a sequential understanding of time in terms of structure or performance duration, because of the density of musical events the listener is often required to be selective, and this process of self-guidance could be made cyclical, for example, so no matter where one enters the stream, one would eventually come upon the same set of conditions. Terry Riley considers his semi-improvised performances to be manifestations of different stages in a continuous metamorphosis of the same piece. In an interview with Robert Ashley (21) he explains how he works out patterns
which are then practised for a long time, becoming ingrained on his aural and muscular memory. These become gradually changed in his mind, often over the course of several years, into new and different patterns sometimes completely superseding the old ones. There is no urgency for change and development, but an intuitive creative process which is allowed to evolve at its own natural pace. Certain forms in Oriental and African music are purposely redundant so that one may come and go (player or listeners) as circumstances dictate without losing the essence, and often, because of performance length or nature, it may be impractical to stay for its entirety or to be alert to every moment. Thus a more ambivalent, less time-bound relationship between music and people could become the norm, particularly in free improvisation which is not concerned with finite structures.

The emphasis of this thesis will be on free jazz as this is, arguably, a more integrated and consistently developed field of improvised music than that which has arisen out of or in opposition to notated forms. The abstraction of thought and conformity to extra-musical patterns and systems implicit in notation have had a detrimental effect on the attitude of art music towards improvisation in many cases (22). While art music embodies certain ideals of 'correct' technique, 'good' tone, etc, jazz has not been so preoccupied with uniformity of sound production.
Indeed, a distinctively individual sound is often an important goal. Whereas the classically trained wind player will devote years of study and practise to eliminating inconsistencies of tone and to overcoming the idiosyncrasies of the instrument, a jazz player is more likely to make use of these quirks and accidental sounds as a richly expressive resource. Similarly, in Japanese shakuhachi music, in which the 12-note scale produced by controlled adjustment of finger positions over the five holes is not consistent with a standard chromatic scale, the player will explore the varying timbres and strengths of each note, using the instrument's timbral heterogeneity to the full. Thus the avant-garde and the free jazz groups of the 60s can often be seen to differ considerably; the former concentrating on sound exploration per se, and the other going a step beyond this to explore ensemble energy with the drive and extroversion of jazz but without its formal principles.

However, improvised music now has such an eclectic genealogy that maintaining such distinctions may well be irrelevant. Yet it is that diversity of background that has proved fruitful in the rapid growth of this music during the latter 70s. The pioneers of free jazz clearly understood that improvisation should be bold and confident, to which end is directed all the energy and passion or recordings such as Archie Shepp's "Fire Music"
(1962) and John Coltrane's "Ascension" (1965). It became clear that freedom meant a particular kind of alertness to group intercommunication and was not simply synonymous with license. But one of the principal difficulties of this music has been its existence in a rigidly defined and maintained performer/audience separation. It has frequently been criticized as a 'closed shop' to all but the initiated few, a musicians' music with nothing to offer a novice listener - precisely those conditions which Musica Elettronica Viva and The People Band sought to break down. The divisions of inside/outside and of comprehensibility/impenetrability are two aspects of an aesthetic misunderstanding, a metaphor of separation, about which neither logic nor psychology are in any agreement.

The problem is as much with the performance situation as with the music itself; that improvised music has usually been forced into a mode of presentation, with all its cultural expectations, which is unsuitable. To begin with, this problem was often side-stepped by exclusion of listening public. Musica Elettronica Viva and The Scratch Orchestra worked initially on this basis, and the later inclusion of audience created unforeseen problems. The 'closed' group situations, were able to play a kind of experimental domestic music, a "musica practica" in Barthes' sense of the word. Here the need for
'projection' is overcome by total participation within the system; a music that is:

"...very little auditory, being above all manual (and thus in a way much more sensual). It is a music which you and I can play, alone or among friends, with no other audience than its participants (that is, with all risk of theatre, all temptation of hysteria removed); a muscular music in which the part taken by the sense of hearing is one only of ratification, as though the body were hearing - and not 'the soul'." (23)

Another way out of the awkwardness of the formal concert situation has been to question, implicitly or explicitly, this performer/audience relationship. Audience participation on a fairly simple level has been an important element of soul and rock concerts (hand clapping, call-response patterns, etc), as it has always been in English folksong using verses and choruses. Don Cherry often makes greater demands on his audiences, asking them to "help him out" by clapping a rhythmic pattern or singing a melody against which he will spontaneously compose a counterpoint. One of the more explicit questioners of performer/audience roles has been Steve Beresford, who started out as an improviser of vignettes, using various instruments, toys, found objects and noise-makers of all descriptions. Using humour and pastiche he would make a commentary on what, perhaps, musical performance is about, often using contrasting tableaux or accumulated details to demonstrate the fact
that he had no particular technical/instrumental skills that he wished to show off.

Other British improvisers have been concerned with restructuring conventional forms of presentation by performing in different environments, exploring musical interactions with unusual or exotic locations, such as Trevor Wishart in "Beach Singularity" and "Forest Singularity". Paul Burwell creates a kind of dialogue with the natural sounds of the landscape chosen for a particular performance, and like the natural sounds, the man-made sounds are equally expendable i.e. if the sounds of human instruments and voices are dissipated by the sounds of wind and waves, what is left is still a valid artistic statement. Of the type of work Burwell writes:-

"A musician playing in a field or on a beach becomes just an element in a landscape. His role is defocused. But in a concert hall he is the centre of attention: all activity is subservient to him and his work. The concert hall is a closed unit, excluding all other sounds and activities except the music, which itself is usually tightly structured and closed, relating only to its own laws." (24)

The Aeolian instruments of Paul Burwell, Max Eastley and David Toop represent a similar breaking away from the normal environments and time spans associated with music. It is a curious irony that a society that accepts background music as an indispensable part of commerce
should still consider these alternative and informal modes of music presentation as controversial.

This type of environmental improvised music occupies an uneasy middle ground between the two segregated sound systems of our society: the symbolic communication of humans (speech, gesture, music, etc.) and the less tangible 'arbitrary' sounds of nature. In some cultures this division is less distinct. In New Guinea, for example, music is closely linked with natural sounds:

"....wind sounds are associated with the supernatural - the sounds of bullroarers are often attributed with spiritual properties, blowing through the mouth is an essential part of many magic spells, and so on. Similarly, flute blowing is used as a mediator between the human and spirit worlds in many parts of New Guinea." (25)

Certainly the art of the improviser has elements in common with the flow, spontaneity and randomness of natural sound systems (David Toop emphasised this connection in his writings on bisonics), but it has more than just this. In improvisation however 'free', the mind naturally functions as a duality: a recording instrument recalling acquired skills and musical vocabulary to complement the creative/spontaneous elements. Free jazz, therefore, would assume some aspects of the styles, ideas and techniques of jazz, and thus differ considerably from an improvisation by, say, Stockhausen's musicians. A degree
of maximum unpredictability might appear to offer the most 'freedom' to the player, but in real terms to make music using this principle as the axiomatic basis would be unsatisfactory and probably quite impossible since musical preferences will naturally assert themselves in some form.

Improvised music is an aural language, bypassing the filtering mechanisms of notation, and as such has more in common with other non-literate musical cultures of the world than it does with Western music. Its immediacy allows a greater degree of aural complexity and thus 'difficulty' for the listener more accustomed to the filtering and standardising effects of notation. Edward Sapir, the distinguished American linguist argued that a language will automatically determine, and to no mean extent, the thought that it seeks to express:-

"The fact of the matter is that the 'real world' is to a large extent built up on the language habits of the group. No two languages are ever sufficiently similar to be considered as representing the same social reality. The worlds in which different societies live are distinct worlds, not merely the same world with different labels attached...... We see and hear and otherwise experience very largely as we do because the language habits of our community predispose certain choices of interpretation." (26).

The point is here that determinate notation - the mnemonic device - being elevated to a position of primary importance, puts severe restrictions on diversity of expression as it is basically geared to certain forms and
time scales. By its very nature it eliminates the immediate, face-to-face communication of non-literate musical idioms. As with the written word, musical notation reduces the language to a rational objectivity and restrains its capacity for much higher rates of change; in this way pre- and post-notative musics can appear 'incomprehensible'. The subtle rhythmic nuance of Ghanaian drumming or Balinese gamelan, for example, defy accurate transcription into standard notation. Similarly the extreme density and speed of much free jazz performance belongs to quite a different language from that which can be written down. I think that it is by no coincidence that the language of new improvised music has gravitated towards certain un-notable qualities: complex rhythms, intricate and vibrant yet unattached to metre, and speed, not just in terms of notes per second, but speed of change in articulation coupled with the timbral variables in any one sound. This notion of speed in relation to keyboard playing will be examined in Chapter 5.

Because of the piano's versatility if can fulfil a variety of different roles, rhythmic, harmonic and melodic, but its position in jazz has always been a dichotomy. As jazz began with ragtime, and ragtime being a pianistic music, one could conjecture that jazz began with the piano. On the other hand, as the piano could not be incorporated
into the early marching bands of New Orleans, the early jazz that derived from street music rather than from ragtime (which was essentially a solo music of the bars, cabarets and 'houses') omitted the piano. Its potential in a band context remained unrealised until the fusion with ragtime which took place in the 20s, brought about largely by Jelly Roll Morton.

Though New Orleans, Kansas City and Chicago are regarded as the principle centres of early jazz (until the late 20s), Harlem of the 1920s was also a breeding ground for jazz piano, with musicians such as James P. Johnson, Willie "The Lion" Smith, Duke Ellington and Luckey Roberts. Theirs again was a solo music making full use of the instrument's tonal range and its melodic and polyrhythmic potential. Much later, in bebop, this richness and full sound was, to a large extent, subordinated to the ideals of group homogeneity and a new style of playing emerged (instigated mainly by Bud Powell) in which sharply etched, horn-like lines in the right hand are set against sparser chordal/rhythmic interjections in the left hand. The hands separate out; the right hand moves closer to the front line instruments imitating their tone, range and phrasing, while the left hand forms an integral part of the rhythm section. Joachim Berendt writes:-

- 47 -
"The more the pianist adopts the phrasing of the horns, the more he relinquishes the true potential of his instrument - up to a point which can represent 'pianistic suicide' for anyone familiar with pianistic virtuosity in European music." (27)

Though Powell is too great a figure to be capable of the 'pianistic suicide' of which Berendt speaks, it did exist within the piano style he represents. As we move towards free jazz piano through such figures as Tristano, Nichols and Monk, a much more eclectic approach emerges drawing on earlier, more 'pianistic' styles of blues, boogie and stride piano as well as the bebop sense of highly articulated dynamic line. From then on we are into a process of discovery or rediscovery of the piano's potential - its lyrical and percussive timbral possibilities and its capacity for harmonic and rhythmic complexity.

I shall be looking at this music from a formal and technical angle; how pianists have opened up the improvisatory possibilities of the instrument since the late 50s, and how the piano has become re-integrated to occupy a central place of importance in the new music. For a working definition of technique I turn to Matthay:
"Technique means the power of expressing oneself musically..... Technique is rather a matter of the Mind than of the fingers.... To acquire technique therefore implies that you must induce and enforce a particular mental-muscular association and co-operation for every possible musical effect." (28)

Using this interpretation of technique, i.e. as an aesthetic as well as a physiological phenomenon, this thesis will examine the changing role of the piano as it relates to recent improvised music. In chapters 2-4 attention will be focused on different manifestations of form, starting with the inter-ensemble relationship of piano to other instruments, and new concepts in overall form - how these depart from the accepted structures of bop. Chapter 3 will take a closer look at the smaller components of modular improvisatory structure - the fertile motifs, composed beforehand or generated spontaneously. Chapter 4 takes a step closer still, as it were, to look at individual piano tones, their unique qualities of sustain and resonance and their changing patterns of distribution within the instrument's range. This chapter will look at 'space'; firstly in the sense of the piano's 'singing' tone and the pianists who have exploited this particular characteristic, and secondly, the physical space involved in the act of playing, the sense of movement or kinaesthesia. Chapter 5 will concentrate on the dynamic and percussive aspects of free jazz piano. Chapter 6 turns from the physiological to the
psychological processes of improvisation; how the opposing forces of habit and originality assert themselves in the improviser's art. Chapter 7 will be a brief conclusion.
NOTES FOR CHAPTER 1


(2) see writings of Frank Kofsky, LeRoi Jones and Mingus's autobiography "Beneath the Underdog"

(3) Ira Gitler: "Jazz Masters of the 40s" p. 235

(4) Gary Giddins: "Rhythm-a-ning" p. 215

(5) A.B. Spellman: "Four lives in the Bebop Business" p. 153-177

(6) op. cit. p. 169

(7) Herbie Nichols Trio (Blue Note 1956) Composer's sleeve notes.

(8) op. cit.

(9) op. cit.

(10) John Cage: "A Year from Monday"


(13) Musics 23 p. 14

(14) op. cit.

(15) In Steve Beresford's articles about the People Band in Musics 16 and 17 is included a letter from Alvin Curran (Jan. 1978) describing his encounter with them at a Musica Elettronica Viva concert at the Purcell Room in 1969:

"...inviting themselves past the stage doorman, the PB installed themselves quietly on stage during the intermission. There was no problem, as we were expecting the band to show up to help us out with "The Sound Pool" in which the audience would be invited to participate. And they did. Within 15 minutes the whole hall was a divine madhouse of singing, playing and dancing. The establishment got terrified and called the police and fire departments to quell us." (Musics 16 p. 16).

(16) Cornelius Cardew: "Towards an Ethic of Improvisation"

p. 18

(17) David Reck: "Music of the Whole Earth" p. 42

- 52 -
(18) Nat Hentoff: Sleeve Notes to "Kulu Se Mama"  
John Coltrane.


(21) From Robert Ashley's video series: "Music with Roots in The Aether".

(22) In Misha Mengelberg's essay, "Werdegang der Improvisation" he quotes "the Dutch composer Louis A. asked Iannis X. what he thought of improvisation. X. replied 'Improvisation is banal'." (1979 trans. Glyn Perrin)

(23) Roland Barthes: "Image/Music/Text" p. 149


(28) Tobias Matthay: "The Visible and Invisible in Pianoforte Technique." p. 3.
The most significant change in attitude in contemporary music which has revitalised the art of improvisation is the wider interpretation of 'form'; the way in which we formulate and structure aesthetic experience. The ideas in sonata form of resolving conflict (inherent tensions directed towards a potential resolution) and the setting up of architectural symmetry and proportion (even though direct auditory cognition of such formal intricacies is doubtful) continue in one way or another in much contemporary written music. However, in more experimental developments we find a discontinuity with these deeply embedded ideals of form and proportion as music has turned in upon itself to focus on the creative process rather than on end result. There now seems to be less emphasis on contained, finished objects that reflect established cultural models, and the formalised nicety of defined beginnings and endings. There is a tendency away from the desire to frame and package, towards a less constraining mode of presentation. As E.Kris has written:-

"There is a trend in modern art to consider the work of art as a documentation of the creative process itself; a shift in the traditional or previously existing relation between the artist and his public". (1).
Jackson Pollock realised that means and end were one and the same; that the physical involvement with paint and canvas dictated the painting's form:-

"When I am in my painting, I'm not aware of what I am doing. It is only after a sort of 'get acquainted' period that I see what I have been about. I have no fears about making changes, destroying the image, etc., because the painting has a life of its own. I try to let it come through. It is only when I lose contact with the painting that the result is a mess. Otherwise there is pure harmony, and easy give and take, and the painting comes out well." (2)

Just as the abstract expressionist's canvas documents his gestures, the improvising pianist's keyboard might be seen as a calligraph displaying and recording a particular state of mind. The contemporary acceptance of change as a norm has diverted attention from the permanent art object to the transient creative act.

John Cage's view of composition is that of an empty frame containing transient possibilities. He writes:-

"....an activity integrating the opposites, the rational and the irrational, bringing about, ideally, a freely moving continuity within a strict division of parts, the sounds, their combination and succession being either logically related or arbitrarily chosen."

(3)

Form by this definition is virtually synonymous with duration. The aesthetic experience of the artist can reflect the sense of time passing and of 'natural'
rhythms; it may exist before and after the particular occasion when it is sampled. With such flexible time referents the frame can become irrelevant and dispensable. Improvised music is concerned a priori with transience and spontaneous ideas, a fact that its practitioners have been at pains to stress. But also, conceptual frameworks become established, patterns of relationship crystallised, so that improvisers can 'speak' to each other. This process of refinement of improvisatory language can be seen as constraining or liberating, but it is more or less inevitable. I shall look first at some of the ways in which form has manifested itself in this most informal or anti-formal music, with particular reference to the changing pattern of relationships and associations of the piano in this context.

The rise of free music is a fairly recent phenomenon. One may attribute it to various sociological, philosophical and political causes, but observed from a musicological standpoint it is due, at least in part, to the disintegration of a musical language, or rather the 'rules' governing that language. In jazz there was a breakdown of harmony, the set patterns of changes, formulaic melodic line, and later, tonality and metre were also cast aside in the search for a more spontaneous style of expression. The spirit of black consciousness in the 60s found a paradigm in the liberation from the formalised
structure in jazz, and while some of its innovators, such as Archie Shepp, were in tune with social events, others, such as John Coltrane and Sun Ra, had a more cosmological view, though in both instances freedom from a 'repressive' musical form was an underlying ideal. Herbert Read, writing on form in visual art, argues that this freedom is a positive inspiration rather than, as commonly assumed, a loss of essential control. He asks:-

"But can we assume that chaos itself, the original formlessness and limitlessness of being, is without positive significance of any kind? We have seen that the unknown is the source of terror and Angst - in other words, that it acts upon human sensibility in a most powerful though incoherent manner. Why do we exclude the possibility that chaos was from the beginning a source of emotions of an aesthetic kind? In other words, must we logically associate art with an emergent consciousness of form?" (4)

Clearly Read believes that creativity emerges from chaos and that order is something superimposed later after reflection. In improvised music there is no predetermined structure or material, ideas evolve unpredictably from moment to moment. The 'form' may be rationalised in retrospect, perhaps from a recording, though the overall shape of the improvisation would probably not be an important concern at the time. The improvisation creates its own autonomous material through the friction between individuals and environment, in this way defining a framework through the temporal manipulation of that material. Distinct areas may recur, consciously or
unconsciously, and ideas may be restated if only coincidentally as part of an individual vocabulary which has its own inherent structure. But it is not merely a matter of adding together self-contained vocabularies. The coherence of the group improvisation comes about through mental cross-fertilisation, the extent of mutual interference between players in the course of which hidden axioms, techniques, implied old codes may suddenly stand revealed and are subsequently dropped. So the form arises not 'accidentally' but from specific player relationships which can range from being 'friendly' to confrontational. The adding together of known and unknown quantities has been a 'creativity formula' in many fields. As Koestler writes of the nature of scientific discovery:

"Out of creative anarchy emerges the new synthesis." (5).

The beauty and appeal of free jazz in the early 60s lay not so much in the absence of 'rules' and the stringent technical requirements that they necessitated (in fact many of the musicians who turned to free jazz were highly proficient in bebop), but in the fact that the music was immediately opened up to exploration of sound and an uninhibited expression through the use of sounds which were previously considered as 'noise'. These were now valid artistic criteria which prompted LeRoi Jones to boldly, and rather misleadingly claim:-
"The Black musicians who know anything about the European tempered scale no longer want it, if only just to be contemporary." (6)

Jones uses the word 'primitive' in the sense of 'first' or 'new' to describe the music of Duke Ellington (his "jungle style") and of Albert Ayler who said that he no longer wanted notes but the total articulation of sound (7). He cites other examples of free jazz turning towards African roots, rather as Picasso and Jackson Pollock turned to primitive art as their main inspiration. But as for dispensing with the influence of Europe, the reverse is often true. Musicians working in the field of free jazz often espouse the sounds and compositional techniques of the European avant-garde, and see nothing wrong with plundering these resources as well as the ancestral past. Jones' statement also throws an unfavourable light on the piano viz. the keyboard is a graphic representation of the equal tempered scale, and short of preparing or retuning the instrument it cannot help but remain so. The piano was, in many instances, left behind or left out of the early stages of this evolution, developing later along its own course which stems from a tradition of solo music, from ragtime and Art Tatum. Because of its fixed temperament it was unsuitable to many aspects of the new aesthetic. Ornette Coleman, one of the prime movers in the free jazz revolution, found the timbre and tuning
restrictive and incompatible with the more expressive free style that he was developing with its flexible, non-tempered tuning. He therefore ceased to use pianos in his ensembles from 1959 on. Other popular new techniques also could not be assimilated by the piano: the bending and cracking of notes, different types of attack and decay, multiphonics, etc. The predominance of the 'horns' in this music eventually produced a backlash of experimentation in keyboard playing, with pianists turning first to earlier styles of jazz for ideas.

Clyde Hart (1910-45) was among the first to directly influence the new music. While a member of Lionel Hampton's small group in the late 30s he would improvise on the chord sequence rather than on the melody, applying subtle variations to the basically simple harmonic patterns in what was then a uniquely individual style. Instead of using the left hand to maintain a steady rhythm, this function was taken over by the bass. The harmonies were played in 2-hand block chords in irregular rhythms. In a solo, Hart's left hand was free to imply the chord changes and to punctuate the improvising right hand, so broadening the range of harmonic deviations from the structure of a given composition.

Thelonius Monk, whose style was indebted to Hart, began to use extra chordal interjections for gaps in the melodic
line, insuring a degree of continuity in the improvisations of the front line instruments. By doing so, Monk moved the piano closer to the front line, while at the same time introducing clashing discordant elements as a type of deliberate opposition. In 'Misterioso', he transforms a simple, straightforward 12-bar blues by a recurring low ninth interval in the bass and the repeated use of a flat 3rd/major 7th interval in the tonic bars. Pulse and line are separated in 'Evidence', where the isolated, delayed, abstracted tones of the theme are suspended over the rhythm section's medium pace.

The changing inter-ensemble relationship of piano to other instruments was not confined to free jazz. The trio that Bill Evans founded in 1959 with Scott LaFaro and Paul Motian was concerned with maximum freedom of bass and drums, albeit within a fairly conservative style. It was Evans' aim that they should all be equal voices, not a solo piano with rhythm section backing:

"I'm hoping that the trio will grow in the direction of simultaneous improvisations. If the bass player, for example hears an idea that he wants to answer, why should be just keep playing a 4/4 background?" (8)

This was taken a step further by the Paul Bley trio (9) in the early 60s where bassist and drummer play out of tempo over long time spans, providing a textural rather than a rhythmic support, and sustaining a mood of quite austerity.
to complement Bley's piano style. For most of the time the three are metrically independent.

In free jazz the piano occupied a rather uneasy position because of its tempered scale and timbral limitations. Its reintegration was brought about largely by Cecil Taylor, who, from the outset, resisted the obvious temptation to employ 'extended techniques', playing inside the piano, etc. Instead he concentrated on developing a new approach to form, which he defines as 'constructivist' and a highly original technique of extreme speed and facility. He explains:-

"The emphasis in each piece is on building a whole, totally integrated structure. In doing this we try to carry on - in ensemble as well as in solo sections - the mood of a jazz soloist. I mean that principle of kinetic improvisation which keeps a jazz solo building. What makes jazz unique is the compression of that energy into a short period of time, and that, in turn, is a reflection of what the machine has done to our lives in the metropolitan areas in America." (10)

The critic Zita Carno thought that Taylor was a bad, overly busy accompanist (11). But this was missing the point of his concept of group homogeneity. Solo and accompanimental roles now overlap into each other's territory. Even in his early recordings of 1956, Taylor shows himself to be always at the centre, never 'comping' in the background. His intention was to transfer the soloistic intensity to the ensemble en bloc to initiate a
more flexible and complex web of ensemble
interrelationships revolving around the piano. In
founding his style on percussive energy rather than on the
instrument's resonant, 'singing' qualities, the harmonic
and timbral functions are changed, bringing the piano
sound in closer empathy with the drums, while an unusually
full left hand technique overlaps with, and to some
extent, undermines the traditional role of the bass. It
is interesting to note that in the trio recordings of
1960-61 he does not use a bass player at all. The use of
rapid runs partly overcomes the piano's natural decay
characteristics, creating an illusion of continuous sweeps
of sound similar to the saxophones. Thus the piano
pervades the ensemble at many different levels and this
ambivalent relationship with the other instruments led the
way to a developing of sophisticated musical structures
which deviate sharply with standard forms.

Taylor's music is not as 'free' as one might at first
think. It is full of formalistic detail and his pianistic
style derives from a certain compositional attitude of
mind (in which notation plays little or no part) combined
with an extraordinary muscular facility in which physical
energy predominates. A tension is created by the
fluctuation between these two poles - the compositional
structuring and the 'automatic' free playing where the
actual notes do not matter - and yet each is inextricably
linked with the other so that transition from 'theme' to improvisation is virtually indiscernible.

The stylistic conventions of the 1950s demanded a certain structural conformity. Beginnings and endings were generally fixed - the theme would open and close and the central section would comprise the improvisation. In the case of bebop the harmonic cycle (most often 12 or 32 bars) would continue, if only by implication, throughout the improvisation before the restatement of the tune. Of course there were deviations to this practise; Bud Powell, for example, would sometimes substantially vary a recapitulation and add on extended out-of-tempo codas. Miles Davis in his early modal style (c.1960) dispensed with themes and melodic motives entirely but generally retained a semblance of cyclic harmony.

However, from the start Taylor makes a break with this conventional cyclic format, preferring to explore more open-ended structures where predetermined material may come just at the beginning, just at the end, or at some interim stage in the improvisation. Without the cyclic groundplan, pieces tend towards linearity and pieces often incorporate several quite different types of material. Any actual thematic recurrences are quite obscure because of their original length and complexity, or because of subsequent variation.
In "Song", for example, the intricate theme spans some sixty bars (0.00-1.25) in several non-repeating sections of irregular length. Here is the first:-

Fig 1

The eventual transition from theme to improvisation is heavily masked as each part of the line, despite distinctive melodic/harmonic shapes and correspondances, sounds quite improvisatory. In its linear continuity it can establish only beginnings which lead forwards into unknown areas, never back. Thus in keeping with this idea, the piece ends not with a recapitulation but a brief mosaic of condensed melodic gestures taken, out of sequence, from the theme.
Though the harmony stabilises towards the end of this theme, "Song" is unusually melodic in Taylor's output and reflects, perhaps, an early interest in the music of Lennie Tristano (12) whose detached lines of little or no tonal reference may have provided the conceptual model for this piece. Taylor's harmonic support of the sax line is at first minimal nor is he 'accompanying' in any sense. Instead he weaves elaborate counterpoints to it, at times almost swamping it with his 'commentary'. One feels as with Ornette Coleman's music, that both sax and piano (or sax and bass in the case of the Coleman trio) are working in terms of pure melody and that the resulting harmonic alignments are coincidental.

"Luyah", recorded in 1958, is actually a 12-bar blues but here again the opening theme does not recur. It is a simple declamatory statement preceding the quartet improvisation. This concept of the "anacrusis", to use Taylor's own term, is fundamental to his later formal structures:

![Figure 2](image)
While few would dispute Taylor's originality, his grounding in blues remains questionable. "Luyah" takes an A minor Aeolian scale as the starting point but in spite of statements on the "essential blues content" of this music this remains implicit rather than explicit. No doubt the obscurity of this blues element is partly the result of his initial interest in European music and a conservatory training which preceded his serious involvement with jazz, and while ostentatiously pushing his European background aside (a changeover more emphatically expressed in his words than in his music) it was really more a process of integration. (13)

After the solo piano anacrusis, Taylor does not 'comp' behind Earl Griffith but rather carried on a constant dialogue with the vibraphone with both chords and lines. Indeed he deliberately jeopardises the functional identity of the chords by their density, thereby relegating the 12-
bar pattern to a metric cycle only. In the first three choruses of the piano solo (2.50-3.25) the harmonic changes occur in their customary place but their relation to blues chords is tenuous:

Fig 3
As the solo develops, however, so does the conflict of interests become apparent. Taylor's harmonic references become increasingly abstruse as compared with the tonally 'correct' bass line, and at the same time the rhythm becomes looser, transforming the syncopated feel to non-metrical bursts of notes which depart radically from Dennis Charles' persistent and metronomical hi-hat. These intra-ensemble conflicts of tonality and metric pulse v free rhythm lend a certain frictional energy to these early recordings, but this stylistic incompatibility ultimately proved to be a dead end. In the early 60s, with Sunny Murray as the new replacement drummer, Taylor's music largely dispensed with metric pulse in favour of urgent, dynamic chains of impulses without metre; continuous rises and falls in energy. Curiously enough, by getting away from the steady beat, the music took on a more pronounced jazz character as this new type of rhythmic drive created a forward propulsion missing previously. This intensity became the mainstay of both solo and ensemble playing. The latter has often been criticised since for being overly busy and lacking in discipline, but the point is, however, that Taylor's supportive role is in providing not a chordal backdrop but an up-front rhythmic energy to "feed" to the soloist. He writes: "Rhythm is life: the space of time danced thru."
"Form is possibility" - Taylor's music is highly constructionistic; an attitude that one might assume would be anti-energetic in its effect, though in point of fact his main concern has always been to create structures that control and govern that energy, like floodgates. In abandoning the constriction of metre, there was more freedom to develop this idiosyncratic concept of form. The music of this period often presents a jagged, fragmentary surface behind which lies the formalistic cohesion - a recondite web of interrelations for the musician to kick off from rather than something outwardly demonstrable. Each of the fragments or "units" has a special tonal or rhythmic quality and these may combine, separate, disintegrate and reappear through simple statement, superimposition or improvisatory elaboration.

