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Prepared instruments in improvised music: precedents and purposes

Gary Butler

University of Wollongong

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PREPARED INSTRUMENTS IN IMPROVISED MUSIC:

PRECEDEENTS AND PURPOSES

A thesis submitted in fulfilment of the requirements for the award of the degree

Doctor of Philosophy

from

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by

Gary Butler, BCA (Hons)

Faculty of Creative Arts

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ABSTRACT

It is a common assumption that improvising musicians using prepared instruments are influenced by Cage's music and that they are using preparations for similar purposes. Improvisors, however, tend to draw on a wide range of sources, spontaneously combining them during performance. There is no general agreement among improvisors as to the importance of Cage's music - some embrace Cage's music and philosophy enthusiastically, some reject them, and others accept only some of Cage's ideas.

Facile assumptions of Cage's "obvious" influence on musicians employing prepared instruments and chance should be replaced by examining the array of ideas relevant to each individual performer. Alternative precedents for instrument preparation include other composers, percussion stops in old pianos and harpsichords, sound effects in theatre organs, African instruments, vaudeville and visual arts.

A brief explanation is given of why improvisors are likely to be influenced by at least some of these precedents. The question of precedents intertwines with a consideration of the purposes of instrument preparation: timbre, humour, to imitate other instruments or produce sound effects, visual appearances, politics, indeterminacy and the (literal or metaphorical) destruction of an instrument.
Questions of organology are also considered – examining definitions of “prepared instruments”, categorising several distinct approaches to instrument preparation, and suggesting that prepared instruments pose significant challenges to traditional systems of organology.
INTRODUCTION

At a Performance of Improvised Music

Someone attending a concert of improvised music any time over the past three decades or so would probably see instruments being used in various unconventional ways. In Toronto one might hear a trio improvisation featuring Stuart Broomer placing aluminium pie plates inside the piano, Maury Coles using a pie plate as a trumpet mute, and Lloyd Garber weaving coins and sticks between his guitar strings. A New York performance might feature Eugene Chadbourne performing on amplified garden rake, or “playing” a guitar with balloons and bicycle chains, as an accompaniment to John Zorn blowing duck calls into a bowl of water or using a football as a saxophone mute. Meanwhile in Europe, one could see Barry Guy inserting zylophone hammers between his bass strings, Annick Nozati using her voice to resonate metal sculptures, pianists Keith Tippett and Misha Mengelberg placing stones, pieces of wood, ashtrays and jackets on piano strings, and guitarists Keith Rowe and Fred Frith laying their instruments flat on a table, the strings being struck, bowed, plucked and muted with a variety of objects from violin bows and xylophone mallets to paintbrushes and wind up toys, or using their guitar pickups to amplify the sound of a portable radio. An Australian performance may feature Ross Bolleter’s prepared piano (with cymbals, combs and other objects on and between the strings), Ernie Althoff playing a saxophone with a length of PVC pipe attached to a kazoo inserted between the mouthpiece and body of the instrument, and Jon Rose’s modified violins and celli (including a wheeled version which Rose pushes around the gallery space like a wheelbarrow and a MIDI violin producing chaotic sounds which even Rose cannot entirely predict).
A hypothetical listener, unfamiliar with such things, may turn to the person on his right and ask “Why are they doing that to their instruments? Where did they get the idea? And isn’t there a risk of damaging the instrument?”

“It’s not as original as it seems,” she explains. “John Cage was preparing pianos in the 1930s, and his ideas developed from his teachers - Henry Cowell and Arnold Schoenberg. Improvisation is just a development of Cage’s indeterminate compositions. If it’s done properly, piano preparation is a ‘non-violent activity.’ But I don’t understand why that clown Chadbourne drills holes in his guitar!”

The man on the left (wearing an afro and a “Black Power” T shirt) disagrees: “Cage hated improvisation, so how could he influence them? Improvised Music is a development of Free Jazz. Those weird noises express the same emotions as Coltrane and Coleman’s overblown saxophone squawks. Rattles have been added to instruments by blues and jazz players from Lightning Hopkins to Cecil Taylor - and before that, we used to do it in Africa. This is just another example of white people stealing our stuff!”

The argument continues, each of them quoting from respected critics and improvisors, but is drowned out by a loud noise from the stage, mingled with audience laughter - the performer has started rubbing a vibrator up and down his instruments, the bowed strings (reminiscent of the hurdy gurdy improvisations of Stevie Wishart) mingled with motor noises more suggestive
of Futurist noise music or the Industrial "noise music" of New York's "No Wave" movement . . .

**Improvised Music - Post-Cage or Post-Coltrane?**

In this thesis, I intend to demonstrate that the various approaches to musical instruments which have been exploited by free improvisors cannot be reduced to a single historical background. Some improvisors are strongly influenced by either the classical avant garde or by free jazz, but some are indifferent or hostile towards certain aspects of these traditions. Even where Cage and Coltrane do seem to be significant in the development of an individual improvisor's methodology, their influence is usually only a small part of a much wider web of influences than is usually acknowledged. Prepared and modified instruments have been used by jazz, blues, classical avant garde and African musicians, and related ideas may also be found in visual art, vaudeville, theatre organs, nineteenth century pianos and radio sound effects. Improvisors using prepared instruments spontaneously draw on several of these traditions, freely combining sounds and concepts from various sources.
PREPARED INSTRUMENTS AND NOTATED MUSIC - BEFORE AND AFTER CAGE

Precursors of Cage

The first use of a prepared piano in classical music occurred during the premiere of *Le Piege de Méduse* in 1914, when Erik Satie, "... apparently on impulse, ... inserted paper between the strings of the instrument . . ." (Dearling, 76'). Maurice Ravel used the same technique as a substitute for the luthéal in *L'Enfant et les sortilège* (1920-5) (Brooks, 348; Orenstein 258). There are earlier precedents for other instruments: bass improvisor Barry Guy notes that in *The Battle* by Heinrich Ignaz Franz Biber (1644-1704), "the violone player is instructed to thread parchment between the strings and beat them with the bow, emulating a drum as the soldiers go to battle" (Personal Correspondence).

Although Charles Ives did not prepare his piano, as a child he attempted to simulate the sound of the drums he had heard in the Danbury band. "It's all right to do that, Charlie," said his father. . . *if you know what you're doing* (Cowell, Henry and Sidney, 24). Later, in the *Concord Sonata*, Ives used a piece of wood holding down the piano keys to raise the dampers, allowing sympathetic vibrations to cause overtones to be sounded when the lower keys were played, a technique which Cowell described as "very effective, producing a swirl of sound

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1 See Orledge, *Satie Remembered*, 145; *Satie the Composer*, 120 & 298.

2 A device for altering the sound of the piano. This and other attachments are discussed in the following chapter.
rather like echoes within a cave” (Cowell, Henry and Sidney, 196). However, for an audience accustomed to standard piano technique, the use of a piece of wood on the keys was “more than baffling . . . they resented it so actively that they remained quite deaf to the fine sound,” and this innovation “caused great hilarity at Ives’s expense” (Cowell, Henry and Sidney, 196). However, this was not done for shock value, but to produce a particular sound which Ives required - the technique was “the result not of modernistic eccentricity but of Yankee ingenuity” (Chase, 427).

It is, perhaps, a small step from placing objects on the piano keyboard to placing them on the strings, and this step was taken by Ives’ biographer (and Cage’s teacher), Henry Cowell. Cowell was, according to Cage, the first composer who “thought of putting various objects on the strings, like a darning egg!” (For the Birds, 70). Cage was able to closely observe Cowell’s method in works such as The Banshee, sometimes assisting by holding down the pedal while Cowell manipulated the strings (Empty Words, 7).

Hugo Weisgall mentions Cowell’s interest in “the neglected possibilities inherent in the piano strings”, which included “harmonics, muted tones, and pizzicati of various sorts,” and the application of such objects as “table knives, gong beaters, rubber bands, coins, and so on” (487-8). Both the sound and the method of playing “. . . are entirely different from keyboard piano playing,” he explained. Therefore, Cowell had “no hesitation in calling the piano strings, when played

3 Cowell’s use of a darning egg also suggests a possible influence from the use of slides by blues guitarists.
after this fashion, a separate instrument, which I term 'stringpiano’” (in Steinbach, 34).

Aaron Copland’s opinion of Cowell in 1926 anticipates Schoenberg’s famous pronouncement on Cage: “Cowell is essentially an inventor, not a composer” (“America’s Young Men of Promise” in Copland on Music, 147), an opinion Copland “regretfully still subscribe[d] to” ten years later (“America’s Young Men. Ten Years Later” in Copland on Music, 157). As will be seen in a later chapter, many critics found it difficult to treat Cowell’s innovations seriously, comparing Cowell’s performances unfavourably with the musical jokes of circus clowns and vaudevillians. Paul Rosenfield’s review of a Cowell performance is typical:

“The Banshee” contained no tone clusters or any other keyboard effects. To play it, the composer rose from his stool, and stepping resolutely behind the piano, thrust a hand inside its open queue and started to pluck the wires. The moment was tense. Few members of the audience could help feeling that if they were the piano, they would certainly get up and sock the follow (sic); and everybody glued his eyes upon the venerable instrument, expecting at any moment to see it rise on its hind legs, and deliver a swift one to his jaw with one of its forepaws. But either because it was helpless or because it had greater confidence in the integrity of the composer’s intentions than his audience had, the piano submitted. (in Steinbach, 35)

* See pages 111-112.
Nicolas Slonimsky was more sympathetic than many early critics, praising Cowell's use of the piano strings as "an undeniable acquisition", and proclaiming that "the entire gamut of percussion, conjured up from the pianistic entrails, make the piano a richer instrument without impinging on its historical dignity" (Slonimsky, 59). David Patterson was another writer who recognised the value of Cowell's innovations, crediting him with seven innovative piano techniques (most of which are now commonly used by composers and improvisors):

1) the massed cluster method by the flat hand (fingers, palm, etc.) . . . 2) the forearm in various positions . . . 3) plucking the strings as of a harp, singly or in chords; 4) the zither method - strumming with one hand and depressing chordal key combinations with the other . . . 5) muted tones - struck with one hand while the strings are muted with the fingers of the other hand held close to the bridge . . . 6) harmonics . . . 7) stripping the string with the finger, as one slides the finger along the edge of a water glass to make it sing. (in Manion, 26)

Cowell's influence extended to other composers who also experimented with piano strings. Gerald Strang recalls "experiments in sound" with Cowell in which they would "bang pots and pans on the strings and use nail files to produce harmonics" (Mead, 203). Arthur Hardcastle modified pianos in the 1920s: "He evolved the idea that the main thing wrong with the piano was that it wasn't forte enough, so he devised a stunt of adding an extra sounding board and clapping it on over the frame" (Gerald Strang in Mead, 99). A jazz musician, William Russell, had his Fugue published in Cowell's New Music series in 1932. It includes instructions for the pianist to "scratch strings lengthwise along winding, with a coin held like a banjo pick", "strike strings with hard rubber ball
mallets” and “prepare all notes from B2 to B1 to sound with sustaining Ped.” (Mead, 226-7). Player pianos have also been fitted with “[v]arious attachments to produce twangy or buzzy sounds” (Brooks, 348), and Conlon Nancarrow removed the felt from his player pianos to allow them to play faster (conversation with Douglas Kahn, 16 Feb ‘95).

Harry Partch specialized in microtonal instruments which he constructed to serve the unique requirements of his music. Most of these instruments, fascinating as they may be, lie outside the scope of this thesis because they are original, unique instruments rather than modifications of existing instruments. However, Partch did occasionally adapt existing instruments to suit his needs - of particular interest are his adapted viola and guitars. Partch’s first guitar was purchased in 1934, and he took until 1942 to resolve the problem of designing frets which would be suitable for just intonation. Finding the original frets unsatisfactory, Partch “… eventually fitted high, stainless steel frets into slots in a brass plate which was then screwed onto the neck” (Genesis of a Music, 203). This was followed in 1945 by “another guitar which had a smooth and narrowed fingerboard with small and large pinheads, and small brass rivets, embedded in it and polished down to the fingerboard level. Electronic amplification compensated for the reduced tone caused by stopping with fingers” (203). Partch’s confusing numbering of his Adapted Guitars is best explained in his own words:

Having transferred my allegiance and the identical tuning to this second guitar, I called it Guitar I. However, in 1952, I removed the high frets from the original guitar
Top: Harry Partch ensemble (Rich, 200)
Bottom: Adapted Guitar II (Partch, 204)
and played it with a plastic rod (like a steel in a steel guitar) weighted with lead so that less pressure was required. . . . This reconceived guitar . . . has been used in the Dances, Oedipus, Revelation, and, most recently, in Delusion. It is generally played with a pick. In order to distinguish it from the second Guitar I (1945), it was at first labelled Guitar III. Now, however, it is again Guitar I, since I abandoned the second Guitar I in 1956 . . . Adapted Guitar II . . . , built at the University of Wisconsin in 1945, has always been Guitar II. It has been prominent in the Intrusions, the Dances, the choruses of Oedipus, and in Revelation and Delusion. (205)

Partch’s Adapted Viola is essentially a hybrid instrument, as Partch’s adaptations consisted primarily of adding fingerboard, tuning pegs and strings from a cello, with the exception of the first string, which was a “double length violin first or second or a monofilament nylon guitar string” (198).

John Cage’s “Invention” of the Prepared Piano

Teaching at UCLA in 1938, Cage had “removed the cover of the upright piano and tied the strings with various objects” (Revill, The Roaring Silence, 55). Then, probably in 1940, Cage wrote Bacchanale, his first composition for the prepared piano, as accompaniment for a dance by Syvilla Fort.

*The date is controversial. James Pritchett states that “Bacchanale is dated 1940 and, indeed, Syvilla Fort’s dance was on a program at the Cornish School on 26 April, 1940” (The Music of John Cage, 206). David Revill also gives the date as 1940 (The Roaring Silence, 69). On the other hand, Calvin Tomkins gives the date as 1938 (The Bride and the Bachelors, 89), as does Daniel Charles (“About John Cage’s ‘Prepared Piano’”, 48) and Ellsworth J. Schneider (37). Paul Griffiths, in mentioning this inconsistency, states that “Cage himself believes the later date to be more likely . . .” (Cage, 13) although elsewhere Griffiths gives the date as 1938 (Modern Music: A Concise History, 116). Richard Kostelanetz also contradicts himself, dating Bacchanale as 1937 (John Cage (ex)plain(ed 182) and 1938 (John Cage (ex)plain(ed, 52; O n
The use of a prepared piano was the result of circumstances - Cage was trying to suggest African music, there was not enough room for a percussion ensemble, and a grand piano was available in the auditorium. Cage's response was simple: "I decided that what was wrong was not me but the piano. I decided to change it" (Cage, foreword to *Well Prepared Piano, Writer*, 117). After attempting unsuccessfully to prepare the piano with nails and pie plates, he inserted screws between the piano strings.

Bonnie Bird recalls another incident which she believes to be the origin of the prepared piano. Bird had intended to have dancers slide down a brass pole in a work she was choreographing, but discovered that the poles used by fire fighters were too expensive. However, she was given a small piece of a pole.

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_Innovative Music(ian)s, 38_. Cage's foreword to *The Well-Prepared Piano* gives the approximate date as "the late thirties" although Richard Bunger states in the same book: "In 1940, John Cage invented the prepared piano" (8). Cage told Stephen Montague that *Bacchanale* was written in 1938 (Cage, *Conversing With Cage*, 58) and also gives that date in the notes accompanying the recording of his 25 year retrospective concert ("[On Earlier Pieces]", 129), while the 1991 Peters catalogue and the notes on Cage's compositions from the 1962 Peters catalogue ("Notes on Compositions", 7) both give the date as 1940. David Revill's chronology (55, 69-71) seems plausible, implying that the confusion has arisen because Cage first experimented with tying objects to piano strings in 1938 at UCLA, subsequently developing the idea with the use of bolts and screws in the composition of *Bacchanale* in 1940. The date of Cage's first experiments with prepared piano could have become confused with the date of his first prepared piano composition. To establish the facts with any certainty would entail extensive primary research which is beyond the scope of this thesis.

Cage had written several percussion pieces prior to *Bacchanale*, which had a significant influence on his approach to the prepared piano.
I brought it back to the studio and said to John as I was about to teach a class, "Well, I have to give up that idea because I can not afford a brass pole, so I'll have to think of something else," and John put this on the tray on the piano that would hold the music (laughs). That was a very wobbly tray, and as he started to play the piano for class, it fell off onto the strings, and rolled up the strings that he was playing – in the bass, as I remember it. Well, he was so intrigued with this sound that he got totally involved in rolling this thing up and down and playing with the sound. So I turned to the class and said, "We'll just let him go on, we'll go on with the class" (laughs). And so we proceeded to ignore him. . . What was happening was that he was beginning to get the idea for the prepared piano. (in Fetterman, 8)

Henry Cowell's stringpiano was another important factor in Cage's decision to prepare the piano:

He got an idea by knowing my own things for the strings and piano very well, first learning them. I gave them up about 1930. . . . When I gave up this sort of writing for piano in order to write more symphonic music, John was very annoyed. I said, "Why don't you do it?", so he did do it, and he took it up and prepared the strings, which I had never done. (Cowell in Revill, 69-70)

Prior to Bacchanale, Cage had used a few piano preparations in Second Construction, although he consistently identified the composition of Bacchanale as the moment when he began to prepare pianos. James Pritchett conjectures that the 1940 dance program which featured Bacchanale may have been "a second performance or revised version of the piece, or perhaps the piano part of Second Construction was changed after the composition of Bacchanale to take advantage of that work's innovations" (206). The suggestion that Bacchanale could have been
written in 1938 and revised in 1940 is conceivable, but unlikely. Pritchett offers no evidence of Cage revising *Bacchanale* or *Second Construction*. I have been unable to find any other references which would confirm it, and Cage's usual attitude to composition suggests that if he became aware of problems with *Bacchanale* he would have probably written a new piece incorporating his recent ideas, rather than revising an old work. It seems much more likely that the process of "inventing" the prepared piano involved a series of minor attempts over a period of time prior to the moment of inspiration which resulted in *Bacchanale*, although it was this moment which Cage remembered with the greatest clarity. The preparations used in *Second Construction* are much simpler than those used in *Bacchanale*, so it is also possible that Cage considered *Bacchanale* to be the first composition in which enough notes were altered for it to be considered as a new instrument rather than an occasional special effect.

Following *Bacchanale*, Cage wrote several works for prepared piano, the most significant solo composition being *Sonatas and Interludes for Prepared Piano*.

John Cage composing *Sonatas and Interludes for Prepared Piano*  
(Fleming & Duckworth, n.p.)
John Cage preparing piano. (Kostelanetz, *Anthology*, n.p.)
John Cage preparing piano. (Fleming & Duckworth, n.p.)
Inside Cage's prepared piano.
Above: *Sonatas and Interludes* cover illustration
Below: Bergman & Horn, 22
Primitive (1942) is listed in the score and catalogue as "string piano", despite having instructions in the score for bolts and screws to be inserted between the strings, and the instruction "Play as usual on the keyboard" indicating that this is a prepared piano in all but name. Second Construction is also listed as "string piano" - it is not clear how this is different from "prepared piano", as Cage does not restrict the term to compositions in which the strings are directly manipulated by hand. Cage also composed two works for two prepared pianos: A Book of Music (1944) and Three Dances (1945), two pieces which combined the prepared piano with other instruments: She Is Asleep (1943; Voice and prepared piano), Concerto for Prepared Piano and Chamber Orchestra (1951) and Amores (1943) which alternates between 2 prepared piano solos and 2 percussion trios.

Two features stand out in this list: a third of the solo prepared piano compositions were written in 1944, and after Bacchanale, no compositions for prepared piano were written until 1942. So, although Cage composed extensively for the prepared piano after Bacchanale, there was some delay before this work reached its peak. Cage later explained that it was "... due to the difficulties of organising a percussion ensemble outside a school situation, that I began writing for a time almost exclusively for the prepared piano." (foreword to The Well Prepared Piano, Writer, 118)
The Prepared Piano in Relation to Cage's Later Compositions

The prepared piano developed from the ideas of Cage's teachers - the timbral discontinuity inherent in the prepared piano implies Schoenberg's *Klangfarbenmelodie*, and the direct manipulations of the piano strings suggests Henry Cowell's stringpiano. Cage's discovery of the prepared piano also represents a significant development in his own music, the percussive timbres having obvious connections with his earlier compositions. Even those who find Cage's chance and indeterminate works unacceptable may find value in his prepared piano works: "For the most part, it will be Cage's earlier work - the prepared piano music above all - that will appeal and continue to appeal to a growing public" (Salzman, 6-7). It is also clear that this earlier work contains elements which would significantly affect his later, more radical, compositions.