This is the approach consolidated in two important recordings of 1966: "Unit Structures" and "Conquistador!". On the former the obscurity of the musical form carried over to some elusive and poetic sleeve notes which give some metaphorical hints as to the formal breakdown of his music. There are three contrasting strata: anacrusis, plain and area. This tripartite division proves to be highly flexible and can be applied with integrity to any time scale as the alternating blocks of "plain" and "area" constitute the main fabric of the piece.
The first section "anacrusis", always comes at the beginning and is a word borrowed from classical prosody meaning 'up-beat': introductory syllables to the normal rhythmic flow of the poetic line. In Taylor's music, then, the anacrusis does not set forth main compositional material, but sets the general tone of what is about to come, "an open field of question, how large it ought or ought not to be". The section called "plain" is the main exposition of pre-determined material. It is a flexible assemblage of small blocks and motivic fragments. Transitions from one to another often take on a canonic form as Taylor triggers the change with a piano phrase which one or more of the players will then take up and develop. New melodic and rhythmic possibilities may arise from given patterns and there is little linear continuity at this point. This happens in the third type of section, "area", "where intuition and given material mix group interaction....the paths of harmonic and melodic light, give architecture sound structures acts creating flight". The "area" is really an expanded solo, comprising usually of one instrument plus piano, bass and drums, but where all four instruments are on an equal footing. As seen in Taylor's earlier music with its seamless transitions between composed and improvised sections, the disposition of these three strata does not create boundaries and fixed forms, but organic directional flexibility.
These architectonic principles are best understood by examining the music itself. "Conquistador!" (1968) evolves from a diversity of "structural units", short self-contained blocks of material which may be stacked in various ways. They are often repeated once or twice in succession, and their formation and gradual dissociation present an overall quality of dynamic energy combined with a craggy discontinuity. But despite this, "Conquistador!" has an almost classical conception - a conflict of two different tonal areas. The tritone conflict (A-Eb) is borne out most noticeably in the "plain" sections, though it also extends into the improvisations which are often strongly modal. The two tonal centres are only resolved insofar as they are allowed to become ambiguous or spill over into the free atonality of the type exemplified in the earlier recording from these sessions, "Unit Structures/As of Now/Section". Here is the formal breakdown of the piece. Significant points of change are indicated in minutes and seconds.

Anacrusis

0.00 This is a piano solo in which the fast and jagged succession of arpeggiated runs announce the two tonal areas implicit in later material:
Fig 4

\[ A^7 \rightarrow E^7 \]

Very last and jagged
Saxophone and trumpet announce the first unit reflecting the contour and phrasing of the anacrusis. Four statements of the unit are separated by rising cluster/runs from the piano:

Fig 5

While this is based loosely on the A tonality, the next unit, which follows immediately, shifts to the Eb centre. The precise nature of these two tonal centres is flexible and at times vague (probably deliberately so). It is the sense of oscillation between the two that provides the structural foundation of the piece.

Fig 6
Taylor now answers these two units with another pair, again separating each statement by short cluster/runs even though the horns do not play these. Each unit is repeated, continuing the rather foursquare schema.

Fig 7

Fig 8

Taylor initiates a heterophonic passage between saxophone and trumpet in a fresh tonality ('white note' mode). These overlapping, initiative lines are probably improvised, underscored with an ostinato pattern on the piano (slight variations with repetition).
Area 1

1.14 With an abrupt switch to a pattern in the other tonality

Fig 9

Taylor signals the beginning of this section without in any way disturbing the ensemble flow at this point. The transition is scarcely noticeable. Now follow the much larger units which, in traditional jazz terminology, would be named 'solos'. These are really collective improvisations involving piano, bass and drums and one wind player, but Taylor remains the underlying force. The pianist's role is "as catalyst, feeding material to the soloist in all registers, encompassing single
notes, diads, chord clusters, activated silence." (Taylor).

In this section Taylor continues to alternate between two tonal centres in the context of freer and more extended phrases, eventually favouring the E♭ centre with the emergence of an insistent pedal point. Meanwhile Lyons constructs an expansive solo, at first modal, based around the alternating chords of the anacrusis. Later the formality is much freer as the solo and supporting ensemble builds to a climax.

5.08 Here there is an abrupt change of pace and timbral balance. Bill Dixon is the soloist in this slow, contemplative section. The drums, which have been virtually relentless up to this point, stop almost entirely, and the basses become more prominent as a result. It is now evident that the basses have quite different ensemble roles, one related to the drums - part of the rhythm section (low register pizzicato) and the other ostensibly related to sax and trumpet (high register arco). Together they are a crucial link in the network of ensemble relationships as they encompass two, sometimes conflicting, directions of rhythmic energy and colouristic line.
7.20 The new group of structural units begins with a rhythmic figuration from the piano, firmly based in E♭ minor.

After four solo repetitions this becomes the basis for a new theme played by saxophone and trumpet in unison. The tempo of line and chords are slightly different:
From what has really been just a comping pattern, Taylor now moves to the fore to play a sequence of units which all use a call-and-response pattern between right and left hands. This technique of internal dialogue is central to his solo work, and here points towards the solo which is about to come in the next "area" section. The interaction with the other musicians is "phased out" - the left hand octaves are simply doubled by sax and trumpet:

Fig 12

7:53"

- 81 -
8.35 The final unit of this group sounds like the start of an improvisation, but from its subsequent treatment and variation it is clear that it has some thematic significance.
Area 2

8.54 The next improvised section is taken up with a piano solo (with the bases and drums) beginning fragmentarily - a natural continuation of the preceding disjunctive kind of movement. Taylor builds a self-enclosed dialogue of short improvised units, tersely stated, restated and transformed by interaction with other units. With this restraint the tension accumulates until it bursts into rapid runs and clusters using the keyboard's extreme registers. The tonality of the solo is free, though the sense of two opposing centres is retained insofar as Taylor alternates between free atonality, and concentrating on white notes.

Plain 3

13.17 This begins in exactly the same way as Plain 2 (Figs. 10 and 11).

A bass register cluster repeated 12 times serves as a transition to a duet for the basses, one arco and the other pizz. The percussion enters while the piano interjects jagged patterns and runs in the E♭-based modality.
Taylor reintroduces an earlier pattern (Fig 9) and the ensemble seems to move toward another free improvisation. However, Lyons enters amidst the turbulence with a quiet, sustained line:--

Fig 16

Dixon weaves a similar counter-line around it synchronising for a repeated F/C to Eb/Bb cadence point.

There now follows a short improvisation for the basses (unaccompanied).

Finally Taylor harks back to the 2nd unit of Plain 1 (Fig 6) playing it slowly and deliberately in ninths:--

Fig 17

It is played three times, the third time Jimmy Lyons joins in a tritone below the upper line. The five notes of this unit are taken up by sax and trumpet while Taylor
elaborates and paraphrases it. As though finally to press home the underlying tonal structure of the piece, Lyons and Dixon interpret the unit (Fig 17) freely, one in each modality (Lyons starting on B, Dixon on F). As this fragment disintegrates we are left with just the 'essential' A/E♭ tritone, sustained as the piano basses and drums come to rest.

Beneath this music's emotional impact, then, is an intricate network of formal relations. Taylor has evolved a workable system that combines spontaneity with constructionism, whereas much improvised music is founded upon a more unconscious, informal system where the "rules" operate on many different levels. In the absence of a specific modus operandi the morphological development of the music must rely more on the ensemble sensitivity of the individual improviser, the tacit "metarules" to modify the rules, "metametarules", and so on. D.R. Hofstadter, in discussing Artificial Intelligence, describes the hierarchy of systems required to simulate this flexibility, which is endemic also in the collective improvisation situation:-
Fig 18

Cecil Taylor: "Conquistador!" Outline plan

ANACRUSIS | PLAIN I | AREA I
---|---|---
Fig 4 | Fig 5 | A
A/Eb | Fig 6 | Eb
0.00" | 0.14" | 0.39" | 1.14" | 5.08" | 7.20"

PLAIN 2 | (Anacrusis 2) | AREA 2
---|---|---
Fig 10 | Fig 11 | sax + trumpet
7.20" | 7.53" | initiating piano LH

PLAIN 3 | AREA 3
---|---
Fig 10 | Fig 11 | Area 3
13.17" | 13.39" | 13.44" | 15.02" | 15.35" | 16.34" | 17.17" | 18.00"
"The reason that so many rules on so many different levels must exist is that in life, a creature is faced with millions of situations of completely different types. In some situations there are stereotyped responses which require 'just plain' rules. Some are a mixture of stereotyped situations - thus they require rules for deciding which of the 'just plain' rules to apply. Some situations cannot be classified - thus there must exist rules for inventing new rules..."

(14)

Alexander von Schlippenbach has been considered to be stylistically the closest to Cecil Taylor of the European pianists. But the resemblance is only superficial. Taylor's music emanates from one morphological conception, one system of rules which here dictate a peculiar state of nervous attention (especially as Units are learned and played by ear and can be cued in various sequences and situations) to prevent the intricate assemblage of units from falling apart. Whereas Taylor has found a particular energy and ensemble cohesion through wrestling with formidably complex and flexible structures, Schlippenbach's ensemble music has no comparable formal basis, but, in the tradition of free improvisation, dictates its own form. The other significant difference between the two pianists is the manner in which they themselves cohere with the rest of the respective ensembles. Schlippenbach's playing does not have the dance-like agility nor the playful antagonism of Taylor; it is altogether heavier and more massive, carrying less
percussive but more harmonic/timbral implication. In ensembles he often plays the role of a "binding ingredient", unobtrusively stabilising the diverse activities of the other musicians and remaining in the background, rather than being the "catalyst" like Cecil Taylor.

In Part 1 of "The Hidden Peak" the piano enters, discreetly adding low tremelando-type sonorities to the already existing framework set up by sax and bass. The piano then abruptly initiates a new direction (at 4.15) by means of a repeated figure of falling clusters, which is at first initiated and then developed by the other musicians. But the piano, having surfaced just once at this crucial point, returns almost immediately to its accompanimental place.

Part 2 begins with a more decisive statement from the piano, a series of disjointed fragments all within the middle/low range of the keyboard, and whose rhythmic and tonal characteristics recall those of Thelonius Monk's composition, "Evidence":-

![Fig. 19](image-url)
This passage seems to have some thematic significance as these chords or chord-types occur in several places. With the predominance of drifting, rootless 7th and 9th chords the passage actually appears to be accompanimental rather than leading, and continues unchanged after Evan Parker's entry. As a first statement it is "low-profile", very different from a typical Taylor anacrusis. As the ensemble intensity increases during the ensuing improvisation the rate of tonal and harmonic change in Schlippenbach's own playing actually decreases. The moment-to-moment points of contrast seem to flatten out as though a much slower sustained movement is already implied in the frenetic speed. This approach to the piano is extended to the ensemble music which has at its foundation certain "areas" - rhythmic, timbral, harmonic - selective vocabularies which transform slowly underneath a busier surface movement, particular "sets" which seem appropriate to draw from at a particular time. The interaction between players is of a totally different kind than with the Cecil Taylor Unit. Schlippenbach is not a 'leader' in
the same sense; he is on exactly equal terms as the other instrumentalists and so questions of functional identity or the extension of traditional roles within the ensemble do not arise. Without the elaborate prestructuring and the rapid call and response techniques, musical material is allowed to generate in a more relaxed manner. As there are no vital or inevitable cues to watch for, the musicians are more at liberty to explore interrelationships and sounds per se, individually or collectively, and to pick up on chance meetings, synchronous alignments that may articulate the formal shape of the piece. To use Cornelius Cardew's analogy:

"Two things running concurrently in haphazard fashion suddenly synchronise autonomously and sling you forcibly into a new phase. Rather like in the 6-day cycle race where you sling your partner into the next lap with a forcible handclasp. Yes, improvisation is a sport too, and a spectator sport, where the subtlest interplay on the physical level can throw into high relief some of the mystery of being alive."

(15).

The bulk of the material in an improvising group will be initially provided by styles and techniques involved which may become transformed through continued acquaintance. The much-used linguistic analogy to this kind of improvisation - that it is comparable to the dynamics and intercommunication of a spontaneous conversation - implies a grammar, a system of rules that provide representations and conventions for the ordering of spontaneous sounds.

- 90 -
The areas explored will naturally be limited to the sum total of individual grammars whose interface creates a system of formidable complexity operating on many levels. However, in the improvisation itself we find points of common reference, even at first meeting, which would seem to suggest something curiously determinate about the whole process, a point illustrated in the following passage, quoted from Stanislav Ulam:-

"It seems to me that something more could be done to elicit the nature of association....There must be a trick to the train of thought, a recursive formula. A group of neurons starts working automatically, sometimes without external impulse. It is a kind of iterative process with a growing pattern. It wanders about in the brain, and the way it happens must depend on the memory of similar patterns". (16).

One might advocate, then, the importance of understanding higher planes of "rules" and their application to the collective situation in the capacity of formal articulation. Noam Chomsky, in discussing a theory of universal grammar, writes:-

"What we should be seeking, then, is a system of unifying principles that is fairly rich in deductive structure but with parameters to be fixed by experience. Endowed with this system and exposed to limited experience, the mind develops a grammar that consists of a rich and highly articulated system of rules, not grounded in experience in the sense of inductive justification, but only in that experience has fixed the parameters of a complex schematism with a number of options. The resulting systems then, may vastly transcend experience in their specific properties but yet be radically different from one another, at least on superficial examination, and
they may not be comparable point-by-point in general". (17).

It is clear that the notion of fixed, pre-determinate form is more or less irrelevant to contemporary improvised music. However, Chomsky's concept of universal grammar, modular systems of syntactic rules that do not necessarily have precedents, is very pertinent to this music. We now have a situation where the schematic forms of historical music no longer apply for the implementation of improvisatory process will inevitably fail to generate "form", as understood by music theorists and historians. In its place we have a new type of form - a produce of certain inter-ensemble relationships which is specifically modular. We have seen that both Taylor's conscious constructionism and Schlippenbach's more unconscious interaction relate more to his grammatical concept then to specify form and/or its negation. Paul Burvell has written:-

"Do what is interesting/absorbing. An attention to the content of sound particles (vocabulary) and a concern with the nature of an event can lead to the construction of a grammar and syntax in which each element tells about itself, the other elements and their relationships." (18)

Improvisation in which the focus is on ensemble rather than individual material will often result in an episodic form as each player alternately leads and
follows/compromises. Any individual preconceptions of the overall shape may well be shattered in the moment of playing, statements interrupted and cut short. But to pursue the linguistic analogy, one may argue that a sententially oriented form developed to allow for more continuous streams of talk, rehearsed or spontaneous. It is possible to set up a situation which allows for simultaneous and possible unrelated statements from individuals where unforeseen clashes may be highly fruitful. This is the concept behind Leo Smith's music:

"...to consider each performer as a complete unit with each having his or her own centre from which each performs independently of any other, and with this respect of autonomy the independent centre of the improvisation is continually changing depending upon the force created by the individual centres at any instance from any of the units. The idea is that each improviser creates as an element of the whole, only responding to that which he is creating within himself instead of the total creative energy of the different units. (19).

Smith's concept of the individual will taking precedence over the collective "pool" is unusual. Improvisers tend to be gregarious and it is perhaps paradoxical that now solo-form is often the most problematic, whereas historically almost all documentation of improvisation concerns solo playing. Keyboard improvisation, especially, gained exceptional pre-eminence in the 17th century and all good performers would be expected to be proficient in this art.
Free solo improvisation offers greater possibilities on the architectonic level though, of course, one loses the vital element of unpredictability created by the "intrusion" of other players. It is an ideal way to consolidate one's own musical vocabulary and grammar, as Derek Bailey describes:-

"......when other more aesthetically acceptable resources such as invention and imagination appear to be absent, the vocabulary becomes the sole means of support. It has to provide everything needed to sustain continuity and impetus in the musical performance. It was having to deal alone with this type of situation - the blank areas, the creative deserts, which in a group improvisation are covered by the collective impetus and dialogue character of the music - which I hoped would demand a strengthened and extended vocabulary. I looked to the enormous reduction in outside information and the increased responsibility for overall continuity to demand and 'force' the development of a more comprehensive and complete improvising language" (20).

It is interesting to note elsewhere that Misha Mengelberg believes Bailey to be now more involved in group improvisation again as solo improvisation is too close to composition (21). In the context of solo playing one can easily apply a particular method of formalisation which will be at complete liberty to run its course uninterrupted by others, but the question is, as always, what is actually being formalised and how.
To return to Alex von Schlippenbach, "Payan" is a solo piece based on a simple foursquare theme, which is not revealed in its basic form until the end:

Fig 20
The natural order of developmental improvisation is reversed so that we are first presented with a remote elaboration of this theme: an aggressive and chaotic blues-type improvisation exploring the particular type of pianistic gesture involved in playing rapid parallel fifths and associated problems such as slipping off the black notes (blues/grace notes). The tonality hovers between E♭ and a free atonality as the jabbing bass notes often revert to fist clusters.

"Payan", then, is roughly cyclic in form, an obscure ABA where the "known quantity" appears at the end rather than at the beginning. Repetition as a formal device is more readily associated with other areas of music: in Western literate music, where often its structural use may be more perceptible to the analytical eye, and in certain non-literate musics where it may be more aurally apparent. In this latter category some musics move in cycles as a matter of design (for example, the nuclear melody of Javanese gamelan music, the repetitious eight or twelve beat cycles of Ghanaian drumming or the rhythmic tala of
Indian music) influenced or determined by social, philosophical and religious outlook.

Improvised music appears to have more in common with the linear, non-repetitive time conception - its "Western-ness" takes precedence over its "non-literacy" in this respect - yet cyclic motion has been adopted by some for structuring improvisations. As a cohesive device for longer time spans it generally works and can effectively supplement the more momentary juxtaposition of certain structures.

The use of repetition need not take on the aspect of systematic ordering. It may simply represent a fluctuation between the known and the unknown. Urs Voekel's improvisations often retain a 'home ground' - a flexible thematic idea or harmonic area which he strays from and returns to in ever-decreasing circles, balancing the explorative with the familiar. This establishes a natural rhythm of tension and release. The circular, or spiralling form works to no particular time frame and the fact that the cycles, as a rule, become longer is an indication both of the improvisatory imagination "warming up" and that the internal durations are not what is important here, viz. the musical direction may change at any point that 'feels' right and "we are not spontaneously
aware of duration when we give our whole attention to the present situation." (22).

The piece, "Chnorze", is worked around a harmonic idea: an arpeggio (a) and a melodic idea, superimposed, often as an upper limit to the arpeggio (b)

Fig 21

(a) separates the improvisatory episodes, reappearing in slightly varied but recognisable forms, rather as the Indian sitar player will strum the drone strings in between the melodic excursions. (b), as well as its concurrences with (a), initially defines the shape of the melodic improvisations, i.e. these particular notes tend to define beginnings, ends or high points of phrases. At first the connection is aurally obvious as in this episode which dwells mostly on the four notes of (b):

Fig 22

\[ \text{Diagram showing musical notation.} \]
Later the improvisations become more tonally divergent, although the four notes of (b) still retain their function as articulation points in the free flowing lines:

Fig 23
"Heiweh" follows the same outwardly spiralling form and makes use of a bass motive, which is quite dissociated from the improvisatory material. It acts as a kind of pedal point, and a greater homogeneity of right and left hand material is attained when the actual gesture (C# to G & D) is abandoned and the constituent pitches used to build more spontaneous structures with free transposition into different octaves. Before giving way to freer melodic exploration some of the harmonic implications of the given motif are considered:
About half way through the piece a transposed variation on this motif begins to make its presence felt:-

-102-
This creates a textural middle ground and a greater harmonic diversity, but at the same time the momentum of the improvisation gradually slows down almost to a point of stasis and the initial musical gestures fragment and disintegrate.

Implied in any discussion of form in improvised music is a distinction between an awareness of succession and an awareness of duration; the former being concerned with the modus operandi of formal articulation, the latter with an overview of the events and their cumulative effect. The process of maturation of an improvisatory language will inevitably incorporate an overall feeling for time spans. However engrossed in moment-to-moment details, the improviser is certainly aware, at some level, of the passage of time as one idea evolves to the next. Without this retrospective frame of mind the sensual effectiveness of his materials would also be depleted. Having looked at some of the expanded possibilities of larger formal structures in improvisation, I shall now look at the smaller elemental ideas on motifs and their syntagmatic relations, which generate material over much longer time spans than it takes to actually state them.
NOTES FOR CHAPTER 2


(2) "My Painting" from Possibilities 1 No.1 Winter 1947-48, p.79.

(3) John Cage: "Silence" - p.18

(4) Herbert Read: "The Origins of Form in Art". Thames and Hudson 1965 - p.92.


(6) LeRoi Jones: "Black Music" - p. 199

(7) op. cit.

(8) Bill Evans: "The Village Vanguard Sessions" - sleeve notes.

(9) for a more detailed analysis of Bley's music see Chapter 4.


-104-

see A.B. Spellman, p. 62.

op, cit. p. 28


C. Cardew: Towards an Ethic of Improvisation. "Treatise Handbook"

Stanislav Ulam: "Adventures of a Mathematician" p. 137.

Noam Chomsky: "Rules and Representations" p. 66.


Leo Smith: "Notes (8 pieces)" Leo Smith 1973.

Derek Bailey "Improvisation" p. 127

Misha Mengelberg: "Werdegang der Improvisation" Key Notes 10 (1979), p. 44.
CHAPTER 3

The criticism of 'formlessness' is frequently levelled against free improvisation. If architectonic form is irrelevant to the music, or at least to much of it, what are the elements that endure to make up a cohesive language? Even the freedom of free jazz has a natural gravitation towards order of some kind, but generally speaking not that which can be expressed as an overview. Wittgenstein may hold some clues to this question:-

"The operation that produces 'q' from 'p' also produces 'r' from 'q' and so on. There is only one way of expressing this: 'p', 'q', 'r', etc. have to be variables which give expression in a general way to certain formal relations." (1)

This observation of truth functions in logic gives us a model which can also be applied to improvisatory form. One starts at a point and moves, as it were, in an eccentric direction as the various musical choices present themselves in the course of events (2). One moves through time making interim decisions without necessarily being able to envisage the precise relationship of parts with the end result. As Derek Bailey puts it:-

"generally speaking improvisers don't avail themselves of the many 'frameworks' on offer. They seem to prefer formlessness. More accurately, they prefer the music to dictate its own form." (3)

-107-
In a musical composition, and this applies also to jazz improvisation over chord changes, the whole course of events is prescribed to a greater or lesser degree. Free music, on the other hand, evolves from moment to moment in the logic of its own grammar. Evan Parker writes:

"Our music is a celebration of 'hereness' and 'nowness'.... a process which defines its own form." (4).

In other words, formal structures evolve naturally through the juxtaposition of ideas and motives in time. Rather than long-term visualisation one must have an awareness of such juxtaposition and the syntagmatic connections in the material. The mathematician, Jacques Hadamard, who wrote on the psychology of mathematical thought (5), believed that any attempt to visualise the way ahead in a particular problem only leads one astray from the real issues; decisions must be allowed to be sequential, unconscious and spontaneous. In free improvisation, as predictive and retrospective awareness guide the course of events, certain musical ideas inevitably emerge as landmarks; phrases, rhythms or textures of greater significance or prominence than their surroundings.

As has been suggested, decision-making in free improvisation is far from being an undifferentiated, purely linear process. Progress, as in Wittgenstein's
paradigm, is a movement of organic growth and branching out without any clear view of the way ahead. Parallels in other art forms can be found in literature (6), and in the improvisatory approach of the abstract expressionist painters such as de Kooning and Pollock. Pollock's vision extended well beyond the material plane of paint and canvas. His preoccupation with mythic images culled from his inner world was probably stimulated by John Graham's article on "Primitive Art and Picasso" which appeared in the Magazine of Art in April 1937. Here Graham identified two formative principles which apply to primitive art:

"First, the degree of freedom of access to one's unconscious mind in regard to observed phenomena, and second, an understanding of the possibilities of the plain operating space. The first allows an imaginary journey into the primordial past for the purpose of bringing out some relevant information, the second permits a persistent and spontaneous exercise of design and composition as opposed to the deliberate which is valueless. These capacities allow the artist, in the first place, to operate with the most elemental components of form." (7).

This free access to unconscious imagination is an important part of musical improvisation which seeks to explore territory beyond that of sound per se and to manipulate "elemental components of form". Free improvisation can often be observed to go through distinct areas of generation and consolidation as new possibilities are brought into focus from the 'chaos' surrounding the well-formulated idea. It is interesting to note how an
experienced improviser may, from just a few notes, extract material information far in excess of their face value.

Later in the same article John Graham goes into more detail on the question of these elemental components in the context of two basic traditions in art:-

"The Greco-African culture is based on geometric design, it is centripetal and synthetic in principle....the Perso-Indo-Chinese culture....is based on florid design, it is analytic and centrifugal in principle..." (8)

In a musical context element components may be melodic, harmonic dynamic or textural in nature. Their use in improvisation is to spark off reactions which may change the course of the music.

The Fertile Motif.

"The word, 'motif''", writes Susanne Langer, "bespeaks this function: motifs are organising devices that give the artist's imagination a start, and so 'motivate' the work in a perfectly naive sense. They drive it forward and guide its progress." (9)

Motif is of fundamental importance in improvisation and can be seen in two ways: (1) as a compact little image in its own right, and (2) as a growth element from which larger structures can evolve. In order to progress from (1) to (2) it is necessary to transform the motif's self-
conscious and precise gestalt into something more indistinct and malleable. In rejecting ready-made 'frameworks' this music has evolved new ways of dealing with generative material in the course of which the functional requirements of that material have also changed. The motif may arise spontaneously or be consciously composed beforehand; in the case of the latter there is a general tendency to keep predeterminate material to a minimum, if not to dispense with it entirely. This is not to suggest that composed elements are now of less importance than previously, but their use is different. The motif is not equivalent to the theme of a jazz composition; the 'head', although it is a springboard for improvisation it is actually complete within itself. It has a beginning, end, neatly articulated cadence points, etc., and once having served a useful function in establishing harmonic changes and tempo, may be abandoned almost entirely. The motif, on the other hand, has something more vague and incomplete about its structure. Its frayed edges and lack of polish make it all the more interesting for exploration and development. Anton Ehrenzweig writes:-

"A fertile motif through its undifferentiated structure often refuses immediate aesthetic satisfaction and for its justification points to its further development in the future." (10)
A parallel might be drawn here with Beethoven's method of composing, as evident from his notebooks; that of struggling, often over a period of years, with tiny fragments of incoherent melody until they yield more extended phrases or large-scale structures. In improvisational terms the motif may not strive for development or fruition in such a forthright way but it may take on an autonomous aspect with respect to its integration into the musical fabric and the way in which it is transformed. This process brings into play a creative faculty which Ehrenzweig terms "unconscious scanning". Here, intuitive choice, rather than the deliberate focussing on particular aspects of an improvisation guides its progress. Ehrenzweig describes this autonomy:

"Any work of art functions like another person, having an independent life of its own. An excessive wish to control it prevents the development of a passive watchfulness towards the work in progress that is needed for scanning half-consciously its still scattered and fragmented structure...The artist must be capable of tolerating this fragmentary state without undue persecutory anxiety, and bring his powers of unconscious scanning to bear in order to integrate the total structure by countless unconscious cross-ties that bind every element of the work to any other element." (11).

Another interesting example of the motif as creative catalyst in musical composition can be found in Wagner's invention and use of the leitmotiv. It forced the
composer to reconstruct the form of opera from within with the motif as the smallest unit, and it broke up the then stultified structure and set pieces of grand opera while replacing it with an equally valid and coherent system. The various musical leitmotivs were related organically to the drama, spun and woven together into melody and polyphony. The effects of such combinations of motifs was often unpredictable. However, Wagner's disciples and imitators were unable to successfully follow the same recipe as the method had by then outlived its usefulness; the leitmotiv became an assembly device for putting together a predictable and conventional operatic form: the teutonic music-drama.

Motif in composition.

In some of his work Howard Riley makes use of pre-composed motifs as tangible structural and emotional starting points. This represents a half-way stage between the tight theme structures of jazz and the more open-ended,'vague' motivic fragments described earlier. At the same time this technique ensures predictable patterns of mood change and clear divisions of tonal emphasis. In the composition "Returning", 6 such motifs form the basis for the sectionalised form of the ensuing improvisation:-
While they are treated in sequence from (1) to (6) each motif can be extended for any length of time with the effect that they usually become more varied and 'foreign' to the original with each recurrence, although Riley seems to strive to retain the particular mood of each one.
Because of this the transitions from one to another are quite recognisable. (1) and (2) are terse gestures; rising 5-note patterns which later become extended to more bombastic flourishes. Here is (1) with subsequent variations:

Fig 2.
(3) is a more introspective and lyrical statement. The right hand melodic phrase is woven around a core of a rising sequence of three fifths; D-G, E-A and Gb-B. The more angular phrases which develop from this with their predominance of 2nd, 7th and aug 4th intervals are typical of Riley's atonal style of melodic improvisation and also echo the same intervals which predominate in the supportive left hand:

Fig 3
(4) which in performance becomes by far the longest of the
6 is also the most static. The left hand plays an
invariant ostinato which supports a melodic improvisation
constructed mainly of 2nd and 7th intervals. Before
returning to the rising 5-note phrase in (6), (5) leads
out of the stability of (4) with anticlimactic descending
figure where the left hand retains the 4-note chromatic
sequence while the right hand follows and embellishes it
in various ways:

Fig 4
"Deflection", written the same year, uses two interconnected note-rows. Although this method has Schoenберgien overtones, and thus congenial to an atonal approach, closer inspection reveals that the rows are not truly chromatic in the serial sense. Indeed, in the resultant intervals that the two rows produce there are strong tonal associations, viz.,
The strongest tonal associations occur at the end (10-13) where we find a fifths-cycle cadence. Elsewhere in the rows the suggestions are more vague, and they lend themselves equally well to tonal or atonal treatment. Here are the two 13-note rows:
Although the coincidence of the two rows leads to a suggestion of tonality, Riley intends that they should be treated quite differently:

"The R.H. written material provides motivic material; the 13 notes which make up the harmonic note row in the L.H. should continue to be played in the order given in varying durations, but the player is free to build harmonies on top of them...thus the L.H. written material provides an improvised harmonic sequence for the player - but there is no time signature and therefore no repetitive harmonic rhythm."