The concept of using a "gamut" of sounds rather than a scale, mode or tone row was an important part of Cage's compositional approach. It was particularly useful for composing with chance operations, as it allowed him to decide which sounds to include in a particular composition, using the *I Ching* to determine their placement in time. The origins of this concept are in Cage's prepared piano compositions. Pressing a single key on a prepared piano can produce "a combination of sounds" explained Cage, and this fact "... led to the gamut of tones, intervals, and aggregates in the *String Quartet* and subsequent pieces" (in Kostelanetz, *Anthology*, 76).
Two of Cage's most important ideas - chance and indeterminacy - are introduced in his later prepared piano music. The impossibility of exactly reproducing the sound of a prepared piano was a factor in Cage's acceptance of indeterminacy:

When I first placed objects between piano strings, it was with the desire to possess sounds (to be able to repeat them). But, as the music left my home and went from piano to piano and from pianist to pianist it became clear that not only are two pianists essentially different from one another, but two pianos are not the same either. Instead of the possibility of repetition, we are faced in life with the unique qualities and characteristics of each occasion. (foreword to The Well Prepared Piano, Writer, 119)

Cage's *Concerto for Prepared Piano and Orchestra* (1950-51) was the "pivotal work" in Cage's use of chance operations (Pritchett, "From Choice to Chance . . .", 50). In the first and second movements, Cage had used the *I Ching* to answer the question: "Given a time length and a series of sounds, how will the sounds be shaped rhythmically?". In the third movement, Cage discovered "... the interchangeability of sound and silence", asking the more radical question: "Will there be sound or silence here, and if sound, what particular sound?" (Pritchett,

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7 It is important to emphasise the difference between improvisation, chance and indeterminacy. "Improvisation" implies that significant musical decisions will be made at the moment of performance. "Chance" refers to compositions where details of the music are determined by the use of chance operations (coin tossing, imperfections in a sheet of paper etc.), although the end result may, as in *Music of Changes*, be fully notated by the composer. "Indeterminacy" refers to works where the composer allows the performer to decide certain features of the music, as in *Variations II* where the performer prepares a realisation of the piece by taking readings from the plastic transparencies which Cage provides. (For Cage's distinction between chance and indeterminacy see "Indeterminacy", *Silence*, 35-40)
In 1954 Cage wrote his last important pieces for prepared piano: 31'57.9864' for a Pianist and 34'46.776' for a Pianist which are also among his first indeterminate compositions.

The impossibility of imagining the sound of Cage's indeterminate music by reading his scores (which often function as tablatures determining actions to be performed rather than sounds to be reproduced) is another innovation which has its roots in the prepared piano. Cowell commented that a performer given “a piano score that is read and played entirely conventionally” will produce “sounds entirely different from those suggested to the eye, in accordance with the mechanical preparation for the particular piece” (“Current Chronicle”, 95). As Peggy Glanville-Hicks explained, the sound of a prepared piano

... may not only bear no relationship in timbre to its unprepared piano counterpart, but its tonality, pitch and whole position in the piano’s range territory may be totally unexpected. The sound may jump up three octaves, down one, up a second, down a ninth, all while the fingers are playing notes adjacent to each other in a simple scale passage. ... Similarly, a whole passage which in written form exists within the range scope of two octaves may in actual sound occupy four or five octaves and include the use of microtones, ... as well as of timbres that defy description. (30)

Cage’s desire to write music which did not communicate ideas or emotions can also be related to his experience with the prepared piano - when he performed The Perilous Night, a work intended to convey his sorrow at the breakdown of his marriage, he was disturbed to find that members of the audience were laughing at
the sounds of the prepared piano. As a result of this experience, Cage concluded that music could not (and should not) be used for communication. "I could not accept the academic idea that the purpose of music was communication," wrote Cage, "because I noticed that when I conscientiously wrote something sad, people and critics (sic) were apt to laugh" (Writer, 239).

Cage's later theatrical performances also included objects being placed in a piano - from the rubber fish in Water Walk (Tomkins, Bride and Bachelors, 131) to Yoko Ono lying across the strings in a performance of Music Walk (Haskell, 35). Although performers of Music Walk are not necessarily required to prepare the piano with Yoko Ono's body, the type of toy fish is specified in the score of Water Walk, along with its location on the piano bridge and the instruction for operating the fish:

1. After starting fish, place on strings of piano, low or middle register, so that movable tail fins set strings vibrating. (in Fetterman 34)

Post-Cage Compositions for Prepared Instruments

Some composers have used prepared instruments in ways which remain fairly close to Cage's model - inserting bolts, screws and pieces of rubber between piano strings prior to performance, to be removed afterwards. The placement of these objects is specified with varying degrees of precision. Nigel Butterley (who has performed and recorded Cage's Sonatas and Interludes) uses eight bolts (two per note) to alter the notes E F B C in his Letter From Hardy's Bay (1971). The first bolt of each pair is placed between the second and third strings, approximately at the
centre. The second bolt is placed at a measured distance from the bridgepins “C - 1 3/4 inches, B - 4 inches, F - 3 3/4 inches, E - 1 1/4 inches”, although Butterley allows for the variation in construction of different pianos: “If the framework of the piano makes the insertion of bolts at these particular places awkward, other positions may be chosen” (“Notes for Performance”, Letter From Hardy’s Bay). In Barry Mc Kimm’s Trio 1 (1968) for flute, viola and prepared piano, the piano preparations used are “26 wedge type rubber and 26 3/4” screws” whose positioning is given only approximately. Even the instrument is optional - “A synthesiser may be substituted if a prepared piano is unavailable, or at the player’s discretion” (in Pressing, 80).

However, some composers have preferred to differentiate their manipulations of instruments from Cage’s prepared piano: “Strictly speaking, I’ve never used the Cageian prepared piano, affixing nuts and bolts to the strings,” explains George Crumb. “The prepared piano à la Cage is really a very beautiful sound, but it was more personal for me to find my own way” (in Strickland, 171). Crumb’s Makrosmos I: Twelve Fantasy Pieces After the Zodiac (1972) requires the pianist to place a chain on the strings (Sutherland, 197). Eleven Echoes of Autumn, 1965 uses a stringpiano technique:

Draw a piece of rather hard rubber (or similar material) very slowly along the indicated strings. When the correct pressure is exerted a 7th partial harmonic emerges. The tone will tend to phase in and out, but the whistled tones will fortify the harmonic...
and give the illusion of a continuous sound. It may be necessary to apply rosin to the strings beforehand. (Crumb, *Eleven Echoes of Autumn*, 1965)

Lou Harrison's "tack piano" calls for thumbtacks to be inserted in the hammers, an approach also used by such composers as Henry Brant, Paul Dessau, Mauricio Kagel, Wilhelm Killmayer and György Ráyki, and honky tonk pianist Winifred Atwell (Davies "Modifications and New Techniques" 671). This is usually applied to old upright pianos because it involves a permanent alteration to the sound. Pleyel's use of "... thin brass tongues folded round strips of felt... placed between the hammers and the strings" produced similar sounds with (presumably) less permanent effects, a method which was also used in a ballet (1926) by Gabriel Pierné and in Reynaldo Hahn's opera Mozart (1927)” (Davies, “Modifications...”, 671).

Lucia Dlugoszewski developed a number of percussion instruments, but the first was the "timbre piano" she invented in 1951. The "timbre piano" is "a conventional piano whose strings are struck with beaters and played with a variety of 'bows' and 'plectra', such as glass rods and bowls, steel rods, felt-headed mallets, combs, plastic strips and wooden objects” (Davies, “Dlugoszewski, Lucia”).

Larry Austin combines electronics with piano preparations in *Accidents* (1968):
Here the strings of a prepared piano are in continuous contact with vibrating membranes while a large number of contact microphones, cartridges and guitar pickups transmit the sound to loudspeakers distributed around the auditorium. An assistant uses a ring modulator to transform the sounds still further. The plan of the piece is extremely exacting; the pianist is required to execute a series of complex passages as rapidly as possible while making no actual sounds. When keys are inadvertently depressed (the “accidents” of the title) a barrage of sound effects is triggered off, obliging the performer to begin the piece again. The performance ends when the performer has successfully (i.e. silently) executed every gesture indicated. (Sutherland, 162)

It is no doubt symptomatic of the commercialism of the late twentieth century that Guillermo Silveira’s “Vinicius”, which included tossing baseballs onto the strings of a grand piano, was sponsored by a sporting goods company (DeVault, 45).

Preparations can also be applied to other instruments. In Mauricio Kagel’s String Quartet I (1965) the instruments are prepared with “matches, paperclips, knitting needles and strips of adhesive tape, thereby clouding their harmonic identity in a haze of insectile buzzings and papery resonances” (Sutherland, 201). A harp can have paper threaded through the strings, as in Ravel and Satie’s piano preparation - this is used in Busotti’s Fragmentations, Crumb’s Ancient Voices of Children and Varése’s Ameriques (Read, 23). In Ancient Voices of Children, the paper is “to be violently ripped out when indicated” (Crumb). David Bedford applied paper to guitar strings in You Asked For It (1969), instructing the guitarist to “place folded tracing paper beneath the strings at the bridge. The paper should be thick enough
to touch and damp the strings” (Bedford). In *Nurse's Songs with Elephants* (1971), Bedford requests “folded newspaper (Sunday *Times* Business Section is about the correct size) under the strings to produce a damped, rattling sound” (in Schneider, John, 183).

A milk bottle is placed on the strings of an electric guitar in Bedford’s *The Ones Who Walked*: “place guitar on the floor. Put a milk-bottle (upright) on the strings above the pickup. If pushed gently, it will wobble on the strings, producing a gamelan-like sound” (in Schneider, John, 184). Bedford also calls for “glass ashtray, jam jar or similar glass object” in *18 Bricks Left on April 21* - first as a slide and then vibrated on the strings: “Leave vibrating until sound has almost died away, then restart vibration with a push (Bedford).

Haydn Reeder’s *Objects Actions I, 1* (1978) calls for small pieces of “Blu-tack” to be pressed around each string, a procedure which emphasises harmonics, producing a gong-like sonority. For the first and second strings, Reeder follows Cage’s practice of specifying the position where preparations are to be placed (“10 to 15 mm from the bridge”), although for the other strings he provides details of which harmonic should be emphasised: “. . . on the third string, over the eight (sic) harmonic (actual sound equals Gb3. . .); on the fourth, fifth and sixth strings over the seventh harmonic (actual sounds, Cb3, Gb2, Db2)” and further information describing the sound to be produced, not just (as with Cage’s tables of preparations) the approximate positions to place objects:
It is essential that a greater amount of 'Blu-tack' is used for the lower strings than for the higher ones; in fact for 1 the 'Blu-tack' is spread quite thinly around the string.

The 'Blu-tack' is to vibrate with the string and not stop it at the point where placed. The pitch of each string will be lowered by about a semitone with the addition of this material; the player is to retune to usual pitch. (Reeder, *Objects, Actions 1*1, performance notes)

In contrast to Cage's practice of specifying different preparations for each composition, Reeder uses the same preparation for *Draw Near to the Bell* (1980), the only difference being that he allows plasticine as a possible substitute for Blu-tack.

William Hellerman similarly emphasises harmonics by attaching paperclips to the strings of classical guitar, violin and cello in his trio *On the Edge of a Node* (1974), resulting in "artificial 'nodes' that emphasize pitches in varying degrees of distant relation to the fundamental stopped pitch. Each note becomes a timbral event in itself made up of a family of pitches at a variety of amplitudes" (in Schneider, 187). The same sort of preparation was used for Hellerman's guitar solo *Still and All*:

Most of the time it was hard to believe I was listening to an ordinary unamplified classical guitar. There were unpitched twangs and buzzes. There were a number of percussive effects, like bizarre drums. There were high overtones with strange colors. There were twangy tunes and odd scrapings. And perhaps most striking of all, there were moments where the guitarist leaned toward a microphone and plucked deep resonant gonglike tones. (Johnson, *The Voice of New Music*, 194)
John Schneider’s *Voyage* (1976) calls for a plectrum to be inserted between the fourth and sixth strings of a guitar, producing “a gong-like sound that can be altered by plucking any or all of the strings touching the plectrum, or by changing the position of the plectrum along the strings” (Schneider, 187). David Toop attaches electrical clips to guitar strings, which “has the effect of converting the guitar into a small orchestra of gong and bell sounds”. This technique, says Toop, “can be used on any type of plucked chordophone, acoustic or electric” (in Schneider, 186-7). Although there are subtle differences depending on the size, weight and type of material, the general effect of these is similar - any object attached to a nodal point on a string will emphasise overtones. In my experience, electrical clips are most effective for improvisation - paperclips, blu-tack and a plectrum between the strings are all more difficult to attach and remove quickly.

In Jacob Druckman’s *Valentine* (1969) for solo bass, the performer is instructed to “use a single beater (soft head) to articulate the pitches as well as its use percussively with the voice and even to rattle the thing between the strings, simulating or suggesting ... the sexual act” (Guy, Personal Correspondence).

Barney Childs’ *Nonet* uses a cardboard tube inserted in the bell of an oboe and a trumpet, resulting in an indeterminately lower pitch (Read, 8, 11). Various mutes have been applied to wind and brass instruments, often in ways comparable to (or in imitation of) the mutes utilized by jazz musicians - although these sources may not be acknowledged by critics and historians of the classical avant garde. Gardner
Read, for example, mentions that Ligeti’s *Apparitions* and *Aventures* make use of “[r]ather exotic mute substitutes” such as cloth and a vase (17), but fails to mention the similar mutes used by jazz musicians. King Oliver establishes clear jazz precedents for this activity, with “... his practice of inserting mutes, cups, bottles, water glasses, a plumber’s plunger, and even buckets into the bell of his instrument in order to obtain expressive tones from his horn” (Southern, 374). Buddy Bolden made similar use of “such make-shift mutes as half a coconut shell, a bathroom plunger and an old derby hat...” (Charles Edwin Smith, 28).
Guitars prepared with electrical clips and paperclips (Schneider, n.p.)
"STRANGE PRODUCTIONS OF AN INVENTOR'S SKILLS GONE ASTRAY": IMITATIVE KEYBOARD STOPS

One of the most curious features in some early nineteenth-century pianos (in response to the detestable musical taste of the time) was their multiple pedals, by which there were produced different effects of timbre, intended especially for imitative pieces such as musical renderings of battles and storms. (Closson, 84)

Disrespect for a Revered Instrument

Prepared instruments in general, and Cage's prepared piano in particular, have been seen by some historians and music critics as an attack on venerable nineteenth-century traditions. Dieter Hildebrandt complains that Cage, the "Arch-innovator", decorated the piano "like a Christmas tree", preparing the piano by placing "screws, rubber bands, eggspoons, hairpins and other carefully specified bits and pieces... between or on the strings... showing little respect for an instrument so revered in the nineteenth century" (181).

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8 Cage did use screws between the strings, but the use of nails and objects on the strings were rejected during his preliminary experiments. Cage's preparations were usually bolts and screws, and occasionally bamboo or weather stripping. Hildebrandt is not alone in ascribing to Cage preparations which do not appear in his compositions. Junior Harper's Bazaar in June 1946 listed "nails, screws, rubber bands, clothespins" (Kostelanetz Anthology, 84). Roger Dean claims that Cage's preparations were "often nails" (New Structures, 92), others have mentioned forks, pens, "and even snow!" (For the Birds, 37).
Apart from the fanciful list of Cage’s preparations, the notion of the nineteenth century piano being too “revered” for such things is interesting. For this was the time in which several pedals were commonly attached to pianos, altering their timbre in ways closely related to the prepared piano. These pedals have evoked similar critical comments to the above remarks about Cage’s prepared piano, with Czerny dismissing them as “childish toys of which a solid player will disdain to avail himself” (in Mobbs, 473). Rowland rhetorically asks how much notice contemporary pianists should take of these pedals, answering himself: “The answer is simple - not very much” (154). However, an examination of these pedals, and of critical reactions to them, may shed some light on critical attitudes towards prepared instruments, regardless of the question of how much these pedals in themselves may have influenced the use of preparations in improvised music. An example of the sort of instrument under consideration is a piano built in 1796 by Still Brothers of Prague, Bohemia, which was fitted with several additional features:

This monstrosity had 230 strings, 360 pipes and 105 different tonal effects. It was three feet nine inches high, seven feet six inches long and three feet two inches wide, had two keyboards, one above the other, and 25 pedals. The pedals had the following functions: To lift the dampers, to produce lute effect, flute, flute traverso dulciana, salicet, viola da gamba, sifflet, open flute, hollow flute, fagott, French horn, clarinet and many others. The inventor evidently attempted to obtain, besides the ordinary piano tone, also all kinds of organ and orchestral effects, noisy additions which we find to a smaller extent with the nickel-in-the-slot playing machines of today. (Dolge, 58)
A piano patented by Millward in 1866 seemed to function more as a piece of furniture than as a musical instrument:

The piano instead of being supported by legs in the ordinary manner, is supported by a frame which again rests upon a hollow base; inside such hollow base is placed a couch, which is mounted upon rollers and can be drawn out in front of the piano . . . A hollow space is formed in the middle of the frame for rendering the pedals accessible to the performer's feet, and on one side of such a space is formed a closet, having doors opening in front of the piano, and which is designed to contain the bedclothes. On the other side of the space so formed, firstly a bureau with drawers, and secondly, another closet for containing a wash-hand basin, jug, towels and other articles of toilet . . . A music stool is so arranged that in addition it also contains a work-box, a looking glass, a writing desk or table, and a small set of drawers.

(Clements, 249)

Pianos with drawers attached seem to have been customary for some time prior to this, to judge from Milchmeyer's comments in 1797: "The old custom of placing a drawer beneath the instrument in which to store music is quite objectionable, for anyone can easily understand that the constant pulling out and pushing in of the drawer must disturb the instrument and put it out of tune" (Rowland, 161).

Most pianos of the time were more restrained than these examples, although it was common for pianos to be fitted with several pedals. Graf (1782-1851), for example, was "a particularly popular maker, whose pianos were played by many of the important virtuosi of the early nineteenth century" (Rowland, 19). He
included five pedals on his pianos until c.1820: una corda, bassoon, two degrees of moderator and sustaining. Other makers, such as Haschka in Vienna, added two or three “Turkish” pedals to this five pedal design, although these instruments, “despite their splendid appearance, are far from typical, and most probably not the sort that a professional musician would have owned” (Rowland, 19).

Generally the mechanisms operated by these pedals operated similarly to the objects inserted in a prepared piano, in that materials such as cloth, metal or paper were brought into contact with the strings, either muting or rattling against them. In some cases, additional objects - such as bells and drums - may be sounded inside the piano, or the soundboard may be struck with a drumstick. The most significant difference between these pedals and Cage’s prepared piano is that the additions to these pianos are pedal operated mechanisms permanently built into the piano by the manufacturer, rather than found objects inserted temporarily by the pianist.

**Muted strings**

As in the prepared piano, pieces of leather or cloth may be used to mute the strings. A sordin (or mute) stop, as patented by Broadwood in 1783, is a piece of wood “curved to lie along the sound-board bridge and lined with ‘soft leather, hair or silk shagg’. It is hinged to the case and is lifted off or on to the strings by means of a pedal” (Harding, 70-1). In 1788, Bury patented a “mechanism for interposing strips of ‘cloth, leather, or anything that will produce a sweet and
mellow tone' between the hammers and the strings" (Harding, 70). Hancock's harp stop of 1790 inserts "a strip of leather between the hammer and one string of each pair of unisons. The hammer being moved so as to be opposite to the string under which is placed the leather. When drawn off the strips of leather lie between the strings" (Harding, 70; her italics). Use of the lute pedal was indicated by the sign D (Closson, 84), its use being marked in the earliest compositions to include pedalling directions: Steibelt's 6me Pot Pourri and Mélange (1793) (Rowland, 135). It also appears in Boieldieu's Premier Concerto, and in works by "Adam, H. Jadin, and Ladurner, all well-respected figures in Paris" (Rowland, 136). A pedal of this type was attached to "any good pianoforte whether square or grand" (Harding, 71-2).

According to Kenneth Mobbs, the moderator pedal "is of particular musical value", producing "a beautifully muted and softened sound, but nevertheless a resonant one, for the strings are still just as free to vibrate as before" (472-3). Although unsuitable for slow pieces requiring "a soft, sustained and resonant tone," it is "suited to pieces of a cheerful or playful character, to many a pastoral song, and to siciliano-like compositions," according to Milchmeyer: "Mordents and short trills have a delightful effect with this stop; also certain solo passages in the bass sound excellent with it" (in Rowland, 162). As with the prepared piano, varying the density and/or thickness of the muting material enabled various timbres to be produced:

In all instruments when the tone is produced by hammers striking strings or bells there are to be introduced between the hammer and the sounding bodies generally,
at the pleasure of the performer, by a pedal or otherwise, pieces of leather or other substances, the parts of which are of different degrees of density, thickness or hardness, so as gradually to vary the tone from loud to soft, or vice versa, by the hammers striking through the medium of the hard, soft, thick or thin parts of the said pieces. (Isaac Hawkins, 1800; English Patent No. 2446; in Harding, 70)

There were, however, those who disapproved: "As for the pedal which damps the vibrations by means of leather, it is not good in any case, since the fingers make the same effect without having the inconvenience of changing the tone-quality" (Madame la Comtesse de Montgeroult, c.1820; in Rowland, 136).

Whether a change in the tone quality is an "inconvenience" is, of course, a matter of opinion. The una corda is also more effective if used with the purpose of altering timbre rather than merely to reduce volume:

If we treat the keys correctly we can produce a perfect pianissimo on three strings, so that actually we should regard our soft pedal as a splendid means of changing the colour of our tone, and use it artistically for that purpose - not casually for the mere sake of playing softly. It is this misconception of its value that leads to the thoughtless abuse so often indulged in where perhaps at every sight of "piano" or "diminuendo" the left foot is plunged down, regardless of the sudden change of tone quality, which makes the effect very patchy. Yes, indeed, the soft pedal should be regarded as a mute, and discerning care taken to put it on - or off - at a suitable moment in the phrasing, and not in the middle of a phrase or passage. (Y. Bowen, *Pedalling the Modern Pianoforte* (London 1936), 27; in Rowland, 152)

In Schubert's notated pedalling "... there is a consistency in his moderator and una corda markings which suggests that he thought of both pedals as devices for
changing the character of the piano's sound rather than assisting its dynamic capabilities" (Rowland, 139). The primary motivation for these pedals is not the reduction of volume but "the production of tone-effects" (Carreno, 7), such effects being necessitated by the limited timbral range of the piano. "The monotony of tone of the piano is its greatest weakness," writes Carreno, "and the one element against which the artist has to be constantly on his guard, and which only through the greatest pianistic art, and through the greatest skill in the use of the pedals can be corrected or made less apparent" (30)

**Harpsichord, Bassoon and Harmonics Pedals**

The harpsichord stop, patented by Bury in 1788, used "tongues of leather tipped with a hard substance, such as bone or ivory, between the hammers and the strings in such a way that the hard substance is struck against the strings" (Harding, 71). Similar devices existed before Bury's patent, three grand pianos by Gottfried Silbermann (1746, 1749, undated) being fitted with "a rather curious stop whose aim seems to be to make the instrument sound like a harpsichord: pieces of ivory are brought into contact with the strings just at the point where the hammer strikes (Rowland, 17). This is reminiscent of Cage's reference to Bach societies which, "lacking a harpsichord, had placed thumbtacks on the hammers of small uprights in order to simulate the sound they needed" (Writer, 36), and the "tack piano" mentioned in the previous chapter.

The first performance of Maurice Ravel's *Tzigane* (1924), used a "luthéal" - an attachment designed to imitate the sound of a Hungarian cimbalom or a
harpsichord, invented by Georges Cloetens, a Belgian organ builder, who patented it in 1919 (Orenstein, 258). Ravel also called for the luthéal in *L’Enfant et les Sortilèges*, but as it was becoming obsolete by this time, Ravel suggested an alternate method of approximating its sound by preparing the piano with paper, an idea which W. Brooks, suggests is a forerunner of Cage's prepared piano ("Instrumental and Vocal Resources"), and which (as previously mentioned) was used by Erik Satie in 1914.

The bassoon stop "lowered on to the strings a spiral of parchment or paper causing a pattering sound" (Closson, 84) or, more precisely, "a roll of parchment covered by silk [was] brought into contact with the strings either from above or below" (Mobbs, 473). It may not have been an exact imitation of a bassoon, but "it was called 'bassoon,' and so people thought it sounded like one" (Loesser, 172). Even Mobbs, one of the few writers sympathetic to these pedals, concedes that the name "bassoon pedal" is "an insult to a noble instrument . . ." (473). Whether or not it was an accurate imitation, it remains, according to Mobbs, "useful in underlining bass motifs, particularly of a humorous nature, and as the simplest equivalent to a percussion effect. It can suit Haydn and Beethoven in their 'unbuttoned' moods (for example, the second movement of Haydn's *Piano Sonata HXVI:40* and Beethoven's *Bagatelles") (473). Steibelt stresses the importance of using it correctly:

The third register, indicated by \( B\), is the bassoon register. If it is to make the proper effect, it must never be used without the second register [sustaining pedal]. The use of this register requires great care and judgement. It is necessary to remark
that if it is used alone the tone of the instrument becomes harsh. One must also take care to release the second pedal a little earlier than the third. (in Rowland, 175)

The production of piano harmonics by lightly touching the string with a finger or adding a preparation at a nodal point has become a common technique of contemporary composers and improvisors. Such sounds were provided for in early pianos by an “uninhibited putterer” who devised “a bar that was made, by the action of several levers, to touch the strings lightly at their mid-points and thus produce a faraway upper octave echo sound after the notes had been struck” (Loesser, 404). This device is similar to instruments by Glenn Branca and Hans Reichel which are also intended to emphasise harmonics9.

**Turkish Music**

Percussion effects are probably the most common type of preparation. In the nineteenth century, the use of percussion was particularly associated with a vogue for “Turkish” music, of which the best known example is Mozart’s *Rondo Alla Turca*. Loesser’s description of this seems somewhat condescending (if not racist):

> In the eighteenth century, after the actual Turks had stopped being much of a menace, some of their ways began to seem amusing to toy with. Kings, dukes, and field marshals then kept “Turkish” bands, partly authentic and partly fake. If real Turks were not available as players, Negroes were employed and dressed in

9 For further information, see Ted Greenwald and Bart Hopkins on Branca, and Hans Reichel (“Crossing the Bridge”) on his own instruments
fantastic garb to make an effect of outlandishness. Loud batteries of mixed rhythmic sounds without definite pitch struck eighteenth century people, quite correctly, as something barbaric and barbarous, to be enjoyed in small doses for what it expressed. “Turkish” music was considered a regular, appropriate way of accompanying heathen hordes on the stage. (Loesser, 171-2, my italics)

Percussive effects were attainable on early pianos by means of pedals. There were two basic approaches. The first approach was to simulate percussive sounds by banging on the instrument. In a device patented by William Rolfe and Samuel Davis in 1797 (No. 2160), “a hammer is made to strike the soundboard and produce the sound of a drum. An escapement action is fitted and the hammer is worked by a foot pedal” (Harding, 71). A more dramatic version was made by Astor in 1815, on which, in addition to a sustaining pedal, there was a second pedal which produced:

... a novel and taking effect, by lifting a section of the top of the piano lid, which was then allowed to fall suddenly, the slamming serving to illustrate the firing of cannon. The young lady who owned the piano created a sensation by playing battle pieces with this startling accompaniment. (F.C. Morse, Furniture of the Olden Time, New York, 1902, 261-2; in Rowland, 34)

However, this seems to have been a misuse of a swell pedal intended to adjust dynamics. Harpsichords were built in the 18th century with a pedal to gradually raise or lower part of the lid, a similar effect later achieved with the “venetian swell”, which opened a section of the lid like a venetian blind, patented in 1769 by Shudi in England (Harding, 48). In 1801 a version for piano was patented by
Bemetzreider, R. Scott, J. Scott and A. Scott, which appears to be the same as the pedal which the lady mentioned above was abusing: “The top of the instrument (a square pianoforte) opens at the back by means of a pedal” (Harding, 149).

Another approach to producing percussive sounds was to insert actual drums in the piano. In 1798 William Southwell & Son patented an ‘upright square’ using this method:

The mechanism involves stickers at the rear of the piano, which are brought into contact with the ends of the keys when the relevant pedal is depressed. The drum stickers extend from F’ to c’ (32 notes); their tips are covered with leather and they are so positioned that they propel hammers to the lower drumhead. The drum itself is handsomely made; its dimensions are 62.2cm x 18.4cm x 8.9cm, it has two skin heads and 18 tension screws. (Mobbs, 474)

In the 1840s, at least two other inventors were working along similar lines. In 1841, Paul-Joseph Sormani invented the ‘Piano-Basque’ in Paris. The strings were replaced by a series of tuned tambourines which were struck by beaters operated from the keyboard. Six years later, a ‘Melodicon with drums’ was patented in New York: “a series of kettle drums was so arranged that the strings of the piano and the membranes of the drums were struck simultaneously” (Clements, 249).

Drums were not the only percussive sound available. A cymbal was imitated by means of “…a brass strip 17.5cm x 3cm, which falls on the bottom 13 notes thus creating the percussive range of a full chromatic octave” (Mobbs, 474). Triangle effects were “normally obtained from three concentric bells of different
diameters that are struck simultaneously by three hammers each time the pedal is depressed” (Mobbs, 474). In the 1798 Southwell piano mentioned above, there was also a device for imitating the sound of a triangle - this mechanism “extends from c' sharp to c”” (24 notes) and its stickers are tipped with brass; they strike the ‘triangle’, a suspended piece of metal in the shape of a flattened S” (Mobbs, 474). Although one pedal generally operated all the percussion effects, the Victoria and Albert Museum, London houses a “highly elaborate” Haschka piano (c.1810) with eight pedals, one of which is reserved for ‘triangle’ (Mobbs, 474).

There were also devices to boost the output of an instrument. The resonator, introduced by Erard in 1895, was a thin sheet of steel “in which were cut slits with raised edges” (Ehrlich, 115).

By attaching it to the back of an upright or below a grand, the tone of old or inferior pianos, it was alleged, would be enormously enriched for a mere ten to forty guineas: any instrument's life would thus be doubled, because players could produce the marvellous new effects without strenuous effort. A long list of tributes backed these claims, headed inevitably by Paderewski, but including such distinguished musicians as Nikisch and David Popper, the great cellist. The Lady's Pictorial exclaimed “it inspires the improviser, encourages the moderate performer, cultivates the student and does justice to the artist”. The Sunday Times was equally impressed, adding the information that each “gong” was attached to the piano's soundboard by a piece of cat-gut. (Ehrlich, 115-6)
(left:) Heichele fortepiano: view of bassoon, moderators, dampers, cymbal and bells. (Mobbs, 473)

(below:) Johann Schantz fortepiano (Vienna, c. 1795): view of bassoon, moderator and dampers. (Mobbs, 472)
Beethoven had his piano fitted with a similar device to compensate for his impaired hearing, requesting Streicher to “be so kind as to adjust one of your pianos for me to suit my impaired hearing. It should be as loud as possible. That is absolutely necessary” (in Newman, 490). According to Frederick Wieck, Beethoven’s Broadwood had a “resonance plate” attached, and Beethoven’s ear trumpet was fastened to the plate (in Newman, 491). However, it has been noted of Beethoven’s Graf piano that “... its special construction to overcome Beethoven’s deafness proved unsatisfactory both to him and to others who could hear it” (Newman, 501, his italics).

**Sostenente Pianos**

Many piano makers were keen to develop a way of extending the duration of piano notes, generally using some device which would bow the strings. The earliest known examples of this approach are found in Leonardo Da Vinci’s diary (in F-Pi H) and Cordico Atlantico (in I-Ma) (Buchner, 420). Leonardo devised several keyboard instruments in which the strings are bowed mechanically using various devices: “a wheel, a bow with a back-and-forth motion, or a belt of hair moving across the strings as a sort of endless bow” (Winternitz “Leonardo and Music”, 120). “With the help of the mill,” he wrote, “I will make unending sounds from all sorts of instruments, which will sound for so long as the mill shall continue to move” (Notebooks, 401). Leonardo’s interest in bowed sounds may be connected with his experience playing the Lira do braccio, which was “an ancestor of the violin” (Kemp, 131) and “... the foremost improvisation instrument of the time...” (Vasari, in Winternitz “Leonardo and Music”, 112). It
is said that Leonardo “sang divinely, improvising his own accompaniment on
the lira. . . . In addition he was the best improviser of rhymes in his time” (Vasari,
in Winternitz “Leonardo and Music”, 112). The relative scholarly neglect of
Leonardo’s musical interests has been attributed to the fact that he was an
improvisor rather than a composer: “Historians of music . . . would waste little
time on a man who did not leave us any written compositions” (Winternitz,

After Leonardo, there were many others who experimented with similar devices.
In 1575, Hans Haiden of Nuremberg invented a “Geigenwerk” - no examples
have survived, but a seventeenth century Spanish imitation by Raymondo
Truchado has 4 octaves, 45 gut strings and 4 wheels (Buchner, 420). Closson
describes this as “a sort of big viol with a keyboard, shaped like a grand piano,
and furnished with four wheels emerging from the soundboard, worked by a
crank, against which the strings were lowered when the keys were depressed”
(69). The “arched viall,” described in Pepys’ diary on 5 October 1664 uses a
similar principle:

And the new instrument was brought, called the Arched Viall - where, being tuned
with Lutestrings and played on with Kees like an Organ - a piece of Parchment is
always kept moving; and the strings, which by the keys are pressed down upon it,
are grated, in imitation of a bow, by the parchment; and so it is intended to resemble
several vyalls played on with one bow - but so basely and harshly, that it will never
do. But after three hours’ stay, it could not be Fixt in tune . . . (Pepys, 290)
Around 1725, Johann Georg Gleichmann of Ilmenau built an instrument “the strings of which were bowed by several small wheels driven by a single large wheel under the body (“Klaviergamba”). In 1801, John Conrad Becker devised “a means of vibrating his pianoforte strings by means of a wheel above or below them...” (Harding, 96). In 1823 Thomas Todd patented another device:

A flat endless band consisting of woollen cloth, hair or silk, or any other substance that will receive and retain rosin upon it is made to pass near to each string, over and around two cylinders or rollers... about six inches apart... These rollers turn upon centres so that when one of them is put in motion, either by means of a pedal or otherwise, the band continues to run without touching the string unless it is brought in contact therewith. (Harding, 96-7)

A similar approach was devised by Roeder of Paris in 1849, using “a revolving cylinder covered with loose layers of material such as rags or leather whose action of flapping the strings continued their vibration and suggested a stringed instrument played with a bow” (Harding, 98).

Alternately, instead of genuinely sustained notes, rapid tremolos would at least suggest the effect of held notes. In 1800, John Isaac Hawkins of Philadelphia produced a Poiatorise Stop. “A cylinder with projecting teeth is made to revolve with considerable velocity. The teeth engage either the tail of the hammer itself or a lever connected with the hammer and keep it continually striking the strings so long as the key is depressed” (Harding, 99). Henri Pape of Paris experimented with substituting “springs of steel, copper, brass or any metal according to the quality of tone desired, in place of the usual strings, whilst a toothed barrel kept
the hammers continually striking them” (Harding, 99). In 1842, Parisian engineer Philipe de Girard patented “a grand piano with two keyboards, one of them exclusively for tremolando notes” called the piano trémolophone (Buchner, 421). According to Dr. Fischof it produced “such a flood of repeated notes in all regions of the keyboard that this stutter-figure shortly become unbearable” (Loesser, 405).

In his Treatise on Instrumentation, Berlioz praises the possibilities of the sostenente pedal:

The prolongation of sound is the most important musical invention that has been brought into keyboard instruments. This invention . . . gives the player the power of sustaining for an indefinite time . . . a note, a chord, or an arpeggio, in all the compass of the keyboard. . . . The player, having his hands at liberty can not only strike and make other notes speak which form no part of the prolonged chord, but also the prolonged notes themselves. It will be at once perceived to what a multitude of various and charming combinations this invention affords scope on the melodian organ and piano. (in Harding, 95)

Interest in sustained piano tones continued into the twentieth century, with Luigi Russolo’s piano enarmonico. In Russolo’s instrument, “the keys brought a moving belt into contact with coiled springs to produce a rich tone” (Buchner, 420). Strings were sustained using electromagnets in the Choralcelo (1909), the Crea-Tone (1930), and the Variachord (1937) (Buchner, 421). Reginald Whitworth described a Radiotone controlled by the organ console in the Electric Theatre, Bournemouth in the 1930s. The essential principle is reminiscent of Leonardo’s
original conception, despite refinements made possible by modern technology (particularly electricity), and the use of a single, mechanically stopped string.

The single metal string is set in vibration by means of three circular bows, which are continuously rotated during use by a small electric motor. These three bows are of different dimensions, one particular bow being employed for producing the notes in each of the three separate octaves. Immediately any note is played, a clever electromagnetic device automatically lowers the revolving circular bow for the particular octave in which the individual note is situated, until its peripheral edge engages with the string, thus setting it in vibration. The speed at which the motor is revolved, and the special diameter of each circular bow, ensures that the latter will travel across the string at the speed appropriate for the production of the notes concerned.

A set of metal fingers operated by the keyboard “stop” the string at the points necessary to obtain the vibration frequencies required by each note of the scale, these vibrations being immediately converted into electrical frequencies by an electromagnetic pick-up. There is no bridge and soundboard, as in the case of the violin proper. (68)

According to Sir Dan Godfrey, this instrument is “a wonderful invention with great possibilities” (in Whitworth, 69).

More recently, Stephen Scott has written works for bowed piano, forming an ensemble specifically for performances of such works. His approach probably belongs more to the area of extended technique than prepared piano, but the origins of the idea came from a 1976 performance by David Burge of a solo piano composition by Curtis Curtis-Smith which included “some prepared piano
techniques.” One of these techniques, the sound of which “captivated” Scott, involved bowing the piano strings with nylon fishing line. Scott immediately began “to imagine the sound of several players bowing a piano’s strings simultaneously, thus producing sustained chords” (Scott). The resulting compositions, as performed by Scott’s bowed piano ensemble, have been described as “. . . thoughtful and beautiful, centered around sustained chordal clusters giving way intermittently to hocketed ostinato patterns” (Hopkins, 7). Sustained passages are performed using “six or eight strands of rosined monofilament nylon, drawn between the strings of the piano”, while staccato notes are produced with “a popsicle stick or nail file with rosined horse hair glued to one or both sides” (Hopkins, 7). Scott’s experiments with the bowed piano led to him working with instrument builder Alex Stahl in 1982, developing a device using electromagnets to convert a piano into a sostenente piano. The prototype was used in a performance of Resonant Resources, composed and premiered in 1983:

In the opening section, I produce sustained tones by silently depressing keys, thereby lifting the dampers and allowing the strings to vibrate in sympathy with the magnets suspended above them. Later in the piece I combine these sounds with “struck” tones produced in the ordinary way by the piano’s hammers. In the closing section, cascading harmonics excited by varying the frequencies of the electromagnets are combined with chords produced by silent depression of keys.

(Scott, New Music for Bowed Piano, record notes)

The bowed piano has also been used in Cage’s Fourteen (1990), all the notes being bowed with bundles of horsehair (Pritchett, 202). Electric guitarists may also note
the similarity of the sostenente piano to various devices designed to simulate bowing on the guitar, including the toothed wheels of the Gizmotron and the electromagnetic Ebow\(^\text{10}\).

The sostenente piano has been seen by some critics as simply a passing fad: "Such inventions were soon forgotten" (Harrison, 105). Even while acknowledging the existence of related pedals into the early twentieth century, the implication is the same: "This too passed; yet 'mandolin attachments' were still to be found on American pianos as late as 1900" (Loesser, 405). It seems rather unfair to dismiss an idea which has persisted from Leonardo da Vinci to John Cage as if it was a short lived experiment. However, as we shall see, this has been an accusation levelled against many of the pedals which have been attached to the piano.

### Passing Fads and Detestable Taste

Of course, the critics who generally uphold the genius of Classical and Romantic piano composers see no contradiction in claiming that these pedals (apart from those which became standard additions to the modern grand piano) were only present during the nineteenth century "in response to the detestable musical taste of the time" (Closson, 84). The use of these pedals is seen as "a debased vogue" (C. Clutton in Mobbs, 473) resulting in "strange productions of an inventor's skill gone astray and of inventions devoid of good taste" (F.J. Hirt in Mobbs, 473) which may be described as "fairly stupid . . ." (Scholes, 792).

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\(^{10}\) See Mulhern 38, 44, 164, 166; Dery "Ebow: Singing Strings and a Little Black Bow."
Ebow and Gizmotron. (top photos: Mulhern, 38, 42; bottom drawing: How to Mount, Adjust and Make Beautiful Music With Your Gizmotron)

POSITION OF STRINGS WITH KEYS NOT DEPRESSED.
Sketches of bowed keyboard instruments from Leonardo’s workbooks

(Winternitz, "Leonardo and Music", 120).

(Below:) Stephen Scott’s bowed piano ensemble. (Doerschuk & Greenwald, 44).
It is significant that the three pedals which are now considered standard additions to the piano were originally seen as no different to those which now seem like exotic additions. The Broadwood company’s 1892 pamphlet Pianofortes stated that because the sostenuto pedal was “of no value in the concert room, and liable to get out of order”, it was not to be included in their pianos (Rowland, 25). J. L. Dussek was even more cautious:

One pedal is all that is necessary, namely, to raise the dampers while tuning. Many young ladies raise the dampers while playing, for the purpose of increasing the sound; they certainly succeed; and, at the same time, produce an abominable jargon, highly offensive to the ear; and, in general, a sure proof of the want of a good finger, and of judicious expression. (in Rowland, 40)

Few piano critics today would object to the tasteful use of the sustaining, una corda and sostenuto pedals, although the bassoon and Turkish pedals are still attacked vigorously in some quarters, as are prepared instruments. It was, according to Hildebrandt, necessary for the timbral range of the piano to be restricted to its “normal” state before it could function as a serious instrument. This occurred in the late nineteenth century “. . . when all these exotic accoutrements fell away. The pianoforte had first to abandon the foreign frippery and concentrate on its own sound, its own increasingly full and powerful, metallic and abstract sound, a far more interesting field for experimental composition” (148). It is typical of such critical attacks to claim that instruments which featured these pedals were only played by those of dubious taste. The element of snobbery in most of these descriptions is unmistakable:
It was the “giraffe”-style pianos that were most often accoutered with all these “attachments” and pedals. The association suggests a congruity of taste: the sort of people who liked to display eight-foot-tall Empire camelopards in their drawing rooms were also the sort who liked their daughters to enhance them by showing off with battles, storms, and “Turkish” marches all harnessed in full-sounding, full-furious finery. (Loesser, 173)

The following description of a piano once owned by Dr Johann Kanka demonstrates the sort of instrument which these “sort of people” may have displayed in their drawing room:

It is in a walnut case with rounded corners and decorated by a frieze of gilt hanging tendrils and is supported by three dark green caryatides which stand upon square plinths. They wear scale armour and military vestments. . . .