In practice, after the three straightforward statements, the motivic restructuring of the right hand involves free transposition of intervals and the incorporation of 'habitual' motifs as well. (e.g. compare the second R.H. group of 0.43 with the virtually identical 7-note phrase at 3.15 in "Returning"). Here is the first 2½ minutes of the performance.
Fig 7 (continued)
Fig 7 (continued)
As extra notes become interpolated in the original rows these become more and more time-extended although the basic skeletal structure remains, rather as the quieter embellishing instruments of the Javanese gamelan, at slower tempos, 'flesh out' the balungan (skeletal melody). The treatment of the composed material is empirical; the rows are not subject to any kind of formal or serial rigour. Beginnings are clearly recognisable while other parts of the rows are obscured or left behind in the improvisation. But the use of composed material in 'Deflection' demonstrates Riley's strong conviction that
the flexible approach to time in free jazz is not an invitation to play just anything, but can actually give rise to valid new forms which could not exist within a metric framework.

The "fragmented state" as defined by Ehrenzweig coincides perfectly with Cecil Taylor's constructive/motivic approach as we have seen in 'Conquistador!', discussed earlier. Taylor makes use of an amorphous pool of material, composed but left deliberately fragmented, which must undergo spontaneous and selective ordering in performance. It is clear that Taylor found the notion of tight, self-contained themes as a basis of improvisation quite inadequate and so in the early recordings (1955-56), as a first step away from this tradition, we see him constructing themes with no discernible end. The transition from theme to improvisation is effectively imperceptible. In later work, however, we find short, distinguishable motifs which are nevertheless mutable. In his ensemble work, as Ramsey Ameen, his violinist, explained, Taylor often invents these figures very quickly in rehearsal and then aurally dictates them to the other musicians only once or twice to ensure that essential vagueness and capacity for easy obliteration is preserved. With unison melodic figures they go through varying degrees of embellishment from simple or heterophonic statement to quite elaborate variation, and the range of
this embellishment will vary from one performance to the next. In this way the motifs are kept in a state of deliberate 'unfocus', ideal for exploring their potential as material for improvisation.

Amid the craggy discontinuity of "Unit Structures/As of Now/Section" a certain logic and structural coherence is apparent on the motivic plane. By repeating certain motifs in different contexts Taylor brings fresh possibilities to light, while certain larger units are transformed or broken down into smaller fragments so that they retain an underlying relevance but whose precise derivation is often difficult to trace. After a short anacrusis Taylor announces the first unit:-

Fig 8

This is then taken up by Jimmy Lyons, transposed down a minor third (it is quite likely that this fragment is notated and that Lyons is reading the same material but in Eb transposition). The rhythmic and melodic variation here makes it sound more like a flowing, articulated jazz phrase and less like a five-finger exercise:-
The same motif reappears a number of times throughout the recording often buried within a dense ensemble texture. Its distinct appearance towards the end of the piece reveals yet further transformations:

From an emphasis on scalar movement and the A/D\# tritone we can trace a definite link with another unit the first group (Plain 1) played by brass in unison:
This is immediately followed by a paraphrase on the piano — an example of the call/response dialogue which Taylor uses constantly in preference to the idea of 'accompanying' the front-line soloists. This unit in its turn is transformed into an ostinato pattern which reappears in various guises in the improvised sections (Areas 1 and 2):

Fig 12

Another important source of motivic fragments is derived from a thematic unit at 1.33 played by Lyons and McIntyre. This undergoes a distinctive fragmentation process during the first collective improvisation before an almost straightforward repeat in Plain 2 (11.30). Certain motivic links can be traced to Fig 11: the $B_b-A_b-E$ sequence of accented notes as well as the central $B_b-D-A_{b}$ $A_b$:

Fig 13

-127-
Fig 13 (continued)

\( d = 120 \)

\( d = 140 \)

\( \text{bass clarinet} \)

\( \text{drums} \)

\( \text{sax & bass cl. "quasi-unison"} \)
Different versions of this unit begin and end the first collective improvisation. The complex of Plain 1 statements is brought to a close by a new unit announced by the front line which mirrors the staccato rising and falling shape of the very first unit:

Fig 14

In immediate response to this Taylor, again, answers the statement with his own variation, and this staccato rising motif marks the beginning of a new group of structural units:

Fig 15

which is imitated in terms of rhythmic phrasing and melodic contour by the rest of the ensemble.

Because it is Taylor's intention to keep the units shrouded in vagueness, it is often difficult to reveal the relationships and the variations to which they are
subjected in transcription alone. As with Ornette Coleman's harmolodic system, phrasing, 'feeling' and tone colour are as much a part of a motif as the pitch material. The units are of use only in so far as they spark off improvisation into unfamiliar territory and in so doing are almost completely obscured by it.

In his solo performance Taylor dwells on the units at greater length, rather than the brief terse statements of the previous example. With a more leisurely exploration of motivic material he maintains extended passages which are halfway between composition and improvisation. The formal displacement of units is complex and organic; between rapid free runs and clusters they may appear, repeated at different octaves and freely interspersed with other motifs. However, the different units juxtaposed in this way affect each other directly as the improvisation unfolds, suggesting in Taylor's words, a broad pattern of development; thesis-antithesis-synthesis. In the following section from the suite "Silent Tongues", two contrasting types of material (a/c and b/d) alternate with each other in short fragments. One is a call-and-response figure between hands and the other consists of rapid arpeggio-like patterns played in contrary motion. Phrase (e) is a synthesis of the two. Apart from the grace note diad figure at the beginning which is derived from (c), the rhythmic articulation derives from b/d except in this
instance the hands now move in similar motion. However, the tonal material of (e) is clearly taken from (c), in spite of its completely different rhythmic treatment:

Fig 16
As with "Unit Structures", the generative potential of the units is unfolded through persistent repetition which at times sounds terse and austere, but in the solo context this exploration of the units is direct and undistracted. The music's multi-layered inner fabric does not have to contend with the possibility of being obscured under a solid ensemble texture. The motifs in their original form and subsequent transformations are as much determined by gestural considerations and the attempts to reproduce a phrase or idea which is slightly out of reach and not properly learnt. The previous passage from "Silent Tongues" shows contrasting patterns of movement juxtaposed. The synthesis at (e) is achieved through using the gestural structure of one with the tonal structure of the other.

Motifs are the fundamental building blocks of Taylor's music and he views these 'cells' as analogous to the forces of Nature:
"...musical heat and energy is related to the sun, which is related to the reason why plants grow."

His idealistic interpretation of the natural order and man's place in it is echoed by this structural technique of assembling motifs; small cells grow into highly varied organic wholes, and the interaction of parts feeds the overall structure intuitively. Intuition, for Taylor is the basis of nature, and this belief has been well documented in his poetry over the years (12). This principle of instinctive creation provides Taylor's music with a gestural immediacy; a dramatic truncation of phrase energized by detailed note choices, exaggerated contour and rhythmic interaction. While they are open to manifold interpretation and reconstruction, the motifs are the cohesive and propelling force in Taylor's music, and not, as many journalists have thought, excess of energy and lack of form. Taylor draws a critical distinction between freedom and intuition:-

"The whole question of freedom has been misunderstood, by those on the outside and even by some of the musicians in the movement. If a man plays for a certain amount of time - scales, licks, what have you - eventually a kind of order asserts itself. Whether he chooses to notate that personal order or engage in polemics about it, it's there. That is, if he is saying anything in his music. There is no music without order - if that music comes from a man's innards. But that order is not necessarily related to any single criterion of what order should be as imposed from outside. This is not a question, then, of 'freedom' as opposed to 'non-freedom', but rather
it is a question of recognising ideas and expressions of order."

In a conversation with Derek Bailey (13), Gavin Bryars pointed out that improvisation is corporeal more than cerebral, viz., it is not really possible for the creator to stand apart from his creation for the music comes about as a direct result of a specifically gestural vocabulary, which, as Cecil Taylor observes, is part and parcel of learning to improvise. Indeed, in transcribing sections of Taylor's recordings one becomes intimately aware of movement and hand positions which determine the nature and course of the music. This gestural vocabulary has a direct bearing on the choice of tonal material. This is in total contrast to the avant-garde, post-serialist school of composition; Ferneyhough, Finnissy, Dench, and others, where intricate and complex musical gesture is completely divorced from physical/muscular considerations by means of overloading the system with a surfeit of notated information. For Gavin Bryars the synonymity of music and person in improvisation became a severe limitation which is why he gave up improvising, from the mid-60s until comparatively recently. But if one is hidebound by a repertory of improvisatory devices and habits, there are certain things that one can do at a compositional stage to alleviate that condition.
Motif as Gesture

Fred van Hove and Guus Janssen demonstrate a use of motif where musical intention and mechanism of production are one and the same. The motifs are often used for their contextual incongruity and humorous effect, as they highlight and go against the grain of more obvious stylistic cliche. The main concern is with the gesture; a pattern of movement of the hands upon the keyboard which is then subjected to transformation and development by musical/aural considerations.

In Fred van Hove's solo performances the motives themselves ostentatiously stand out from the rest of the musical texture, rather than being obscured by it. Their idiosyncratic nature is deliberate and somewhat at odds with the motoric tendencies of the hands, imposing themselves on the improvisation as an external force. The definition of motif here must be extended to mean physical as well as musical gesture; a kinesthetics of improvisation. "Compositie mit Toonladders" has no thematic material as such but uses a wide variety of scales; diatonic, modal, chromatic and whole-tone, juxtaposing and overlaying them. For example, at the beginning the left hand plays a succession of five-finger scales:
over which the right hand enters with hovering chromatic runs at a different tempo. These develop into long descending chromatic runs while the left-hand's five finger motif becomes a kind of Yancey-style boogie bass:

Unlike Taylor, whose units function as a catalyst for improvisation and are never left far behind, Fred van Hove tends to use predetermined motifs as starting points only. These become springboards for improvisation and are quickly dispensed with, so a piece may develop independently of its clear-cut beginnings and end in a different area entirely. The motif is not a thematic or architectonic device; it is a functional starting-point. It is, in Anton Ehrenzweig's meaning, "vague, unpolished, suggestive". (14)

Fred van Hove's second solo piano record "Verloren Maandag" consists entirely of miniatures of between one
and five minutes. In an interview he explains his choice of this unusual format:-

"I try to do things with just pure sound, and I can only do these in silence, in solo.....I had gathered together many starting points, points to be developed which could begin an improvisation. Some of these points were notated." (15)

Later in the same interview he speaks of finding "stations" during an improvisation, points of stasis in an essentially linear progression of ideas, where certain aspects of the music, rhythmic, textural, etc., could be consolidated. These stations do not often bear any specific resemblance to the starting point but are selected spontaneously out of their context for closer scrutiny and exploration, as though 'zooming in' on a particularly fruitful idea. This type of developmental movement with its forward motion and sudden still points suggests a connection with Hove's earlier interest in silent film accompaniment. He has played for many early experimental films by Walter Bruckman, George Melies, Leger and Picabia, finding in cinema a parallel to his 'pure' musical style, namely a principle of forward development broken up by tableaux held together by the magnetic power of their segmentation. Hove intends that the "stations" should be complete within themselves, being able to hold the listener's attention and not relying entirely on their 'meaningful' placement in a larger
context. Roland Barthes recognises a similar aesthetic in the sequential tableaux of Eisenstein's films:

"...the film is a contiguity of episodes, each one absolutely meaningful, aesthetically perfect, and the result is a cinema by vocation anthological, itself holding out to the fetishist, with dotted lines, the piece for him to cut out to take away to enjoy." (16)

Some pieces on "Verloren Maandag" are built on incongruous combinations of motivic material, and while the material may be dropped, the incongruity that it establishes persists. Each particular "gimmick" is sustained for a while, taken apart, looked at from different angles before being replaced by something else as the centre of focus. For example, "Onheil" begins with quiet, isolated staccato notes in an upper register, interposed with crashing tremolandi in the bass. The incompatibility of right and left hand tasks - the fact that the left will always drown out the right if playing simultaneously - is explored thoroughly and impassively before finally being rejected. "Twee Hoog" works on the same principle. The motif (three slow notes in the right hand, followed by two fast ones in the left) is played three times before the hands move further apart to accommodate this idea at the extreme registers. What results is a parody and absurd dialogue (as indicated by the title), "Twee" being C/B trill at the top of the keyboard, and "Hoog" the cumbersome bass notes:
The piece ends with an extended improvisation on the B and C exploring the various percussive and overtone effects.

"Old Maid in a Drawing Room" contrasts two opposing ideas which alternate but do not combine at any point. Fast repeated two-hand chords are interposed between rapid single note runs over the whole keyboard. In the preceding piece, "Hoefd - By en nevenzin" two different simultaneous types of articulation are combined into a single motif:-
The motif structure of "Wordenschat" is more complex.

From the opening three separate levels become apparent:
1. The melodic motif of a falling semitone, repeated three times, pervades the upper lines of the improvisation. This motif is used to begin more extended phrases and is the basis of most of the melodic movement.

2. The left hand chords - all simple major or minor sevenths or augmented third and fourth chords makes a stylistic reference to an earlier period of jazz piano, as does the textural separation into line with supportive harmony. The separation in this case is much more marked as the chords too do not correspond to the right hand material harmonically, or indeed to each other in the sense of a harmonic progression. Quasi-cadential points arise but are unresolved (a, b and c).

3. The third motivic level is not so easily definable in sonic terms, but could be considered as "associative". In many of these pieces certain phrases and types of articulation are reminiscent of other pianistic styles. While Fred van Hove rarely indulges in idiomatic pastiche, one might contest that these pieces are quite on the level of "pure sound" which he claims. There is a certain wry humour in the way in which he will manipulate the listeners' aural experience behind a facade of simple motifs.
On the level of "pure sound" we can isolate two motifs in "Ballade Terug":-

(a) a sustained left hand diad followed by four staccato attacks in the right hand, and (b) a two-part chordal structure passed from left to right hands and repeated a few times:-

Fig 22
On an associative level, though, the persistent minor seconds in motif (a) might seem like "mistakes", which, together with the predominance of sixths and tenths in the left hand and the lurching movement are reminiscent of Thelonius Monk. Motif (b) undergoes various transformations: reversal of hands (bar 10), simultaneity of hands (bar 6) and later motoric treatment:

Fig 23

The textural effect of this "station" is qualitatively different from the original motif. The motif is submerged as the musical emphasis shifts from single chords to rhythmic drive and energy. The hidden potential of such starting points gradually unfolds as one idea leads to another. Their connection with any arrival point is obscure, as this is reached at the end of a continuous chain of contiguous developments.

In Irene Schweizer's music, the obscurity of the motif in its relation to a resultant form is greater, since its occurrence is always spontaneous. Unlike Hove, whose
motivic material is like a springboard to kick off from, Schweizer's motifs generally occur at interim stages. Large sections of a performance may be taken up with intensive treatment of one limited idea, a few notes or a chordal structure, expanded by repetition or simple variation. She herself has said that the decision to use a certain idea at a certain moment is quite spontaneous, basically determined by contextual links with its surroundings. It is therefore quite remarkable that such on-the-spot decisions can seem to have such far-reaching architectonic consequences. In this respect Schweizer's motifs contain an illusory autonomy. They are extraneous to the music itself until "applied" diachronously. They constitute a flexible motivic vocabulary which can be drawn upon at any time which is felt to be right.

The motifs fall broadly into two types of application. The first relates to Schweizer's crystalline a-rhythmic playing, where the phrasing is more suggestive of a romantic rubato than of the explosive nervous energy of Taylor or Schlippenbach. Here the motif is embellished and obscured, often buried under the weight of interpolated extra notes.

In "Rapunzel...Rapunzel" a simple, descending chordal motif appears in various guises:-
Certain elements of this form the opening flourish: the sense of alternation between two basic tonal centres (Ab to Eb), the general downward movement, and the predominance of an internal progression from augmented fourth to major third and back again:
These runs tend to favour arpeggiated seventh structures, mirroring the F-B-E chords which in this treatment function as a substitute for the basic E♭ tonal centre.

The second type of application of the motif is with jazzy syncopated sections which disrupt the more texturally dense passages. Here the motif may be reduced to its simplest and most obvious constituents in "Rapunzel" it becomes the basis of an ostinato figure:

Fig 26

The appropriateness to the jazzy sections is the main requirement of the motivic material. They affirm rather than contradict the natural tendencies of the improvisatory hand, as Schweizer's present style is consciously based on her traditional jazz roots. The motifs are never notated and are subject to extensive modification from one performance to another.

Marilyn Crispell, in her work of the last few years, has developed a more complex system of interactive motif-types which have quite different roles. For her, the
introduction of compositional elements into a style of solo improvisation which was previously based on a stream-like sense of continuity and fluctuating inner pulse, gave rise to certain internal stylistic confrontations. These difficulties were partly overcome by adopting a principle of restless change and substitution in using written material. The motifs are usually notated and practised outside their improvisational context in order to acquire fluency with them in all twelve keys and rhythmic variants. Each piece is then built around a certain group of elements, rhythmic and melodic, which are used interchangeably and integrated into the flow of spontaneous ideas. Melodic elements are grouped according to their overall similarity, so that compositional and improvisatory variation becomes ambiguous to the listener. No single motif sticks out from the texture or becomes especially familiar. Rhythmic elements are developed and extended, small rhythmic motives yielding much larger units. Some motives are suitable for beginning a piece while others are designed to be brought in at different points. The ordering of these is generally flexible, although in some pieces they have come to be organised in a specific sequence which is now immutable. This is an ongoing process of crystallisation affecting most of Crispell's music: motives which have originally been a product of improvisation eventually become well-crafted elements in a compositional framework.

-147-
Marilyn Crispell is unusual amongst improvisers in that notation, which calls into play the whole visual/aural interaction, is an essential part of her music. Some pieces work by a principle of random sighting, a technique more commonly associated with certain "aleatoric" works of the 50s and 60s - the eye alights on any one of a number of notated elements scattered over the page. This is then brought into the improvisation in some form or other, combined with ideas immediately preceding and followed through by another notated fragment or with some hitherto unknown connection. Relations between certain motifs may affect their placement on the page; similarly, a particular visual configuration may inspire musical connection which otherwise would not have arisen. In this way the motifs serve in part as visual stimuli containing elements that may be extraneous to the mechanics of playing - another way of enlarging upon one's improvisatory vocabulary. The motif may serve as an occasion for the mind to produce an interpretation in terms of conceptual structures drawn from its own inner resources.

Marilyn Crispell has remarked on a tendency towards oppositional friction which is responsible for the intense energy of her playing. The motifs in their improvisational context often give rise to some kind of imaginary and antagonistic "opposite" and these two are
forced together under duress. The spontaneous antithetical idea becomes gradually more "compositionally" defined through this opposition. This could be represented by a zigzag ladder where typology generates actual process which in turn modifies certain in-built "rules":

<table>
<thead>
<tr>
<th>Form</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>The notated page</td>
<td>Formulation of motif</td>
</tr>
<tr>
<td></td>
<td>The set of different realisations and treatments in context.</td>
</tr>
<tr>
<td></td>
<td>Incorporation of &quot;random intrusions&quot; - spontaneous antithetical ideas.</td>
</tr>
<tr>
<td></td>
<td>Expanded formal possibilities: dialectic of pre-determined and unknown areas.</td>
</tr>
<tr>
<td></td>
<td>Interaction of pre-determined and &quot;random&quot; ideas, generation of new motivic material.</td>
</tr>
</tbody>
</table>
At each stage the theory, the modus operandi, is modified by spontaneous action. This is the principle of "feedback", a term used in biological theory to described the whole genus of methods altering an adaptive act.

Guus Janssen is both a composer and an improviser and his work generally has been profoundly concerned with dissolving the barriers between his two "personalities". His improvisatory technique is rooted in jazz with its dynamic approach and rhythmic contrasts while his composing is indebted to the procedures of European art music. The proportions of composed to improvised material varies enormously, but what is of primary interest here is the ways in which they are combined. The specific nature of that relationship to a large extent predesignates that material. Janssen is perpetually exploring that dichotomy and making the boundary-line ever more ambiguous. The improvisation is semi-formalised so that the motif functions in a unique, often severely restrictive context.

"Zwart Wit" is based on a downward scale of white notes in 6ths in the right hand with the black note pentatonic
scale in the left hand. This, in fact, comprises the entire pitch material of the piece:

Fig 27

The motif is disassembled and reconstructed in various ways, without any change to its pitch content, with different nuances, accents, tempi, pauses, repetition and arpeggiation.

"Metro oom" is based on a similarly limited palate from which only minor deviations are occasionally made. The absurd, humorous material is treated in a meticulous and calculated way, dealing with the variety of hand alignments created by the two simple sequences of notes, one in each hand. The left hand plays an ostinato figure:
with occasional harmonic variants such as

Above it the right hand constructs a line of sparse isolated notes. Beginning perhaps as a parody of pointillistic serialism (the melody does have certain characteristics reminiscent of a twelve tone row), by the interpolation of ornaments, a jaunty rhythmic line gradually emerges:

The relationship of hands immersed in their separate tasks is unstable and intriguing. There are sections where one or other hand gets 'stuck' mid-flight, while the other carries on through its sequence regardless. Janseen
emphasises the inherent flippancy and humour by grotesquely exaggerated phrasing and awkward pauses. After a brief period of fluency around the middle of the piece, in which the whole of the right hand line is played with various rhythmic inflexions, the faulty machinery just grinds to a halt.

The interface of the two hands playing non-corresponding motifs also provides the basis for "Soft Pillow". Here one hand plays a succession of quiet, detached G#s while the other plays loud, rapid G7 arpeggios (3rd omitted). An improvisation develops from this treating the planes of black and white notes as clearly separate and independent. As with "Metro oom" the simplicity and directness of the motivic material make this ostentatious distinction and conflict possible.

In some pieces the actual motif is more difficult to discern. Its presence is felt by suggestion as though influencing the improvisation from a distanced source. This allows a certain degree of structuring without adherence to a particularly striking or recognisable pattern of notes. "Fifth Avenue" for example is based loosely around sequences of fifths, played at the beginning in single notes, then building up into tentative harmonic structures. By the strong associations that the cycle of fifths has with many different music, this simple
motif here underlies an extraordinary stylistic patchwork which appears to sample the entire history of jazz piano style and technique. The fifths are sometimes stacked on top of one another, at other times treated as the instinctive harmonic progression of the standard. Janssen has used the fifth progression in some of his notated works, such as "Met Speod" for bass clarinet and piano. In this piece the way the tones are spaced out evokes the sound of atonal music although the structure is thoroughly diatonic. As with "Fifth Avenue" the flexibility of this system means that it is possible to make use of diatonic elements without strict tonal involvement, at the same time leaving open the possibility of interesting tonal associations.

"Kinheim" likewise develops at somewhat of a tangent to the opening gestural motif pursuing the humourous implications of familiar-sounding cliché. The whole performance is a comedy of errors. It is characteristic of Janssen's sense of ironic humour in that the chord progressions do not quite fulfil the stylistic requirements:-
The motif itself - grace notes plus a seventh chord - is reminiscent of the harmonic style of jazz piano associated with Dave Brubeck or Errol Garner, but the way in which it is used works contrary to this suggestion. The harmonic progressions make no sense whatsoever within those stylistic terms - expected resolutions are constantly eluded, cadences never materialize, and the quasi-
syncopated rhythmic flow is perpetually disrupted by awkward pauses.

"Brake" has been described by Janssen as a written out improvisation which is a study in mistakes. As the pianist rushes headlong at the first few bars the octaves and seventh chords soon disappear under a welter of 'wrong' notes. The paradox here is that Janssen illustrates the apparent gross incompetence of the pianist by means of very precise notation:--

"I have sometimes been asked why I don't present this idea in an improvised form. But one of the disadvantages of improvisation is that passages containing little or no information are practically inevitable. In Brake the information is communicated rapidly and in concentrated form, which makes it a kind of musical manifesto."

Fig 31
The piece is built on an A/E octave motif which becomes progressively obscured throughout the piece. From the original breakneck speed the music gradually slows down suggesting an attempt at a return to order. The first 'mistake' appears in bar 4 - a G# seemingly struck by accident, followed by a RH acciaccatura in bar 6 as though the little finger has slipped off the black key. A barrage of such accidents builds up in an accelerating frenzy and all feeling of order is lost, culminating in a passage which simulates stumbling over a sequence of difficult arpeggios. Like Janssen's improvisations, the piece is primarily a commentary on musical performance and to do this he uses motifs with strong stylistic associations in an unorthodox way. The motifs become elements in a kind of pastiche which delves, with wry humour into the incongruieties of certain styles and techniques of piano playing.

An overview

A motif can be melodic, harmonic, rhythmic or textural. It may be composed or improvised and may assume varying degrees of prominence within its framework. But, most importantly, it works as a catalyst outside the normal finite vision of musical vocabulary. The purpose of this relationship between the motif and its context should be one of cohesion, joining designed and non-designed
elements together into a seamless whole. The motif is, in Paul Burwell's definition:-

"...a product of a set of interactions between man, objects and natural phenomena. It also becomes an element in that set and modifies it. The whole is a flux.

Do what is interesting/absorbing. An attention to the content of sound particles (vocabulary) and concern with the nature of an event can lead to the construction of a grammar and syntax in which each element tells about itself, the other elements and their relationships." (17).

Paul Burwell sees the interaction of these "events" which stimulate the improvisation rather like sound 'objects' - not events that are restricted by their placement in a time continuum but more like visual or sculptural motifs that can be walked around and examined from many different angles.

The motif is distinguished by its inherent flexibility and the way in which it can establish a type of discourse between improviser and music, helping to overcome its syntactic limitations as defined earlier by Gavin Bryars. The value of the useful motif lies in its ability to stimulate the creation of new patterns and directions while at the same time disrupting a too-comfortable system of surface connections.
NOTES ON CHAPTER 3

(1) L. Wittgenstein: "Tractatus Logico-Philosophicus" p. 42.

(2) see also Kandinsky: "Concerning the Spiritual in Art" p. 37

(3) Derek Bailey: "Improvisation" p 131.

(4) From sleevenotes to "Urban Collective Calls" (Incus 2).


(6) Jorge Luis Borges: "The Garden of Forking Paths", and also Italo Calvino: "If on a Winter's Night a Traveller".

(7) from Magazine of Art XXX No 4 April 1937 p 236.37.


(9) S. Langer: "Feeling and Form" - p.168


(12) see the long poem which accompanies "Garden"
     (hat ART 1993/94)

(13) Derek Bailey: "Improvisation" - p. 136


(15) "Musics" No 18 1978 - p.14

(16) Roland Barthes: "Image/Music/Text" - p.72

(17) Paul Burwell: "Radical Structure I" - Studio
"First was actual life with its motor reactions. Then arose a unity: the dromenon the deed done, and this deed was either a dance, which is a pattern of movement, or a painting or a carved figure, which are patterns of perception, and the life of the ritual was identical with the life of these patterns." (1)

In his book "Icon and Idea" Herbert Read draws our attention to two distinct parts of the creative ritual - the action and the reflection. The Greek word for rite, dromenon, is synonymous with performance here for in the moment of "doing" there is no such rationalization or dissociation of action and sensibility. However in terms of music-language development outside the performance situation we may apply Read's distinction of the action and reflection in spatial awareness, i.e. the sensorimotor awareness of space which is both linked with perception and motor activity, and the idea of space - the symbolic activity of intuitive thought. To begin with the latter, having looked at macro-structure as well as motivic elements in improvised performance, I shall proceed by looking at the individual piano tones, their particular qualities in the different registers and their changing patterns of distribution within new stylistic contexts,
then look at the kinaesthetic experience of piano improvisation.

Howard Riley, in a conversation, described the limitations of older styles of jazz piano as being related to the circumscribing of particular areas of the keyboard to particular roles. For example, the optimum register for one type of left hand chord voicings is quite restricted. Below this register the chord will sound 'muddy' and above it will sound disparate and lacking in sustain. In both cases its harmonic value is decreased. To compensate for such restrictions, different types of chord voicings are substituted when the registral boundaries of one particular voicing are transgressed. From this idea evolves an elaborate code of practise for the density-distribution of harmonic notes, while the improvised lines maintain certain tacit 'rules' about intervallic spacing and the coincidence of phrase-shape, climactic points and register. In bebop, the piano is basically an instrument of emulation - single-line melody with supportive harmonic/rhythmic accents or bass line, an ensemble in microcosm. Although it suffers certain shortcomings in unifying all these roles, its flexibility lends it a position of arbitrator and link between the diverse elements of the ensemble texture, rather than giving it a character of its own. Contemporary improvising pianists have, to some considerable extent, realised piano sound as
a more independent voice, emancipated the keyboard from these divisions of functional territory and opened it up to a much greater variety of textures utilizing the full extent of timbral possibilities, the capacity for polyphonic layering of sound, and the unexplored regions of ambidextrous music.

Because of the rational simplicity of the keyboard, the fixed timing and attack/decay pattern there is a tendency to think pianistically in 'structural' rather than sonic terms. Because the minutiae of tonal and timbral inflexion possible on some other instruments are bypassed, attention may be focused on 'pure' pitches and rhythms insofar as they are reducible to summative procedures. However, an improviser's distinctive style is as much determined by the physical technique - the approach to attack, articulation and resonance - as by the musical material itself.