There are six pedals as follows:
(1) Bassoon up to d
(2) ‘Stummzug’, i.e. Lautenzug.
(3) Forte.
(4) Piano.
(5) Former purpose no longer recognisable but now coupled with piano.
(6) Turkish music. (Harding, 136-7)

This was an instrument often played by Kanka’s client - Ludwig van Beethoven. Beethoven was not the only composer to have access to pianos with multiple pedals. Schubert’s 1817 song “Der Tod und das Mädchen” (Op.7, No.3) is marked pp (sempre con Pedale e Sordino), indicating use of the Lute pedal
Mozart's piano (made by Anton Walter, c.1778) included a moderator (Rowland, 18). Weber's Brodmann piano had four pedals, and a portrait of Rossini shows him beside a square piano with "at least six pedals" (Harding, 137). Clearly then, these pedals were not rejected by all "true artists", although they were not universally accepted either. "It is rare that the great pianists make use of their help," commented Gardeton in 1820. "... Clever masters wish, so to speak, that the pedals are only to be found at the end of their fingertips" (in Rowland, 115). In his 1828 piano tutor, despite having indicated "fagotto" (i.e. bassoon pedal) four years earlier, in his Trois Amusements op. 105, no.1 (Rowland, 41, 181), Hummel wrote that pedals were unnecessary for the "truly great Artist". While he conceded that "an agreeable effect in many passages" could be obtained using "the damper-pedal, combined occasionally with the piano-pedal... All other pedals are useless, and of no value to the performer or to the instrument" (in Harding, 112).

However, it is apparent that some serious pianists were willing to make at least occasional use of these pedals, which were common enough that "their presence in the home of an Austrian, German, Netherlander or Frenchman would have

11 Confusion must be avoided between sordini and sordino. As Harding explains: "The term Sordini when used in pianoforte music relates to the dampers, 'con sordini' signifying with the dampers up. Hence the direction in the original edition of Beethoven's 'Moonlight' Sonata (Op 27, No. 2); 'Senza sordini' placed at the beginning of the first movement means that the dampers are to remain lifted throughout the movement. But the term Sordino does not relate to the dampers but to a special extra mechanism for muting the tone. The Sordino is merely another name for the lute stop" (71). However, Banowetz, at least regarding Beethoven, sees the confusion between various damping possibilities as "just one of the countless linguistic laxities of the time" (147).
Pyramid and Giraffe pianos (Harding, 118)

Dr Kanka’s piano (played by Beethoven) (Harding, 99)
occasioned no astonishment during the earlier half of the nineteenth century” (Harding, 136). Derek Melville suggests a simple answer to this apparent contradiction - composers were obliged to have these pedals fitted to their pianos (due to the detestable taste of the time), however, (because they were true artists) they never actually operated them: “there is no evidence that Beethoven ever made use of the jeu céleste on any piano, nor of the lute-stop on the Erard, which was the only piano of his that had this stop. He certainly gave no directions for their use” (50). However, the absence of notated directions for these additional pedals in no way proves that Beethoven avoided them in practice, even if it is accepted that “[t]here were few composers anywhere in Europe who marked the pedals so frequently as he did” (Rowland, 41).

It should not be assumed that everything in a musical composition must be notated. According to Rowland, the lack of directions for the moderator suggests that Beethoven “did not like the device”, although he concedes that it is “. . . unwise to be too dogmatic, however, since the uneven spread of pedalling indications in Beethoven’s later works suggests that he was far from consistent in marking their use” (138). Indeed, Czerny states that Beethoven used the piano pedals “much more frequently than we find it indicated in those compositions” (in Rowland, 52). According to Zimmerman, writing in 1840: “We must first be content with taking the pedal in those places indicated by the composer; however, some composers . . . indicate it much less than they use it, so as not to multiply signs” (in Rowland, 115). W.S. Newman comments that Beethoven’s pedalling indications “in their relatively isolated occurrences . . . scarcely begin to cover all the places where pedalling seems appropriate” (495). Many details of
pedalling were left to the performer's discretion, and it seems likely that Beethoven would avoid specifying a pedal which was not fitted uniformly to all pianos, although this would not necessarily forbid the use of such pedals when they were available. A score which required lute or bassoon stops could not, of course, be played on an instrument which did not have such pedals fitted. Therefore, because the pedals varied from one piano to another, it makes perfect sense to leave their use to the performer's discretion (the Cagean concept of indeterminacy comes to mind here, despite Cage's antipathy to Beethoven\footnote{See Cage, "Defense of Satie"}). If the performer is free to determine pedalling, then Kenneth Mobbs may be justified in recommending use of the bassoon stop in Beethoven's bagatelles (473), "Turkish music" in Es war einmal ein König op. 75 (474), the harmonic swell in Piano Sonata op. 27 no. 2 and op. 31 no. 2 (475), and in his observation that, because the bells on his Haschka piano are tuned to A major it is "virtually obligatory to play the Rondo 'Alla Turca' from Mozart's Piano Sonata k331/300i on it" (474). Mobbs also notes that Christopher Hogwood has used Turkish pedals effectively in Weber's Regen op. 30 no. 5 (474).

The question of the appropriate use of pedals was an element in nineteenth century debates over the relative merits of pianists, with some musicians who are highly valued today being accused of overpedalling by critics of the time. Beethoven was accused of "... mistreating the piano, of lacking all cleanness and clarity, of creating nothing but confused noise the way he used the pedal" (Czerny, in Rowland, 40). Hummel, on the other hand, was criticised because he

\footnote{See Cage, "Defense of Satie"}
... often lost fine effects, which would have been produced by the correct and judicious use of the pedal” (Weick, in Rowland, 118). Clara Schumann complained that Franz Liszt “... used the pedal too much, thus making his works incomprehensible if not to the professionals at least to amateurs” (in Rowland, 118). Louis Adam wrote in defense of pedals, in 1894:

We know that some people, by a blind attachment to the old rules, by a proper but badly-understood affection, forbid their use and call it charlatanism. We will be of their opinion when they make this objection against those performers who only use the pedals to dazzle the ignorant in music, or to disguise the mediocrity of their talent; but those who only use them appropriately to enhance and sustain the sounds of a beautiful melody and fine harmony assuredly merit the approval of true connoisseurs. (in Rowland, 36)

Although noting that at first “this use of the registers was described as charlatanism, and students disliked them,” Steibelt felt that this situation was changing as listeners became accustomed to the sounds and performers learned to use the pedals more effectively, so that “those who outlawed them are overcoming their prejudice, while at the same time many do not yet know how to use these registers skilfully” (in Rowland, 174). The issue is not so much the pedal itself as the taste with which it is applied: “There is much to say concerning the dampers; they can create either the most beautiful effect or the most abominable, depending on whether they are used with taste or bad judgement” commented Milchmeyer. “In the latter case, all the notes sound together and produce such a horrible cacophony that you want to cover your ears” (in Rowland, 163). Louis Adam makes a similar point about the sustaining pedal:
"... as one is sure of producing good effects with it appropriately, so one can be sure to displease and to tire by employing it in a contrary manner" (Rowland, 171), although the same could, of course, be said of any sound which is to be used in a piece of music. The simple fact that a piano pedal, or any other sound, is sometimes (or even often) used inappropriately need not be taken to mean that it should never be used - only that it should be approached with caution.

These pedals are generally depicted as a passing fad, to be dismissed as "infantile contrivances, now happily obsolete" (Schmitt, Das Pedal, 85; qtd. and trans. Rowland 155), "mere inventors' "fancy work"" which "blew out at the moment of consummation" (Loesser, 405-6), these pedals were "not accepted by the true artist and soon died out" (Dolge, 58). However, although many nineteenth century pianos used pedal-operated mechanisms for timbral effects, the idea of expanding the tonal range of keyboard instruments has been evident at other times. Some of the devices mentioned above, such as lute and bassoon stops, were originally used in the harpsichord:

Other attempts to vary the tone included several different kinds of stop, the most important of which were the 'buff' or 'harp' stop (often misleadingly referred to as the 'lute' stop), and the lute stop proper. The buff stop consisted of a series of small pads of buff leather or felt which could be slid against the strings at a point adjacent to the nut, thereby partially muting them and producing a harp-like pizzicato effect. The lute stop, a constructionally much more complicated device, involved a special row of jacks plucking the strings at a point a short distance beyond the nut which produced a tone of distinctive, nasal quality (such as can be obtained on the lute when the strings are plucked close to the bridge). (Closson, 37)
Some instrument makers took the idea to extremes, such as Milchmeyer's eighteenth century harpsichord featuring three manuals and "two hundred and fifty changes of tone colour" (Cramer's *Magazin der Musik*, 1783; in Rowland, 16), a 1749 clavecin by Le Voir which included "... two violins, a drum, a viola and a large violoncello", a 1764 Le Gay clavecin offering "a choice of tone colour ranging from a theorbo to a consort of viols", and a keyboard instrument from 1730 which included 790 strings, 130 changes of registration, and even "a means for giving the performer an electric shock" (Harding, 91).

Pedals of this type continued into the late nineteenth century, and had not entirely vanished in the early years of the twentieth century. On 2 April 1896, an advertisement appeared for "The Crown Piano with orchestral attachment" which imitated the "harp, zither, guitar, mandoline, banjo, autoharp, music box, chime of bells, fife and drum corps, bagpipes, bugle, Bach's clavichord, Mozart's spinet, Handel's harpsichord" (in Ehrlich, 138). In 1924, Luigi Russolo combined his noise instruments into a "noise harmonium" (rumorarmonio), using two instruments of this type during a lecture at the first National Futurist Congress in Milan, entitled "The Unification of the Noise Instruments in the Noise Harmoniums (5 keyboards, 8 timbres)" (Russolo, 7). In 1927 Russolo completed a third noise harmonium with twelve timbres, although this was operated by means of levers rather than a keyboard (Russolo, 16). It was displayed in the foyer for the 1930 Paris premiere of the Surrealist film *L'Age d'Or*, where it was destroyed (as were several surrealist paintings) when the audience rioted in protest at the film (Richter, 19).
Instrumental Transvestitism

The tradition of keyboard instruments with a mechanically expanded timbral range continued into the player pianos and theatre organs of the early twentieth century, followed by Cage's prepared piano and a similar diversity of timbres produced electronically by organs, synthesisers and samplers. I have not seen any reference by Cage to nineteenth century piano stops, but he acknowledged other precedents:

The actual muting of an instrument is, as anybody knows, not a new idea at all. We are familiar with the mutes of the brass instruments, and with that of the violin. The altering of the sounds of a piano had been effected by hot jazz musicians in New Orleans by placing paper between the strings. Henry Cowell, who had used his fists and arms to play the keyboard of the piano, had muted the strings themselves with the fingertips and palms of his hands. Bach societies, lacking a harpsichord, had placed thumbtacks on the hammers of small uprights to simulate the sound they needed. ("A Composer's Confessions," 36)

The use of thumbtacks in piano hammers to simulate the sound of a harpsichord is similar in intent to Cage's attempt to modify the piano to suggest the sound of a percussion ensemble. Similarly, the stops in nineteenth century pianos may be understood as part of a nineteenth century tradition of using one instrument to imitate another. This practice is demonstrated by a critic's description of guitarist

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13 This is referred to in the chapter on African instruments. It is interesting, given Cage's musical tastes, that he cited jazz musicians rather than Satie in this context – presumably Cage was unaware of Satie's early experiments with piano preparation.
Giulio Regond: "He imitates by turn the violin, harp, mandolin and even piano so naturally that you must look at him to convince yourself of the illusion" (in Grunfeld, 200). According to Fernando Ferandièr's *Arte de Tocar La Guitarra Espanòla por Musica* (Madrid, 1799) the guitar "... can easily imitate other instruments, such as flutes, trumpets or oboes, and has the ability to accompany singing as though it were a pianoforte" (in Grunfeld, 140). Pascual Roch, a student of Francisco Tarrega (1852-1909), describes techniques which enable a guitarist to imitate harp, bell, side drum, bass drum, trombone, clarinet, oboe, and even how to "Imitate the Cracked Voice of an Old Man or Woman, To Imitate Sobbing, a Stammerer, and a Stammerer Singing" (*A Modern Method for the Guitar: School of Tarrega*, in Schneider, 101). Dionisio Aguado's *Nuevo Metodo* (Paris, 1843) and Fernando Sor's *Methode* (Paris, 1830) both give instructions for imitating orchestral instruments, although such techniques are not notated in their compositions. John Schneider suggests that such matters were understood by performance conventions: "... it must be assumed that an enlightened contemporary player, seeing a horn-like passage in the score, would understand by convention that he should use the appropriate colour" (100). Presumably the same applies to the use of piano pedals which are not notated and is part of the traditional practice of the composer determining pitch and duration and the performer determining timbre.

Frederic Grunfeld disparages such imitations as "instrumental transvestitism" (140), although this sort of technique was widely appreciated at the time. However, the concept of an orchestral range of sounds being produced by a single performer conflicts with the traditionally strict division of labour in
orchestral music, in which the composer conceives of the music, to be interpreted by the conductor and performed by the orchestra, with each member of the orchestra having a fixed role to play. When a single performer disrupts this demarcation by playing several roles simultaneously, the result is not related to orchestral music, but to the vaudevillian one man band. While Cage intended the prepared piano “... to place in the hands of a single pianist the equivalent of an entire percussion orchestra” (For the Birds, 38), Arthur Berger describes it as being “... a conception not dissimilar to that of the one-man bands common in the jazz world” (in Thomson, 73). Dieter Hidebrandt evokes similar imagery in a description of the effect of nineteenth century piano stops:

One way of picturing how the pedal was used in early forms of the piano would be to imagine a street artist playing six instruments simultaneously. He might have a mouth organ strapped around his head, a fiddle clamped under his chin, with his left hand wielding the bow while the right plucks at a zither, an accordion busily heaving between his knees while one foot works a drum and a triangle. (148)

The notion of a one man band is applicable to some uses of prepared instruments in improvised music. Probably the most familiar example of multiple instruments is Roland Kirk's playing of several wind instruments simultaneously (although these are not prepared instruments, they do give an idea of the approach). Kirk's precedents are found primarily in vaudeville - according to Ted Vincent, vaudevillian saxophonist Wilbur Sweatman was “the first known reed player to play three horns simultaneously” (138). Swiss circus mime Dimitri surpassed Sweatman, by being “able to play no less than four saxophones
simultaneously” (Speaight, 125). Joe Laurie mentions some other pioneers: "Luigi Del’Oro played two instruments at one time. This was done by many others years later. Solly Violinsky was the first I ever saw to play violin and piano at the same time. Dave Apollon played a mandolin and piano (great)” (66). However, these were not the first. Two centuries earlier, on April 19, 1727, an advertisement appeared for a performer in Hamburg: “He will perform solo, artfully, on two horns simultaneously, in a manner hitherto unknown and surpassing all human understanding” (in Loesser, 92).

As a child, Roger Frampton was

...totally fascinated by the sight of a man simultaneously blowing a harmonica, strumming a guitar (or playing an accordion), striking various small drums with mallets attached to his elbows, whilst operating a foot pedal which struck a bass drum! It was common for the performer to have cymbals strapped to the insides of both knees which he crashed together at the desired time. (draft of DCA thesis, n.p.)

Frampton enjoyed the “visual spectacle . . . enormous sound and extravagant self-indulgence” of the one man band, but not the repertoire of tunes from "English music halls, circuses, fairgrounds and seaside resorts” (draft of DCA thesis, n.p.). In 1962 he heard Roland Kirk applying the concept to jazz, going “... quite beyond the old time vaudeville stunt [and] playing integrated ensembles with legitimate musical function and effect” (Martin William, record notes to Kirk’s We Free Kings, in Frampton). Frampton played two descant records simultaneously, then in the early 1970s various devices were used to
enable a single performer to produce several sounds - balloons blowing party whistles, broken metronomes, a vacuum cleaner blowing an alto saxophone, radios, records and toys. On the CD *Two Pianos, One Mind*, Frampton plays a prepared piano and an unprepared piano simultaneously. Frampton performed *Duet for One* - an improvisation for piano and soprano saxophone played simultaneously - as part of a solo recital at the University of Wollongong on September 11, 1997.

In the 1950s, Lloyd Garber constructed "a strange gadget" which enabled him to fret 12 major chords on the guitar with his left foot, while strumming with his right foot (Personal Correspondence, 19 Mar 90). Davey Williams has also played two guitars simultaneously in his solo improvisations: "I play sitting down, and I have one guitar in an open tuning on the floor. I play that one with one bare foot, muting it with the other foot" (in Dery, "Forging a New Vocabulary", 64). On the cover of his record *Vivisection*, Jon Rose is shown performing in Berlin on April 24, 1987. There are four violins on the floor, a doublenecked cello attached to the middle of the stand, with a viola and a cello at each end, and long strings stretched across the frame, is bowing a cello with his right hand, bowing the long strings with his left hand, and stopping strings with his foot. This "multiviolin frame" is featured on the track "Budapest in Flames."
Improvising one man bands: Jon Rose (Vivisection) and Roland Kirk.
Fred Frith’s “not-so-customary customization” of a 1963 Gibson ES-345 (used for his 1970s Guitar Solos recordings) involved an extra pickup added over the strings at the nut and the fingerboard being effectively split into two sections by a capo placed at the 12th fret. This enabled Frith to amplify the sounds produced on either side of the finger fretting a string, playing by tapping percussively on both sides of the capo (Dery “New York Underground”, 37). “Each segment of the neck,” Frith explains, “has a separate sound source, and with volume pedals you can produce the effect of four different instruments at the same time.” (in Dery, “New York Underground”, 37)

Improvising cellist Tom Cora’s Live at the Western Front makes use of the “four-limbed approach” as an electronic means of suggesting a one-man band, “not unlike the techniques of trap-drummers, pedal-organists and four-wheel-drive dumptrucks”. Cora uses his left foot to trigger fragments of live cello samples, while his right foot triggers a pre-recorded cassette (record notes).

Frith and Cora performed as a duet under the name Skeleton Crew (Zeena Parkins later expanded the group to a trio). Although their repertoire mostly featured eccentric rock songs rather than free improvisation, Skeleton Crew were notable for “. . . taking the one-man band ethic and applying it to a duo using a multi-limbed/multi-instrumentalist approach (aided by tapework)” (Recommended Records 1991 Catalogue, 5). With the addition of Zeena Parkins, the group were described by Frith as “three one-man bands in one” (Frith/ Dery, 76).
Keith Rowe’s use of mechanical preparations to provide a “continuo” permits the use of more than one sound to be produced simultaneously. My use of “perpetual motion” guitar preparations serves a similar function - a droning sound is produced on the treble strings, which can serve as accompaniment to improvisation on the bass strings and/or objects held over the pickups.

Silent Film Accompaniment

As the idea of extending the sound of a piano became unfashionable in the concert hall, attention was turned to another area of programme music - the cinema. Sound effects and background music for contemporary cartoon and comic films are generally produced using synthesizers and/or guitars with effects pedals, but in the silent film days they were often accompanied by keyboard instruments. There were several different brands of cinema organs, including Noisegraph, Dramagraph, Kinematophone, Soundograph, Excelsior Sound Effect Cabinet, Kinesounder, Allefex, Biorkestra, Cinechordon, Cinfonium, Clavitist-Violina, Filmplayer, Fotoplayer, Movieodion, One-Man Motion Picture Orchestra, Orchestrian and Pipe-Organ Orchestra (Kahn, “Audio Art in the Deaf Century”, 308; Davies, “Sound Effects”, 423-4). Russolo’s noise harmonium was also used to accompany silent films, and Fox Movietone produced a short sound film about the instrument (Barclay Brown/ Russolo, 9).

14 See page 175
15 See Obrecht, Jas. “Cartoon Guitar: Steve Carnelli” and Carnelli, Steve. “Cartoon Guitar”.
These cinema organs were more closely related to the early piano stops than to the traditional church organ, and (on the rare occasions that popular culture has been noticed by historians of classical music), critical opinion has been similarly antagonistic. Percy Scholes, for example, describes them as "an inferior type of organ" (188). Their purpose was, like the pedals in early pianos, to imitate orchestral sounds and produce sound effects to illustrate programme music.