There has been considerable controversy as to whether piano tone can actually be altered by different types of key strokes. Many pianists and pedagogues are of the opinion that a wide range of tone colours is possible. Maria Levinskaya draws a connection between the varieties of touch and certain tone-colours. However, it is not clear whether such relations are simply used as imaginative devices to aid with musical conception or
whether they are physical realities (2). Tobias Matthay is quite emphatic about the connection, and actually lists 42 distinct touches (!) (3). Physicists, on the other hand, have argued that such supposedly qualitative differences in touch are merely differences in intensity i.e. the number of overtones increases in direct proportion to the velocity of the hammer stroke. A forcefully struck note will have a comparatively shorter decay and it will activate higher overtones than one struck with less energy. It is these high overtones which are the slowest to fade and become more prominent as the tone continues. The sustained tone alters, grows thinner. In addition to the overtone characteristics one must also take into account the noise element as a formant of tone-colour, which is made up of five separate components (b) is the most audible but (a) and (c) increase proportionally with harder attacks:

![Diagram]

- a) finger impact noise
- b) hammer impact
- c) key bed noise
- d) thud of returning noise.
- e) friction noises
The most comprehensive study on this subject is "The Physical Basis of Piano Touch and Tone" by Ortmann. The author argues also that different touches produce only differences in intensity: a quiet sound will not produce many partials, whereas a loud one brings out many more (4). Gat puts the noise elements into three categories - a) hammer noise, b) the collision of key and key bed (lower noise), c) collision of hand and key (upper noise). He goes on to explain how categories (b) and (c) can be "controlled" for specific musical ends:-

"The apportioning of upper and lower noises and their mixing with the tone of the string depends upon our will: the amount of them can be varied according to our musical conception. The deep hollow sound of the lower noise is an indispensable requisite of representing a dark, heavy depressed mood, while the upper noises are needed in sharp, light, fresh sounds. However, their 'over-dosing' - unfortunately a most frequent occurrence in concert halls - will spoil the tone quality because the less the noise-effect (compared with tone volume) the more 'carrying' and sonorous the tone will be" (5)

A familiarity with these noise effects and with the various tonal characteristics of different registers reveals a wealth of subtle gradation and nuance in tone colour available to the improviser, which are not immediately apparent to the topographical abstract view of the keyboard. David Sudnow writes of an innate intelligence of the integrated knowing hand already familiar with a network of spatial contexts, a physical
grasp and tactile appreciation of the sound:—

"the piano...is no longer experienced as an external mass of ivory and wood and steel, but that it rather seems to dissolve into an inner acquisition of spaces to speak with. Keys are no longer encountered as places with lower limits that speak back to the hand as physical boundaries, but as places having sound throughout their depths. You come to use the instrument to speak with as you use a hammer, not just to hit the nail but to bond two pieces of wood, as you use the typewriter, to throw sights to another person, as you use the car, not merely to handle its parts but to get downtown in a hurry". (6).

Much free jazz has concentrated on the percussive aspects of the instrument, an aesthetic with little precedent either in jazz or composed music, except perhaps certain works of Bartok or Stravinsky. Chris McGregor once described the piano as "a drum with a melody" (7). Some pianists, however, such as Paul Bley and Ran Blake have preferred to explore the instruments lyrical and resonant qualities.

The 'Singing Tone'

The piano can create only an illusion of sustained sound i.e. unlike voice, wind or bowed instruments, the piano vibrations are free; no energy is fed into the sound after the initial impact of the hammer. Thus the sustaining qualities depend upon how that energy is dissipated. While centuries of piano pedagogy have stressed the
singing tone ideal with various methods of how to achieve
it, it was not until comparatively recently that
acoustical physicists have been able to explain this
phenomenon. When a note is struck and the key held down
the sound fades away naturally. But this decay rate is not
uniformly exponential as was once thought. It is made up
of two separate decay functions. The initial sound
disappears in a matter of one or two seconds, after which
it is replaced by a gentler decay, known as after-sound.
This is the main component of the piano's singing tone.
The decay pattern changes in this way because the plane of
the string's vibration changes. Initially a string
vibrates vertically, having been struck in this direction.
But what happens then is more difficult to anticipate.
The plane of the vibration begins to revolve because of
imperfections in the hammer or interactions between the
strings, bridge and soundboard until the string ends up
vibrating horizontally. These horizontal vibrations
become more important as the sound fades away.

Another contributory factor in singing tone is the tuning
of unison strings. Some of the best piano tuners make the
three strings of a note slightly out of tune with each
other (anything up to 0.8 cent - anything more than about
1.5 cents starts to sound 'jangly'. The explanation for
this practise of slight detuning lies in the decay rates.
If three strings are tuned precisely together the sound
disappears much more quickly than if there were only one string. The bridge, which is fixed to the soundboard, vibrates with the strings. If the strings are perfectly in tune the bridge moves three times as far and the sound leaves the instrument more quickly. If the three strings are not in tune their action upon the bridge delays the dissipation of sound. What seems to happen is that the movement of the bridge makes the strings vibrate at the same frequency, but cause the tone to decay more slowly.

Gabriel Weinreich of the University of Michigan speculates that piano tuners may intuitively vary the degree of mistuning from note to note to produce a uniform sound quality throughout the range of the instrument. He also believes the direction of vibration is quite significant in determining the quality of the tone. Because the initial vertical vibration is taken up and transmitted to the soundboard we do not notice the various idiosyncrasies of vibrational amplitude that occur within a unison group. At the start of the sound their motions are coupled. However, as the vibration continues it gathers elliptical and then horizontal movement. In the transition to horizontal vibration the movement of the strings become out of phase and they vibrate independently making up a 'singing' after-sound. Professor Weinreich suggest from his findings that these two vibrational polarisations and associated prompt and aftersound emanate from different
"antennae" and that they are altogether quite different in quality.

A third factor contributes to this after-sound. When Hermann Helmholtz and C.F. Theodore Steinway collaborated in the last century to produce the modern piano, one of the principles they laid down was that the hammer for the bottom 40 notes should be one eighth of the way along the string, and this rule is followed by piano makers today. The reason was to dampen the seventh harmonic (B above a fundamental of C) which was thought to be unduly dissonant. Now tonal analysis shows the seventh harmonic to be still present, because halving the length of a piano string does not produce a true octave, but one that is slightly sharp, and higher overtones are even sharper. This phenomenon is called "inharmonicity" and has to do with the stiffness and inflexibility of steel piano strings. This stiffness reduces the 'speaking' length of the string slightly and produces higher partials than would be normal. They are artificially increased by the stiffness and tension of the wire and are not integral multiples of the fundamental tone. The difference is cumulative: measurements have shown that the 15th partial is nearly sixteen times that of the fundamental tone on grand piano bass strings (8).
Karl Berger is a pianist more concerned with the peculiarities of after-sound than with attack, as it underlines his particular interest in tuning and temperament and their effects upon the psyche. In one of his classes he attributed the singing tone of the piano partly to the idiosyncrasies of equal temperament and the interactive nature of vibrating strings. The ideal tuning system laid down by Pythagorus on the island of Samos in the 6th century B.C. has never entered into modern piano tuning. The 'mistuning' of equal-tempered intervals displays a similar mismatch to the tuning of a unison group of strings, so that psychoacoustically there is a resistive interaction between the perfect interval and the tempered compromise. Berger argues that because the natural geometric ratios are no longer operative the tones of simple intervals and chords do not lock together harmonically: the fact that they may seem to is just an illusion. The tones are quasi-autonomous, each requiring (and here Berger stresses the analogy with human behaviour) a certain amount of individual acoustic space to speak, and they never actually blend.

Berger's music tends to dwell on simple harmonic relationships and sparse textures which give full rein to the richness of the resultant resonances. The strings and soundboard ring freely for most of the time in this type of playing. The sustaining pedal is actually released at
certain points of emphasis or to delineate phrase structure. Berger is especially interested in the interactive nature of piano tones and the way in which they appear to attract or repel one another. The concept of harmony in equal temperament, he points out, is a fallacy - an aural illusion only - and to emphasise this conception, notes are rarely sounded simultaneously. This idea is also bound up with a quasi-Platonic analogy between piano playing and human society: each individual tone (person) requiring a certain amount of 'breathing space' and being autonomous to a degree, yet open to modification through relationship with others.

This socialistic vision of tuning and temperament is first encountered in the writing of Plato: in the Republic he warns of inevitable degradation:-

"Since for everything that has come into being there is decay, not even a composition such as this will remain for all time; it will be dissolved. And this will be its dissolution: bearing and barrenness of soul and bodies come not only to plants in the earth but to animals on the earth when revolutions complete for each the bearing round of circles."

Any system of tuning that uses perfect ratios of integers (Socrates' system uses 1 : 2 : 3 : 4 : 5 : 6) will degenerate unless the number of tones is severely limited. From these ratios we can derive the Greek Dorian mode, the
musical foundation of The Republic, and its reciprocal, the major scale:-

<table>
<thead>
<tr>
<th>Greek Dorian</th>
<th>D C B A G F E D (falling)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reciprocal Dorian</td>
<td>D E F# G A B C# D (rising)</td>
</tr>
<tr>
<td>(major scale)</td>
<td></td>
</tr>
</tbody>
</table>

| 1 : 2                          |
| 1 : 3 : 4                      |
| 4 : 5 : 6                      |
| 5 : 6                          |
| 4 : 5 : 6                      |

However, as tones are generated through the cycle of fifths they become increasingly 'inharmonious'. When the cycle is complete, the "second generation" of tones are given the same name yet the tuning is out by the syntonic comma 80:81, a micro-interval symbolising, in Plato's metaphor the dissention between generations ("your young will become more unmusical"). Further mismatches generate "mad relatives" and "children of the worst births" who must be excluded from rule in the musical city.

Despite the physical realities of equal temperament there exists still the inherent tendency to make the perceptual substitution for 'pure' interval. Karl Berger emphasises the importance of thinking in terms of pure intervals in piano improvisation as a means of balancing dynamics and
shaping phrases. The dynamic mixture of a chord is the most perfect means at the pianist's disposal to bring out certain pitches over others and transgress the psychological limits of the tempered scale. This is the deciding factor in the relative dynamics of the separate tones of Berger's phrases. A note struck more strongly will appear to sound higher in pitch (due to the inharmonicity of its partials) while a note that is struck more softly sounds lower. Ideally these differences will correspond exactly with those between the imagined pitch and the tempered scale. Pianists must learn to develop a technique of greater dynamic differentiation from tone to tone than would be required from an instrument capable of playing in pure tuning. Tempered tuning is an abbreviation for a much more complex system. One of Berger's exercises to develop this awareness using any sustaining instrument with piano is to place a single held tone in a variety of harmonic sequences, and to make the necessary adjustment of pitch with each harmonic change.

Whilst it is obvious that such a cumbersome structure as the piano is necessarily a static sound source (9) there are various factors which influence the way that sounds are perceived in acoustical space. I mentioned earlier Weinreich's idea of the different "antennae" for vertical and horizontal string vibrations and that the prompt sound (vertical motion) appears to have much more directional
impact than the more elusive aftersound. Varese recognised an intrinsic three-dimensional aspect to sound which goes beyond the placement or movement of sound sources. His remarks about the spatial quality of a performance of Beethoven's 7th Symphony in the Salle Pleyel are revealing:

"Probably because the hall happened to be overresonant...I became conscious of an entirely new effect produced by this familiar music. I seemed to feel the music detaching itself and projecting itself in space. I became conscious of a third dimension in the music. I call this phenomenon 'sound projection'...the feeling given us by certain blocks of sound. Probably I should call them beams of sound, since the feeling is akin to that aroused by beams of light sent forth by a powerful searchlight. For the ear - just as for the eye - it gives a sense of prolongation, a journey into space." (10)

We actually perceive a spatial difference between high and low tones. Conventional staff notation reflects this perception as does the piano keyboard (in a horizontal plane). Piano sound and construction exhibits too a dimensional tendency - big on the bottom, small on the top - despite facets of its design which aim to equalise this difference in touch and power of resonance. In an experiment performed by C.G. Pratt over fifty years ago (11) it was shown that high tones are phenomenologically "higher" in space than low ones:

"Observers were asked to locate on a numbered scale running from the floor to the ceiling the position of tones coming from a Western
Electric No. 2-A Audiometer. The scale was 2½ metres high and divided into 14 equal parts. The observer sat facing the scale at a distance of three metres, while the experimenter operated the audiometer in back of a large screen to which the scale was attached. Five tones were used 256, 512, 1024, 2048, and 4096. They were presented in haphazard order at five different positions in back of the vertical scale.

The frequencies chosen here were octaves as it is known that the most common mistake in gauging pitch is to confuse the actual octave register. Pratt had expected this confusion to take place, producing reversals of location, but in spite of the fact that the pitches were emitted from random vertical positions such confusions rarely occurred.

More recently S.K. Roffler and R.A. Butler carried out two experiments (12) to investigate this phenomenon. The first showed that complex sounds which included frequencies above 7,000 Hz were much easier to locate than simple or pure tones which did not. Their second experiment supported Pratt's conclusions: that higher-pitched sounds are perceived as originating above lower-pitched ones.

However, none of these findings are definitive as regards this perceived spatial character of tones being innate. It seems likely that they are founded on associative cues. With written music the visual associations of the printed
page might have some influence (though none of these authors make any mention of testing musically literate subjects), as might also a familiarity with the exaggerated stereophonic separation produced by hi-fi equipment which by its very nature, distorts the natural spatial projection of piano sound by dividing it into two separate sources. But the different psychoacoustical spaces that these tones occupy may help to explain the clear stratification that can be obtained in solo piano music. In jazz piano the keyboard is divided into three areas - the middle, which is the optimum range for LH chord voicings, the lower register used for bass lines or pedal notes, and the upper register for the 'front line'. This type of stratified texture is most clearly illustrated in McCoy Tyner's playing of the early 70s where roots, chords and modal improvisation represent three quite independent layers, each of which can drift freely from one tonal centre to another.

Cecil Taylor has been preoccupied with the idea of stacking independent layers, both with ensemble and solo playing, using imaginary or pre-existing registral boundaries of each instrument as a determinant of the musical structure:-

"Each instrument has strata. Physiognomy, inherent matter-calling-stretched into sound (layers) in rhythms regular and irregular measuring co-existing bodies of sound" (13)
This style derives from his wish to use the entire keyboard in his personal language of expanded tonality. As he explained in an interview:

"When I was in the Conservatory I first hit upon the idea of developing my own scales, beginning with the first two notes that were in harmony with my own personality. Then I found the next note, that is the vertical line. Then the horizontal, which they traditionally called intervals, and from these intervals you developed chords - well, perhaps the most important people in shaping my attitude to that were Monk and Ellington, of course - in their use of the spatial elements which are implicit in the measurement of intervals. Monk would use minor 2nds, Ellington would use minor 10ths and 9ths. Also, Ellington would use the entire keyboard - lesser players would use perhaps two octaves, an octave and a half. So, when confronted as a young player with the magnitude of Monk or Ellington, the lilting lyricism of Errol Garner, or the didactic ideology of a man like Lennie Tristano, these were people who shook my universe when I was 16 or 17 years old" (14).

In solo performances, Taylor creates his own "artificial" interplay by the division of the keyboard into five or six different fields treated as though they are separate instruments engaged in dialogue. A technique he uses often is to repeat one fragment in these different registers. In this way different aspects of the same material are revealed, like objects standing in space, not only through their repetition and transposition but
through the changes of tone quality and sonority that these sudden leaps entail.

Ran Blake, in an interpretation of "Stormy Weather" plays the main theme in slow resonant tones with liberal use of the sustaining pedal, interpolating extra unconnected notes in a higher register. Because of the registered differentiation these notes do not confuse or interfere with the exposition of the main theme.

In "The Ballad of Hix Blewitt" the main notes of the theme (circled) are given a harder attack than the other notes which note comment on the melodic shape of the phrases and surround them with ethereal harmonic fields. The theme is not 'supported' but surrounded by the additional notes (including pedal notes) and used as the generating material for a study in different types of piano resonance. A wide variety of harmonic nuance is obtained by the holding of the A and F octaves on the sostenuto pedal while the main melodic fragments (C#-F#-C#, E♭-B♭-A♭-B♭, C#-F#-A♯-G♯) are reiterated at different transpositions. The entire piece is very sparse and notes are generally quite separated in terms of articulation, but unified in the blending of resonances that occur.
The top few notes of the piano have a curious quality of their own. Clearly perceptible in the densest textures even though they may be relatively quiet, they are, paradoxically, the tones with the least intrinsic resonance and the most unfavourable tone-to-key-noise ratio. They can, however, by means of the high noise content activate a curious resonance from the whole frame when the dampers are lifted - an effect explored in Fred van Hove's "Twee Hoog" (see Chapter 3) and in Keith Tippett's extraordinary motoric improvisation "The Unlonely Raindancer", which consists of a continuous rapid stream of single notes organised into repetitive patterns almost all in the top octave. The technique and the leisurely pace of change and development within the context of motoric speed is more reminiscent of phase music. The aural effect of the motoric gesture, as used here as a continuous and unchanging texture, is quite disorientating, as though having no discernible source. It is known that our positional discrimination of sound is at its weakest around 3,000Hz, which coincides with the top octave of the piano. In the same pitch area we are maximally sensitive to quiet sounds and so they will be more prominent in dense textures. For a sound source placed, say, to one side of the listener, a high frequency sound above this c. 3,000 Hz range will be easier to locate because the period or wave length is so short that the skull acts as an effective barrier, lowering the
amplitude of the signal that arrives at one ear in relation to the other. Below this frequency, the more prominent factor in grasping location is the difference in time of arrival of a wave front and the time intervals separating all the transient components. This is the conclusion reached by Roffler and Butler in the second of their two aforementioned experiments. The presence of a large number of prominent partials in a sound helps with determining its locality.

The transient partials of piano tones are complex and differ considerably from octave to octave (although the keyboard attempts to conceal this, being built around the same scalar shifts of hand position which preserve consistent spatial relations of movement, the quality of the tones themselves exhibit no such consistency) and these contribute in the various ways described to the 'singing' quality. While free jazz has become equated with percussive playing in which the attack of the note is of paramount importance, there is a growing concern amongst some improvisers with the qualities of sustained tone and ringing aftersound: the ways in which tones connect to create the illusion of legato. In Ran Blake's playing there is a topological sense of contiguity which makes it possible to interpolate extra material into a song theme without disturbing the integrity of that theme. Strata are established and maintained, if only skeletally,
by a wide range of different touches and uses of resonance.

Paul Bley's introspective but intense improvisations are less pointilistic than Blake's and are concerned mostly with the dynamic of line. Harmony is very sparse and simple so as not to impinge upon the expressivity of the line (15). This is always used to create aural depth or to suggest direction and resolution, etc rather than to support. The line itself is mapped onto a slow and flexible pulse and the acute sense of poise and balance within the time continuum is the result of carefully considered placement and quality of each note. The fluidity of the phrases is determined by each note's dynamic, register (and relative duration of decay) and pedal resonance so that the comparatively sparse contents in terms of numbers of notes is compensated by attention to every detail and nuance of attack and decay. Bley is well aware of unpredictable peculiarly resonant properties of widely spaced diads. In the following example the left hand notes two octaves below the right hand are not so much 'harmonic' as there simply to extend the resonance of the line at significant phrase points, and also to 'highlight' the brilliance of the particular register by adding a sense of depth. This section of the
improvisation from "Closer" occurs towards the middle of the performance.

While the line and sparse accompanimental tones have certain implications of harmonic progression (Ab⁶ at the beginning of this passage to Eb⁷ at the beginning of the second line, also the persistent Ab right hand arpeggios) this is skeletal enough to give the line a
sense of direction and inevitability rather than any firm support. The sketchy harmonic interrelations intimate of certain possibilities - certain expectancies are set up with each note which, at the extremely slow tempo, have time to be fulfilled or negated. Seen in these terms the rate of change in this music is quite fast as the listener, at each point on the line, can predict or imagine phrase beginnings and endings as well as reconstruct the movement and development of the line thus far. While the line is passed from the right to the left hand (at 0.41) the function of the accompanimental tones is the same: to create additional resonance or to 'pull' the tuning in one way or other. This concept of pitch inflexion by means of dynamic stress, also encountered in Karl Berger's playing, is explained at some length by Jozsef Gat (16).

Paul Bley's technique centres around ways to maximise this sonorous aspect of piano sound, achieved by decreasing the various noise-effects in comparison with the tone volume. Although the importance of noise as a formant of tone colour is greater than is generally recognised in traditional piano pedagogy, its presence does diminish the 'carrying power' of the tone. Thus a sonorous forte can only be achieved through a particular kind of attack using weight rather than velocity. From the fact that a pianist is unable to modify a tone once sounded many theoreticians
have come to the conclusion that force need only be exerted up to the escapement level. Once the hammer has hit the string the pianist's finger may relax. However the rapid alternation of activity and relaxation called for here would undermine any control over the noise-effects and the sense of phrasal continuity, both of which rely on a close interaction between musical conception and physical motion. The steady transference of weight is more useful in controlling the shape of a slow phrase than is playing tones in a staccato sequence with legato pedal. Bley has spoken of a "clinging" sensation: a necessary intimacy with the keys. Elsewhere this has been termed "agogics" (Gat and Ortmann) and the maintenance of physical pressure on a note after the attack which may alter the players subjective idea of tone colour as it is passed from one note to another. Gat considers such motoric aids to musical conceptions to be of the utmost importance but makes a clear distinction between an objective tone colour (measurable in its overtone and noise proportions) and subjective tone colour (the interrelation of several notes with their dynamic and agogic contrasts).

"Dynamics and agogics supplement each other in producing the subjective tone colour and may therefore, to a certain degree, replace each other. This is why the organist applies agogics in an increased degree. He marks the stresses by agogic alterations instead of changes in the tone volume... The individual subjective colour means the application of dynamics, agogics, and noise-effects
in a way characteristic of the respective player. It does not depend upon dynamic degrees to the same extent as the general subjective colour does, because the accents, noise-effects, dynamic and agogic characteristics of the individual pianist assert themselves in all dynamic degrees." (17).

The connection which Gat outlines between the musical idea and the muscular action (18) speaks of a deeper issue in human creativity. Read wrote of a dual form of space: intellectual and sensorimotor, the latter form being a direct result of creative awareness and develops in early childhood:

"....a sensibility for space-as-such could only have developed in mankind as a result of his creative activities. Space consciousness is a by-product of a compelling need for 'realisation' - that is to say, for the plastic materialisation of insight, of numinous awareness, or what might be called 'Gestalt-free' perception..." (19)

Moholy-Nagy also divides space awareness into two categories: dual aspects of space-time which have become misaligned in contemporary art. It is only through an understanding of the physical/motor space and the intellectual/psychological space and their synthesis that we can "re-create the path of our inner motion":-

"Besides complicated social and economic issues, there appeared at the end of the nineteenth century two complex areas of human experience. The one was vision in motion; the other the discovery that the subconscious is a part of the organic function of the human being." (20)
His comments on the "excesses" of concern with kinematics (Futurism, abstract expressionism and later, kinetic art) on the one hand and the psychological sphere on the other (Surrealism) preceded Herbert Read's well-formed theories by ten years. Moholy-Nagy believed it to be essential to fuse the sense and the idea of space in contemporary art and design.

It is clear that the acoustic space and resonance of tones is directly connected with the movements of playing - the articulation of physical/visual space. It is this latter aspect which has acquired a particular importance in keyboard improvisation often to the point of being the main structural determinant. However, the use of innate movements is quite a logical starting-point for the development of an improvisatory language, for if the stylistic requirements of that language necessitated the innervation of entirely new movements learning the piano would be a hopelessly daunting task. Thus it is obvious that we select from a repertory of movements those that can be utilized and perfected to this particular end, those by the aid of which we can most closely realise our musical ideas.

For the individual pianist, the main prerequisite for a particular hand or finger movement is that it naturally corresponds to the physiological endowments of that
individual. Of course, the learning of any movement is greatly affected by spatial and aural feedback - comparison of some actual performance with some 'desired' performance - by which we can gradually attune the reflexes to respond to a certain level of mental control and to produce particular sounds at will. In free improvisation feedback can actually work conversely: uncoordinated reflexes, 'wrong notes' can give rise to new ideas. The subject of feedback in patterning motor behaviour will be deal with in greater depth in Chapter 6.

Some pianists have made a point of developing the kinetic element almost as a separate entity; a choreography which forms part of a larger associative network of musical ideas and motor reflexes. David Sudnow's first book, "Ways of the Hand" is about the process of acquiring conditioned reflexes in improvisation. While the author places, perhaps unknowingly, unnecessarily severe stylistic constraints on his learning process he nevertheless describes with considerable insight the dynamic of line (right hand) and the nature of this strange familiarity with "an external mass of ivory, wood, and steel" which later "dissolve into an inner acquisition of spaces to speak with". In his subsequent book, "Talk's Body" he draws attention to the connection between physical and psychological selves and their analogous understanding of space:-

-188-
"The pure process involves the body being caught up in the course of movements being made, involves two bodies conjointly moving through a strongly shared system of inner spaces together" (21)

Cecil Taylor's use of the term "units" to describe the self-contained compositional building blocks on which his improvisations are based, tells us something about his attitude to these fragments. Any unit may recur in a performance in various guises, and such variations are normally quite spontaneous. Rather than being an organised system of transformation, the changes to the units are more a matter of looking at them from different angles. Perhaps it is because of a prevailing anarchic spirit in ensemble improvisations that Taylor regards the units as a ground base - solid, palpable 'objects' - recognisable note patterns and/or rhythms which can be observed, dismantled and recombined. This spatial approach to compositional structure, has much to do with Taylor's own keyboard technique. For example, he rarely uses the sustaining pedal as he want to hear each note as a separate entity, even at the fastest speeds:-

"the piano from my point of view is primarily a percussion instrument....When I practise my own technical exercises, each note is struck, and I hear it, and it must be done with the full momentum and amplitude of the finger being raised and striking" (22)
He told A.B. Spellman: "I try to make at the keyboard the leaps a dancer makes through space" (23). This almost choreographic approach to piano playing represents a logical integration of his very percussive and physical technique with a fascination and admiration for combined art forms:

"People used to snigger when Thelonius Monk got up and started moving, as they would when he used his elbows on the keyboard. I didn't find it funny, in fact I was rather mesmerized by the audacity of this man getting up in the middle of a composition and moving, and yet I was quite aware that the focus of his hand was always centred, whether he was sitting at the piano or moving. The same applied to the Kabuki Theatre from Japan. All of the musicians always danced, always sang. The only approximation we have to that is certain r and b and rock people who sing and dance; the so-called serious fine artists just sit and look glum. There is not much happening with their bodies. But the body is an instrument."

Because of this emphasis on physical movement, Taylor views musical notation as the very antithesis of the improvisatory spirit: "The physicality of looking, or learning to read, is from my point of view a division, a deterioration of creative energies. Because you have to spend half your time looking elsewhere than inside".

Taylor has sought for a full integration of kinetic elements into the units. Indeed many of them originate from kinetic rather than musical ideas, for, as is suggested in some of his writings, he is anxious to avoid
the visual and intellectual associations with notation in order that the music can have the effect of trance-induction. Paradoxically though, it is through structural complexity that this end is achieved ("trance is the unreasoning reflection being possible thru multi-layered rhythmical complexes"). He writes:-

"co-ordination of physique (muscles, the mind) existing as one reasoned act thru erasure of written note: the division implicit, inherent; ambivalence/paper objective paper becometh objective focal point.... Creating Music is sound within the whole body; which must be brought to level of total depersonalised realisation, exciting various limbs...." (24)

Karl Berger divides his time between playing piano and mallet instruments (vibraphone and balafon) and it is the latter which have largely influenced his ideas on the connection between intrinsic spatial qualities of tone and the actual space employed in the physical gestures of playing. "To activate tones to their fullest resonance one touches the keys and releases them". Of course, this really applied only to one type of playing in which harmonies are static and the soundboard is allowed to vibrate freely. Berger likens the free resonance of tones
to an original silence (non-action) which is the single most important element of musical form. In classes he encourages students to make use of silence to articulate structure and to encapsulate ideas in space. Absolute continuity can only result in a confused immobility where the formal articulative power of silence is obscured, and occurs only through exhaustion. In playing the piano he advocates one basic motor pattern—alternating hands, as this is one of the most natural movements to the human body. (Our arms swing naturally in alternation when we walk). For Berger this is related also to a background in mallet instrument technique. To put the two hands down simultaneously, he claims, goes against our innate tendencies and is a gesture of dominance and repression. It is the crudest of the piano's resources. Pianists should explore the polyphonic and polyrhythmic capacities of the instrument to their fullest advantage, developing reflexes and manual independence to meet these goals. One section of "Tuning/Timing" is a simple two-part improvisation where the two parts develop according to their own rules: the left hand playing a steady succession of rising and falling semitones and the right hand playing melodic phrases of irregular lengths which move at an independent tempo. While it is, in effect, a walking bass and 'solo', this type of material and texture derives as much from Berger's interest and studies in the music of J.S. Bach, in particular the clear two-part counterpoint.
of the keyboard partitas, as it does from jazz sources. He tries to capture here the 'floating' right hand phrases mapped onto a more stable and foursquare bass line: (25)
Borah Bergman has been similarly involved in developing a technique of manual independence and a pianistic choreography in which physical energy and movement become the source of musical inspiration and production. This obsession with space and kinesics derives, for Bergman, largely from visual analogy. He produces 'musical canvases', which, though time-bound are essentially static in character, and these come as a by-product of unleashed physical energy-in-motion - an idea fundamental to abstract expressionist painting. The "crude" motor responses leave finer, detailed movements to chance. Stylistically, Borah Bergman's music could scarcely be further from Berger's poise and tranquillity or from Taylor's anarchic constructionism. In its sheer, unrelenting force and density it reaches that point of "immobility" that Karl Berger has warned us against, which makes it possible to make music akin to the still canvas. Tom Johnson, for this reason, has paradoxically described Berman's music as "minimalist". But there is no pre-structuring as such - just a sudden and uncontrollable release which follows a period of intensely methodological, disciplined practise with its accumulation of ideas and mental images.