The bells and percussion of the Turkish pedals continued in the theatre organs, one instrument included "... a resonated xylophone, glockenspiel, chryosglot (resonated metal bars), and chimes, each playable in two or more pitches; also bass and side drums (tap and roll), cymbals, triangle, and Chinese block" (Whitworth, 3). The percussion instruments attached to these organs were not "inferior or toy instruments . . . . On the contrary, they are often of the highest quality, being the true gran cassa e piatti and triangolo of the orchestra; and their action is such that, given a skilful player, the result readily suggests a separate instrumentalist" (Whitworth, 61). The bells were more elaborate than could be fitted in a piano:

A real carillon, composed of properly tuned bells, is a luxury but rarely found in the cinema; nevertheless, such a stop, costing about £2000, is to be found in the magnificent Christie Unit organ at the Regal, Marble Arch, London. Sleigh bells, however approximately tuned, are a popular feature in many organs. The number of bells varies from three or four for mere film effects to a chromatic set of two or three octaves having from five to ten bells for each note. (Whitworth, 60)
Reminiscent of the Turkish pedals which produced the sound of triangles and cymbals, theatre organs had a device to imitate a fire-gong, using “a sheet of resonant brass or other suitable metal, with a reiterating striker” (Whitworth, 67).

From the keyboard of a theatre organ, it was sometimes even possible to operate a piano, by using one of two methods: “either an electro-pneumatic or direct electric action is made to control the tracker-bar of an ordinary player-piano, or the actual keys of the pianos are depressed by electro-pneumatic agency” (Whitworth, 59-60).

As well as simulating other instruments, theatre organs were also used to produce sound effects, which “ranged from the sounds of pistol shots, flames, wind, waves, thunder, breaking china, steam engines, trains, cars, chains, animal cries and horses’ hooves to conventional percussion, whistles, bells and Morse code buzzers” (Davies, “Sound Effects”, 423-4). Or, as another writer lists them:

... galloping horses, railroad whistles and bells, rooster crows, cow bawls, canary chirps, mockingbird calls, tugboat whistles, auto horns, cowbells, anvil strikes, marching feet, gun shots, tom-toms, thunder, temple bells, castanets, frog croaks, slide whistles, tambourines, telephone bells, glass crashes, auto chugs, water splashes, and the blowing of noses. (in Kahn, “Audio Art in the Deaf Century”, 308)

In general, although the effects of theatre organs were sometimes referred to disparagingly (even by their builders) as “the toy shop”, this should not detract from the fact that “the craftsmanship and the materials used in the best makes
are beyond reproach” (Whitworth, 67). Whitworth explains how a few of these effects worked¹⁶. To produce the sound of hail or heavy rain:

The corrugated metal drum D contains a quantity of pellets P made of suitable material; and when the drum is rotated at the correct speed by the electric motor EM, belt and pulleys, the “pitter patter” of heavy rain or hail is well imitated. The thunder effect is generally obtained by sounding several low pedal pipes simultaneously. (65)

Several other devices are shown in the diagram:

C: steamboat whistle
D: “the screech of a railway engine”
E: car horn
F: police whistle
G: aeroplane
H: siren
I: “fire-gong”
J: horses hoof (“two shell-like cavities which, when clapped together by the motor (on which the lower one is mounted), produces a sound like the trotting of a horse”)
K: electric klaxon horn
L: “bird warbler.” (“The ‘dickie bird’ refuses to sing unless supplied with a drink, for the apparatus merely consists of a small organ pipe, of suitable construction and pitch, inverted into water. The water container is shown,

¹⁶ The following description refers to the diagram on page 87.
together with the connecting tube. A short chromatic series of bird warblers is occasionally provided.”

M: electric bell ("for telephone or door bell effects, or for the ‘line bell’ when used in conjunction with the wood block when a typewriter in use is shown on the screen.")

N: “crockery smash”:

The long arm A is secured to wheel W which, when at rest, is held in position by the spiral spring SP together with the attached steel tape. Suspended by a chain from the opposite end of A is a series of thin metal plates PP, the lower end of the chain being fastened to a large metal plate LP. When the control is operated at the console, the magnet in chest CH is energised, and the usual series of movements cut off the pressure wind from inside motor M from which a wire passes through a purse in the roof of the chest to a steel tape secured to wheel W. Motor M now closes, the wire and tape turning the wheel and so causing arm A to drop the thin metal plates with a clatter upon the large plate below. Given a suitable picture on the screen, the effect is quite realistic. When the control is released, spiral spring SP restores the machine to the position shown in the diagram. (Whitworth, 67)

F.C. “Wid” Gunning explains something of the approach used by theatre organists accompanying comedy films in 1919:

If you don’t overwork it, the old “groan” stuff, pulled in synchronism with the action of the cartoon, helps mightily. And then they use all sorts of other traps like the buzzing of mosquitoes, the willunous laughter of the willun (sic), chicken squawks and all that sort of thing. This helps very much, as has been found by comparing this manner of running the cartoon with the usual stunt of “just running it.” (in Maltin, 27)
rum in cinema organ. (Whitworth, 64)
atre organ special effects. (Whitworth, 66)
It should not be surprising, however, that it was still considered necessary to consider these sound effects “as distinct from real music” (Whitworth, 106). Whitworth acknowledges that the production of “non-musical sounds from the pipes of the organ . . . before ever traps were introduced” by theatre organists Firmen Swinnen and Quentin Maclean, was “not only immensely clever, but should certainly be remembered” (106). However, imitative stops built into organs, together with the advent of sound films, meant that such “often astonishingly realistic and genuinely clever synthetic effects” were no longer necessary. Similar effects, however, were still occasionally used in solo performances, where there was “just a little danger (as with the too-realistic ‘storm piece’) in that some of the listeners perhaps may class this sort of thing as organ playing” (Whitworth, 106, his italics).

Some of the pedals attached to nineteenth century pianos (and most of the sound effects in theatre organs) are primarily intended for programmatic effects. Programme music was an important part of nineteenth century music, but has become rather unfashionable in classical music. These pedals are therefore associated with a musical style which is not taken as seriously as abstract formal schemes such as the symphony or the string quartet.

A great deal of programme music that has enjoyed a temporary popularity in uncultured circles is, of course, of the crudest kinds, attempting to imitate actual sounds, bird-singing, cannon-firing, storms, and the like.

... Such compositions ... do not in the slightest justify themselves as music and there is nothing to be said for them save as entertainment.
And even as entertainment they surely do not rank high. (Scholes, 835)

However, such effects have an obvious place in the accompaniment of silent films. Accompanying silent films was a possible source of income for some jazz musicians - Fats Waller, for example, worked as a theatre organist (Kirkeby, 24-25). Some improvisors have performed recently in revivals of these films. At the 1992 du Maurier Ltd. Downtown Jazz festival in Toronto, saxophonist Nic Gotham led a trio improvising to the 1930s expressionist film *The Cabinet of Dr. Caligari*. The music was improvised, "but because it's a film there are ways of preparing and structuring for a 90-minute improvisation" (Gotham in Sobol). The 1997 version of the same festival included Les Projectionnistes improvising to silent films from the 1920s (programme notes, 25). In the absence of an actual film, an improvisor can use an imaginary scenario as the basis for an improvisation:

> Your guitar could act as a t.v. screen. You could have little characters situated all over your screen and you play each part. Natural and prepared techniques. This would be great theatre. You could get very heated up and jump around and be really into it.

> Rub on one place for General George Armstrong Custer and rub on separate spots for each soldier and Indian. You could have different sounds relating to different spots on your instrument. You could feverishly enact the battle of "Little Bighorn". (Garber, *Auntie Nature*, 209-210)
I wet my thumb and rub in two places on the wood (back or front) and pretend two voices are reading the 6 O Clock news. I do this with strange sounds via my thumb rubbing on the wood. (Garber, Personal correspondence, 10 Mar 1995)
FROM AFRICAN INSTRUMENTS TO BLUES

PIANOS

The investigation of oneself means the attempt to hear the calling of those great black minds that have preceded one, and to understand the responsibility, through the investigation of the orders that they maintain, to define what the essential and aesthetic perimeters are that make this music, coming originally from Africa, you know, and combining with other forces, the really supreme Africanization of Western music. (Cecil Taylor in Taylor/ Figi, 13)

Percussive Approaches to Instruments

Although drums are an important part of much African music, there are areas of African music which depend on other instruments and voices. Exaggerating the importance of drums “. . . excludes the large number of string and wind instruments as well as unaccompanied song. It would seem wiser to speak of African music as percussive, rather than to emphasize the use of percussion instruments exclusively” (Merriam in Oliver, Savannah Syncopators, 31). It is, of course, the interest in coaxing percussive sounds from stringed instruments which is relevant to prepared instruments. When playing a pitched instrument, African musicians use various techniques which reflect “a preference for musical textures that embody percussive sounds” (Nketia, 115), or what has been described as “. . . a definite liking for a buzz tone” (Roberts, 8). This may involve striking the instrument, the use of preparations (particularly rattles) or detuning strings. Similar techniques were used by early jazz and blues musicians: Lucius Smith’s banjo was “loosely strung so that the strings, which were raised high above the fingerboard, slapped and buzzed with every stroke” (Lomax, Where the
Blues Began, 334-5). This tradition continues through blues and jazz into improvised music, suggesting that the "deliberate choice of 'dirty' tone" which is apparent in African music is therefore "significant in the consideration of New World black music" (Roberts, 8-9). The origins of preparations, particularly as used by African-American improvisors, may lie in an attempt to simulate African instruments rather than an influence from the (white) classical avant garde.

The percussive sounds which Cecil Taylor achieved by placing metal sheets over the piano strings in "Amplitude" (Litweiler, The Freedom Principle, 212) may represent a later adaptation of this tradition, rather than a development of Cage's preparations, being part of a general approach to the piano as a percussion instrument. Archie Shepp has commented: "Cecil plays the piano like a drum, he gets rhythms out of it like a drum . . ." (in Roberts, 210). As Taylor himself explains it: "We in Black music think of the piano as a percussive instrument: we beat the keyboard, we get inside the instrument" (in Wilmer, As Serious as Your Life, 50). Despite having graduated from the New England Conservatory of Music (As Serious as Your Life, 51), Taylor's percussive piano technique may be more closely related to African and jazz precedents than the classical avant garde, "his decidedly percussive attack" having developed as "an extension of African tradition" (As Serious as Your Life, 176). Randy Weston similarly states that "by becoming more aware of African music," he has learned to "use the piano as a more percussive instrument," including the use of "actual drum effects on it" (in Wilmer, Jazz People, 78)
The percussive use of instruments is part of an African-American tradition - from Milford Graves “talking about the saxophone being a drum” (Frank Lowe in Wilmer, *As Serious as Your Life*, 170) to bass “slapping” giving a percussive effect “analagous in some ways to beating a vibrating membrane” (Andrew Cyrille in Wilmer, *As Serious as Your Life*, 175) to pianists who “think of the keyboard as eighty-eight tuned drums“ (Wilmer, *As Serious as Your Life*, 176). The same is true of blues players: Alan Lomax mentions Lucius Smith’s banjo being “played like a strung drum, presumably much as American slaves handled it after they introduced it into the United States” (*Where the Blues Began*, 335), and Dave Edwards, who “. . . played a savage, simple rhythm, the guitar strings snapping and clashing until the instrument sounded just like a drum” (*Where the Blues Began*, 398). Richard Waterman comments that in urban gospel hymns “. . . percussion effects are stressed even in the absence of actual instruments, and the instruments . . . are, in general, exploited to the full extent of their percussive possibilities” (in Oliver, *Savannah Syncopators*, 16). Donald Garrett, one of Coltrane’s bass players, confirms that this attitude continued into free jazz: “I always thought using two basses sounded like an African water drum“ (J.C. Thomas, 215), while Sun Ra also “treats the bass as if it were another kind of drum” (Wilmer, *As Serious as Your Life*, 79). Valerie Wilmer asserts that, “. . . any sound-machine played by a Black person automatically takes on a different meaning; in other words, whatever the actual origins of an instrument, in Black hands it becomes an African/American musical device” (*As Serious as Your Life*,

17 According to Wilmer, the use of two basses was inspired by “Coltrane’s fascination with the Indian water-drum . . .” (*As Serious As Your Life* 36).
175). This statement is echoed by Courlander: “It is almost as though every instrumental device is intended to produce a percussive effect” (30).

In 1880, Lafcadio Hearn commented on the percussive approach of African-American pianists, although he suggested the banjo rather than the drum as a model: “Did you ever hear Negroes play the piano by ear? Sometimes we pay them a bottle of wine to come here and play for us. They use the piano exactly like a banjo. It is good banjo-playing, but no piano-playing” (in Blassingame, 140). In 1839, Fanny Kemble was fascinated by “. . . the feats of a certain enthusiastic banjo player who seemed to me to thump his instrument with every part of his body at once” (in Oliver, Savannah Syncopators, 23). It is notable that the banjo, an important instrument in early jazz and generally acknowledged as of African origin, features a drum for a soundboard. The African Siiri has a drum resonator which is reminiscent of the banjo: “While continuing to pluck the strings with one hand, the player uses the fingers of the other to snap out a percussion figure on the drum-like top of the bowl” (Hyslop, 53). Kenyan Litungu (eight string lyre) players accompany themselves with:

... three large pea-pod shaped bells, known as Ibiturani. They are tied with leather thongs onto the end of a long stick which is held between the player’s toes - the big toe of his right foot and the one next to it. This stick is struck against the lower frame of the instrument and provides a sturdy bell accompaniment. (Hyslop, 54)

The Obukhana is also played with percussion: “The player wears ankle bells called Tindeche, and on the big toe of his right foot there is a stout iron ring which
is tapped against the frame of the instrument” (Hyslop, 54). These percussive devices are stored inside the instrument, accessed through “a small trap door in the back of the wooden resonating bowl” (Hyslop, 54).

The idea of bells and rattles attached to a performer is quite common, although not, of course, confined to African and African-American musicians. Murray Schafer mentions that women in Israel, Persia and Arabia wear ankle bells “[T]o attract men . . .”, and in Europe during the Middle Ages “. . . knights wore little bells attached to their armor and women wore them jingling from their girdles” (The Tuning of the World, 173). Hans Sloane observed a celebration in the West Indies where the participants had “. . . in the Dances Rattles ty’d to their Legs and Wrists, and in their Hands, with which they make a noise” (capitalisation sic; in Piersen, 126). In Kingston, Jamaica, the coat of one Christmas reveller had “tin or white iron frills, with loose pieces attached, which tinkled as he moved,” and included “a small bell hung to the extreme points of the swallow-tailed skirts” (Michael Scott, in Piersen, 125). In the early 1820s, Timothy Flint saw a parade through the streets of New Orleans: “They dance, and their streamers fly, and the bells that they have hung about them tinkle” (in Piersen, 129). James Creecy commented in 1834 on the “queer, grotesque, fantastic, strange, and merry dancers” with “fringes, ribbons, little bells, and shells and balls, jingling and flirting about the performers’ legs and arms” (in Piersen, 129).

Similar techniques have been applied to contemporary composition in Michael Finnissy’s Kemp’s Morris, although here the precedents are European:
Bukusu Litungu. (Hyslop, 49)

Kuria Litungu (Hyslop, 50)

Shona mbira. (Eyre, 88)

Akpata. (Ben-Amos, 27)
"... recalling the ankle bells of traditional Morris dancers, the pianist’s knuckles
have bells tied across them . . ." (Schwartz & Godfrey, 444). Dadaist Richard
Huelsenbeck similarly performed with bells attached to his left foot (Tzara, Dada,
no.4-5, in Gordon, 15)

A second performer could also provide percussive effects - W.C. Handy recalls a
technique used by slaves: "A boy would stand behind the fiddler with a pair of
knitting needles in his hands. From this position the youngster would reach
around the fiddler’s left shoulder and beat on the strings in the manner of a snare
drummer" (in Southern, 179). David Barrow, writing in 1882, mentions a similar
technique, although he does seem somewhat sceptical of the skill involved:

No preliminary training is necessary in this branch of music; any one can succeed,
with proper caution, the first time he tries. The performer provides himself with a
pair of straws about eighteen inches in length, and stout enough to stand a good
smart blow. An experienced straw-beater will be very careful in selecting his straws,
which he does from the sedge-broom; this gives him an importance he could not
otherwise have, on account of the commonness of his accomplishment. These straws
are used after the manner of drum-sticks, that portion of the fiddle-strings between
the fiddler’s bow and his left hand serving as a drum. One of the first sounds which
you hear on approaching the dancing party is the tum tee tum of the straws, and after
the dance begins, when the shuffling of feet destroys the other sounds of the fiddle,
this noise can still be heard. (Barrow, 175)

This tradition was continued in jazz. Eddie Durham recalls that his father used to
"take some of us kids along and get two hatpins, and he would play his fiddle.
We're standing there, playing rhythm on [the fiddle neck with] those hatpins . . . that fiddle would sound like a drum” (in Spottswood, 64). In the 1930s, Bob Crosby's *The Big Noise From Winnetka* featured Ray Bauduc using drumsticks on Bob Haggart's bass (Feather, *Book of Jazz*, 120). The same technique is also used in composer George Crumb's *Songs, Drones and Refrains of Death* - the second percussionist uses hard vibraphone mallets to play on the strings of first the contrabass and then the guitar (Crumb, 14-15). Improvising guitarist Mike Cooper relates his use of extended percussive techniques to blues precedents:

> I got interested in using the instrument as a sort of sound source mainly because, first of all I was interested in environmental and improvised music, but I was at the same time interested in the fact that a lot of the blues players, and Hawaiian players especially, used to use the guitar in a percussive manner. They had percussion techniques which they'd developed - the Hawaiian player (sic) used to *drag* the metal bar that they use up and down the frets to make this sort of drumming sound. (Cooper/Smith)

While it is true that some of these are playing techniques rather than prepared instruments, they do indicate an interest in applying percussive techniques to any instrument which, coupled with a preference for sounds of indefinite pitch, implies a predisposition to the use of prepared instruments.

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18 Although he is a white English guitarist, Cooper has performed with Son House, Fred McDowell and other blues performers, in addition to performing free improvisation.
Rattles

Although Cage primarily related his own use of preparations to Henry Cowell's example, he also acknowledged that "... maybe one of the oldest instruments that goes in this direction is the marimbula that is plucked metal and often you find them made in Africa with beads around the metal at a point where they won't slip off so that you get a pluck plus the rattle" (non-punctuation and lower case sic; I-VI, 271-2). Although Cage rarely acknowledged this use of rattles with African instruments, it seems likely that many African-American improvisors would have been aware of this tradition, and applied it to their own instruments. Paul Oliver explicitly relates African traditions to the preparations of early blues musicians:

Every African instrument has a drone, a vibrator or other device which produces a buzzing note or in some other way destroys a totally pure note. Such sound elements may be in the nature of the instrument itself, but if not, they will be added - a handful of beans or small stones will be put inside a calabash or in a drum, a length of chain will hang from the sanza 'thumb piano'. For the blues pianist the problem was often solved by the fact that the instruments were indeed out of tune, or the felt on the hammers was worn, but sometimes he would put newspaper behind the strings, even tacks in the hammers to alter the sound, and generally the front would be removed from the upright piano. (Oliver, The Story of the Blues, 85)

Several African instruments have rattles attached to them: "... a drum may have jingling discs fastened to the rim or placed on the head like a snare ... a plucked lute may have such a rattling device attached to the tip of its neck" (Nketia, 70). Snail shells are attached to the mbira (thumb piano) and the Chadangá li (one
stringed mouth bow) to “increase the ratio of noise to pitch” and the mbira may also have a chain or metal rattles attached to the resonator, or small strips of metal wound loosely around the keys (Nketia, 77, 405). The Gambian bulumbata features “… a curving arm which carries the strings and which terminates in a metal plate festooned with rings that vibrate with every touch of the strings” (Oliver, Savannah Syncopators, 48). The komo (two stringed lute) from the Hausa regions of northern Nigeria may also have similar rattles - Paul Oliver mentions that “(a) strip of metal with vibrating rings inserted around it is to be found on one komo in my possession; another has no vibrator” (Savannah Syncopators, 50), although he does not explain whether this is a normal variant, or whether a previous owner could have added or removed the rattles. The sehgura has been described as a “kind of guitar made from a hollowed gourd with seeds threaded on strings to make a sharp metallic sound” (Cuney Hare, 13). The kasayi has a gourd resonator, which is

... studded with bits of metal, beer bottle caps and other objects which set up vibrations when the instrument is played. On some instruments a chain to which bits of metal are attached is fastened to the wooden base in such a fashion that it can be swung rhythmically against the gourd. (Merriam, 177)

The Edo akpata, which has been described as “a congo-guitar” (B. Ankermann in Ben-Amos, 29), has seven strings. Each string is fastened to a wooden rod with “several rattlers (egogo, literally ‘bells’ or ise, literally ‘seeds’), made from split seeds of a palm tree, caps of soft-drink bottles, or other metal pieces” (Ben-Amos, 26). The heterogenous timbral concept of African music is implicit in the fact that
each of these rods is taken from a different bush because “otherwise . . . all the strings will have the same sounds” (Ben-Amos, 26). This use of mixed timbres has also been noted by Pierre Boulez in reference to the African sanza:

... in order to differentiate the sounds and give them extra interest because of their static nature one of the blades will be provided with a kind of mute with a bit of tar on it, so that the sound becomes extremely muffled. The next blade, on the other hand, will be equipped with a small resonant ring to produce a sort of nasal buzzing sound. So, starting off with a static scale, they try to individualise each sound as much as possible. (Conversations with Delièges, 118)

It seems likely that the African use of mixed timbre has influenced the disjunct timbres of improvisors at least as much as Schoenberg and Webern’s Klangfarbenmelodie. M.J. Budds describes “the presence of a heterogenous sound ideal” as an “Africanism in jazz”, a connection which is strengthened by jazz musicians’ “great variety of timbral effects, phrasing idiosyncrasies, and non-European methods of tone production . . .” (3).

Coins rattling in an instrument may also suggest financial considerations:

In the membrane of the resonating bowl of the Bukusuu Litungu . . . a hole can be seen about an inch in diameter. When asked about the purpose of this, the player replied that it had the dual function of letting the sound out and the cents in! This was obviously said in jest, but it does confirm this practice of presenting little gifts to an instrumentalist as he plays. Similarly, at the top of the crossbar of the frame of the Kuria Litungu . . . there is a small tin lid which is clearly a receptacle for coins presented by admirers, although the player said it was his ashtray! (Hyslop, 49-50)
It seems reasonable to see the use of rattles in these instruments as direct predecessors of an early method of preparing acoustic guitars used by blues guitarists Albert Collins and Lightning Hopkins:

Lightnin' taught me that trick about rattlers. People down in Texas used to go rattlesnake hunting. You take about four or five of those rattlers, dry 'em out, and put them inside your hollowbox guitar. It gets a good sound. I used to take pennies and put them inside of mine. Like tin pennies, copper pennies. A lot of people did it around before my time, and I started doing it too. You can tell the difference with the rattlesnake rattlers. I guess it's because the rattlers inside makes a weird sound. (Collins in Obrecht, “Requiem for the Iceman”, 70, 72)

Eddie Durham also recalled that his father would "kill two or three rattlesnakes, and he'd get the rattles and dry them out and put them in the fiddle, and the rattles would amplify the fiddle" (Spottswood, 64). Eugene Chadbourne's use of seashells rattling inside an acoustic guitar was inspired by blues guitarist Big Joe Williams "... who taped his guitars together and had strings attached with nails and stuff..." (Chadbourne/ Dery, 76). Samuel Charters mentions that Williams "got into the habit of buying old broken guitars" repairing them and adding extra strings (Country Blues, 136). However, Williams may have considered financial concerns for confounding his imitators as more important than African ideas of tone - according to the Final Years CD notes, his 9 string guitar was designed "to confuse a competitor who was stealing his licks..."
A more extreme example of an African inspired guitar preparation is found in Tim Olsen’s whimsical plans for an instrument he calls a Selpreg, which is essentially an mbira mounted on an acoustic guitar. Olsen claims to have seen something of this type being used by Eugene Chadbourne - presumably a version of Chadbourne’s “electric rake”:

THE SELECTIVE PREFERENCE GUITAR: A conventional guitar modified by the addition of several metal lamellae (old bandsaw blades may be used) mounted like the tongues of a sansa on a semicircular bridge below the normal bridge on the lower bout. The tongues are tunable or, alternatively, may be individually damped, allowing them to serve selectively as resonators for chosen pitches.

The Selpreg (as it is sometimes called) represents an alternative to sympathetic strings, so Mahavishnu John19 take note. Also, and more importantly, it offers a potential use for those pesky outworn bandsaw blades.

A J-200 or Guild F-50 make likely victims for conversion to Selpregs, as they are already built as sturdily as pianos and have a lower bout soundboard area suitable for tank maneuver. The blade bridge is the only thing you will need to attach to the sound board, as the tuning and damping blocks are held in place by the downward pressure of the blades.

19 For a description of Mahavishnu John Mc Laughlin’s custom guitar with sympathetic strings, see Wheeler.
Above: Big Joe Williams playing 9 string guitar. (Russell)
Below left: Eugene Chadbourne with rake-guitar (Chadbourne/ Dery, 73)
Below right: Selpreg (Olsen, 16)
By tuning the blades chromatically and judiciously selecting those left free to ring, the Selpreg can be given a preference for certain notes or keys. Or you may tune the strings to perform a droning function, hold the peghead between your feet, and pluck the blades. (16)

**The Jazz Piano**

It is clear that the out-of-tune upright piano used by early jazz and blues players in night clubs was not the same instrument as the polished and expensive grand piano available to the classical pianist in a concert hall. Although most modern nightclubs and jazz festivals are now expected to provide a grand piano, smaller venues may still offer inadequate instruments. Stuart Broomer speculates that "the egregious pianos jazz musicians faced through the years" may have introduced "elements of indeterminacy into the music" (Personal Correspondence).

While jazz players may be irritated by the discrimination implicit in the inferior instruments available to them, this sort of instrument has a particular sound which has influenced the development of jazz and blues. Despite the prestige which has come to be associated with the grand piano through its association with classical music, the instrument may be inappropriate for traditional styles of jazz and blues because "the fixed notes of the piano, tuned to a European diatonic scale and with a purity which is alien to blues, made blues interpretation on the instrument extremely difficult" (Oliver, *The Story of the Blues*, 85). A battered upright develops quite a different character, as it "settles into a certain permanent degree of 'out-of-tuneness' related to jazz dissonance, to the blues scale, to African handling of
pitch" (Blesh, 296). Pianists became accustomed to such instruments, experienced players could “choose from a dozen apparently hopeless instruments and select one as carefully and wisely as a violinist inspects a group of Stradivarii” (Blesh, 296). Blues pianists prefer “an instrument which produces a metallic, hollow sound, or where the notes sound a shade flat,” according to Paul Oliver. “Many blues pianists dislike the concert grand when they have the opportunity to play one, being unable to manipulate its impeccable tuning into the tone colour they require” (The Story of the Blues, 85). Blesh asserts that to perform “barrel-house blues on the concert grand is, in itself, a Europeanization of this profoundly Afro-American music” (296). Jazz pianist Herbie Nichols has also praised the timbre of old upright pianos:

The jazz ‘sound’ is surely a living thing and as a piano player I find it mostly in old ‘uprights’. Sometimes these faded pianos with muted strings, strange woodwork and uneven ‘innards’ have a way of giving up fast and resonant overtones. Each note shoots back at you like a bass drum. In such a situation, as soon as I find that I am not financially liable, I let myself go and use any kind of unorthodox touch needed to dig out the strange ‘sounds’ which I know are in the instrument. The only respectable piano that gives up this sort of intimate ‘jazz sound’ in an easy and copious manner is the Steinway upright. (Nichols in Matthieson, 292)

A similar consideration may apply to contemporary African guitarists: “Zulu guitarists play hard, using metal picks and beat-up guitars that you have to really work the sound from. A less resonant small-bodied acoustic guitar is actually better for this than a full-sized dreadnought” (Eyre, 86). Taking this attitude to its
logical conclusion, Ross Bolleter has played on "Ruined" and "Devastated" pianos. However, most jazz pianists moved away from the sound of battered upright pianos as soon as they had the power to demand access to higher quality instruments. Fats Waller, for example, included a specification in his contract that he would not perform unless provided with a Steinway grand (Kirkeby, 224-5).

The deficiencies of these old pianos may be considered as unintentional preparations which result in a timbre somewhat reminiscent of African instruments. Such pianos may even be old enough to include some of the devices referred to in the previous chapter - the typical saloon upright, according to Rudi Blesh, "... often has a device known as the mandolin attachment that gives a plucked and twanging percussive quality not unlike a harpsichord" (296). Due to the relative cheapness of these instruments, players may be less inhibited about altering them than they would be with a grand piano. The changes which are made typically serve to make the piano more percussive, such as producing "a rasping, dirty tone by inserting old newspapers or heavy manila in the strings" (Blesh, 296).

Cage has acknowledged the preparation of a piano with paper by "hot jazz musicians in New Orleans" (Writer, 36) as a forerunner to his prepared piano. There is, however, a significant difference in dynamics. In Cage's prepared piano, "[t]he objects work as mutes, and the sound becomes softer than an ordinary piano ..." (Conversing With Cage, 58). Jazz and blues preparations, as used by "pianists
who partially dismantled their instruments so that they made more noise and kept the customers awake” (Goffin, 48), serve to add percussive sounds, increasing volume by functioning as resonators and/or rattles, so that “Boogie-woogie or The Fives on an upright with the front out and buzzers on the strings could reach to the back tables in a big noisy barroom” (Lomax, Where the Blues Began, 359). Resonators were also used to amplify guitars until electric instruments became available.

Eddie Durham made his own resonator in the 1920s:

I got one of those tin pie pans and carved out my acoustic guitar’s top and put it down in there . . . . It was the size of a breakfast plate. When you’d hit those strings, the pie pan would ring and shoot out the sound. I’d also use a megaphone with it. (in Siegel & Obrecht, 58)
"I WROTE A SAD PIECE AND PEOPLE HEARING IT LAUGHED": HUMOROUS PREPARED INSTRUMENTS

MAX: What instrument can you play?
GROCK: I play the WZTDHP.
MAX: What on earth's that?

Grock launches into an elaborate description, with much pantomime, of the instrument. There are banks of strings arranged so, tubes and pipes curling and twisting so, a mouthpiece here, a keyboard there, and so on.

MAX: That sounds more like an entire orchestra. But at the end of the strings, at the end of the pipes, at the end of the keyboard, what is there?
GROCK: There is some cheese.
MAX: Some cheese! What on earth for?
GROCK: To eat. (Speaight, 87)

Inadvertent Humour

When John Cage composed The Perilous Night in 1944, he intended to express his response to the breakdown of his marriage, evoking "the loneliness and terror that comes to one when love becomes unhappy" (Writer, 40). The formal structure of the work was described by Cage as "... a suite of six pieces of varied character and differing rhythmic structures using a moderately elaborate piano preparation" (Writer, 239).
However, when the work was performed, Cage was disturbed to find that instead of responding to the emotional content or the formal structure of the composition, the audience merely laughed at the sound of the prepared piano. "I had poured a great deal of emotion into this piece," said Cage, "and obviously I wasn't communicating this at all" (Cage in Tomkins, 97).

Given the diversity of musical styles, each with its own specialized audience, Cage reasoned that if art did communicate, then "all artists must be speaking a different language, and thus speaking only for themselves. The whole situation struck me more and more as a Tower of Babel" (in Tomkins, 97). Years later, Cage still insisted that communication could not be the purpose of music, because of the time when he "... wrote a sad piece and people hearing it laughed" (Conversing with Cage, 215). As was mentioned in a previous chapter, this misunderstanding of his intentions was very significant for Cage, constituting a significant factor in his decision to abandon attempts at expressivity in music. Cage's later music could also be unintentionally humorous. Even Peter Yates, generally quite supportive of Cage's music, suggests that the performers in Cartridge Music are to be watched "... as in other days one watched the actions of the clowns circulating around the three rings of the circus, and the more one relaxes into uninhibited attention the funnier it gets" (308).

How could such a lack of communication arise? Cage has assured us that he had

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18 Other factors include Cage's interest in Zen and Dada.
"conscientiously" tried to communicate, so either his intention was not carried out skilfully enough (either by the composer or the performer), the audience was unreceptive (although Cage tells us nothing to suggest a deliberate lack of goodwill on the part of the audience), or Cage was correct in concluding that music is not an effective means of communication. Or, as seems more likely, communication is possible, but dependent on the sender and receiver of a message sharing an understanding of which prior associations are relevant to understanding the message. In this case, the audience may have connected Cage’s prepared piano with humorous precedents which Cage would have considered irrelevant. Such a response was not necessarily arbitrary, because prepared instruments have a number of precedents in vaudeville, cartoons and circus clowning, and the basic concept of prepared instruments is relevant to theories of humour, particularly Koestler’s idea of *bissociation*. Koestler’s theory also explains why different observers variously consider the prepared piano as humorous, creative, inventive or offensive.

Cage was not the only composer to suffer the indignity of audiences laughing at music which was intended to be serious - although he was unusual in renouncing communication as a result. Percy Scholes used his column in *The Observer* (London, 16 December 1923) to make the “inevitable comparison” between Henry Cowell and the circus clown Grock, suggesting that, “as a pianist, Grock is funnier, but Mr. Cowell decidedly the more advanced musician. I should like to hear them in duets” (in Manion, 134). Another English critic, while conceding the comparison with clowning, acknowledged Cowell’s serious intent: “It might be supposed . . . that Mr. Cowell was merely a clown whose
proper place is the music-hall. But Mr. Cowell, whatever he may be, is not a clown; he is perfectly serious” (in Manion, 136). The critics in Prague seized on vaudeville rather than circus clowning as the appropriate point of reference, Cowell’s compositions being seen as “more or less successful vaudeville musical pieces” (“Divadlo a huda.” Národní Listy, Prague, 28 April 1926; in Czech; qtd and trans Manion, 164). While acknowledging Cowell’s virtuosic piano playing, it was nevertheless a “virtuosity which belongs in a vaudeville show, not in a concert hall” (“Divadlo a huda/Koncerty.” unidentified newspaper: Cowell collection, 28 April 1926; in Czech; qtd and trans Manion, 165). Or, as another critic complains: “. . . what was demonstrated to us here is a plaything for children, the most transparent naturalism, which, as I hope, has already been once and for ever buried in music; it is a beautiful number for a vaudeville show, which doesn't suit the concert [hall], however” (L. Kundera, “Rozšíření techniky pianistické a skladební?” Národní Osvobození, Brno, 10 April 1926; in Czech; qtd and trans Manion, 162).

John Zorn experienced similar problems with his use of duck calls as sound sources - as Eugene Chadbourne recalls, “[h]e was into the sounds but people laughed, and he didn’t look at it as humour” (Chadbourne/ Johnston, 24). Zorn also suffered from a problem which Cage was familiar with - as soon as the performer is given freedom to determine which sounds to use, some performers will take this as an opportunity to add humorous effects. Chadbourne’s sense of humour led to “some tensions” between Zorn and Chadbourne after a New Orleans performance of Zorn’s Hockey. The performers were free to choose their own sounds: “I used some repetetive phrases from traditional New Orleans
music and the audience laughed," recalled Chadbourne. "That upset John because he didn’t want that to be a funny piece of music" (Chadbourne/Johnston, 24).

Eugene Chadbourne has also been criticized for his use of humour, recalling "a guitar magazine saying that I could be the greatest guitarist if I quit screwing around" (Chadbourne/Johnston, 23). Chadbourne continues to use humour in his music, but is aware that some critics use this as a weapon - "The criticisms about the presence of humour made it sound like I couldn’t play" (Chadbourne/Johnston, 23). There is however, a need to maintain a sense of balance between the musical and humorous aspects of performance, and even Chadbourne acknowledges that there can be too much humour in a performance: "Some people have so much humour that the humour isn’t funny. I’ve heard this criticism of Frank Zappa, where he had just too many jokes about shit and sex . . . His humour is about things that you’re sick of hearing jokes about" (Chadbourne/Johnston, 24). Contradicting the attitude that humour has no place in music, Chadbourne explains why he refuses to restrict himself to more conventional playing, suggesting that humour is a psychological necessity for some players: "If I was out there trying to be a macho rock star, or a serious Berklee type, I would feel miserable. This is what I’m good at. Some people just don’t like clowning" (Chadbourne/Dery, 76). The humorous aspects of Chadbourne’s performances are clearly intentional. Chadbourne suggests that he is able to "do the things that comedians do to make people laugh, and do it within music" (Chadbourne/Dery, 72). However, even for serious musicians, it
is difficult to avoid some members of the audience finding humour in the use of prepared instruments.

**Unconventional Uses of Musical Instruments**

"Ever since I can remember," says the circus clown Grock, "all kinds of inanimate objects have had a way of looking at me reproachfully and whispering to me in unguarded moments: 'We've been waiting for you . . . at last you've come . . . take us now, and turn us into something different.' To use onions for nothing but frying and making into sauce . . . how humdrum . . . how unimaginative!" (in Welsford, 313). To use objects in unconventional ways is a very common source of humour, as it represents a simple *bissociation*. In musical performance, this sort of joke can be suggested either by using musical instruments in a nonmusical way, or by producing music from noninstruments.

Both approaches are evident in a sequence from *Grampy's Indoor Outing*, a 1936 Max Fleischer cartoon featuring Betty Boop in which a player piano is modified to iron sheets and towels, and steam from a kettle is used to play a flute (Maltin, 106). Unconventional uses for an instrument include vaudevillian Herb Williams using his piano as a chicken coop, with a beer tap attached to the side of it

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9 Bissociation, which Koestler sees as the common feature of humour, tragedy and invention, is defined as "...the intersection of two independent and self-contained logical chains" (20). The punchline of a joke, which Koestler calls the *junction* where these two logical chains intersect, is the point at which "a thing is seen in a dual light; a mental concept is simultaneously perceived under two different angles" (36). Cage's prepared piano, which joins the visual appearance of a piano with the sound of percussion instruments
Improvisor Jon Rose modified his violin in a way which suggests a child’s hobby horse or a wheelbarrow:

Jon had one of his fiddles mounted on a long stick, to the bottom of which was attached a metal cylinder, which served as a laughably primitive wheel. However, the extraordinary sounds this ‘wheel’ produced scraping over the gallery’s concrete floor, became the catalyst for a highly entertaining segment of the improvisation. This culminated in a slide projector almost being bowled, and Caroline being bailed up against the wall by a slightly out-of-control fiddle. (Rose/ Shand, 23)

George Grosz recalls the first time that he heard “something like a jazz band” in the Café Oranienburger Tor around 1912:

Two or three members of the band, wielding saws and cowbells, kept interrupting the general melodic line with rhythmic noises of their own, while the band leader, known as “Mister Meshugge” carried on like a lunatic. He pretended to be quite out of control, and kept breaking his baton or hitting the poor fiddler over the head with his violin. Then he would seize the double bass and engage it in a grotesque duel; in the end he would fling the broken pieces into the audience, who screamed with delight as they flung them back at him.

clearly fits this model. It is significant that whether a particular bissociation is humorous depends on two factors - timing, and the attitude of the audience.

* Grosz acknowledges that it “was not a jazz band in the proper sense but more like a Viennese palm-court orchestra that had suddenly gone mad” (75).
Jon Rose - wheeled violins.
Above: *Shopping*, 95
Top left: *Pink Violin*, 43
Bottom left: *Pink Violin*, 64
Throughout this entire charade, waiters served the band with round after round of beer and schnapps, which helped to lift their high spirits even higher. “Mister Meshugge” kept tearing the instrument out of the players’ hands, danced, sang, jumped suddenly on the grand piano and scratched himself like a monkey, grabbed a large glass of beer, pretended to be raising it in a toast to his enthusiastic public and then poured it, with utmost dispatch into the trumpet of one of his hapless musicians. The audience was convulsed with laughter at each new antic. (75)

Following the lead of “Mister Meshugge” a musical instrument can function as receptacle to hold water, as in George Brecht’s *Drip Music*: “First performer on a tall ladder pours water from a pitcher very slowly down into the bell of a French Horn or tuba held in the playing position by a second performer at floor level” (Friedman, 13). Improvisor Jim Denley inadvertently found an additional source of humour when playing a saxophone with water poured into the bell (performance: Cafe De Lane, Sydney, 1996) - the water leaked from the finger holes of his saxophone, onto the effects pedals of guitarist Deano Merino. At the improvised music festival *Company Week*, Steve Beresford similarly utilised “... a hot water bottle emptied into a trumpet (horizontal, then rain). ... He wears no shoes or socks. He paddles in the pool under his trumpet - infant urination delights ...” (Riley, n.p.). Robert Watts’s Fluxus piece *Duet for Tuba* calls for a tuba to be prepared to dispense coffee and cream from the spit valves (Friedman, 56).

Another example of the bissociation of water and musical instruments is found in Buster Keaton’s 1922 film *The Playhouse*, in which Keaton uses a bass drum as a boat and a violin as a paddle (Wead and Lellis, 29-30), a joke which is echoed
when the Bananas in Pyjamas find a guitar on the beach, and B1 suggests that it 
might be “a paddle for a very fat canoe” (“Musical Stairs”, It’s Music Time).