Traditionally almost all forms of piano music have assigned a melodic, soloistic role to the right hand and a harmonic, accompanimental one to the left. Bergman's
philosophy, however, stems from the premise that this division of labour is both irrelevant and inhibiting to the development of an improvisatory virtuoso technique. He has consciously abandoned these assumed roles and has developed the hands independently of each each - firstly the left for several years, and then more recently the right - so that each is capable of tackling any idea or type of material. Ambidextrousness, he believes, is the fundamental issue of contemporary keyboard improvisation. (26).

The consequences of this system are wider than they might at first appear. Firstly, it has led to Bergman's developing, by conventional standards, an extraordinarily "dexterous" left hand. To prove this he has displayed his skills on recordings of solo left hand performances. Secondly, he has achieved such a degree of manual independence that his two hands are, in effect, two separate instruments, dissociated from one another, meeting, overlapping, tossing gestures back and forth between them. Thirdly, in this music, which is born of a philosophy of stamina and callisthenics, the continuous momentum, the illusion of the indefatigable is maintained even when one or other hand rests for a few moments. The texture becomes thinned out but the essential musical thread is unbroken. Aside from being manifestos of manual independence, these one-handed improvisations which can
act as rest points for the other hand become the main proviso for a distinguishable texture change.

The keyboard is really the ideal medium for a colloquy of hands for there they are performing ostensibly the same function. One hand is an automorphism of the other: that is, we can make a mirror image of one, an illusory back-to-front reversal, and we see two hands exactly the same. But how can this be reconciled with the fact that the keyboard represents a linear tonal range from low/left to high/right? The symmetry of the keyboard is itself illusory as it is not aural (the African mbira comes close to that), it is one of formal relations only. But because of the nature of Bergman's playing this 'split' does not necessarily manifest itself as an extra weightiness of the bass register. The hands, liberated from their usual pianistic roles, are freed also from their specific domains. Each has the entire keyboard at its disposal and yet the shapes of the phrases in one hand will always be different from those in the other. It is partly this concept of inexhaustible dialogue and 'not knowing what the other hand is doing' that provides the intellectual interest (in terms of improvisatory form) and forward momentum.

Bergman's unique style of phrasing can be heard on his second record, "Bursts of Joy". There is a curious
rhythmical jaggedness within these irregular torrents of notes which seems to refer back to a much earlier period of jazz history; it has an entirely different musical effect from the fast but regular pulsatile rhythms of the two-handed pummelling technique that has become something of a trade-mark of free-jazz piano playing. Bergman dismisses this percussive hammering with alternating hands as rhythmically uninteresting and unpianistic, claiming that it does not realise the true potential of two hands, ten fingers, and the possibilities of a more sophisticated interaction. It eliminates the angular accents and microrhythmic inflexions and breaks - all the qualities of that craggy discontinuity on the microscopic level which Bergman sees as the inner life and "drive" of his vibrant canvases. As the hands glide over the keyboard surface they outline certain shapes, and the fingers, ready to strike at any time can make any complex composite movement irrespective of the particular location. Bergman emphasises the importance of a close contact with the keys, for only by keeping hands poised at close quarters and by exercising the necessary control and digital strength can one achieve variety of attack, sustain, and touch control, and realise the true piano/forte capacity of the instrument. This technique he views as a logical, if extreme, development from bebop phrasing. In the same way that Bud Powell's lines contain a wealth of 'supplementary' notes which appear to be not part of the
main argument - 'grace' notes, subliminal 'fumbles', etc - which throw the improvisation into greater rhythmic and dynamic relief, so the notes of Bergman's dense and jagged phrasing have many different levels of "presence". To recall David Sudnow's idea of "keys having sounds throughout their depths", Bergman's phrasing naturally involves keys depressed without being sounded, sounded without being fully depressed, given agogic stress by being held while others are released, all of which turn the dynamic of linearity into a continually shifting aggregate texture. This capacity for wide dynamic and rhythmic variety on a micro-level holds a fascination for him as it puts the threshold of physical possibility both of piano and pianist to the test. For example, the fastest possible sounding tremolo will cause the key to 'quiver'; the hammer is activated repeatedly without being given the chance to return to its rest position.

The concept of an intrapersonal dialogue would seem to border on the schizophrenic, but the split personality is not an invention of modern psychiatry. The two hands symbolise this split: self and other. As Mary Douglas puts it: -

"The human body is always treated as an image of society and there can be no natural way of considering the body that does not involve at the same time a social dimension" (27)
Among some tribal peoples a man is believed to have another soul which embodied in some object or creature:-

"Many primitives assume that a man has a "bush soul" as well as his own, that this bush soul is incarnate in a wild animal or a tree, with which the human individual has some kind of psychic identity." (28).

With Bergman the dissociation is two-fold; between the right and left hands, and between the conscious will and the reflexive, auto-kinetic movements of his improvising. He sees close difficulties between his own art and that of Jackson Pollock and the other abstract expressionists, in a shared concern for colours, shapes and kinetic energy. Like Pollock, he writes in a trance-like state of heightened awareness; thus the mental concentration is able to override immediate physical problems of stamina and strength.

"The antic activities of the left hand offer gifts to the right for closer scrutiny." (29)

The metaphorical basis for Bruner's work of cognitive psychology, "On Knowing", is the symbolic definitions of right and left hands - the one the doer, the other the dreamer. The right represents light, order, logic and lawfulness; the left the darker side, intuition and spontaneity. Traditionally the left hand has been considered an awkward and clumsy counterpart of the right, its character questionable (it gave rise to the word
'sinister'). Indeed the Short Oxford Dictionary defines 'left' as "distinctive epithet of the hand which is normally the weaker". Derogatory associations with the left hand abound in many different languages and cultures, too numerous to explain here (30).

Bergman maintains that the left hand has been misused and neglected in piano literature, and that is has inherent talents that the right cannot reproduce. The second side of the record, "Bursts of Joy", is given over to three left-hand solo improvisations. He actually considers the left hand to be superior in some aspects of its construction - the thumb is on the right so weight can be more easily angled towards the upper notes. Ravel explored the potential of this in the Concerto for Left Hand, particularly in the cadenza, where the theme is picked out by the thumb while the other fingers fabricate a complex 'ghost harmony' of runs and arpeggios. The left hand is better suited than the right to a complete melodic/harmonic framework which it can produce quite naturally (31). The musical substance of Bergman's left-hand solos is as solid as that of the two handed music. The texture is thinner yet the virtuoso element is heightened by the aspect of visual drama (witnessed or imagined). There is a connection, perhaps, between the highly developed left hand and the visual element of playing that suggests something more than a coincidence.
Bergman freely associates visual images with his music. "The Piano", he says, "is a very physical instrument". There exists a concept of physical design relating to dance and other kinetic art forms, which has little to do with the actual sound.

The clavier (dummy keyboard) is an invaluable practise tool in this respect. (Bergman owns several claviers, including a home-made portable one that fits into a small shoulder bag, making it possible to practise on walks or on the subway undetected!)

Bergman recognises a certain madness in his playing, an exhilarated expressionism held in check only by a thorough background of self-evolved technique and a certainty of practise methodology and artistic aims. His prodigious facility has been built up through a rigorous system of exercises, drawing upon many different sources. Though he is an accomplished jazz (bebop) pianist, his technique is derived as much from classical sources as from jazz. But here also he maintains a personal slant on the material and a healthy irreverence for the pedagogical tradition. Thus he will play Phillippe exercises substituting expanded jazz progressions for the diminished seventh arpeggios, apply different fingerings which are conceived independently of the musical task (complex permutative systems of numbers 1-5) to scales and to Hanon exercises.
This taxes the mental concentration as well as a facility with awkward hand positions. Many exercises involve stretching, such as parallel fifths and sixths runs with double thirds fingering, or one-hand scales in legato ninths. The most valuable exercises, he finds, are those which involve holding one or more fingers down while the other fingers of that hand improvise round them. This develops the ability for rapid variations of touch within phrases, and a facility for polyphonic improvisation in each hand. To this end another exercise involves an imaginary division of the hand into two separate areas (1 2 (3) 4 5) which become the two parties in a one-handed dialogue.

Bergman's exercises constitute a highly individual and idiosyncratic pedagogy which has a direct and profound bearing on the improvisations in terms of phrasing and technical/callisthenic possibilities. There is an almost overwhelming visionary aspect to the theoretical basis of the music as it is the technique that is vigorously pursued and formulated along its own lines and dictates, almost as a separate issue. The sinistral obsession and ideas on spatial manifestation in musical form might appear to have some deeper physiological connection. While flippantly referring to sinistrality as his "demon", the issue of redressing the traditional imbalance of motor
skill acquired in piano-playing carries with it a significantly expanded musical insight.

While at the present, research into the different hemispherical functions of the human brain is still in its infancy, there is evidence to suggest that spatial functions are more dependant on the right hemisphere (Milner 1962, and Kimura 1967) which also controls the left hand, and that language too may be subserved by this side of the brain, particularly amongst left-handed or ambidextrous people, at the expense of spatial skills. It has been argued that left-handed children are more prone to specific delays in language acquisition (Arnett 1974). Brian Byrne (32) conducted an enquiry to determine whether this bilateral language representation interferes with musical or spatial abilities. He found that spatial operations and musical abilities were quite independent, the former being affected to some extent by bilateral language representation, but the other not. One might draw another palpable link here between music and language - that those aspects of language that are subserved by the right hemisphere are functionally similar to timbral perception and tonal memory, and hence music and language can 'share' neural substrate. Some evidence suggests (Unitta, Frost and Hyman 1972) that vowel discrimination is a right-hemisphere function, and so a neurological connection between this and timbre perception - the
various subtle qualities of piano tone in different registers - would be quite plausible.

The aforementioned cultural discrimination against the left hand poses the question of whether in fact the left-right distinction is acquired by 'convention', whether such imbedded associations actually go so far as to determine the spatial orientation and to define the direction of this innate manual asymmetry. It is well-known that left and right are internal orientations (unaffected by gravity or compass) as shown by Martin Gardner in his explanation of why mirrors reverse left to right but not up to down (33). The confusion with this particular problem stems from the fact that 'left' and 'right' refer only to our own bilateral symmetry, whereas notions of up and down entail no such ambiguity. The mirror puzzle is resolved when left and right are replaced by the more precise language of east and west and coordinate geometry.

But the prima facie spatial orientation still remains open to question on this point. The partition of handed objects into two distinct classes is an on-going process and leads us to believe in some ideal symmetry which simply does not exist in the natural world. There are a great many phenomena, like human anatomy, which are non-mirror-image symmetrical in a de facto rather than in a
lawlike way. If we want to teach the meaning of 'left' to someone without demonstrating some left-oriented object, we could do so by means of explanation of the various characteristics associated with that orientation.

Lawrence Sklar (34) considers the essential distinction between handedness attributions and global orientability by speculating:-

"Suppose, for example, that some fairly substantial miracles occurred in the world. All of a sudden electron emission from spinning nuclei occurring with the dominant emission in the opposite direction from the present preferential axial direction. Would we then say that the clockwise direction has become anti-clockwise? That right-handed gloves had suddenly become left-handed? Nothing of the sort. We would be astonished and look desperately for some explanation of this mirror reversal of a law. But we would, I believe, still take it that we could recognise left- and right-handed objects as before, teach meanings of orientation terms by ostention, as before, etc."

Thus orientability is ultimately irrelevant to a conceptual analysis of what we think of a certain handedness attributions.

Bergman is now working on a new style of piano playing in which the two hands are even further dissociated from one another, in a situation similar to a competitive game. Directional phrasing replaces the continuous circular motion, and the hands play phrases in rapid alternation each trying to 'outdo' the other, rather than creating a vast magma, which though teeming with inner life, is
essentially non-developmental. The extensive periods of practice concentrating on one or other hand alone has made this 'split' possible and a truly dialectical pianism now emerges, or as Bergman puts it, "hand-to-hand combat".

"Space that has been seized upon by the imagination cannot remain indifferent space.....it has been lived in with all the partiality of the imagination." (35).

Space as a concept is connected with the present study in a number of ways. It can mean piano resonance and after-sound, silence (36), widely spaced intervals as found in the work of more 'economical' improvising pianists examined here. It is fundamental to visual orientation and kinaesthetics. These various implications are connected, as Jozsef Gat observes: "there must be a close interrelation between musical imagination and physical motion" (37). These twin notions of resonant acoustical space and the movement in or through space which is part of the act of piano playing are united in the creative involvement in and attention to piano tone and how it is produced.
NOTES ON CHAPTER 4

(1) H. Read: "Icon and Idea" p. 57.

(2) Maria Levinskaya: "The Levinskaya System of Pianoforte Technique and Tone-colour". p. 66.

(3) Tobias Matthay: "The Act of Touch".

(4) Ortmann: "The Physical Bases of Piano Touch and Tone" p. 96-97


(7) Radio Interview.


(9) The idea of sound-in-motion has been of great importance in the new improvised music, with investigation also into acoustical properties of different improvisation environments. Evan Parker uses the resonant properties of the performing space in arcs and figure-of-8
movements. Perhaps the most extreme example of this is Max Eastley's "Whirled Music" - a performance consisting entirely of bull roarers and other instruments that can be spun around on strings, plastic twirlers etc.


(12) Roffler & Butler: "Factors which influence the localisation of sound in the vertical plane and localisation of tonal stimuli in the vertical plane". JASA 43(1968) 6: 1255-1266.

(13) Cecil Taylor: "Unit Structures" sleeve notes.


(15) Kandinsky believed the line, in both music and art, to be the greatest means of expression in space-time (Kandinsky: "Point and Line to Plane" p.99ff).

(17) Gat: op. cit. p. 16.

(18) op. cit. p. 79.

(19) Read: "Icon and Idea" p. 64.


(21) David Sudnow: "Talk's Body" p. 46.

(22) The Wire. op. cit.

(23) A.B. Spellman: "4 Lives in the Bebop Business" p. 42.

(24) Cecil Taylor: "Air Above Mountains (buildings within)" - sleeve notes.

(25) It is interesting to note the similarities of this two-part texture with its clearly delineated manual functions with the first movement of Bach's 2nd keyboard partita.

(26) This "split" and the ability to maintain awareness of two independent bodies of sound is prerequisite for the performance of much keyboard phase music. Terry Riley has developed a capacity to play and to
improvise independent isorhythmic and isometric lines of almost any degree of complexity.


(30) For a summary of the various linguistic and cultural discriminations against left-handedness see:

Martin Gardner: "The Ambidextrous Universe" p.70ff.
Mark Brown: "Left-handed/right-handed" p.43ff (David and Charles 1979)

and

Michael Parkin, writing for The Guardian, notes some interesting country dialect words, including:

scrammy, key-paw, coochy, teegg, kay-fist, cuddy-wiff, cowly, dollocker, gallock, bay-fister, clicky, gimmicker, left-keck and wat man!

(31) See Scriabin: "Prelude and Nocturne for Left Hand" Op.9, Godowky's "Prelude and Fugue on B-A-C-H" and transcriptions of Chopin's Etudes and also the
many compositions for and transcriptions by the renowned one-armed pianist Paul Wittgenstein.


(35) Gaston Bachelard: "The Poetics of Space" p.32.

(36) op.cit. "There is nothing like silence to suggest a sense of unlimited space. Sounds lend colour to space, and confer a sort of sound body upon it. But absence of sound leaves it quite pure, and, in the silence, we are seized with the sensation of something vast, deep and boundless". p.43.

(37) Gat: op.cit. p.79.
CHAPTER 5

Having examined the sustained, 'singing' quality of piano tone favoured by certain improvisers, I would now like to look at its more percussive and dynamic aspects—dynamic in the sense of force as well as movement.

Cyclic Movement.

Paul Bley, Karl Berger and Ran Blake whose music deals largely with a sense of stasis or time extension minimize the percussive attributes of the piano. However, none of this music strives towards a state of immobility as is the case with Charlemagne Palestine. Ran Blake speaks of a basic cyclic movement in improvising, whether freely or over chord changes. "The ebb and flow is what is important, to get nowhere by standing on the spot." He imagines a line with waves and troughs, and retains links however tenuous with a harmonic structure; the cycle which is absolutely fundamental to the psychology of jazz improvising. In the piano/drums improvisation "Doktor Mabuse" Blake takes as a focal point a chord made of two triads a tritone apart (a) and another similar-sounding motif of two 3-note chords (b):-
While (a) implies the F# melodic minor scale (ascending), (b) implies the C# whole tone scale. Blake moves freely between these two tonal areas, exploring the common notes of these scales: A B C# D# F as well as the clash of their mutually exclusive areas, but never drifting too far from the cornerstones of (a) and (b).

With Paul Bley the harmonic motion can be ambiguous and quite subtle. Because he tends to use widely spaced chords of 2 or 3 notes, tonal centres are often defined by the accompanying melodic improvisation rather than the other way round. Thus the chords will circle around a central point moving up or down incrementally by tones and semitones. In one of the solo piano versions of "Closer" harmonic movement is outlined almost entirely by a progression of major 2nds:
Here it is in the context of the melodic line:-

In Carla Bley's composition "Ida Lupino", this same type of shifting harmony provides Bley with an ideal vehicle for improvisation. It is based on a 3-note chord whose outer notes G and B remain more or less constant while the inner one slowly shifts through four chromatic degrees, thereby implying a wealth of different tonal centres and scales:

-214-
Although Bley relishes the sustaining aspect of piano tone between the attack and the decay, there is a tension/relaxation effect as melodic phrases gravitate towards changing tonal centres. The 'singing' notes in this context are not static self-contained entities but exhibit motion. They are propelled forward even when the music is extremely slow or has no discernible rhythmic impetus.

Victor Zuckerkandl has written:–

"Musical contexts are motion contexts, kinetic contexts. Tones are elements of a musical context because and insofar as they are conveyors of a motion that goes through them and beyond them." (1)

Saint Augustine described the nature of music as being ordered motion, though here he draws a distinction between rhythm which is connected with the body, and 'pure' motion which is self-contained and not time-bound. This pure or
'divine' motion which is cyclic by nature has its roots in more mundane musical theory i.e. in a simple succession of tones, movement away from a central point in either direction will find us going toward that point again in another octave. Every arithmetical 'double' defines an octave 1:2. Within this octave space the arithmetical mean (M/a=1½) and its 'inverse' or 'harmonic' derivative mean (M/h=1) require 6 as the lowest common denominator, and so appear as 9 and 8 in the Pythagorean tuning system:

\[
\begin{array}{ccc}
M/h & M/a \\
6 : & 8 : : & 9 : & 12 \\
3:4 & \frac{3}{4} \\
2:3 & \\
2:3
\end{array}
\]

These are the only fixed and invariant elements of the Pythagorean theory and define a circle as they apply to both rising and falling sequences of pitches:
Plato translates Pythagorean theory into geometric imagery; Platonic cities are all circular and their models are tone-circles. In the fourth book of the Republic he gives an account of the ideal city:

"The regime, once well started, will roll on like a circle in its growth." (Republic 424a).

In fixing his sights on the "constant revolution of potency and its converse" we see the importance of the cycle in Platonic cosmology as outlined in Timaeus:-

"As it is, the sight of day and night, the months and returning years, the equinoxes and solstices, has caused the invention of number, given us the notion of time, and made us inquire into the nature of the universe; thence we have derived philosophy..."

These cycles find a direct analogy in music:-

"all audible musical sound is given us for the sake of harmony, which has motions akin to the orbits in our souls, and which, as anyone who makes intelligent use of the arts knows, is not to be used, as is commonly thought, to give irrational pleasure, but as a heaven-sent ally in reducing to order and harmony any disharmony in the revolutions within us." (Timaeus 47)
The symmetry of the tone circle, in Plato's scheme, is both therapeutic and an important geometric image. In the octave D (which happens to be the centre of symmetry in alphabetical notation as well as one of the two centres of keyboard symmetry - the other being A /G#) A and G reverse their roles as arithmetic and harmonic means, so we arrive at a geometric projection of these proportions expressing a circular motion to and from a central point:

\[ \begin{align*}
\text{rising:} & \quad D \quad G \quad A \quad D \\
\text{falling:} & \quad D \quad A \quad G \quad D \\
\text{ratios:} & \quad 6 : 8 :: 9 : 12
\end{align*} \]

Such axes of symmetry can provide an important visual stimulus for the pianist, particularly those like Borah Bergman who are obsessed with the injustices of right hand
dominance! Martin Theurer makes a special point of inventing various exercises in contrary motion usually around the notes D and G#. In the recording "Ein Thema, Quarten, Kim Walzer und Mehr" he uses regular bursts of fast 2-note clusters around G# above middle C (generally between F and B) as a homing-point for more exploratory improvisation encompassing the whole keyboard. The motif here not only creates an analogy for circular movement - the physical explorations of the keyboard coming full circle, but also creates a spontaneous cyclic form in the music.

Apart from the abstract, 'timeless' motion of tones in a circle (pitch) and their rhythmic movement through time, movement is also the natural expression of the motor system and circular movement is fundamental to piano technique. Tobias Matthay, and other pedagogues since, have stressed the importance of the rotations of forearm or wrist, mostly unseen in their incidence, as the secret of technical competence. Rotation (a) redresses the imbalance of relative finger muscle power and (b) provides a workable system of tension and relaxation designed to minimize the tension element. There are two basic rotation positions: pronation (twisted so that the palm faces downward) and supination (untwisted so that the palm faces upward). When the hand is over the keyboard the outer of the two forearm bones, the radius, crosses the
inner bone, the ulna, and so the "forearm-rotation element" (Matthay) involves increasing or decreasing this arc according to phrase or fingering. Most playing involves a strong pronation. The cessation of exertion inwards towards the thumb leaves the hand and forearm free to roll outwards and hence direct the arm-weight towards the little finger thereby correcting its relative weakness of finger muscle power. Matthay explains in some detail how to apply this twisting and untwisting action (even though this action is "invisible") and assures his reader that this will render all fingers equally strong and responsive (2). Borah Bergman has discovered, without recourse to classical piano pedagogy, that a type of arm rotation is a vital element in his technique. In order to ward off mounting tension during improvisations he will move wrists and forearms in clockwise and anticlockwise circles while playing. Irene Schweizer too finds that introducing more flexibility in the wrists, especially when combined with "unnecessary" side-to-side movements, provides a release from tension.

Velocity and Tone

In "The Act of Touch" Matthay wrote extensively of the different tones that could be produced by different key-attacks. He argued that if the key-descent was executed with an acceleration rather than at a constant velocity,
the hammer would remain in contact with the string for longer and produce a tone more "sympathetic". Helmholtz established through careful laboratory investigation that the length of time a piano's hammer remained in contact with the string was one of the principal determinants of the resulting tone quality. The more forcibly the hammer is struck the shorter the contact with the string and also the greater the intensity of the upper partials. Unfortunately Helmholtz did not carry his investigations further to determine whether different tone qualities could be produced at the same level of intensity. It was not until 1931 that William Braid White proved in a series of experiments that tone quality and intensity were inseparable, thus disproving Matthay's hypothesis, although Matthay hedged and objected to the bitter end (3). White concluded that "touch" was purely a matter of control of hammer velocity. This controlled loudness, or amplitude of string motion, and that every loudness-value had a distinct corresponding colour-value (partial structure). Therefore there could be no change in loudness without a corresponding change of tone-colour and vice versa. John Backus remarks that pianists have always been curiously resistant to this fact (4).
The Evolution of percussive tone

It is clear that Matthay's conception of technique is firmly rooted in the piano literature of the 18th and 19th centuries and does not bear up to the scientific scrutiny of the Acoustical Society. Matthay was strongly opposed to any use of arm movement that involved hitting the keys from a distance as this emphasised the instrument's intrinsically percussive nature. For while the piano is by nature percussive, it is constructed to yield maximum resonance to defy to some extent its natural physical properties. However, jazz technique evolved along rather different lines. In small jazz combo playing in the 40's the piano was assigned its place with the rhythm section and the chords were as important for their rhythmic placement as for their harmonic content. In solos, phrasing was angular and detached. Smooth legato playing was an anathema to the rhythmic vitality of bebop. While Lennie Tristano and other later pianists brought a gentler and flowing lyricism to the angular lines and syncopated phrasing, free jazz favoured the intense hard-edged sound with little or no use of the sustaining pedal which put the piano in closer empathy with the drums. Not only was piano and drums a popular combination as we shall see later but aspects of the technique of free jazz piano playing emphasised this connection even more. As Chris MacGregor has said: "A piano is a drum with a melody".
Clearly there is a world of difference between the contemplative playing of Paul Bley which uses tonal areas selectively, and the highly percussive playing exemplified by many of the European improvisers. In the case of the small bebop group the piano is mainly a 'neutral' chordal instrument with a vital contribution to the rhythm section. In free jazz the rhythm and timbre take precedence over any harmonic interest where attention to individual notes of chordal structures is relegated to a flow of rhythmic energy.

For Marilyn Crispell this rhythmic energy constitutes the actual form of an improvisation. She speaks of a heightened state of awareness in improvising, "hooking into a sense of continuity of energy and a pulse within that energy which dictates where the music is going". In working with compositional ideas it is this "energy wave" that can redirect a train of thought to new areas. As a member of Anthony Braxton's ensemble she often had to deal at very short notice with dense and complex notated scores such as Composition 98. She admits that the notation was used more as a kind of auto-suggestion for the dynamic momentum and physical movement around the keyboard rather than read accurately. This position is fully endorsed by Braxton himself who writes of this particular composition:—
"The germ procedure underlying Composition 98 involves the interrelationship between visual shapes and musical postulation. Improvisation in this composition is based on the transposition of given visual shapes - in actual notation - into creative musical phrases....there is a music for every visual reality - or at least the particulars of a given visual reality has a complementary music that services to affirm the same vibrational postulates." (5)

Cecil Taylor was one of the first pianists to explore the concept of percussive playing extensively. Using clusters of just a few notes he would string them together in very rapid runs as a type of solo line using hands alternately in tight, closed positions rather like mallets. Particularly when combined with his uniquely aggressive style the clusters themselves have an intrinsic percussiveness. They contain less extractable pitch definition than do more 'familiar' chord shapes. The effect of consonance or more widely spaced intervals seems to take the edge off this percussiveness, as can be heard by comparing a simple major triad with a tone cluster filling in the gaps between those notes. The mallet-like alternating hands technique as used by Taylor has been widely adopted by other improvising pianists as the freedom of arm movement which it implies gives scope for a wide and rapidly fluctuating tonal and dynamic field.

The sense of the arm movement, or Kinesthesis, is of prime importance here. In Taylor's case the alternate-hands
technique is stretched to the limit of human capability in terms of speed and amplitude. As with several other pianists the movement made is actually greater than that required to depress the keys. Taylor finds important links between this hand and arm movement in space above the keyboard, the agile and rhythmic movements of a dancer, and the spaces and silences surrounding the individual attacks. Irene Schweizer too has developed a whole area of her technique around oscillating arm movements for this style of playing which has close connections with her work as a drummer.

The facility of the arm to make rapid and repeated attacks depends on the relative inertia of the various links which make up the arm in biomechanical terms. Schultz, Ching and Ortmann assume that the larger the link the slower must be its maximum speed of oscillation, the implication here being that greater speed must be assigned to smaller and smaller links. Borah Bergman also upholds this theory in that he claims that the fastest speeds are the result of finger movement only. His individual technique is founded ultimately on finger power and strength and not on arm movements which follow a slower and wider course of parallel circles. He claims that the percussive techniques of many of the European free pianists are gross and primitive as they: (a) are an anathema to the complex polyphonic improvisation of which the instrument is
capable and (b) they completely neglect the vital links of wrists and fingers. Bergman's ideas are curiously consistent with 19th century pedagogy which advised keeping the wrist loose and the arm, as far as possible, immobile in particular for octave passages. Wieck, an advocate of "pressure-playing" bemoaned the virtuous trend for "piano-banging" and "jingling" stressing the importance of "bringing out a fine legato tone with loose and quiet fingers and a yielding, movable wrist, without the assistance of the arm." (6).

In the arm the links are in proportion with one another in that the largest, the shoulder, has the most powerful musculature to operate the whole arm, while the fingers have only small muscles. Roughly speaking all the other links in the arm display a similar proportion of joint size to musculature so a dimensional analysis reveals a constant scaling factor - the links have approximately equivalent performance capabilities. Ching comes the closest to realizing the essentials of the problem of rapid playing. he discovered through experimentation that maximum rates of oscillation are virtually the same for different parts of the same body, though he was concerned mainly with minimal finger movements. In playing the piano the key must be displaced by 1cm and if that displacement is carried out by the forearm oscillating at maximum speed from the elbow, this is roughly equivalent
to the finger moving through 1mm (which is less than the amount of 'give' in the flesh of the fingertip). This implies that in piano playing at least it is the forearm which is the fastest link.

In practise the biomechanics are more complex than this viz. the different parts of the hand and arm are not used in isolation but work co-operatively. For example the crucial moment of inertia which dictates the maximum speed can be slightly reduced by bending the hand downward at the wrist with the attack, so the wrist compensates for the forearm's inertia. As the alternate hands technique of free jazz requires each hand to contribute equally each hand on its own is really only playing at half speed. The alternation is coordinated by a neuromuscular switching from one to the other and this in effect doubles the potential speed.

Another important factor to consider is that the inertial reaction of key and arm increases with tonal amplitude. In other words in playing louder the load on the arm is increased, so under the condition of maximum frequency of the forearm's oscillation will be slightly reduced. This can be illustrated by the following diagram:-
If curve (a) represents maximum effort, (b) and (c) represent the same relationships of frequency and amplitude at lesser degrees of muscular stimulation.

In other words there is a trade-off between speed and amplitude and the pianist must make a choice. Curve (a) represents the condition of maximum effort, though this is not something that can be sustained indefinitely. Fatigue naturally takes its toll, so depending on a pianist's individual strength and stamina, the longer this kind of activity is maintained the more the muscular stimulation to the arm must be reduced to compensate for the fatigue factor. Don Pullen notices this slowing down process particularly in free playing where fatigue will have a sudden impact on music and action: "it all becomes very heavy and slow-motion as though moving through honey".

While Pullen uses the fatigue factor to positive effect, to signal changes in the direction of the improvisation,
to some it is seen as a drawback especially in the rapid forearm oscillations of 2-handed runs. Fatigue can be viewed as the result of overloading the muscular system and practise is partly about developing a resistance to it. Some pianists have sought answers in traditional pedagogy interpreting the idea of rotation in a variety of ways. Martin Theurer uses an undulating wrist motion which, he claims, enhances that sense of freedom to move immediately to any part of the keyboard. Borah Bergman, because of the extremes of muscular exertion in his playing keeps arms and wrists in constant rotary motion, as a way of relaxing, as a visual test of looseness, and partly to bring about a muscular/aural dissociation - the ears being constantly surprised by what the fingers are doing. In order to assist the independent movements of the finger muscles the arms must be kept free of all stiffness and obstruction. Bergman finds that without this rotary freedom fatigue develops quite rapidly. Alexander von Schlippenbach, on the other hand, equates a certain type of muscular tension with musical objectives: by an exaggerated stiffness in his arms and wrists he achieves a particular stylistic angularity in his playing. Relaxation, he says, is a precondition of work and a state of rest between its various stages, but cannot achieve any positive action when it comes to musical performance. Maria Levinskaya draws a distinction between Temporary Fixation or Stabilisation: the idea of steadying the arm
in a certain position (even though this may only take a fraction of a second) to take aim for a specific note or group of notes, and Permanent Fixity or stiffness: riveting a limb so tightly in a stationary position that movement becomes awkward or sluggish. This is the limitation which Don Pullen makes deliberate use of. Schlippenbach aims for a state in between the Temporary Fixation and the Permanent Fixity where an enhanced degree of tension in the joints results in a certain type of stiff playing full of random accents and sudden silences, but the stiffness is not taken to a degree which inhibits high speed repetitive movement. The heavy accents achieved by this calculated stiffness are a direct extension of his earlier, more conventional jazz style. In "Payan" for example the sense of heaviness and inertia are combined with an urgent and syncopated jazz phrasing. Schlippenbach's use of muscular tension coincides with Ching's argument against the "Relaxation School" (7) which equates speed with maximum freedom of movement. This, he argues is a faulty doctrine; the highest speeds of repetitive movement are achieved only through increased tension and not relaxation in the relevant joints. Schultz (8) points out that there is no such condition as complete relaxation or looseness. Muscles work in pairs alternately contracting and relaxing at the required speed. When the pairs are simultaneously contracted the

-230-
joint becomes set or stiff, and in this condition the onset of fatigue is almost immediate.

The adoption of techniques from systems music

It was Steve Reich and later John Adams who realised the potential for superimposing patterns of different lengths in each hand, each simple and repetitive in itself but together creating complex and varied lines. Perhaps the simplest example of this can be found in Reich's "Piano Phase" (1967) where patterns of 2 and 3 notes respectively produce a composite sequence of 12:

Terry Riley had been developing a similar technique in his solo keyboard music since the early 60s (5 or 6 years prior to this piece) but in a wholly intuitive way. "Piano Phase" was one of the first instances of this technique in notated music. In his piano work "Phrygian Gates", John Adams builds many different phasing/looping patterns into a series of changing harmonic/timbral fields or "gates" of precomposed temporal proportions. The texture from one gate to another is astonishingly varied:
simultaneous melodic patterns in both hands, chordal structures in alternative hands, una corda and three different degrees of sustaining pedal and many different rates of articulation. One feature common to all the patterns is the constant interruptions to the order by 'foreign' notes which throw patterns into fresh alignment and also stand out by nature of their 'foreign-ness'.

It is this potential for disruption within order, unity combined with sense of total unpredictability that interests Keith Tippett. While acknowledging the influence of Steve Reich and Terry Riley on his work he feels his roots to be in jazz and the European tradition of free improvisation. He often uses an alternating-hands technique in conjunction with specific fingering sequences of differing lengths in each hand. If 2:3, as in Piano Phase, produces a cycle of 12 there are many extensions of this principal available to the improviser: 3:4 = 24, 4:5 = 40, 3:5 = 30 etc. And as Tippett points out, one is not limited to "5 finger exercises" when one starts to combine the single-hand patterns in more complex ways e.g.: 4+3:5+1 or 5+2+4+4. The attraction of these more complex groupings for Tippett is to "out-wit" the rational order to achieve something quite spontaneous and unpredictable. In this type of improvising the hands will play alternately over the same range of notes producing composite patterns which appear to be a great deal less
repetitive than their individual components. With the longer single-hand sequences which are themselves prone to fluctuation of both length, pitch content and patterning there is an unpredictability to the direction of the streams of notes. Tippett sees this type of passage as having certain internal consistency which allows the sequence to be interpreted as a 'block' - that same fusion of stasis and forward momentum which is common to much minimalist music.

Tippett plays these sequences with the hands directly on top of each other so the same range or set of notes is available to the fingers of either hand. The resultant stream of notes appears to emanate from a single source when played at high speed and with an equal articulation from each hand. But as the hands move apart to cover different pitch fields a discontinuity causes the perceptual system to interpret the composite sequence as emanating from two sources. Tippett is fully aware of this perceptual boundary and enjoys the areas of ambiguity that this type of playing creates, as can be heard when single streams gradually divide and the patterns of one hand or just certain notes become isolated from the flow:-

-233-
Apart from pitch there are other parameters that can segregate the flow of notes into separate streams such as articulation and relative intensity of each hand:

Apart from pitch there are other parameters that can segregate the flow of notes into separate streams such as articulation and relative intensity of each hand:

The fusion or separation of these streams is inextricably linked to attentional processes. In improvising Tippett might relax attentional effort with the result that attention might randomly alternate between the available...
streams, focus on one of them individually or even play them against one another.

In the duo recording with Louis Moholo "Zimbabwe is Free" notes of the stream are isolated by timbral differentiation - they emerge as normal piano tones to either side of a confined register of prepared piano (with glass ashtrays) the rapid syncopation emerging randomly by means of the hand alternation.

The capacity for fusion into a single stream depends also on articulation; the balance and exchange between the hands and the leaving of the right amount of space in the gaps. This is as true of Keith Tippett's technique as it is in the nuclear melodies of Balinese gamelan music where a single line is divided between two instruments which play in a rapid, interlocking 'hocket' style. The reverse process - separation into streams of what otherwise would be a coherent single line - has been explored in arrangements of Bach by Varese and Webern, and more recently in electroacoustic music by the American composers Robert Erickson in "Loops" and Charles Dodge in "Earth's Magnetic Fields" where streams decompose and regroup themselves timbrally. A marked change in rhythmic articulation can be observed in Tippett's music when he moves at certain points from alternation of single notes to alternation of phrases or note groups such as in "The
Unlonely Raindancer" Part I. The percussive stream in the uppermost register of the piano is what the ear naturally gravitates towards rather than any discernible melodic sequences. Here the runs and motifs are passed from one hand to the other and so the hands are still alternating albeit at a slower speed than with the single note attacks.

This technique of alternate-hand single note attacks contributing to the formation of a single line has a direct derivation from drumming - the single stroke roll. So far we have looked at only this one technique but there are many other derivations of drumming which can and have been applied to the keyboard. The adoption of the single stroke roll, though one of the most common techniques with free jazz piano as well as with drumming, is only one possibility among many and some pianists have adapted basic drum rudiments to keyboard technique with greater degrees of sophistication. Indeed this is nothing new to jazz piano where the emphasis, more often than not, is on rhythmic angularity rather than on rounded legato phrases. Lionel Hampton claims to have derived much of his keyboard technique from playing the vibraphone with 4 mallets, where, by means of an exaggerated forearm rotation he treats the two extremes of this rotary movement as the main channels of force: the two 'mallets' being the outer fingers (thumb/4th and 5th fingers) of each hand. This
action is one in which the hand acts as an amplifier of
the forearm oscillation. While employing this very simple
form of "weight transfer" technique might be considered
crude by traditional pedagogues or even by Borah Bergman,
reducing as it does the possibilities of ten fingers to
four, its performance characteristics are more flexible in
some respects than the single-note alternating-hands style
because here an extra link is introduced to each hand.
Apart from simply translating the double-stroke roll to
the keyboard (RRLLRRLLRRLLRRLL) it facilitates the
combining of single (interlocking), double and
simultaneous strokes. In this new two-link movement the
forearm oscillates with less displacement than before, and
this combined with the new imposed rotary movement creates
the right conditions for a greater resistance to fatigue
and an increased capacity for speed. On the other hand
the decreased rigidity of the wrist lowers the upper
amplitude limit.

Irène Schweizer introduces a rotary movement into this
type of passage, often combining alternate single strokes
and double strokes to form rapid triplets. By thus
arriving at the basic traditional rhythmic unit of jazz
she is better able to make the music "swing". Either hand
can lead: LRRLLR or RLLRLR or more complex patterns such
as double paradiddles (LRLRLR LLRLRR), can provided a
rhythmic focus for unrestrained movement about the
keyboard. The mixing of single and double attacks in this way means that the force output of the two sets of muscles can be adjusted to a constant level so that the hand oscillates at the same rate as the forearm but at the same time turning back and forth about the wrist in something like a controlled shake.

The forces $F_2$ and $F_3$ provide a restoring torque and a release from fatigue particularly so in improvisation as $F_1$ and $F_2/F_3$ have the option of exchanging roles at any point.

If attentional effort is directed towards kinesthesis rather than sound, what of the music that results from this mental attitude? Although a crisp, percussive sound is Irène Schweizer's main goal, the timbre and articulation being of greater concern than pitch content, her playing is often dominated by repetitive phrases. She does not decide in advance to use particular thematic ideas; these just surface spontaneously from her former background of playing more conventional jazz. In a free improvisation ideas follow each other in a logical
progression and these ideas are either learnt or are generated then and there by kinesthetic freedom. She claims not to practise in any organised way but simply to "play" and follow her own train of thought. The "accidental" ideas arising pout of the free percussive style provide a rich and constantly changing source of creative stimuli.

Schweizer's conventional jazz background has had a marked influence on her free style: "the music sometimes gets stuck in a groove and becomes straight away more 'jazzy'. When this happens it's always a consciously used device, as my roots are in jazz music." It is interesting to note that she came to play the piano as a substitute for the drums from which, apparently she was discouraged from taking up as they were deemed 'unfeminine' (!) In recent years she has started to record as a drummer as well as a pianist, finding close parallels in technique: "I especially like the sharp rebound from a drum head - space and silence around the stroke, no matter how fast you play, which is what I try to achieve on the piano".

Martin Theurer applies drum technique to keyboard practise by adapting some of the basis rudiments:
paradiddles: RLRR LRLL/RLLR LRRL/LLRL RRLR etc.
5-stroke rolls: RRLLR LLRRL
drag: RRRL RRRL/LLLR LLLR

In the case of repeated attacks from the same hand forearm rotation is applied for greater speed. Like Schweizer, Martin Theurer was also attracted to playing drums believing that sticks would behave in the same way as fingers in amplifying wrist and arm movements. However, he found the differences in technique too great and could not play the type of rhythms that he heard and so, frustrated, sold the drum kit!

**Piano and drums ensembles**

The emergence of percussive keyboard technique have given rise to close associations with drumming and the piano/drums duo has become a popular combination in free jazz. In fact in 1980 for their annual festival of improvised music FMP records devoted the entire event to piano and drums duos(9).

In many ways the duo is an ideal medium for a clash of different styles of performance as it is analogous to the most basic cell of relationship. The insights offered by the diversity/unit possibilities of this ensemble is comparable to the advantages of binocular vision, of a
second language, of binomial theory in mathematics or the double proofs of geometry. For relationship is always the product of a double description; the interaction of the improvising duo is like the interaction of two eyes - each can give an independent monocular view; combined a single binocular view in depth. They can play 'together', against each other (consciously) or quite independently: in the case of the latter a third 'vision' may belong exclusively to the outside listener when the players may themselves be unaware or disinterested in the music's composite direction. But most importantly the duo has at its disposal the gamut of varied and unpredictable phenomena of relationship which cannot be internal to one person. Unlike a monologue (and in jazz the monologue often predominates in group playing: soloist/backing), in the duo there is a mutual interference whose friction creates material for the continuation of the improvisation process; a self-perpetuating chain of stimulus, response and reinforcement. Apart from the various kinds of dialogue and interplay possible within the duo, the instrumental combination has interesting implications; the piano as percussion instrument, drums as 'melody' instrument (Milford Graves always perceives drums in this way), their attack/decay characteristics, the jazz rhythm section or a piano trio without bass, the historical precedents for piano/drums duos in free jazz such as the
Cecil Taylor groups since 1961 and the Don Pullen/Milford Graves duo founded in 1965.

Martin Theurer and Achim Goeke have played together as a duo since 1973 and have always sought to explore and develop points of correspondence between piano and percussion. Thus Theurer's playing is deliberately and consciously percussive making extensive use of fast alternate-hands technique powered by wrists and forearms rather than finger articulation. To this end he imitates stick technique likening stiff fingers to vibraphone mallets in order to bring out the key action noise and high overtones that come from loud playing. The main disadvantage of this, as Theurer pointed out in conversation, is the inability to gauge intervals accurately and play scalar runs. However, this is a limitation that he hopes to overcome by practising major and minor scales with alternating hands on each note, similar to vibraphone technique. But accuracy of pitch is not a prime concern for Theurer: "my 'aleatoric' gestures create new sounds, new ideas."

He thinks in terms of blocks of sound rather than in pitch sequences or harmony. While claiming that the music is "atonal" (an atonality derived from ballistic accident rather than from the deliberate avoidance of all that is tonal), the dynamic extremes, the unusual use of pedal to
create thick washes of sound, the simple but very effective piano preparations coupled with a leisurely progression from one sound area to another lend an 'epic' quality to the music on an abstract/timbral level which overshadows any conscious manipulation of pitch content, if indeed there is any at all. Achim Goeke's percussion playing makes little or no reference to the conventions of jazz drumming, free or otherwise, but instead takes sound exploration and timbral contrast as its starting points. He uses a normal drum kit in conjunction with other pitched percussion of varying degrees of resonance and sustain such as crotales and various found metal objects which are hit, thrown or spun. Like Theurer he leaves much to kinesthetic chance. While his playing has a busy surface texture most of the time, the use of gesture gives it a high degree of unpredictability and randomness. One significant difference between these two musicians' outlooks is that while Goeke sees his playing as a kind of 'performance art' where the gesture itself is a spectacle or theatre and not purely incidental to making sound, Theurer says that he is "just a musician" and so all movement is directed toward that end. Though his concept of "atonal" or "pure sound" music embraces the chance happenings of such gestures, the movement is not an end in itself; it is quite unselfconscious. Despite these differences, both musicians stress the importance of communication and paying very close attention to each
other during improvisation to reach special moments of "effective surprise" when there is a sudden shock of recognition "as though the total music is being played by one person....this is a special state we feel only occasionally."

Jerome Bruner explains this condition of intuitive familiarity as applied to scientific theory:-

"I would propose that all forms of effective surprise grow out of combinatorial activity - a placing of things in new perspectives. But it is somehow not simply a taking of known elements and running them together by algorithm into a welter of permutations. One could design a computer to do that, but it would be with some embarrassment, for this is stupid even for a computer...'To create consists precisely in not making useless combinations and in making those which are useful and which are only a small minority. Invention is a discernment, choice.' If not a brute algorithm, then it must be a heuristic that guides one to fruitful combinations. What is the heuristic? Poincare goes on to urge that it is an emotional sensibility: 'the feeling of mathematical beauty of the harmony of numbers and forms, of geometric elegance'". (10)

Theurer and Goeke aim for a clear and intelligible ensemble communication - a process of formulation and of creating 'linguistic' boundaries. They speak of "pure sound" and "emotion" and of keeping a balance of these two by means of the music's self-regarding and self-regulating mechanism.
The Milford Graves/Don Pullen duo - one of the pioneer piano/drums ensembles of the mid-60s - was motivated by quite a different spirit from this rather self-conscious 'togetherness'. Complete freedom was the byword and direct ensemble communication was actually avoided. Graves dismisses this listening/reacting syndrome as "following stagnant nerve impulses" and Pullen has remarked: "we don't listen; we just let it happen. You have to catch onto your own train of thought and follow it regardless of what else is going on." This concept of 'non-listening relationship' is common to many free improvisation groups of this period where probably liberation from the constrictions of form and structure was too new for such groups to be hankering after its reintroduction in the form of justification for their freedom of expression. This concept is explained by Leo Smith:-

"to consider each performer as a complete unit with each having his or her own centre from which each performs independently of any other, and with this respect of autonomy the independent centre of the improvisation is continuously changing depending upon the force created by individual centres at any instance from any of the units. The idea is that each improviser creates as an element of the whole, only responding to that which he is creating within himself instead of responding to the total creative energy of the different units. This attitude frees the sound-rhythm elements in an improvisation form being realised through dependant re-action." (11).
In the improvisation P.G. III Pullen follows an independent pulse playing chordal structures which drag behind the beat, reminiscent of the rhythmic style of Erroll Garner while Graves, following another idea entirely, plays arhythmically across this pulse. He explains this principal of lack of conscious attention:

"This music will cause a Mind-Challenge-Struggle within the self insofar that internal control is needed to adjust to the spontaneous forces... If one tries to formulate our music, or listen to it with a biased mind towards rhythm-sound, he will only baffle himself. If you can let yourself react according to the natural principles of organic structure and free the mind of conventional laws of western music, you will cause less bewilderment within yourself." (12)
NOTES ON CHAPTER 5

(1) V. Zuckerlandl: "Sound and Symbol" p.76.

(2) T. Matthy: "The Visible and Invisible in Pianoforte Technique" p.E18FF.

(3) see: T. Matthy: "The Act of Touch" p.137.


(6) Friedrich Wieck: "Piano and Song" (Boston/Oliver Diston Co. 1875).


(8) Shultz: "The Riddle of the Pianist's Finger" p.29ff.

(9) "Wat'n bloss Duos?" see author's review in Contact 22.
(10) J. Bruner: "On Knowing" p.20 (quoting Henri Poincare: "Science and Method").


During his European tour in 1981, Anthony Braxton kept detailed notes on the audience responses to the performances of Composition 98. These he catalogued into a chart of "reception dynamics" as he found that they emerged as a definite pattern which remained virtually unchanged throughout the tour; such responses as boredom, humour, curiosity, "is it jazz?", etc. What interested Braxton about this type of documentation (and he has remained stolidly resistant to adverse criticism of his radical approach to composition) was the fact that it brought up the question of competency. By mixing conventional notation with graphic score and free improvisation in such a way that they were indistinguishable from each other he found that this upset even discerning listeners as it challenged traditional notions of performance skill. Since notation will often act as an intermediary, in a sense justifying 'difficult' music, the aesthetic uncertainty (of whether what is being played was actually intended by the composer or whether what is being improvised is stylistically acceptable to his ears) is thrown into sharp relief by this approach. Bertram Turetzky, the American contrabass player, encountered a similar experience when after being congratulated by a university professor for an outstanding
performance of a new work by Harold Budd, met suddenly with a completely different reaction on producing the score which consisted of a few coloured squares on plain paper. In improvised music, where, ostensibly, anything goes, what is the role of relevance of traditional performance skills?

Language

Derek Bailey discusses the analogy between free improvisation and language (1), the process of building a vocabulary and of deciding what are the dialectics of one's own style. Steve Lacy speaks of a "brotherhood of language....When you hear a new player - and you make it your business to hear anyone who comes along who has something new- then you have to go back and re-think everything."

Technical accomplishment, in most instances, is a necessary or at least a highly desirable goal to facilitate this language formulation. Alexander von Schlippenbach stresses that individual freedom must be tempered with self-discipline and that improvising is concerned with combining exploration with one's past musical experience. Freedom is not synonymous with licence; it lies between licence and artistic order and a balance must be maintained in order that the improvisation
can project and communicate. Schlippenbach believes that in a performance situation free improvisation must carry some externalised conviction in order to get across; therefore some form of disciplined training must precede truly spontaneous music. In more widely accepted styles symbolic communication is accomplished by adherence to the vocabulary of that particular style, but in a radical style there is a danger of a similar conformity but to individual whim, thus banishing communicative power. To avoid this isolation there is a need for efficacy amongst improvisers and their audiences, and good instrumental technique is important in the discovery of new associations and patterns.

Although some work has been done in this direction, most notably George Russell’s book "The Lydian Chromatic Concept of Tonal Organisation", there is clearly a lack of methodology in post-bebop jazz, and the epithet of 'free' does nothing to encourage a structured approach. Jerome Bruner has suggested that "the first object of any act of learning, over and beyond the pleasure it may give, is that it should serve us in the future" (2). While building up skills with past material it becomes an obligation of education to stimulate positive attitudes toward innovative and experimental ideas. This is a theme taken up by Bertram Konowitz who believes that the intuitive aspects of traditional jazz improvisation can
and should be reconciled with a teaching methodology:-

"The improviser, functioning simultaneously as performer and composer, explores conscious and developed skills while he strives to unearth relationships which may be part of the subconscious." (3)

The assimilation of skill into the subconscious is the fundamental means of building a vocabulary for improvisation, and many improvising musicians stress the importance of practise to this end. Arthur Koestler writes: "an exercise of more or less flexible skill can perform tasks only of a kind already encountered in past experience" (4).

These developmental factors combine with other motivations impinging upon the individual which can be depicted in a simple system:-

![Diagram](image)

- Fig. 1

Developmental factors → Training

Sociocultural influences → IMPROVISER → performance

Abilities and capabilities → Immediate Environment.

-252-
On the broadest scale, musical behaviour is influenced by social and cultural elements - whether it be American jazz, European avant-garde music etc - and these infiltrate the system manifesting themselves in the form of attitudes, motivations and outlet possibilities of improvisation. A more complete picture of this process might be illustrated thus:-
Habit and Originality

If we accept that improvisation is about skill acquisition, it follows that the greater the mastery of that skill the more automised it will tend to become. This is a process that Koestler calls "the mechanisation of habit" (5) in which awareness is a matter of degrees. The conscious and subconscious are not separate compartments but a continuous scale of gradations. Spontaneity decreases and fades away with increasing mastery of skill under stable conditions, and as the assimilated experiences of improvisation become more ordered and structured, a schemata of 'rules' begins to suppress elements of surprise. This process is described by Derek Bailey in his discussion of group playing:-

"Even the musically successful groups seem to lose some of their fertility after around two to three years. At this point there occurs a hardening of the groups' improvisational arteries; the music becomes too obviously a dialogue or there is a continuous harping on the identity of the group which is hard to distinguish from self-parody. Sometimes a self-conscious clarity takes over - a straining after simplicity which narrows the music down to what might or might not be its essentials. Mainly, though, the played-out improvising group suffers a loss of what Leo Smith describes as the 'independent centre' of the improvisation; that part of the music which exists independently of the performers' intentions and seems to be created by a sort of second-degree or sub-conscious relationship between the players. The indefinables get defined or disappear. It is inevitable perhaps in a music which relies so heavily on invention and for which the feeling of freshness is essential, that there should be a gradual using up of these resources." (6)
When ensemble interaction becomes defined and standardised it is still possible to work under these conditions. There are exceptions to Bailey's analysis such as The Sun Ra Arkestra and The Art Ensemble of Chicago both of which have remained as tightly-knit ensembles since the 60s. Some semi-automatised skills have a great deal of flexibility already built in, so to speak, even though, as Bailey points out, a set of rules and a malleable strategy may not be combined with the essential spirit of creativity. The more complex the skill, the more flexibility it embodies, and adaptable strategies arise to cope with changing environmental conditions and external stimuli. T.C. Ruch writes:-

"The cerebral-cerebellar circuit may represent not such much an error-correcting device as a part of a mechanism by which an instantaneous order can be extended in time........" (7)

However, an excessive sense of 'orderliness' can be counter-productive. More often than not this feeling of straining after order is a feeling of stagnation and this applies as much to the solo improviser as it does to the group. Let us consider some of the parallels between the habitual and the original forces at work:-
<table>
<thead>
<tr>
<th>Habit</th>
<th>Originality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Association within the confines of a given matrix.</td>
<td>Bisociation of independent matrices.</td>
</tr>
<tr>
<td>Guidance by an ideal of conscious clarity.</td>
<td>Guidance by subconscious processes normally under restraint.</td>
</tr>
<tr>
<td>Stylistic rigidity.</td>
<td>Stylistic flexibility.</td>
</tr>
<tr>
<td>Repetitive.</td>
<td>Surprising.</td>
</tr>
<tr>
<td>Conservative.</td>
<td>Constructive - Destructive.</td>
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</table>

The preconditions of habit-formulation arise from unwillingness to experiment and a too-slow growth of vocabulary. Koestler identifies two ways of escape from this stagnation:-

1. Regression to more primitive levels of ideation, trance or dream states where codes of rational thinking are temporarily suspended.

2. Perceptive self-analysis and an ascent to new and more complex levels of rational involvement.
Apropos (1) he cites an interesting paradox of subconscious control:-

"A pianist, after practising a piece for some time, can reel it off 'in his sleep', as the saying goes. The exact opposite of this process is illustrated by the famous case of Tartini composing the Devil Trill Sonata while asleep."(8)

For the subconscious to be creative in this way it cannot be completely inert as Bailey has suggested. The hardening of improvisational arteries comes about through over-use of stock reactions and responses rather than any lack of rational involvement and analysis. The extended performances of Charlemagne Palestine, Terry Riley and Borah Bergman, which all involve a high degree of motoric/aural dissociation, rely on the attainment of a trance-like quasi-hypnotic state in performance. As Terry Riley explained when talking about his astonishing facility to maintain complex phasing patterns independently between the hands:-

"When I have mastered a pattern it can function more or less automatically, without thinking. The playing is transferred to more primitive parts of the nervous system, releasing higher mind centres for concentration on another plane."

Riley is identifying two interlinked but separate processes: (a) the subconscious as a repository of habits that no longer need attending to and (b) the subconscious as a centre of intuition and a breeding ground for new
ideas. The phasing patterns he develops are the essential, concentrated bits of information for extemporisation.

The concept of ontogeny - the development of the individual, both biological development and the habits of accumulated past experience - is of particular interest to Terry Riley as his music evolves organically rather than being consciously composed. If memory-formation strips input to its bare essentials, recall requires dressing it up again. Fragments of the original memory input are patched up with new intuitive ideas that emerge during performance (9).

Borah Bergman regards his own music as a journey into the subconscious but in order to be able to 'switch off' conscious attention he has developed a fluid technique through rigorous callisthenic practise:

"I would practise so that I would have absolute control, ease, strength, and security. I would practise very methodically so that I would not have to 'think' when I actually sat down to produce the work of music. I would be intuitive. I would touch my unconscious as they [de Kooning and Pollock] did. I would get inside my own piece. Energy came, I was free, I was flying. I made a series of tapes which had to last at least forty minutes respectively. No slowing down, playing as fast as I could to build endurance and to help me reach a state that was dream-like and beyond definition. And in this state my hands, my fingers, seemed to be going by themselves." (9)
The idea of being inside the piece is a reference to the abstract expressionist painter Jackson Pollock whom Bergman very much admired and identified with. Pollock (1912-56) worked by placing his canvases on the floor of his studio moving around and through them flinging, spotting and dribbling pigment. He evolved a gestural technique to paint as directly as he could, to bring more of himself into the art work, to bring his whole body into contact with the canvas, to be quite literally in the painting. Pollock's images appear to have been produced by the gyrations of his entire body. In a sense they register his creative experience, both his 'living' on canvas and his response to the evolving 'life' of the painting. As he wrote:-

"When I am in my painting, I'm not aware of what I am doing. It is only after a sort of 'get acquainted' period that I see what I have been about. I have no fears about making changes, destroying the image, etc., because the painting has a life of its own. I try to let it come through. It is only when I lose contact with the painting that the result is a mess. Otherwise there is pure harmony, an easy give and take, and the painting comes out well." (10)

Bergman similarly employs the reflex actions which are a result of the complete concentration and involvement with the physical act of playing, and because of this induced mental state he claims that the music is always spontaneous and therefore totally free of cliches. Koestler suggests an alternative path, that of increased
rational involvement, to avoid the stagnating effects of habits. If we presuppose, then, that voluntary movement is of a higher order than reflex action, the exercise of the will over improvised conduct should dispense with 'known' factors such as accidents. If each movement is correlated with one musical event, then a lawlike chain of voluntary movements will be perfectly matched by a lawlike chain of musical events:

But this is a misrepresentation as it assumes that it is a closed system, which it is not. It does not take into account many other sorts of physical events and environmental influences which will constantly bring about changes in the neutral state. The system would be better represented thus:
In this scheme, $V_1$ alone is not a sufficient condition for the occurrence of $V_2$, in the same way that $M_1$, which is correlated with $V_1$, is not a sufficient condition for the occurrence of $M_2$. $M_1$ will yield $M_2$ only if the environmental factors, which include aural, visual and physical feedback, are taken into consideration.