Where an instrument is used as a receptacle from which unexpected objects 
emerge, the effect is related to the trick of a magician producing a rabbit from a 
hat. This approach is evident in several Fluxus pieces, such as Ay-O’s production 
of bubbles from “various wind instruments” in Rainbow No. 1 for Orchestra. The 
bubbles are burst by the conductor using either his baton or a samurai sword 
(Friedman, 10). Joe Jones calls for one or two brass players to inflate a rubber 
glove or an inflatable leg in the bell of their instrument, in a composition 
variously titled Duet for Brass Instruments or Piece for Winds, “It expands slowly, 
finally shooting out of the bell toward the audience” (Friedman, 25). A version 
of the work performed on March 24, 1979 substituted condoms inflated by a 
trumpet and a soprano saxophone (Johnson, “Paper Airplanes . . .” 71)

In Robert Watts’s F/H Trace:

A French horn is filled with small objects (ping-pong balls, ball bearings, small toys, 
etc.) or fluid (water, mud, whiskey, etc). Performer enters the stage, faces the 
audience, and bows toward the audience so that the objects cascade out of the bell of 
the horn into the audience. (Friedman, 56)

Improvising guitarist Derek Bailey almost caused a riot at a music festival where 
the audience had already been less than receptive - “Slow hand claps, boos, 
shouts, jeers, hoots, screams; we were treated to their complete vocabulary of

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hysterical rejection." In response to this audience reaction, Bailey produced a rubber fish from the sound hole of his acoustic guitar and "dangled it on the end of a guitar string in front of the noses of the front row. The People flipped" (Bailey, "John Stephens")

In some cases, the hidden objects only become apparent with the destruction of the instrument²⁰. Vaudevillians Clooney and Ryan staged a fight in their act, breaking a clarinet in the process, "its parts spilling beans over the stage" (Gilbert, 76-77). A more elaborate version of this joke is found in a circus clown act:

a. A white-faced clown announces that a violin recital will be performed by a famous virtuoso. The clown proper, wearing a formal tailcoat over his outfit, enters the ring, carrying a violin case. He bows ceremoniously to the audience, opens the case and extracts from it first a napkin, which he ties around his neck, then a bottle of cheap wine. He drinks noisily from the bottle, wipes his mouth, and puts the bottle and the napkin back in the case. He bows again to the audience - and is driven out of the ring by his outraged partner.

b. Same initial situation as in a except that the clown enters with a violin. As he starts playing, an explosion occurs in the violin. It falls apart and its contents spill out: strings of thick red sausages. Same conclusion as in a.

c. Same beginning as in b, except that a horn is attached to the neck of the violin, the clown blows the horn. Same conclusion. (Bouissac, 171)

²⁰ Instrument destruction is at least as common in comedy as in visual arts - the emotional attitude of an audience watching Buster Keaton and Charlie Chaplin demolish a piano in *Limelight* is, of course, very different to the reactions evoked by Ortiz's *The Sky is Falling* (this work is described in a later chapter see pages 289-291).
A piano can be used to hold a person. Yoko Ono’s performance lying across the strings in a performance of Cage’s *Music Walk* was mentioned earlier (Haskell, 35). When LaMonte Young performed in a composition by Terry Riley, his instructions included a symbol which indicated that the performer should “crawl into the piano and roll around and kick the lid or the sides”. Riley thought that this would be well suited to Young, who was “small and can probably easily get in the piano” (Young, *Anthology*, n.p.). Richard Bunger mentions a composition which calls for “. . . a nude woman lying on the piano strings inside the lid” (Well Prepared Piano, 39). Charles Dickens suggests the same concept in *The Pickwick Papers* when Sam Weller’s father devises a plan for Mr Pickwick to escape from prison concealed in “a pianner forty . . . as von’t play . . . There ain’t no vurks in it . . . It ’ull hold him easy, vith his hat and shoes on, and breathe through the legs, vich is holler” (639).

Animals can also be placed inside an instrument. The fifth composition in George Maciunas’ *12 Piano Compositions for Nam June Paik* requires the pianist to “Place a dog or cat (or both) inside the piano and play Chopin” (Friedman, 40). In the children’s book *Where’s Spot?* Eric Hill depicts a bird and a hippopotamus hiding in a grand piano.
e: Piano as hiding place - "Is he in the piano?" (Hill, Where's Spot?)

v: Rube Goldberg's unconventional instruments (Experimental Musical Instruments, Dec 1986, 2)
Instruments are redefined as weapons in Fluxus artist Anthony Cox's *Tactical Pieces for Orchestra*:

The orchestra is divided into teams, winds and strings, sitting in opposing rows. Wind instruments must be prepared to be able to shoot out peas. This can be accomplished by inserting a long narrow tube into wind instrument. String instruments are strung with rubber bands which are used to shoot out paper V missiles. Tubes, peas, rubber bands and paper missiles will be provided during the rehearsal to those who did not prepare their instruments in advance, but performers are advised to prepare their instruments in advance and practice shooting at home to improve their aim.

In this piece, the performers are required to hit a performer of opposite team with a missile. If a performer is hit he must exit. The conductor will act as a referee. (Fluxorchestra Circular Letter No. 2)

Almost exactly the same joke was used in the cartoon *Hepcat Symphony*, in which mice use a flute as a gun and fire bows from the strings of violins and celli (*Cartoon Triple Show*). In Robert Bozzi's *Choice 9* (1966) the use of instruments as weapons is reminiscent of George Grosz's account of Mister Meshugge's band: "Two performers fight between themselves using two violins as if the violins were swords, axes or clubs" (Friedman, 11). This idea moves into black comedy in a passage from John Hawkes's book *The Cannibal* (1949):

I swung the tuba short. I should have preferred to have some distance and to be able to swing it like a golf club. But even as it was, Stintz fell, and half-sitting against the wall, he still moved for a moment.
Two things were wrong: there was the lack of room and I had misjudged the instrument itself. Somehow thinking of the tuba as squat, fat, thinking of it as a mallet I had expected it to behave like a mallet; to strike thoroughly and dull, to hit hard and flat. Instead it was the rim of the bell that caught the back of Stintz’s head, and the power in my arms was misdirected, peculiarly unspent. I struck again and the mouthpiece flew from the neck and sang across the room. I was unnerved only for a moment and when finally out in the hall, thought I would have preferred a stout club. Stintz no longer moved. (in Winston, 36)

Fortunately, instruments are not usually redefined in such an extreme fashion in improvised music. Other areas of music, however, are not so reticent - Fletcher Dragge, guitarist for the punk rock group Pennywise, prefers using his guitar as a sharp instrument. “I’ve hit people with all different types of guitars,” explains Dragge, “but my goal is to be able to move around the stage and not have to take off my instrument. I want to continue playing and use it like a sword. For that, the Ibanez RG is perfect. That tip really hurts” (Grad). Dragge believes that the guitar could be improved by adding an object to it, which may be considered a distinctive type of preparation: “I was actually thinking of putting a cattle prod on it. Then I could really regulate the stage” (Grad).

**Alternative Instruments**

As well as using instruments in alternative ways, various objects may be adapted as musical instruments. Vaudeville served as “a valuable testing ground” for new instruments including the washboard and saw which were both used in vaudevillian comedy acts. The drum kit was developed by vaudeville drummer Buddy Gilmore, at the height of his fame in 1919-20.
Vincent, 183). Jean Cocteau describes an American dance which he witnessed at the Casino de Paris:

The American band accompanied it on banjos and thick nickel tubes. On the right of the little black-coated group there was a barman of noises under a gilt pergola loaded with bells, triangles, boards, and motor-cycle horns. With these he fabricated cocktails, adding from time to time a dash of cymbals all the while rising from his seat, posturing and smiling vacuously. (Cocteau, 308)

The humour of producing unconventional sounds with unorthodox soundmakers also “encouraged musicians to produce bizarre sounds on legitimate musical instruments” (Kenney, “The Influence of Black Vaudeville on Early Jazz”, 234), and early jazz musicians often included imitations of barnyard noises and car horns in their music. New Orleans musicians utilised “novelty effects to attract the public” according to Jelly Roll Morton, “and many of the most important things in jazz originated in some guy’s crazy idea that we tried out for a laugh or just to surprise the folks” (in Lomax, Mister Jelly Roll, 66). When his drummer played too loud, Morton offered him a pair of fly swatters to use as drumsticks: “This drummer fell in with the joke and used them, but they worked so smooth he kept right on using them. So we have ‘the swats’ today - a nice soft way to keep your rhythm going” (in Lomax, Mister Jelly Roll, 66). In the film Balls of Fire (1941) Gene Krupa drums with matchsticks on a matchbox (Davies, “Sound Effects”, 424). The use of found objects as musical instruments (or instrument preparations) is quite common in improvised music, and can add an element of humour to a performance.

Experimenting with applying contact microphones to various objects, Eugene
Chadbourne attached a microphone to a garden rake: "... it picked up the tines vibrating and turned it into a horrible din. What attracted me to it was the horrible din - that's what I really liked." Chadbourne, however, accepted the lack of communication when he realised that "audiences really liked the fact that I was making this horrible din on a garden rake" (Chadbourne/Cromelin).

Joe Laurie Jr. lists several examples of vaudevillians using alternative instruments:

Adams & White played on farm implements, Josh Adelman & Co. played on tiny instruments, Beltrah & Beltrah, "The Musical Dairy," milked a prop cow and made music. Carmenelli & Lucille did "Music and Fun in a Butcher Shop" (you can imagine that one). Fitch Cooper was the originator of the musical saw (lots of other acts claimed it). . . . George Dixon . . . played xylophone on a skeleton. . . . Phil Glissando, on a battleship, played the guns, life preservers etc. (66)

The use of the typewriter as a musical instrument by Satie, Cage and others finds a vaudeville equivalent in the 1924 performances of sixteen year old Miss Bird Reeves, a "champ typist" who "did twenty strokes a second and 300 words a minute," and may even have invented the prepared typewriter: "She put a piece of tin in the machine and gave imitations of a drum and a train" (Laurie, 222).

Sometimes the unconventional instruments were faked, but the joke is essentially the same:
A performer whose name nobody can recall had an act called "The Cat Piano." It comprised a number of live cats confined in narrow boxes with wire netting on the front ends. Artificial tails extended from the rear. This performer was a marvellous cat imitator and miaowed the "Miserere" by pulling the cat's tails. Spits, snarls, and plaintive mews added to the effect of the back-fence serenade. (Gilbert, 58)

A similar concept was used in 1789 by an Italian who brought eleven cats to London: "The animals were well trained: each one had its own particular timbre and range; each one made correct entrances upon a given signal and also kept pretty good time" (Loesser, 242-3).

The redefinition of objects as musical instruments may also be prompted by punning. Given the opportunity to search a woman's garage for potential musical instruments, Eugene Chadbourne selected some bicycle fenders, "because you know, every musician wants to play a Fender . . ." (Chadbourne/Moule, 18).

**Prepared Instruments And Extended Techniques**

In "serious music", prepared instruments and extended techniques are generally used for the same purpose - the extension of timbre. So it is usually simply a matter of convenience for the performer whether a harmonic is sounded by touching the node of a string with the finger or by attaching a clip to the nodal point. Whether a piano has its strings muted with paper or with the pianist's fingers, it is still intended to produce a percussive sound. However, when the instrument is being used in a theatrical, humorous way, there is a significant difference - extended techniques are often intended not to
significantly alter the sound, while preparations may alter the sound in a way which the performer will consider (or pretend to consider) unacceptable.

With extended techniques, the joke is to play the instrument in an unconventional manner, but to maintain a sound as close to “normal” as possible. Vaudevillian performer Blatz “The Human Fish” played a trombone underwater, with the bell of the trombone extending out of the water (Gilbert, 40). The Tom-Jack Trio played tambourines by throwing snowballs at them - a method which, according to Joe Laurie, “made good music” (67). Pauline Cook and May Clinton “. . . played musical instruments by shooting at the keys,” and Miss Vivian similarly played the chimes by shooting at them from the balcony (Laurie, 35). Jack Connelly played the piano with bananas and lemons (Laurie, 223). Will Mahoney danced on a large xylophone with hammers attached to his feet (Laurie, 224). With all of these examples, although the sound of the instrument may actually be modified, the intent is to remain as close as possible to the sound which would be produced by conventional means, focussing the attention of the audience on the conventional pitches produced rather than the alteration of timbre. This is particularly apparent in an act by the circus clown Dimitri:

He comes in strumrning a guitar and humming a tune. The ringmaster orders him to be silent. He continues strumming and humming. The ringmaster stuffs a ping-pong ball in his mouth, without effect. He stuffs in a second ping-pong ball. Dimitri pops them out of his mouth onto the strings of the guitar, dancing them there and producing the same tune. (Speaight, 125, my italics)
Prepared to Sound Inappropriate

It is clearly an example of bissociation when something produces a sound other than that which it is usually associated with. Even young children understand a rabbit chirping like a bird as a source of humour (Hill, *Spot Goes to the Farm*). Treg Brown added unconventional sound effects to Warner Brothers:

Once we had a coyote and sheep-dog film and we showed boulders rolling towards the wolf. Instead of using the regular sound effect, he used the sound of a locomotive - and it worked. In *Zoom and Board*, the Coyote uses a Captain Ahab harpoon gun, and of course his foot gets caught up in the rope. Well, Treg used every sound except the proper ones for this scene - he had horns and oinks, and all kinds of things - and I’ll tell you something, people have looked at that thing, people who know about film, and they don’t notice it . . . which is wonderful, of course. His sound effects gave the cartoons a great deal of subconscious humour.

(Chuck Jones in Maltin, 106)

Canadian improvising pianist, filmmaker, visual artist and writer Michael Snow describes a similar approach in notes for his 1974 film *Rameau’s Nephew by Diderot* (Thanx to Dennis Young) by Wilma Schoen:

Wrong or invented sounds for things that happen on screen. Man drops a cup, it shatters, sound is thunder and rain. Rain sound continues till woman covers her eyes. Man cleans up broken cup, sound is hammering. . . . Woman lights cigarette, sound is a bell or chime. . . . She knocks ash off cigarette, sound is splashing water, puffs on cigarette, sound is the spoken word “money.” Simultaneously, man pulls letter from his pocket, sound is a bird sound till he unfolds letter. As he unfolds letter, sound is a siren . . . (102)
Something similar is suggested in Lloyd Garber's imaginative scenario:

If you played a (G) note on the guitar and you heard a dog bark, you would no doubt be surprised. If you picked up the telephone, and instead of a dial tone, you hear a hyena laughing, you may become very insecure. When you close the door, instead of a slam, you hear the t.v. news. You could suddenly become very turned around. *(Auntie Nature, 212)*

Preparations are also useful for rendering an instrument unplayable (at least in a context where a standard sound is assumed to be desirable). When circus clowns Grock and Antonet find their piano to be unplayable, closer inspection reveals a woman's corset wrapped around the strings *(Speaigh, 85)*. Vaudevillian Herb Williams had a variety of props built into his piano, which served more as an obstacle course than an array of timbral modifiers:

*Certain keys produced clacks, gongbeats, and plunks; trying to avoid them got him into more trouble - fearsome faces would arise and objects appear from the piano's insides. At the finish of a long and difficult cadenza, a hand reached out and smacked him in the head.* *(Gilbert, 262)*

This idea is taken to its extreme in the Bugs Bunny cartoon *Show Biz Bugs* *(1957)*, "in which rival Daffy plants a bomb to go off if and when Bugs hits the proper note in a xylophone rendition of *Those Endearing Young Charms.*" *(Maltin, 24)*.
Who's that hiding behind the bush?

Inappropriate sounds: *Spot Goes to the Farm*
THE MUSIC OF PICASSO'S GUITARS

My dream, in music, would be to hear the music of Picasso's guitars.

(Jean Cocteau in Gabrels)

Prepared Instruments from Painting to Performance

Visual artists have explored and modified the appearance of musical instruments throughout Modernism and Postmodernism, passing from two and three dimensional representations into sound sculptures which function as instruments for improvisational performances. This can best be understood as a progression from two dimensional pictures through to functioning instruments. The stages may be roughly summarised in this way:

1) Musical instruments are depicted in paintings, subjecting them to various distortions. Picasso and Braque paint musical instruments in a Cubist manner. Salvador Dali's Still Life by the Light of the Moon (1927), described by Dali as "the clear prefiguration of my soft watches", reworks the Cubist approach into his own idiosyncratic "melting" imagery: "In contrast to the guitar as a dry object, I have painted a guitar soft and viscous as fish" (Descharnes, 144). The idea is introduced that musical instruments need not follow traditional forms, but can be fragmented and reconfigured into a variety of new shapes. The neck of a violin, for example, can protrude from the F-hole. The shape of an instrument can be radically simplified and subjected to various distortions and permutations.
2) Sculptors such as Jacques Lipchitz and Claes Oldenburg develop these ideas in three dimensions, producing sculptures and three dimensional constructions depicting musical instruments.

3) Paper, cloth and cardboard are added to Cubist paintings and drawings as collage elements. Kurt Schwitters produces collages made from discarded bus tickets and other found objects.

4) As collage elements include any objects which can be attached to a picture, collages become constructions expanding out from the picture frame, and the borderline between painting and sculpture is blurred.

5) Musical instruments are used as components of sculptures, where the instrument is treated as a found object incorporated in a visual construction.

6) Sound is included as a sculptural element - including the use of musical instruments as components to be played mechanically.

7) Performance art using sound sculptures and modified musical instruments.
Salvador Dali: Still Life by the Light of the Moon (Descharnes, 145).
Salvador Dali *Metamorphosis of the Guitarpa* (Descharnes, 220)
Picasso. *Guitar.* (Waldman, 44)
It is apparent that through this process, modified instruments can originate from a visual arts background as readily as they can evolve from musical developments. An artist may begin by altering the appearance of an instrument, or juxtaposing it with other objects, and only later become interested in any sounds which may be produced. However, this does not necessarily indicate the chronological order of development. Certain developments may be reversed, or one may jump from one place to another, skipping over intervening stages. It is, for example, quite possible for an artist to start from an interest in sculpture and move on to painting, or to alternate between music and visual art. Of particular interest is the possibility of being in between two or more categories: the areas representing the overlapping of, say, sound sculpture and instrument making are examples of what Fluxus artist Dick Higgins called Intermedia. Emphasis may be placed on either the sound or the appearance of a musical instrument, the relative importance of aural and visual factors may be different for different individuals, and for sculptures and instruments produced by the same person. Sound sculptor Bernard Baschet has said that his own creations can be considered "either as a musical instrument, as an instrument easy to play, as a 'sculpture-object' for which sound is only complementary, or even as the starting point for working with materials" (Grayson, 1). Visual and aural considerations are brought together in "a search for harmony, in the sense of harmony between shapes, sounds, sculpture, music, light, poetry and motion - a harmony for a new generation" (Grayson, 4).

\footnote{Only the later stages of this will be discussed in detail here, as stages 1-4 are explained in many easily accessible books on Dada, Cubism and Surrealism.}
An interest in juxtaposing visual elements can also predispose an artist to the juxtaposition of various sound events. Allan Kaprow saw his exploration of tape music in the 1950s as "a natural translation from being a visual collagist to being a noise-collagist" (Kostelanetz, *Theatre of Mixed Means*, 105) - tape composition being, of course, literally related to collage by its use of techniques of cutting and splicing. William Furlong points out that for tape composers, "Collage, juxtaposition, reduction and addition, contrast, abstraction, realism and so on are all techniques at the artist's disposal" (63). Laurie Anderson's tape-bow violin uses a modified instrument to perform "live" musique concrete - the hair of Anderson's bow is replaced by a length of prerecorded tape, and a playback head mounted on the bridge of the violin, allowing her to play the sounds on the tape (Concannon, 172-3).