Cecil Taylor uses "unit structures" as a means of introducing more rational involvement. This material, which divides up the free exploratory sections, provides a return to more conscious modes of thought, balancing the more random impulses and bringing the music 'down to earth' through the deliberate movements involved in their correct execution. Sometimes these units are notated and sometimes dictated or remembered aurally. Howard Riley is all for thinking carefully about style and language-formation. Having come to free jazz as a result of dissatisfaction with the stylistic limitations of bebop.
and hard bop, he was then faced with the problem of what to replace them with. On what criteria do we judge the good and bad in improvisation? The coherence of his free style (in fact he has been criticised for sounding too coherent and therefore not free enough!) depends on having an extensive personal vocabulary which has evolved simply through a lot of playing and an aesthetic filtering process. Playing is an exploration which may further the bounds of that vocabulary. Riley speaks of development by unconscious editing: getting rid of new ideas that don't work or ideas that are no longer relevant to the present situation, between that performance and the next: "You can't stand still on the spot - by the very nature of playing an instrument you have to change". The evolution of vocabulary is intimately connected with technical capability and these two have to grow in step with one another: "the technical side of my playing is a direct reflection of my thinking.......I can only play as much as I can think or think as much as I can play."

Feedback

Voluntary movement has three basic properties: (a) it is consciously controlled (b) it is adaptive, and (c) every movement is necessitated by environmental demands. If we interpret 'environment' as piano keyboard we can represent this relationship in a simple feedback loop:-
However, in improvised music where choices of action continually present themselves there is a dichotomy between actual and intended movement. Motoneurons situated in the spinal cord control skeletal movement, receive instructions and send these on in the form of electrical impulses, to the muscle. If the muscle contraction matches that which the higher centres have specified then there is congruity - if not, then signals are fed back to the motoneurons for the necessary adjustments, and to the motor centre.

How does the muscle know what has been specified by the motor centre? Inside the main muscle (extrafusal) is a smaller one (intrafusal). Contractions of this intrafusal fibre can take place independently via the motoneuron pool but the contraction is insufficient to cause limb movement. If after the motor centre has instructed the muscle as a whole to contract, the main extrafusal fibres meet with some resistance different from that which has been anticipated, the intrafusal fibre will still follow through with its contraction. Thus the contraction of extrafusal fibre represents actual movement and that of
intrafusal fibre intended movement. So we have a double feedback loop:

Curt Sachs, writing in "The Wellsprings of Music", gives a working definition of instrumental music which he considers to be inseparable from the activity of the motoneurons:

"The original concepts of vocal and of instrumental music are utterly different. The instrumental impulse is not melody in a 'melodious' sense, but an agile movement of the hands which seems to be under the control of a brain centre totally different from
that which inspires vocal melody. Altogether, instrumental music, with the exception of rudimentary rhythmic percussion, is as a rule a florid, fast and brilliant display of virtuosity... Quick motion is not merely a means to a musical end but also an end in itself which always connects with the fingers, the wrists and the whole body." (10)

Speed and virtuosity are underlying forces in free improvisation, but in the high energy playing of Cecil Taylor and others there is no time to make adjustments and realignments as a result of aural feedback. In this case a greater level of programming is necessary. This would suggest:-

1. Reduced necessity to attend to cues.
2. Increased anticipation of successive stimuli.
3. Faster possible movements.

According to Howard Riley the energy level of the music comes directly from having a well-developed vocabulary:-

"I know what I am doing as far as it is possible to know......the energy level that I achieve when I do a solo concert is something that I couldn't achieve within the context of playing time because you can compress events and get very fast flurries of notes from the piano. But I would have to slow down a lot to fit it into a metrical framework. The idiom itself which doesn't have a beat behind it is the issue; in other words, you can create very rhythmic things but you can't tap your foot to it."
Movements may be controlled with visual/aural feedback if these movements are slow enough but with greater speed comes a greater degree of preprogramming. Steven Keele (12) believes that motor programs exist for predictable and well-learned events. Such a programme would act to control the direction, extent and speed of movements. He indicates that movements may be preprogrammed in that the particular muscle fibres to be activated, the timing of their innovation, are determined prior to the actual movement. A motor programme would exert control until a certain period of time had elapsed, at which point peripheral feedback could influence a change in the movements. Keele also speaks of a "feedforward" function that comes into play under the conditions of rapid and continuous complex movement patterns sending corrective instructions which put the muscles on the right track for the intended movement.

Deutsch and Deutsch (13) proposed that the subjects receive and use far more input from the kinaesthetic receptors than they are aware of. Greer demonstrates that subjects make use of an unconscious residual energy to make positioning movements (14). In very fast playing where there is no time to react directly to the preceding musical events, it is more a question of perfecting a type of movement through continual trial and error - what Greer calls "non-conscious kinaesthesis". Bateson calls this
type of learning procedure "calibration" and it is related to feedback as higher logical type is related to lower.

He explains the distinction:

"Let us suppose that the act is the shooting of a bird. In the first case this is to be done with a rifle. The marksman will look along the sights of his rifle and will note an error in its aim. He will correct that error, perhaps creating a new error which he will again correct, until he is satisfied. He will then press the trigger and shoot. What is significant is that the act of self-correction occurs within the single act of shooting. (feedback). In contrast consider the case of the man who is shooting a flying bird with a shotgun or who uses a revolver held under the table where he cannot correct its aim. In such cases, what must happen is that an aggregate of information is taken in through sense organs; that upon this information, computation is completed; and that upon the (approximate) result of that computation, the gun is fired. There is no possibility of error correction within the single act. To achieve any improvement, correction must be performed upon a large class of actions. The man who would acquire skill with a shotgun or in the art of shooting pistols under the table must practise his art again and again, shooting at skeet or some dummy target. By long practise he must adjust the setting of his nerves and muscles so that in the critical event he will 'automatically' give an optimum performance." (15)

Bateson's explanation relates largely to visual feedback. The motion involved in piano playing has the option of a greater degree of visual orientation than with most other instruments. This provides another field of information outside the purely aural one. The motion creates visual patterns of change, and this visual feedback can play an important directive role. The piano is unique among
instruments in its almost diagrammatic illustration of musical possibility. To the pianist looking at the keyboard it suggests patterns of action and relationship which are motivated by anticipated consequences; it is a cognitive map implying various kinds of information. As David Sudnow describes it, in the early stages of his apprenticeship as a jazz pianist:-

"As my hands began to form constellations, the scope of my looking correspondingly grasped the chord as a whole, a consistency developed in seeing not its note-for-noteness, but the pattern of its location as a configuration emerging out of the broader visual field of the terrain. Looking's work became expansive in scope as the reaching was moving concurrently for constellations. Sitting at the piano and moving into the production of a chord, the chord as a whole was prepared for as the hand moved toward the keyboard, and the terrain was seen as a field relative to the task. The keyboard is as many sorts of places as there are activities to be undertaken with it, a rather different-looking place to the cleaning lady than to the musician who in the course of play may see past it into the music with a look that is hardly looking at all." (16)

The keyboard implies a cyclic interaction between musician and instrument:-

-268-
The feedback provided by looking at the hands and keyboard in action helps to manage and oversee the trajectories of movement and the choices of their direction which are open to the improviser. J.J. Gibson called this type of feedback "visual proprioception" (17). It is not simply a matter of seeing the keyboard but a more fundamental orientation through observation of the flow-pattern of movement. David Sudnow describes this sensation:

"I knew what the paths sounded like, was not surprised by the sounds of the routes, as one may be startled when accidentally learning on an open keyboard. But what the paths sounded like was known in the way I was making them. There was not one me doing 'listening' and another doing pathway playing. I was listening-in-order-to-make-my-way,
in order to find as I played each day that I was doing this jazz music. I recognised the pathways' sounds. They had become quite familiar to me. But it is one thing to recognise familiar sounds you are making and another to be able to aim for particular sounds to happen. A different sort of directionality of purpose and potential for action is involved in each case." (18)

This system of pathways has close analogies with the Method of Loci, invented by the Greeks, wherein the user familiarises himself with particular locations along some route or path (for example, for the Ancients a walk through a temple noting the distinctive niches and statues). Once learned this cognitive map would be used for mnemonic purposes by taking a mental stroll along the path. A similar system is described by Bruce Chatwin in his article on the Australian Aboriginals where each Ancestor, while travelling through the country, was thought to have scattered a trail of words and musical notes along the line of his footprints, and how these "dreaming tracks" lay over the land as ways of communication between far-flung tribes. "Provided you knew the song, you could always find you way across country." (19).

Association Theory

In his book "New Pathways to Piano Technique" Luigi Bonpensiere outlines a number of simple symbolisation
exercises to develop the facility of "ideo-kinetics" - a sort of associative kinaesthetic feedback. These exercises do not involve piano playing but abstract spatial movement, such as moving the hands (with eyes closed) from one object to another on a table, like a number of stations along a route. The objects are symbols of the sounds one is aiming for. The idea is that if one system is parallel in spatial structure and orientation to another, transferring from one to the other should not be a problem as it should be sensorily comprehended. Conversely, when applying the principles of ideo-kinetics to the keyboard it is possible to strip the notes aimed for of all sensory elements and reduce them to mental symbols. These might be abstract musical symbols such as an image of the written note or of the name of the note or something different entirely: sights, scents, other objects, etc. The purpose of this mental juggling and substitution is "to unfold the inner system to a point where we could relinquish both sight and touch in the attainment of space-location. As for the sense of hearing, we used the physical sounds produced by our motions only as a concluding register of our inner dynamics, like an outside instrument on which we could read what the working machinery was doing. For, so far as sounds are concerned in our Ideo-Kinetics, only those comprised in our ideation as motive end-results do actually belong to the dynamics of our system" (20).
This wilful relating of performance action to other types of mental images is a useful and creative learning device. This theory of learning has been termed association theory, bond theory or connectionism (21). This sort of familiarity with the keyboard is gained gradually, is relatively long-lasting and yet is easily modifiable. Sudnow's "pathways" represent a network of associations of keys, hand positions and movements - information which, through assiduously developed familiarity, is embedded in the keyboard, as it were. In documenting the process of familiarisation with these pathways, Sudnow argues that his music is a direct response to the will and motivation to learn and to the stimulus of various extra-musical associations along the way.

Association theory implies that there are no intervening ideas between the stimulus and the response and that the connections or "pathways" are strengthened automatically with each occurrence. The learning of notated music to a high level of proficiency can often be repetitious and monotonous, but with the ever-changing and expanding vocabulary of improvisation different response patterns will emerge from a sensitivity and awareness of these changing associative stimuli. Marilyn Crispell cultivates various mental images when playing to 'hang' the music onto. These images some of which are musical and some of which are not, provide this source of changing associative
When I play my approach to improvising is changing all the time. I visualise different images and when I try things out on the piano, if I like them and want to repeat them or return to them in the future I return to the same mental image. The ideas are sometimes musical, for example hand shapes that are easy or natural for me to do, sometimes they are visual images or memories of past events. I don't really have to think about them or control them.

Other Models of Skill Acquisition.

Association theory implies stimulus-response connections, fixed responses and the formation of habits. According to this theoretical approach, repetition results in habits or preferred reactions. This is useful up to a point in considering the learning process prior to improvisation, but the interpretations of behaviour from this model is rather rigid. Through this theoretical approach it is difficult to explain adaption or new or changed responses. Howard Riley tells how his style changes unpredictably over the course of time:

"I play a lot and obviously there is an editing process in my own head in what I hear, where if there is something that is not acceptable to me I edit it out for the next time, but I don't do it in a conscious academic way. On a bigger time-scale you find that your ear and your empirical instincts lead you towards being interested in different things at different times. In the last couple of years I have found that I am including some tonal elements in my playing that I would never have included 5 or 6 years ago. It isn't that I have suddenly said, 'Right, I have done with my pan-tonal period; I'm going to a period of tonality mixed in with it (?'). It's just a question of what you are hearing in your
own music and other factors which influence you as you go." (22)

R.N. Singer identifies several other models that are specific to motor-skill acquisition and have relevance in the field of improvisation. These include cybernetic, information-processing, and adaptive models.

The cybernetic viewpoint cuts across many disciplines; biology, psychology, communication and physiology. The Greek origin of the word, 'kybernetes', means "steersman: one who operates a ship and has to keep it on course". The motor centre is such a control system and operates mainly under the principle of feedback, which we have discussed both in relation to learning and to actual improvised performance. On the question of learning many theorists have expressed dissatisfaction with the notion that it is a sequential process conditioned by reinforced responses to given stimuli. The cybernetic model lays greater emphasis on spatial and temporal factors in behaviour. K.U. Smith formulated a theory, which he termed "neurogeometric", on the premise that all significant behaviour is space-structured and based on sensory feedback process. The main factors in the learning and training of motions are not those of stimulus or reward reinforcement (hitting the right notes!) but of the displacement and interactions between sensory and
motor systems (23). The justification for this approach lies in the fact that man, in most of his behaviour, reacts to stimulus changes that are caused not by outside agents but by his own actions. The phrase that Smith often refers to is "closed-loop systems" i.e. the environmental influence on motor behaviour is minimal in specialist skills. In playing solo the improviser must make the best possible use of his own inner resources without the stimulus of other musicians, hence the emphasis that Derek Bailey places on practise in order to build the necessary vocabulary (24). Many improvisers have turned their attention to movement, rather than to sound, as the first area of consideration in this learning and training process. As David Sudnow writes:-

"...to look for the essence experientially is to look at the choreography of bodily movements and their interior organisation." (25)

Keyboard playing is a space-structured activity and learning it is a process of establishing new spatial relationships in patterns of motion. Bonpensiere's entire book "New Pathways to Piano Technique" is essentially about the training of movement both at and away from the keyboard. Above all he stresses the exchangeability of symbols, whether they be piano keys or other objects. Leo Smith has evolved his own system of improvisatory music and dance (called "aFmie") where elements of motivic
organisation are introduced by a specific notation which is applicable to both musicians and dancers. (26).

Whereas the focus in cybernetic models is on closed-loop feedback as a principal determinant in the organisation and control of behaviour, the information-processing viewpoint provides a framework for examining limitations of attention, perception, memory and decision-making. The proficient execution of a simple or complex task is dependent on the individual's capacity to discriminate effectively among a variety of cues. In any communication system, man or machine, there is a great deal of variability of what goes in and what comes out. Naturally a good system will show some relation between input and output. Certain cues will be irrelevant to a particular situation (a), some will be accepted and transmitted more or less directly (b) while some of the response will be the outcome of uncertainty, as presented below:-

\[\text{Diagram: } a \cap b \cap c\]

In improvisation the balance of known information and uncertainty can provide a fruitful dialogue though many improvisers are wary of feeling too 'comfortable' with well-established cues or even with repetitive material.

-276-
Borah Bergman, for example, says that improvisation is and should be a continual struggle against any cliches and habits that one may form in the course of technical practise. Derek Bailey, on the other hand, remains open-minded about pre-learnt stimuli, although he has deliberately sought out concepts of perpetual renewal and variation from post-1945 European composition. He recognises the need for a continual and changing supply of fresh stimuli which will keep the vital element of uncertainty as the main priority:

"Probably the most important requirement is for the language to keep an open-ended evolving quality, which is why systematic or circular devices, if used at all, seem to have a very limited life. A feeling of freshness is essential and the best way to get that is for some of the material to be fresh. In a sense it is a change for the sake of change....Having been relieved of the threat of all causal or systematic ordering, the succession of events could be mainly decided by the attractiveness of their momentary juxtaposition, and, as a consequence, those powers which govern improvisation could gain even greater influence over the choices and decisions being made at the moment of performance." (27).

Guus Janssen uses repetition as a vital element in his highly structured improvisations. While recognising the need for change and freshness, repetition brings a formal cohesion which throws the aspects of uncertainty in to deliberate sharp relief. The effect is often one of self-parody. Janssen distinguishes between two types of memory: (a) long-term: past events, learning procedures and composed material, and (b) a short-term memory, which
is something directly connected with the immediate past in an improvisation; an image, like that on a television which remains for a moment after the set has been turned off, that has a direct bearing on the present moment. The idea is similar to Adams' theory of the "perceptual trace" (28). Previously executed movements leave a trace or image and are used by the learner to modify his next actions. Knowledge of the results of the movement is compared to the trace and this sense of the movement (proprioception) provides feedback stimuli:

![Diagram of a keyboard and related processes]

The renowned Russian physiologist, N. Bernstein, contributed many cybernetic and adaptive notions about coordinated and skilled activity, mainly in relation to the execution of various sports. However, his ideas are also
of particular relevance to improvisation. The central thesis of his work is that a performer's changing and adaptive movements cannot be described only by different impulses. The prominent role of afferent feedback (stimuli produced from responses) was recognised by Bernstein for controlled movement:-

"the process of practise towards the achievement of new motor habits essentially consists in the gradual success of a search for optimal motor solutions to the appropriate problems. Because of this, practise when properly undertaken, does not consist in repeating the means of solution of a motor problem time after time, but in the process of solving this problem again and again by techniques which we changed and perfected from repetition to repetition." (29).

This idea is of particular relevance to the improviser's art as well as to the sportsman. To retain that essential freshness it is necessary to come up with techniques of practising that look at the fundamental problems of the skill from as many different angles and with as little actual repetition as possible. The practise of improvisation requires a particular type of repetition without repetition and that motor repetition by rote, if this position is ignored, is fairly irrelevant to the development of the skill. Many improvisers, while realising the importance of individual identity and continuity in their work are also wary of the pitfalls of mechanical, repetitive practising and the staleness it can lead to. As Martin Theurer has said:-
"In my music I am often dealing with the same technical problems and ideas, for example how to finger a particular kind of run or how to create a particular type of texture that I am hearing in my head. But I am always trying to invent different solutions and not just mechanically repeat myself. My music is exploring hereness and nowness and this is what I have to practise rather than practise to sound technically brilliant and accomplished in the classical sense."

The following model proposes an interactive balance between the efferent-afferent impulses and the essential intellectual involvement of the individual developing skill in improvisation:-
Here the control apparatus has six main sections: (1) muscles to activate the prescribed keys, (2) a control element which conveys to the system in several ways the required parameters of that muscular movement, (3) a receptor which physically comprehends what has actually been played and signals it to (4) which perceives the discrepancy between the factual and the required results, (5) and (6) which retain and reselect for further use in the cycle of the data thus provided.

The study of improvisation is obviously concerned with highly skilled and very flexible movement patterns as well as with the coordination of the appropriate parts. It is evident that there is an enormous number of "degrees of freedom" (Bernstein's term) that can be attained in successfully mastering skills and completing activities. In older styles of jazz the stylistic constraints are such that it is conceivable that it is a more finite process with ready-made and acceptable criteria. However in freer styles such constraints are minimized and so the musician, in the more personal quest for original vocabulary is required to develop great internal flexibility and technical elasticity. The more degrees of freedom that one has in an activity, the more complicated the system and the more difficult it becomes to control it. Thus, to Bernstein, coordination in movement "is the process of mastering redundant degrees of freedom of the moving
organ, in other words its conversion to a controllable system" (30). It is the organisation of control of this freedom and practise in free improvisation should be geared to reflect this.
NOTES ON CHAPTER 6

(1) Derek Bailey: "Improvisation" p.126-129.


(6) Derek Bailey: "Improvisation" p.145.

(7) S.S. Stevens (ed.) "Handbook of Experimental Psychology" p.205.


(10) from "My Painting": Possibilities No 1 Winter 1947-48 p.79.


(19) Bruce Chatwin: "Dreamtime" (Granta 21 1987 p.41-79).

(20) Bonpensiere: "New Pathways to Piano Technique" p.123.

(22) R.N. Singer "Motor Learning and Human Performance" p.72-101.


(26) Leo Smith: from "Notes: 8 pieces".

(27) Derek Bailey: "Improvisation" p.129.


(30) N. Bernstein op.cit. p.127.
CHAPTER 7

The foregoing discussion of skill acquisition in keyboard improvisation has returned repeatedly to the question of rules and modes of behaviour. Unlike the study of notated musics and their 'correct' interpretation, the formalising of such rules presents problems in an idiom which is fundamentally exploratory. Here I turn to Hofstadter's thesis of 'metarules' and 'metametarules': the higher, decision-making faculties guide and make sense of an already existing vocabulary. He writes:-

"There is no need to rely on 'Rules that permit you to apply the rules', because the lowest-level rules - those without any meta's in front - are embedded in the hardware, and they run without permission." (1)

The absence of these rules would result in unconfident and haphazard trial-and-error performance, which is not a feature of the mature improviser's art. So while certain aspects of vocabulary almost inevitably degenerate to cliche, on the way to this ignoble end they become features or a set of conditions of a recognisable style. Henry Pleasants observes:-

"Even the most finicky jazz musician will agree that the inventions of the Armstrongs, Goodmans, Ellingtons and Basies have become the cliches of the run-of-the-mill commercial product. But he forgets while deploiring this dilution or commercialization, that it is proof of an accomplishment more momentous than a hundred minor masterpieces: the creation of -286-
a style, a set of conventions born of contemporary
taste, mutually agreed to and understood by musicians
and their listeners.....Style is the prerequisite for
communication, good or bad." (2).

I should like to end as we began by considering the notion
of 'freedom' as the propelling force behind the rise of
new improvised music. One might see it was a backlash
against excessive formalisation in the 50s; the serialist
and "third stream" composers, or the emotionally detached,
refined "cool school" of jazz. As Misha Mengelberg
writes:-

"In the not-too-distant past, improvisation was an
important part of musical practise; today to a
certain extent, this is again the case. It was
during the industrial revolution (up to the 60s of
our own century) that musical developments tended
increasingly to become a manual of fixed forms.
For industrial society, music is a consumer commodity.
Thus the job of the composer is to prepare his
musical consistency for labelling and distribution.
At the moment, this job finds its optimum
realisation in the pop single." (3).

The advantages of flexible process over rigid form have
long been recognised by many non-literate musical
cultures. A process, repeated often enough, implies a
type of formalisation yet one without the authoritarian
dictates of notation or pre-programmed drum machine. In
other words, change is always possible, even though there
are plenty of clichés to fall back on. Even if the style
is very refined in terms of what is and what is not
'permissible', such as in Ghanaian drumming where the
improvised variation of supporting drum patterns follows certain conventions, the existence of this improvisatory freedom gives the player an immense range of creative expression both in feeling and in form. John Miller Chernoff explains this in relation to the music of the Ewe:

"The good drummer has the strength to listen to all the ongoing rhythms and still find a place to add his own beat, balancing his accents on the edge of disorder and confusion, rendering a complementary wholeness out of the separate and conflicting parts. A musician can afford to take his time because of the openness of the arrangements to various rhythmic interpretations." (4)

Both the open-endedness of overall structure and the necessity for good improvisational judgement in this music are qualities shared with free jazz. While there is a back-up vocabulary of patterns, ideas, etc, the way is open to innovation.

Now 'freedom' itself has become the cliché. Since the early 80s free jazz has gone into something of a decline, or at least its direction has altered. Instead of the gladiatorial anarchy of the 60s we now see trends towards a studious realignment with the mainstream, in particular a resurgence of such qualities as beat, melody, wit and structure over and above the principle of self expression per se. Amongst the new generation of jazz musicians is an energetic rediscovery of the 'classic' styles of the
late 40s and early 50s, and the rapid rise to fame of such players as Wynton Marsalis and Courtney Pine is evidence of the popularity of this neoclassicism which has found a new wider audience. With musicians who have grown up with free jazz there are now numerous examples of a harking back to earlier periods of jazz for new expressive resources, from Air's arrangement of "Weeping Willow Rag" by Scott Joplin, to Ronald Shannon Jackson's frenetic rendering of "Bebop" by Dizzy Gillespie. Indeed, free jazz itself has become a historical style; a style from the 60s to be viewed dispassionately and similarly plundered. Kahondo Style's avant-garde parodies of the avant-garde are one example of this. Even Cecil Taylor has been known, in recent years, to introduce sections of regular metre into his otherwise abstract constructions (in "3 Phasis", for example); not that this should be misconstrued as half-baked historicism, but merely as a recognition of the legitimacy of 'swing' in its most basic and widely-understood form: "the traditional colouring of the energy that moves the music" (5). Taylor, in a recent interview, reaffirmed his debt to the hard bop pianist, Horace Silver, for this quality of 'swing' and energy of articulation (6). So while the jazz avant-garde may have lost its momentum in the area of free collective improvisation, "the hardening of improvisational arteries" as conjectured by Derek Bailey, the field is vast for the inventive reappraisal of jazz repertory. It could even be
argued that a long period of violent expressionism and unrestrained freedom has paved the way for musicians now to perceive the jazz tradition afresh and to approach it with agnostic curiosity free from any trace of nostalgia.

The work of Misha Mengelberg is interesting in this respect as he combines free jazz with pastiche of a huge repertoire of historical styles which are incongruously mixed of juxtaposed. Mengelberg studied composition (1958-64) at the Royal Conservatory in The Hague and towards the end of this period was very active in the "Fluxus" movement while at the same time working as a jazz pianist with his own quartet. Although he has worked for many years with improvisers he stands somewhat apart from the tradition of free music. He sees his identification as a jazz pianist as more of a 'role' within a larger theatrical domain. He describes himself as a formalist, and performance as simply a question of action - whether purposeful or not. The action is influenced by factors present in the environment, by the state of mind of the actor himself, and by unexpected events which may involve a conscious reaction or may be ignored. In the duo of long standing with percussionist Han Bennink a visual and aural theatre of the absurd is set up where the non-congruence of piano and drums (and their players) is emphasised. To quote from my review of a performance at the FMP festival in Berlin:-
"Bennink not only used the whole stage area for hitting, throwing, bouncing, rattling and jumping, but the entire hall. Mengelberg, on the other hand, would spend much of the time in comparative inertia, hunched at the piano with coffee and cigarette, just contemplating the keyboard, sometimes tentatively trying a few notes, a snatch of tune, listening thoughtfully. His languor and subtle changes of facial expression were totally opposite to the vivacity, aggressive slapstick and enormous spatial distribution of Bennink's playing, and that arrant disconnection between two people who are meant to be playing as an 'ensemble' was perhaps the funniest thing of all. When unable to compete with the noise level from the rhythm section, Mengelberg would walk around, do keep-fit exercises to encourage audience participation and applause. At times this disconnection seemed positively antagonistic - Bennink's yells and loud crashes in Mengelberg's quietest moments, or one instance where Mengelberg stormed off the stage to retaliate by rattling the cloakroom racks of coathangers, returning only to find Bennink applying his sticks to the keyboard...." (7).

The elements of Mengelberg's formalism are haphazardly assembled and the theatrical effect is calculated. Ranging from Beethoven pastiche to parodies of stride and bebop, sometimes with curiously elongated chord changes and unresolved cadences, to extravagant fists-and-elbows free jazz; all these various elements combine to create a style which is ironic in tone and which forms the central tension in Mengelberg's work.

Ran Blake also makes reference to various historical styles creating a dialectic between surprise and expectancy in his dissection of jazz standards. The very word "standard" implies an undifferentiated or passive
listening, a normality which affirms certain expectations. To quote Adorno:—

"The illusion of a social preference for light music as against serious is based on that passivity of the masses which makes the consumption of light music contradict the objective interest of those who consume it. It is claimed that they actually like light music and listen to the higher type only for reasons of social prestige, when acquaintance with the text of a single hit song suffices to reveal the sole function of this object of honest approbation can perform. The unity of the two spheres of music is thus that of an unresolved contradiction." (8).

However, what Adorno sees as a quandary, Ran Blake sees as unexplored and potentially fruitful territory. He has always kept in close contact with his jazz and gospel roots, viewing excursions into atonality and non-metric rhythm as logical extensions of an otherwise traditional style. His use of angular lines with abrupt dynamic contrasts, registral/timbral explorations, and 'wrong' harmonies are tessera in a sophisticated style which is essentially tonal and jazz-orientated. Most of his records have been concerned with exploring the possibilities of popular standards, rebuilding their predictable architecture and extracting from such reconstruction elements of surprise, showing the familiar in a new light. Blake has described himself as "a searcher and collector of banalities", and the vehicle of the popular song offers a wealth of material for subsequent transformation and demystification. By his
iconoclastic recreations of "banal" music he is manipulating the powerful effects of familiarity to his own ends. According to the degree of manipulation the music can still appeal to 'popular taste' while at the same time presenting a face that is new and challenging.

In the early 60s, Jaki Byard once noted with dismay a Down Beat critic describe his stride piano playing with the Charles Mingus group as "tongue-in-cheek". At that time modernism was so much the norm that recourse to earlier styles of jazz was presumed to be intentionally comic. Nowadays this is not only acceptable; more often the very reverse is true: modernism is a novelty or a cause of suspicion, and yet the keyboard techniques, styles and structures pioneered by the improvising pianists studied here remain to be used and developed in the wider context of new jazz.
NOTES ON CHAPTER 7


(2) Henry Pleasants: "Death of a Music?" p.159.

(3) Misha Mengelberg: "Werdegang der Improvisation"
    Key Notes 10 p.44.


(7) Contact 22: "Wat'n bloss Duos?"

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Key Notes 10 p.44-45 1979.

OLDFIELD, R.C.
"Handedness in Musicians".
PLASS, Paul C.

POLLOCK, Jackson

PRATT, C.G.

RILEY, Howard

SKLAR, Lawrence
"Up and down, left and right, past and future". Nous 2 p.113-126 1981.

SMITH, K.V.

STUCK, O.H. and YOUNG, R.W.
YOUNG, R.W.

"Inharmonicity in plane wire piano strings".

Various issues of The Wire, Contact and Musics.
APPENDIX 1
SELECTED DISCOGRAPHY

KARL HANS BERGER
"Interludes" (solo) FMP 0460
Recorded: Woodstock, N.Y. May 24th 1976 and
    May 30th 1977 (Ex. 41).

BORAH BERGMAN
"Discovery" (solo) Chiaroscuro Records 125

"Bursts of Joy" (solo) Chiaroscuro Records 158.

"Upside Down Visions" (solo) Soul Note SN 1080
Recorded: Milan July 24th and 25th 1984 and
    October 2nd and 3rd 1984 (Ex.43).

RAN BLAKE
"Breakthru" (solo) Improvising Artists Inc. 373842
Recorded: Oslo December 2nd and 5th 1975.

"Open City" (solo) Horo HDP 7-8
Recorded: Rome June 18th and 19th 1977 (Ex.38 and 54)
"Rapport" Arista Novus 3006
Recorded: Boston/New York April 28th-May 3rd 1978 (Ex. 39)

"Film Noir" Arista Novus 3019
Recorded: Massachusetts January 23rd and 27th 1980 (Ex. 44)
Blake (p); Hankus Netsky (oboe); Paul Meyers (gtr);
Jon Hazilla (d); Ted Curson (tpt); Jon Heiss (f);
Daryl Lowry (as); George Schuller (d).

PAUL BLEY

"Copenhagen and Haarlem" Arista Freedom 1901
Recorded: Copenhagen November 5th 1965.
Haarlem November 4th 1966.
Bley (p); Kent Carter/Mark Levenson (b); Barry Atlschul (d)

"Open, to Love" (solo) ECM 1023
Recorded: Oslo September 11th 1972 (Ex.40 and 45).

"Alone, Again" (solo) Improvising Artists Inc. 373840
Recorded: Oslo August 8th and 9th 1974.

ANTHONY BRAXTON

"Composition 98" Hat ART 1984
Bern January 24th 1981.
Braxton (ss,as,ts); Marilyn Crispell (p); Ray Anderson (tbn)
Hugh Ragin (tpt,flugehorn)
ORNETTE COLEMAN

"Free Jazz"  Atlantic ATL 50 240
Recorded: New York 17th May 1961 (Ex.1)
Ornette Coleman (as); Eric Dolphy (bass cl); Don Cherry (pocket trumpet); Freddie Hubbard (t); Scott LaFaro (b); Charlie Haden (b); Billy Higgins (d); Ed Blackwell (d).

JOHN COLTRANE

"Kulu Se Mama"  Impulse A-9106.
Recorded: New York October 1965 (Ex.13)
Coltrane (ts); McCoy Tyner (p); Jimmy Garrison (b)
Donald Garrett (b, bass cl); Pharoah Sanders (ts);
Elvin Jones (d); Frank Butler (d); Juno Lewis (voice, perc).

"Ascension"  Impulse A-95
Coltrane (ts); Freddie Hubbard (t); Art Davis (b); Elvin Jones (d); McCoy Tyner (p); Marion Brown (as); Pharoah Sanders (ts); Archie Shepp (ts); John Tchicai (as); Dewey Johnson (t); Jimmy Garrison (b).

Marilyn Crispell

"Spirit Music"  Cadence CJR 1015
Crispell (p); Billy Bang (vln); John Betch (d); Wes Brown (gtr)
"And Your Ivory Voice Sings"  Leo LR126
Recorded: Woodstock, N.Y. March 7th-9th 1985
Crispell (p); Doug James (drums).

BILL EVANS
"The Village Vanguard Sessions"  Milestone 47002
Recorded: New York June 25th 1961 (Ex.15)
Evans (p); Scott LaFaro (b); Paul Motian (d).

FRED VAN HOVE
"Einheitsfrontlied"  FMP S3
Recorded: Bremen 1973
Peter Brotzmann (ts); Van Hove (p); Han Bennink (d)

"Tschus"  FMP 0230
Recorded: Berlin September 14th 1975.
Peter Brotzmann (ts,as,bs,cl); Van Hove (p,acc); Han Bennink (b)

"Veloren Maandag" (solo)  FMP SAJ 11
Recorded: Belgium January 9th-11th 1977 (Ex.25-30).

RONALD SHANNON JACKSON
"Decode Yourself"  Island ILPS 9827
Erik Person (ss, as); Robin Eubanks (tbn); Akbar Ali (vln);
Vernon Reid (gtr); Onaje Allen Gumbs (kb); Melvin Gibbs (b);
Rev. Bruce Johnson (b); Jackson (d).

-311-
GUUS JANSSEN

"On the Line" (solo)  C479.4
Recorded: Scheveningen January 26th 1979/Amsterdam September 1st 1979 (Ex. 32-37).

KAHONDO STYLE

"My Heart's In Motion"  Nato 469
Recorded: Chantenay-Villedieu April 7th-11th 1986 (Ex.51)
Clive Bell (f,acc,whistles,etc.); Peter Cusack (gtr); Max Eastly (gtr.perc); Kazuko Hohki (v); David Holmes (d,perc);
Siamed Jones (vln, as); Stuart Jones (vc,tpt,b); Alan Tomlinson (tbn).

MISHA MENDELBERG/HAN BENNINK

"Einepartietischtennis"  FMP SAJ-03
Recorded: Berlin May 12th 1974 (Ex.53).

CHARLES MINGUS

"Passions of a Man"  Atlantic SD3-600
Recorded: New York 1952-59 (Ex. 3 and 4).

"Tijuana Moods"  RCA (France) FXL1-7295
"Mingus Ah Um"  Columbia  CS 8171
Recorded New York 1957.
Shafi Hadi (as); John Handy (as); Booker Ervin (ts); Horace Parlan (p); Danny Richmond (d); Mingus (b); William Dennis (tbn)
James Knepper (tbn)
THELONIUS MONK

"In Japan" East Wind 702
Recorded: Tokyo May 23rd 1963 (Ex. 7)
Monk (p); Charlie Rouse (ts); Butch Warren (b);
Frankie Dunlop (d).

"Something in Blue" Black Lion BLP 30119

"The Man I Love" Black Lion BLP 30141
Monk (p); Al McKibbon (b); Art Blakey (d)

HERBIE NICHOLS

"Herbie Nichols Trio" Blue Note 1519
Recorded: Hackenstack, N.J. July 29th and August 7th 1955 (Ex. 9-11).
Nichols (p); Al McKibbon, Teddy Kotick (b); Max Roach (d)

THE PEOPLE BAND

Atlantic TRA 214
Recorded: London October 1st 1968 (Ex. 12).
DON PULLEN

"Nommo"  SRP LP 290
Recorded: Yale University 1966 (Ex. 48)
Pullen (p); Milford Graves (d,perc).

"Solo Piano Album"  Sackville 3008
Recorded: Toronto February 24th 1975.

"Five To Go"  (solo)  Horo HZ02

"Milano Strut"  Black Saint BSR 0028
Recorded: Milan December 1978
Pullen (p); Famoudou Don Moye (d,perc).

HOWARD RILEY

"Angle"  CBS 52669
Recorded: London December 3rd 1968/January 2nd 1969
Riley (p); Barry Guy (b); Alan Jackson (d).

"The Day Will Come"  CBS 64077
Recorded: London March 1st/April 17th 1970
Riley (p); Barry Guy (b); Alan Jackson (d).

"Flight"  Turtle TUR301
Recorded: London March 20th 1971
Riley (p); Barry Guy (b); Tony Oxley (d)
"The Toronto Concert" (solo) Vinyl VS112
Recorded: Toronto February 23rd 1977.

"The Other Side" (solo) Spotlite SPJ511
Recorded: London 1978 (Ex.22 and 23).

"Endgame" JAPO 60028
Recorded: Ludwigsburg April 1979.

TERRY RILEY

"Happy Ending" Warner Bros 46 125

"Shri Camel" CBS 73929
Recorded: Holland 1980

ALEXANDER SCHLIPPENBACH

"Payan" (solo) ENJA 2012
Recorded: Munich February 4th 1972 (Ex. 21)

"Pakistani Pommade" FMP 0110
Recorded: Bremen November 1972
Evan Parker (ss,ts); Schlippenbach (p); Paul Lovens (d)

"Globe Unity Orchestra Live In Wupppertal" FMP 0160
Recorded: Wupppertal 1973

-315-
"The Hidden Peak"  FMP 0410
Recorded: Berlin January 27th 1977 (Ex. 19 and 20)
Evan Parker (ss,ts); Schlippenbach (p); Peter Kowald (b)
Paul Lovens (d).

"Kung Bore"  FMP 0520
Recorded: Stockholm November 18th 1977
Schlippenbach (p); Sven Ake Johansson (d,v,acc).

IRENE SCHWEIZER

"Early Tapes"  FMP 0590
Schweizer (p); Uli trepte (b); Mani Neumeier (d)

"Wilde Senioritas" (solo)  FMP 0330

"Hexensabbat" (solo)  FMP 0500
Recorded: Charlottenberg October 8th 1977 (Ex. 31)

"The Very Centre of Middle Europe"  Hat Hut X
Recorded: Basel October 28th 1978
Schweizer (p,d); Rudiger Carl (cl,bass cl,ts,concertina)
HORACE SILVER

"Blowin' the Blues Away"  Blue Note BST 84017
Recorded: New York 1958 (Ex. 2).
Blue Mitchell (t); Junior Cook (ts); Horace Silver (p);
Eugene Taylor (b); Louis Hayes (d).

KARLHEINZ STOCKHAUSEN

"Aus Den Sieben Tagen"  Deutsche Grammaphon 2720 073

CECIL TAYLOR

"In Transition"  Blue Note BN-LA458-H2
Recorded: Boston December 10th 1955 (Ex. 16)
Taylor (p); Steve Lacy (ss); Buell Neidlinger (b);
Dennis Charles (d)

"Looking Ahead!"  Contemporary LAC 12216
Recorded: New York June 9th 1958 (Ex.17)
Taylor (p); Earl Griffith (vibra-harp); Buell Neidlinger (b);
Dennis Charles (d).

"Unit Structures"  Blue Note BST 84237
Recorded: New York 1966 (Ex.25)
Eddie Gale Stevens Jr (t); Jimmy Lyons (as)
Ken McIntyre (as, oboe, bass cl); Taylor (p); Henry Grimes (b);
Alan Silva (b); Andrew Cyrille (d).
"Conquistador!" Blue Note BST 84260
Recorded: New York 1968 (Ex.18).
Bill Dixon (t); Jimmy Lyons (as); Taylor (p); Henry Grimes (b)
Alan Silva (b); Andrew Cyrille (d).

"Silent Tongues" (solo) Black Lion FLP 40146
Recorded: Montreux, Switzerland July 2nd 1974 (Ex.24)

"3 Phasis" New World Records NW 303
Recorded: New York April 1978 (Ex. 52).

"One Too Many Salty Swift and Not Goodbye" Hat Hut 3R02
Taylor (p); Jimmy Lyons (as); Raphe Malik (t);
Ramsey Ameen (vln); Sirone (b); Ronald Shannon Jackson (d)

KEITH TIPPETT

"No Gossip" FMP SAJ 28
Recorded: Berlin March 20th and 23rd 1980 (Ex.47)
Tippett (p); Louis Mohole (d).

MARTIN THEURER

"Moon Moods" (solo) FMP 0700
Recorded: Berlin July 13th-15th 1979 (Ex. 46)
LENNIE TRISTANO/TADD DAMERON

"Crosscurrents" Capitol M-11060
Recorded: New York May 16th 1949 (Ex. 5 and 6)
Lee Konitz (as); Wayne Marsh (ts); Tristano (p);
Billy Bauer (gtr); Arnold Fishkin (b); Denzil Best (d).

URS VOERKEL

"S'Gschank (solo) FMP 0300
Recorded: Berlin 1976
APPENDIX 2

BIOGRAPHICAL NOTES

KARL HANS BERGER

b.1935 Heidelberg, West Germany.

Studied at Heidelberg University, gaining a Ph.D on the organ works of J.S. Bach, while teaching himself to play jazz piano. He became involved with the avant-garde jazz scene in Paris with Don Cherry (1965-66) and then later in New York with Marion Brown, Steve Lacy, Sam Rivers and Rosewell Rudd. Won Down Beat international critics’ poll as vibraphonist of the year in 1968, 1971, 1974 and 1975. In 1976-82 he was the director of the Creative Music Foundation, Woodstock, New York, and then joined the music faculty of the Banff School of Performing Arts in Canada.

BORAH BERGMAN

b.1934 New York City.

Studied piano and clarinet as a child but then gave up music to pursue ambitions as a writer. He returned to music seriously in his mid-20s keenly aware of the new forms of expression possible with the emergence of the free movement. Having taken some lessons in jazz piano with Teddy Wilson and classical piano with David Hollander he set about developing his unique virtuoso style of improvisation. On a grant from the Ingram Merrill Foundation he furthered his
explorations into "a totally ambidextrous approach" and in 1975 released his first solo record, "Discovery" on which he demonstrates his highly developed left hand technique. As well as solo work (and a further 3 records) he has played with Archie Shepp, Malcolm Goldstein, Fred Hopkins, David Murray, Paul Rutherford, Evan Parker and Derek Bailey. In recent years has had made many appearances in Europe, playing at the North Sea Festival, Berlin Festival, IRCAM and others.

RAN BLAKE b.1935 Springfield, Massachusetts, U.S.A.

An early interest in the singing of the Pentecostal Church, the compositions of Bartok, Ives and Webern, and the playing of Thelonius Monk, led to the later development of a very eclectic but economical style. Blake accompanied for the singer Jeanne Lee in the late 50s and made his first record with her in 1961 (The Newest Sound Around - RCA PL 42863). He toured Europe in 1963 and later joined the faculty of the New England Conservatory of Music in Boston, becoming, along with Gunther Schuller, a key figure in the "third stream" school of jazz composition. On the strength of his 1980 record "Film Noir" (Arista AN 3019) he was awarded the Guggenheim Fellowship for composition in 1982.
PAUL BLEY  b.1932 Montreal, Quebec, Canada.

Played the piano from the age of 8, led his own quartet when he was 12 and then in 1949 took over Oscar Peterson's accompanying job when Peterson left for the States. In 1950 he went to study composition and conducting at the Julliard School. Spent the latter half of the 50s on the West Coast and led a quintet in 1958 with musicians who were to make up the original Ornette Coleman quartet: Coleman, Don Cherry, Charlie Haden and Bill Higgins. Moving to New York, Bley played with Charles Mingus in 1960, the Jimmy Giuffre Trio (1960-1963) and toured Europe and Japan with Sonny Rollins in 1960 and 1963. Has led his own ensembles since 1964 and has concentrated on intimate, small group or solo work as being the best medium for his subtle, reflective style. Has made several solo records of a limited repertoire of compositions by himself, Carla Bley and Annette Peacock. Toured Europe in 1987 with new quartet: Bill Frisell (guitar), John Surman (saxes), and Paul Motian (drums).

MARILYN CRISPELL  b.1947 Philadelphia, U.S.A.

As a child she was first introduced to improvisation by Grace Cushman, her music teacher at the Peabody Preparatory Dept. At the New England Conservatory of Music, Boston, she took a B.A. in classical piano (1964-68) and then studied jazz piano with Charlie Banacos (1975-77). She played with
Anthony Braxton in various combinations (1978-85) making several records with the quartet and touring Europe in 1978 as a member of the Creative Music Orchestra. She has also worked with Anthony Davis, Leo Smith, Oliver Lake and was a member of the AACM Big Band. Taught at the Creative Music Studio, New York (1980-83) and performs regularly in Europe and the U.S.A. as a solo pianist and a leader of her own quartet.

BILL EVANS  b.1929 Plainfield, New Jersey, U.S.A.  
d.1980 New York City.

First came to international attention with his contribution to two highly influential records: "Tijuana Moods" by Charles Mingus and "Kind of Blue" by Miles Davis, and his performance on John Lewis' soundtrack to the 1959 film "Odds Against Tommorrow". Some of his finest work was with his trio of 1959-61 with Scott LaFaro (bass) and Paul Motian (drums), and although this particular trio was brought to an end by the sudden and tragic death of LaFaro, Evans favoured this format throughout his career. He quoted George Shearing as the principle influence on his lyrical style.
One of the first pianists to play a bebop-style left-hand i.e. rootless voicings with highly syncopated rhythm. Worked as a pianist/arranger with Jap Allen (1930-31), with singer Blanche Calloway (1931-35) and briefly with McKinny's Cotton Pickers (1935). Settled in New York, started his own quartet (1936) and also played with Stuff Smith (1936-38). During the 40s he was much in demand as a side man and recorded with Billy Holliday, Roy Eldridge and Lester Young. When ill health curtailed regular playing he worked as an arranger for Paul Baron's CBS Orchestra.

FRED VAN HOVE

b.1937 Antwerp, Belgium.

First studied classical music with his father and then later went to the Antwerp Music Academy. At the same time he developed an interest in jazz and decided to make his career in this field. In the late 50s he earned a living playing dance music and standards and worked for a while in a Dixieland band. He was among the first generation of free jazz players in Europe and played regularly in a trio with Peter Brotzmann and Han Bennink (1966-75). More recently composition has become an important element of his work and he has written a series of pieces for instrumental ensembles (brass quintet, chamber orchestra, etc) with improvised
piano parts. He works in duos with violinist Phil Wachsmann and the French singer Arnick Nozati and plays with the Belgian Piano Quartet (4 pianists at 2 pianos).

GUUS JANSSEN b.1951 Heiloo, Holland

Studied piano with Jaap Spaanderman and composition with Ton Hartsuiker at the Sweelinck Academy of Music in Amsterdam. As a pianist he has worked with John Zorn, George Lewis, John Tchicai, Maarten Altena, as well as with the Willem Breuker Kollektief and the Netherlands Blazers Ensemble. He works mainly as a soloist (releasing "On the Line" Claxon 79.4 and "Tast Toe" Claxon 81.7) and as the leader of a septet. Several of his chamber music compositions have been recorded on the Composers' Voice label. He has given performances at various European festivals, including the Holland Festival (1981) and the North Sea Festival (1982). He received the Boy-Edgar Award for Jazz and Free Music in 1981 and the Matthijs Vermeulen Award for composition in 1984.

MISHA MENGELBERG b.1935 Kiev, U.S.S.R.

Studied composition (1958-64) with Kees van Baaren at the Royal Conservatory in The Hague. Towards the end of this period he was very active in the "Fluxus" movement and at the same time as a jazz pianist and leader of a quartet.
During the later 60s he took an active part in various musical-political campaigns and union activities. He composed the politically inspired opera "Reconstruction" together with Louis Andriessen, Reinbert de Leeuw, Peter Schat and Jan van Vlijmen, also ex-pupils of Kees van Baaren. He established and has been a leading figure in the Instant Composers Pool which toured in the U.K. in 1988, its 20th anniversary year, and performs regularly in a duo with percussionist Han Bennink.

THELONIUS MONK b.1917 North Carolina U.S.A.
d.1982 Englewood, New Jersey, U.S.A.

During the late 30s he played piano for a travelling evangelist's show and then became house pianist at Minton's Club, New York. He worked alongside Dizzy Gillespie in Lucky Millander's band (1944). He then went through a long period of relative obscurity, overlooked by record companies, mainly because of the "cabaret card" law which prevented him from undertaking club engagements in New York. In the late 50s he formed a big band with the tenor sax player, Charlie Rouse. This was the start of a long and fruitful association in his subsequent quartet work. In 1971 he toured the world with the all-star "Giants of Jazz" along with Dizzy Gillespie, Sonny Stitt and Kai Winding, and the night after the last concert recorded the celebrated trio albums, "Something in Blue" and "The Man I Love" in London.
Made only occasional public appearances after this and in 1975 retired through ill health. Received a special tribute from President Jimmy Carter at his White House jazz party in 1978.

HERBIE NICHOLS  b.1919 New York City  
d.1963 New York City

Although Nichols was introduced to jazz audiences through a Blue Note recording of 1955, he remained an obscure figure throughout his life and was only posthumously recognised as a great pioneer of modern jazz. His story has come to public attention mainly through A.B. Spellman's research and interviews published in "Four Lives in the Bebop Business". Nichols' professional career was undistinguished, backing various night club singers and playing with mediocre bands. He rarely had the opportunity to play any of his 100 or so unique compositions to audiences. He befriended Thelonius Monk in the early 50s, and Monk remained a devoted admirer. In 1960-62 he had various club residencies in New York City. He joined Archie Shepp in 1962 and toured in Scandinavia that year. Died of leukemia.

HOWARD RILEY  b.1943 Huddersfield, U.K.

Academic career includes University of Wales (M.A. 1966), Indiana University (M.Mus.1967) and University of York
(M.Phil 1970), but a self-taught jazz pianist and composer who evolved through bebop to a personal style based on atonality or pantonality and a technique founded on a more equal distribution of work between the hands. He has concentrated mainly on solo and small group work, the latter often in collaboration with bassist Barry Guy with whom he has been recording since 1968. He has also worked with Barry Guy with the London Jazz Composers' Orchestra. He has toured extensively in Europe, U.S.A. and Canada and has made many festival, radio and TV appearances.

ALEX SCHLIPPENBACH b.1943 Berlin, West Germany.

As a pianist and composer he has been a pivotal figure in European improvised music. In 1962 he played in a group with multi-instrumentalist Gunther Hampel and arranged music which departed from traditional harmonies. A quintet with trumpeter Manfred Schoof recorded some of his compositions in 1966, and the same year Schlippenbach put together an orchestra of free players to perform a work called "Globe Unity". The project developed and the Globe Unity Orchestra has remained together on and off until the present, enlisting most of the major European improvisers at one time or another. Schlippenbach's other principle ensembles have been together since the early 70s: a trio with Paul Lovens and Evan Parker and a duo with percussionist Sven Ake Johansson.
IRENE SCHWEIZER  

b.1941 Schaffhausen, Switzerland

Started to learn jazz piano by ear at the age of 12 and then played in a Dixieland band while at school. After a period in England studying music and English, she settled in Zurich and formed a trio in the early 60s with Uli Trepte (bass) and Mani Neumeier (drums) playing her compositions as well as free improvisation. She has remained a central figure in the European improvised music scene and has played at many international festivals. She has a regular duo with Rudiger Carl and has played with George Lewis, Maggie Nichols, Peter Kowald, Evan Parker and Paul Lovens.

HORACE SILVER  

b.1928 Norwalk, Connecticut, U.S.A.

Some of Silver's earliest professional work was with Stan Getz (1950-51) but he changed abruptly from 'cool' jazz when he teamed up with Art Blakey (1951-53) to co-lead The Jazz Messengers. Together they formed the turbulent 'hard bop' style and Silver's energetic and percussive playing was the first to acquire such epithets as 'soulful' and 'funky'. He was a seminal influence on many younger jazz pianists. He formed his own quintet in 1956 for which he wrote many excellent compositions. Played in Britain for a season at Ronnie Scott's Club in 1980.
CECIL TAYLOR  

b.1933 New York City.

Studied piano and composition at New York College of Music and then at the New England Conservatory, Boston. As his interests turned to jazz, he was, from the outset, determined to find a totally original style of improvising, although his first record ("In Transition" Blue Note 1956 438-H2) does include, as a concession to 'tradition', versions of "Sweet and Lovely" and Thelonius Monk's "Bemsha Swing". In the late 50s his quartet had a long residency at New York's Five Spot. Toured Europe in 1961 with Jimmy Lyons and Sunny Murray but played only sporadically in the U.S. during the 60s, remaining a main voice of the avant-garde 'underground'. (This period is well documented in A.B. Spellman's book). From the early 70s onwards he has achieved considerable success, leading a variety of ensembles and giving solo performances all over the world, and enjoyed a new level of recognition as evidenced by a Guggenheim Fellowship in 1973 and an Honorary Doctorate from the New England Conservatory of Music in 1977.

KEITH TIPPETT  

b.1947 Bristol. U.K.

Moved to London in the mid 60s after studying classical piano and organ. Won a Musicians' Union Scholarship to attend the Barry Summer School where he met Nick Evans, Mark Charig and Elton Dean who shortly after made two records as
part of the Keith Tippett Group. In the late 60s he turned
down an offer to become a member of King Crimson, to
concentrate on putting together the 50-piece band,
Centipede. After this project he led a band with Julie
Tippets, Ovary Lodge, and another large-scale venture, Ark.
He tours in Europe and performs regularly as a soloist and
in a duo with drummer Louis Moholo.

LENNIE TRISTANO   b.1919 Chicago
d.1978 New York City.

Lost eyesight in early childhood and spent ten years in a
state institution for the blind where he learned to play
saxophone, clarinet, cello and piano. After attending the
American Conservatory of Music in Chicago and gaining a B.A.
he led a Dixieland band as clarinettist. He moved to New
York in 1946 to work as a pianist. Led his own trio and
quintet at regular club dates in New York City with
saxophone players, Wayne Marsh, Lee Konitz and guitarist
Billy Bauer. It was during this period that he formulated
his celebrated "cool jazz" style which was imitated by many
younger musicians. He settled on Long Island in 1951 and
from then on mainly confined his activities to teaching.
### APPENDIX 3

#### INDEX OF NAMES

<table>
<thead>
<tr>
<th>Name</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams, John</td>
<td>231-232</td>
</tr>
<tr>
<td>Armstrong, Louis</td>
<td>18-19</td>
</tr>
<tr>
<td>Art Ensemble of Chicago</td>
<td>36-37, 255</td>
</tr>
<tr>
<td>Austin, Larry</td>
<td>32</td>
</tr>
<tr>
<td>Ayler, Albert</td>
<td>60</td>
</tr>
<tr>
<td>Bailey, Derek</td>
<td>94, 107, 254-255, 275, 277</td>
</tr>
<tr>
<td>Basie, Count</td>
<td>19</td>
</tr>
<tr>
<td>Berger Karl Hans</td>
<td>170-173, 191-193, 212, 320</td>
</tr>
<tr>
<td>Blake Ran</td>
<td>166, 178-179, 181-182, 212, 291-293, 321</td>
</tr>
<tr>
<td>Blakey, Art</td>
<td>20</td>
</tr>
<tr>
<td>Bley, Paul</td>
<td>62-63, 166, 182-185, 212-215, 223, 322</td>
</tr>
<tr>
<td>Braxton, Anthony</td>
<td>223-224, 249</td>
</tr>
<tr>
<td>Brown, Earle</td>
<td>30, 31</td>
</tr>
<tr>
<td>Bryars, Gavin</td>
<td>134</td>
</tr>
<tr>
<td>Burwell, Paul</td>
<td>43</td>
</tr>
<tr>
<td>Cage, John</td>
<td>30, 35, 56-57</td>
</tr>
<tr>
<td>Cardew, Cornelius</td>
<td>34, 90</td>
</tr>
<tr>
<td>Cherry, Don</td>
<td>36, 42</td>
</tr>
<tr>
<td>Coleman, Ornette</td>
<td>13, 16, 22, 60-61</td>
</tr>
<tr>
<td>Coltrane, John</td>
<td>16, 37-38, 41, 58</td>
</tr>
<tr>
<td>Cowell, Henry</td>
<td>35</td>
</tr>
</tbody>
</table>

-332-
Crispell, Marilyn
Davis, Miles
Eastley, Max
Ellington, Duke
Evans, Bill
Feldman, Morton
Foss, Lukas
Gillespie, Dizzy
Graves, Milford
Hampton, Lionel
Hart, Clyde
Hove, Fred van
Jackson, Ronald Shannon
Janssen, Guus
Kahondo Style
Konitz, Lee
Lewis, John
Mengelberg, Misha
Mingus, Charles
Monk, Thelonius
Morton, Jelly Roll
Musica Elettronica Viva
Nichols, Herbie
Parker, Charlie
People Band
Powell, Bud

146-150, 223, 322-323
16, 19
43, 208
47, 60
62, 323
30, 31
31-32
19, 26
23, 241, 245-246
236
61, 324
135-143, 180, 324-325
289
150-157, 277-278, 325
289
23, 24
19
94, 287, 290-291, 325-326
20-23, 51, 293
25-26, 48, 61-62, 88, 326-327
47
32-34, 41
26-29, 48, 327
19
34, 41, 52
19, 47-48, 197-198
<table>
<thead>
<tr>
<th>Name</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pullen, Don</td>
<td>23, 228-229, 242, 245-246</td>
</tr>
<tr>
<td>Reich, Steve</td>
<td>231</td>
</tr>
<tr>
<td>Riley, Howard</td>
<td>13. 113-124, 162, 261-262, 265, 273-274, 327-328</td>
</tr>
<tr>
<td>Riley, Terry</td>
<td>38-39, 257-258</td>
</tr>
<tr>
<td>Roach, Max</td>
<td>20</td>
</tr>
<tr>
<td>Rzewski, Frederick</td>
<td>33, 34</td>
</tr>
<tr>
<td>Schlippenbach Alex von</td>
<td>87-90, 92, 95-97, 229-230, 250-251, 328</td>
</tr>
<tr>
<td>Schweizer, Irene</td>
<td>143-146, 220, 225, 237-239, 329</td>
</tr>
<tr>
<td>Shepp, Archie</td>
<td>40, 58</td>
</tr>
<tr>
<td>Silver, Horace</td>
<td>20, 289, 329</td>
</tr>
<tr>
<td>Smith, Leo</td>
<td>93, 275-276</td>
</tr>
<tr>
<td>Stockhausen, Karlheinz</td>
<td>44</td>
</tr>
<tr>
<td>Taylor, Cecil</td>
<td>22, 38, 63-87, 92, 124-134, 176-178, 189-191, 224-225, 261, 289, 330</td>
</tr>
<tr>
<td>Tippett, Keith</td>
<td>180, 232-236, 330-331</td>
</tr>
<tr>
<td>Theurer, Martin</td>
<td>219, 229, 239-240, 242-244, 280</td>
</tr>
<tr>
<td>Toop, David</td>
<td>43, 44</td>
</tr>
<tr>
<td>Tristano, Lennie</td>
<td>23-24, 48, 331</td>
</tr>
<tr>
<td>Vasconcelos, Nana</td>
<td>36</td>
</tr>
<tr>
<td>Voerkel, Urs</td>
<td>98-103</td>
</tr>
<tr>
<td>Waldron, Mal</td>
<td>23</td>
</tr>
<tr>
<td>Wolff, Christian</td>
<td>30-31</td>
</tr>
<tr>
<td>Williams, Mary Lou</td>
<td>26</td>
</tr>
<tr>
<td>Wishart, Trevor</td>
<td>43</td>
</tr>
<tr>
<td>Young, Lester</td>
<td>26</td>
</tr>
</tbody>
</table>