Cubist constructions using found objects may function as musical instruments. Ken Butler [no relation] constructs musical instruments from found objects: "It's what I find in the street. The music I play on these instruments is kind of avant-garde", so I call it 'avant garbage' " (in Milkowski). He describes his work as pervaded by a "spirit of improvisation" in which "hidden meanings and

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² In fact, most of the music on Butler's CD *Voices of Anxious Objects* is in a relatively accessible, postmodern pseudo-ethnic style which sounds rather less avant garde than might be expected from the visual appearance of the instruments - to me, it sounds less avant garde than does the playing of, say, Derek Bailey using a conventional guitar.
associations reveal themselves, momentarily creating an ironic and re-animated cultural identity” (Voices of Anxious Objects, CD notes). Butler had played guitar in the late 1960s, and obtained a Master of Fine Arts degree from Portland State University in 1977, at which time he was creating installations combining painting, sculpture and photography (Sievert, 10). Then, in 1978, he added two guitar tuners, strings, and a small microphone to an axe, and built an electric violin:

Initially it was just a good pun . . . But when I plugged it in, I was astounded. It sounded indistinguishable from a violin. That worked so well that I decided to make a guitar out of a tennis racket. It had a regular wound pickup and neck, and it was really a fully functional electric guitar. I started to use them in my installations, and they always caught people's attention, so I decided to expand on the idea. (Sievert, 10)

Since then, Butler has constructed a large number of instruments using found objects, which he conceives of as “. . . assemblages or constructions because I'm interested in finding things that exist and turning them into instruments, as opposed to fabricating out of a piece of wood or something” (Sievert, 10). Butler offers this description of his "Pool Cue and the Double Reel":

One of the reels is for film, and the other is for audio. There's also a tennis racket, and those three things sort of represent the major forms of expression that we see in the media - film, music, and sports. There are four necks. The top neck has two strings, which are tuned a fourth apart and can be strummed and manipulated without frets. The next neck is a shoe-size measuring device. The aluminum clip is a moveable bridge. The strings come out where the number 1 is on the film reel, and come back across the X's over a bridge and up to a row of six tuners, which my right hand partially covers.
One way to play this instrument is to push down where the pyramid shape is, and strum over the X’s. It produces sort of a koto sound. I can also move the bridge back and forth while pushing the strings down to get something like note-bending. The next neck is just a nice piece of aluminum I found that had those numbers on it. It’s similar to the top neck but has a deeper sound. It’s tuned to a fifth and is basically for droning. Before you get to the bottom neck, you can see a string hooked to a regular guitar tailpiece up there by the film reel. That’s hooked to the black wheel down by the tennis racket. To play that, you basically push the tailpiece in and out to get sort of a whammy-bar effect. The bottom neck begins at the tennis racket and is just a single note. It’s got very good action, and you can play single lines on that. The picture predates the implementation of a common bridge for all the strings. That improved the sound quite a bit. The contact mike is in the middle of the third neck down. It makes the whole instrument live, so I can bang on it or flip a spring-loaded doorstop for percussive sounds. I use that instrument quite a bit. (Sievert, 12)

Emphasising how closely such instruments are related to Cubist collages and constructions, one writer has referred to Butler performing “Braque’n’roll” utilising a “Cubist contraption made from a door and various car parts . . .” (Milkowski)

Nam June Paik’s *TV Cello* (1971) is one of several of his works which blur the distinction between visual constructions and musical instruments:

Rather than starting with the existing instrument, Paik re-invented the cello through a mutation with the prevailing form of global communication: television. Three modified monitors, encased in plexiglass, replace the craftsmanship of finely worked
Two of Ken Butler’s “guitars” (Milkowski)
Top: Charlotte Moorman playing Paik's TV Cello during Projekt '74 exhibition. (Nam June Paik: Video Time-Video Space, 52)
Bottom: Moorman playing TV Bra for Living Sculpture (Kahn, 115)
woods. It is more than a visual pun. It embraces the concerns of audio and visual information. (Holubizky, 243)

Once the principle of collage is accepted, all materials become equally available to artists: “I demand on principle the total equality of all materials, equality between able-bodied people, idiots, whistling wiremesh and brainpumps,” insisted Kurt Schwitters in 1919. “I demand the total fusion of all materials from welding torches to violins. I demand the most scrupulous rape of technology for the attainment of this fusion” (in Dietrich, 1982). Although, to my knowledge, Schwitters never actually included violins (or welding torches) in his collages, other artists have used musical instruments as components of sculptural constructions. Picasso produced an early example which, according to Pierre Daix, represented “a synthesis of two and three dimensions, of abstract symbols and concrete reality, which had no precedent” (130). Only a photograph remains of the work in Picasso’s boulevard Raspail studio:

On the wall is an abstract, conceptual drawing with symbols which identify it as a man. Dangling against it are two arms cut from newsprint, holding a real guitar suspended from the ceiling by string. This conception derives from the unity between non-imitative sculptures and real objects achieved by African art. It also proves that conceptual figuration functions in traditional, three-dimensional space. The abstract guitarist exists! (Daix, 130)

2 There is a slightly different translation in Gordon (99).
Maurice Henry’s *Homage to Paganini* (1936) consists of a violin wrapped entirely in bandages, in what seems to be a precursor of Christo’s much larger wrapped objects. The wrapping seems designed either to heal wounds which have been inflicted on the instrument or to silence it, rather than to evoke aural imagery - a concept which may derive from the Surrealists’ dislike of music²⁴.

²⁴ See particularly Breton’s “Silence is Golden” and Paul Garon, *Blues and the Poetic Spirit*, 24-28. Breton’s antagonism towards music seems to have arisen primarily from disagreements with Erik Satie around the time when Dada was becoming Surrealism (Schiff, 160). Although uninterested in musical sound, many Surrealist painters used musical imagery, placing themselves “in the curious position of making the visual element of musical performance acceptable while making the sound itself unacceptable” (Schiff, 188). Robert Goffin, however, considers jazz to be “the first form of surrealism” and “the highest manifestation of surrealism” (4), describing jazz and Surrealism, as “two sides of the same coin, [having] developed along parallel lines but without any mutual influence” (82). Even Breton acknowledged that Surrealist poetry often emphasized sound over meaning, the structure of such poems showing “... the inevitable aspect of musical concatenations” (Breton, 153). Later manifestations of Surrealism disregarded Breton’s opposition to musical performance. In Chicago, Spring 1976, the World Surrealist Exhibition Blues Show was presented as part of the World Surrealist Exhibition, featuring country bluesman Honeyboy Edwards and the urban blues of Eddie Shaw and the Wolf Gang. Two concerts by the Sun Song ensemble, led by Douglas Ewart and organised with members of the Association for the Advancement of Creative Musicians (AACM), demonstrated avant garde developments in the tradition of African-American music, seen by the Chicago Surrealists as “paralleling the surrealists’ own in many respects”:

> These concerts not only exemplified the newest tendencies in black music; thanks to the ensemble’s special flair, with their painted faces and zany costumes (Ewart wearing a necktie almost as large as himself, made of folded newspapers), they were poetic dramas of extreme lyricism peppered with humour fully qualifiable (without playing on words) as absolutely black. (Rosemont, 128)

It is significant, however, that the primary interest of the Chicago Surrealists seems to have been in the lyrics of blues musicians, and the theatricality of the Sun Song ensemble, rather than the music itself.

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A similar idea was explored in Fluxus performances, including Ken Friedman's *Judgement For String And Brass* (Spring 1963) and Robert Bozzi's *Music Piece for Erik Dietman* (1966):

**JUDGEMENT FOR STRING AND BRASS**

1. A brass musical instrument, string, and a performer are required for this piece.
2. The performer slowly wraps the brass instrument in the string, exercising the greatest economy of movement. (Friedman, 24)

**MUSIC PIECE FOR ERIK DIETMAN**

Orchestra members cover their instruments (sic) with bandages or adhesive tape.

(Friedman, 12)

Ion Pearce's *mobile-without-mobility* combines a truncated piano keyboard with a train signal bell and a photo of a cellist. Although the construction is silent, the viewer is aware that these are objects which should sound. One presumes that the keyboard and bell have at one stage been used to produce sound, the photograph serves as a silent record of sound-making. The objects "are set up to stimulate auditory memory and to suggest the way that objects and sounds can metaphorically 'strike a chord'" (Coyle, 10). These objects function as "clues", which the viewer can use to reconstruct the "auditory experience of the artist as he collected these objects" (Coyle, 10).

Ken Unsworth has used pianos in sculptures exploring a preoccupation with death which is also a recurrent theme in many of his non-musical works. *Rapture* (1994) has been described as "one of Unsworth's most important sculptures for some
time” (Fenner, 356). The work consists of a series of piano keyboards ascending like a stairway to the top of the piano, which is filled with straw, burnt music sheets and plastic mice. It does not seem too fanciful to think of Rapture as a prepared piano, and the construction may be seen as related to several of Unsworth’s other constructions using pianos, including Pavane for Dead Cities (1993) and Elegy (1994). Felicity Fenner sees Rapture as “[a] redolent symbol of death and decay . . . A funeral pyre staged for ignition, it harbours the fears and desires of a pretentious society enlightened to the inevitability of its final destiny” (356). The anonymous author of the NSW Art Gallery’s pamphlet “Introducing Contemporarary (sic) Art at the Art Gallery of New South Wales” similarly understands Rapture as suggesting “that all promise and hope is doomed to end in frustration and pain.” However, the work may not be entirely bleak, as Fenner suggests that despite its initial impression, “Rapture speaks also of life and continuance: straw has a regenerative function; as an animal feed that is digested then returned to the land as a natural fertiliser” (356). If the straw is seen as animal feed, then the sculpture may be related to LaMonte Young’s 1960 composition Piano Piece for David Tudor #1:

Bring a bale of hay and a bucket of water onto the stage for the piano to eat and drink. The performer may then feed the piano or leave it to eat by itself. If the former, the piece is over after the piano has been fed. If the latter, it is over after the piano eats or decides not to. (Nyman, 70)

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Pavane for Dead Cities and Elegy are both discussed by Fenner.
Henry, Maurice. *Homage to Paganini*, 1936. (Passeron, 171)

Simultaneous performance of Yoko Ono’s *Sky Piece to Jesus Christ* and *Piece for La Monte Young* (Owen W. Smith, 33)
Ion Pearce. *mobile without mobility*
Photo: Gary Butler (by permission of Museum of Contemporary Art)
Ken Unsworth: *Rapture* (Photo: Gary Butler, by permission of Art Gallery of New South Wales)
Combining the idea of straw as animal feed with Unsworth’s obsession with death, one could even see *Rapture* as a companion piece to another famous prepared piano from visual art: the dead donkey inside a piano in Dali and Bunuel’s film *Un Chien Andalou*. The mice are reminiscent of *The Sky is Falling* by Ralph Ortiz. If, on the other hand, the straw is understood as fuel for a fire, a connection can be made with Annea Lockwood’s burning piano installations.

**Sound Sculpture**

For visual artists who want their work to stand alone in a gallery space without requiring human intervention to perform on them as musical instruments, an obvious solution is to devise a mechanised approach. Allan Kaprow describes Stephan Von Heune’s *Rosebud Ammunicator* as “A one-man band without the man who is the band, [which] mechanically having become the band, plays for itself in an empty room” (in Grayson, 25).

Fluxus artist Joe Jones has produced several instruments/ sound sculptures, which can be combined to form a *Mechanical Orchestra* in which “[s]elf-playing, motor-operated reeds, whistles, horns, violins, bells and gongs play predetermined, dynamically variable and continuous tones for a determined length of time” (Friedman, 25). Jones’ *Music Plant* consists of three violins, their strings continually struck by leather strips attached to small motors. A pot plant

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25 This performance is discussed in a later chapter – see pages 289-291.
is placed on the revolving base of the sculpture, the movement of its leaves
detected by electronic sensors which turn the motors on or off. As George Brecht
describes it: "Electric eyes intercept the leaves/branches. From the base are
mounted three violins each with its own motor and beaters. A leaf intercepted,
energy to a motor, a violin playing, briefly or for a long time - two or three
together" (in Wilson, "Operational Music", 91). Jones has also attached drums
and violins to a bicycle (Wilson, 91) - an idea which seems quite avant garde
unless it is realised that Leonardo da Vinci also experimented with using the
wheels of a carriage to operate a mechanism which played drums (Winternitz,
117). Some of Jones' instruments can be heard on Yoko Ono's record Fly.

Performance Art

As visual artists progress from altered images of musical instruments, through
sculptural representations and collages into functioning musical instruments, the
next logical step is for these instruments to be performed on. There is, of course,
some history of visual artists giving performances. The Dadaists were among the
forerunners of this sort of activity.

At a 1920 Dada-Soirée in Dresden, Raoul Hausmann shoved a gramophone horn
through a huge green velvet curtain surrounding the stage, "and began to play
some glorious jazz music. . . . From time to time [he] tossed a couple of
firecrackers to the stage" (Gordon, 86-7).
Left: Joe Jones Music Machines. Detail from George Maciunas price list for Fluxshop and mail order warehouse. (Smith, “Fluxus . . .”, 32)

The use of music in Dada performance was not restricted to jazz recordings - Hans Richter considered Dada to have begun when Hugo Ball “sitting at an out-of-tune piano in the Cabaret Voltaire, had first given the signal for the attack . . .” (172).

Much of the music was improvised, “Ball’s piano improvisations” being featured as one of the regular items at the Cabaret Voltaire (Richter, 20). Ball also recalled having “composed a short piece of music on the spot” to accompany a dance performed at the Cabaret Voltaire in 1916 (Ball, 64). In Geneva, Dr. Walter Serner . . . held a great Dada Ball with musical items which included a piece played on a piano without a keyboard . . .” (Richter, 179). Berlin performances featured the Dadaists’ “very own composer”, Dr. Dohmann: “His Dada-tunes were never put down on paper; he did nothing but improvise. Under the name of Daimonides he also wrote grotesque poems, and he was one of the few who could play jazz on the piano” (Grosz, 106). Dada performances in Zurich included a wide range of sounds: ”Bells, drums, cow-bells, blows on the table or on empty boxes, all enlivened the already wild accents of the new poetic language . . . (Richter, 19). There were also performances of music by composers not usually associated with Dada - a Berceuse by Debussy, the first movement of the Sonata for Piano and Cello Op. 32 by Saint-Saëns and piano compositions by Scriabin and Rachmaninoff were all included in performances at the Cabaret Voltaire in 1916 (Ball, 52, 55, 56). Compositions by Schoenberg, Laban and Perottet were performed at the 1917 “Third Soiree” at the Galerie Dada (Ball, 110).
The performances of the Dadaists may not have included prepared instruments, although they do suggest the sort of openness to noise and unconventional sounds which is a prerequisite for the use of preparations (a musician committed to producing a "legitimate" tone being unlikely to find prepared instruments acceptable). However, around 1914 the Futurists were experimenting with instruments ranging from "what appears to be a simple wind instrument, the Tofa, made from a large seashell, to the proto-Dada Scetavaisse, a ‘fiddle bow’ that was actually a saw with additional rattles and pieces of tin hanging from it" (Kirby, 29). There are also indications that artists at the Bauhaus were involved with performance on prepared instruments before Cage began work on his Bacchanale. Xanti Schawinsky - who taught at Black Mountain in 1936 (Goldberg, 100), fourteen years before Cage’s time there - described his own performances at the Bauhaus as

... a fanatically rhythmic and penetrating din. chairs, gunshots, handbells and giant tuning forks, sirens and pianos prepared by means of nails, wires, and any kind of tone-modifying materials supplemented the instrumental outfit, which in its ensemble, from various folk sources or from homemade compositions, was able to produce guaranteed danceable music for hours. Improvisations, however, even when they threatened to get out of hand, seemed nailed together by the swinging sledge-hammer rhythm. (Schawinsky, 157; my italics, lower case in original)

So many other visual artists have experimented with musical performance and sound sculpture that it would be impossible to discuss them all in the space which is available. The artists associated with Fluxus have been described as “the most
musical of the avant-garde (or experimental or new-avant-garde) art movements of this century" (Kahn, "The Latest: Fluxus and Music", 102). Many of the Fluxus artists produced *intermedia* works which blurred the distinction between musical instruments and sculpture, and/or between musical performance and theatre, and some of these will be discussed in the following pages.

Annea Lockwood’s use of pianos as components in sculpture installations suggests the possibility of entering visual art from a musical starting point. Lockwood had originally been a pianist - she recalls having spent “the first 24 years of my life playing a lot of piano. I practised six hours a day every day, in addition to composing” - so her piano installations may reflect this background even if they function primarily as visual art. In the 1960s, Lockwood permanently prepared a piano for performances of the song “Lili Marlene.” The piano included

... a movable bottle hung against the lower strings, pluckable bamboo slivers imbedded in the soundboard near the tuning pegs, a carved mouth through which bubbles blew when the soft pedal was depressed, and a pair of doll’s eyes, which coyly winked during trills on a high E and F. (Lockwood, in Doerschuk & Greenwald, Bowing, Scraping, Banging and Burning . . .”, 42)

**Intermedia**

“Our sense of music,” comments Fluxus artist Dick Higgins, “is modified by the penetration from visual art” (Horizons, 17). Several artists have attempted to blur

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27 For more on Lockwood, see page 283-284.
the boundaries between sculpture and musical instruments, or between musical performance and theatre, or between drawing and notated music. “You have to understand,” says George Maciunas “that in new music the audible and the visible overlap” (O’Regan).

It is often impossible to consider the sound and the appearance of sound sculptures separately. In the assemblages of Le Parc, Tinguely and Takis, sound is an essential component. The sculptural object and the sound it produced “… could not be satisfactorily separated. The sounds produced were dependent upon and arose from the material nature and kinetic functioning of the work” (Furlong, 63).

Emphasis may be placed on either the sound or the appearance of a musical instrument, the relative importance of aural and visual factors may be different for different individuals, and for sculptures and instruments produced by the same person. Bernard Baschet has said that his own creations can be considered “either as a musical instrument, as an instrument easy to play, as a ‘sculpture-object’ for which sound is only complementary, or even as the starting point for working with materials” (Grayson, 1). Visual and aural considerations are brought together in “a search for harmony, in the sense of harmony between shapes, sounds, sculpture, music, light, poetry and motion - a harmony for a new generation” (Grayson, 4).

Some of Baschet’s sculptures are used as resonators by French improvising vocalist Annick Nozati, who “met the Baschet brothers and their sound sculptures” in
1967-8, around the same time she met and improvised with various musicians including members of the Art Ensemble of Chicago (Nozati, 4). According to Nozati, her voice “acquired its particular quality” as a direct result of her work with the Baschet sculptures (Nozati, 4). Nozati uses a Baschet sculpture called the Cristal on her 1997 recording *LA Peau des Anges*:

It's played by rubbing glass rods with wet hands. The metal sheet vibrates from the frequencies of the voice, creating a natural reverb and its own unique metallic frequencies which blend with the frequencies of the voice. All the recorded effects are made by this instrument which looks like a double metallic corolla on a stand with four vibrating strings. (Nozati, 7)

Ernie Althoff, having progressed from saxophone improvisations to sculptural installations, maintains an interest in both the appearance and the sound of his constructions:

Maybe it's my graphic design background and my interest in sculpture and contemporary arts practices. Maybe it's my belief that symphony orchestras purposely wear black evening dress and grunge bands purposely wear black leather\(^\text{28}\) and, similarly, that the visual elements of my works are all selected and arranged to serve particular purposes. (Althoff, “Sonic Installation . . .”, 35)

\(^{28}\) Althoff is confusing his visual icons here - it is heavy metal bands who wear black leather; grunge bands wear flannel shirts, T-shirts and tight jeans.
Althoff refers to "a nine-year-old friend" who commented that in his 1993 installation *In the Corner* "you could really only hear the cymbal if you looked hard at it" ("Sonic Installation . . . ", 35).

Visual art and theatre can be combined with music in two ways: mixed media and intermedia. In mixed media, a variety of artistic disciplines occur simultaneously - an early example being Cage's 1952 "happening" at Black Mountain which brought together music, dance, painting, lecture and theatre29, although earlier precedents are found in performances by Dada and Futurist artists. Fluxus artist Ben Patterson's *Variations for Double Bass* combines elements of music and theatre in such a way that it is difficult to disentangle the theatrical elements form the musical elements:

"How would you describe your *Variations for Double Bass* which you're going to perform at the festival?

"I would call it a juxtaposition of objects brought together into a metaphysical relationship . . . or let's say a poetic relationship. Well anyway, some sort of relationship."

"What kind of objects do you juxtapose?"

"Quite a number. For instance, one variation employs plastic butterflies, another requires a long rope constructed of old rags and pieces of wire, and so forth, torn out of the inside of the instrument, dragged through the strings, and stuffed back inside as fast as possible. In another variation I use a stomach pump to rid the instrument of any foreign bodies."

Would you call this a visual or auditory experience?"

29 See Revill 161; Cage, *Conversing With Cage*, 103-105; *For the Birds*, 52, 165-6.
Ben Patterson performing *Variations for Double Bass* at Kleines Sommerfest: Après John Cage, Wuppertal (1963) (Smith, Owen F., 25)
"Decidedly both."

"But is it music?"

"What do you mean, is it music? Of course it's music. It's performed on a musical instrument, it's taking place in a concert hall, and I'm a composer and trained musician." (Williams, 142)

According to Richard Kostelanetz, Cage may be described as a "polyartist" because he "excels in two or more nonadjacent arts" (John Cage (ex)plain(ed), 34). However, it is generally possible to distinguish these separate elements, even when they are used within the same work - for example, Joan Retallack's book of interviews with Cage (Musicage) divides the material into sections on music, text and visual art. In intermedia, however, the elements are inseparable, having combined into "a conceptual fusion" (Higgins, Horizons, 172). Just as some of Picasso's constructions lie in between painting and sculpture, prepared instruments may be situated between sculpture and musical instruments. As Higgins explains it:

... the media have broken down in their traditional forms, and have become merely puristic points of reference. The idea has arisen, as if by spontaneous combustion throughout the entire world, that these points are arbitrary and only useful as critical tools, in saying that such-and-such a work is basically musical, but also poetry. This is the intermedial approach, to emphasize the dialectic between the media. (Horizons, 172).

See Kostelanetz, "John Cage, Polyartist", John Cage (ex)plain(ed), 34-46
Higgins refers, for example, to Joe Jones, "whose self-playing musical instruments fall into the intermedium between music and sculpture" (Higgins, *Horizons*, 23). Most of Ken Butler's assemblages are intended as "both unique playable musical instruments and works of assemblage sculpture . . ." (Butler, *Voices of Anxious Objects*, CD notes). They may be considered as intermedial because he assembled components without knowing at the time whether he was creating a musical instrument or a sculpture:

> At first I wasn’t that concerned with how they sounded. I was more interested in the sculptural characteristics. I’d put them together relatively well and then test them to see which ones sounded good. It wasn’t a failure if it sounded bad - it just became more of a wall sculpture. (in Sievert, 10)

Seen as intermedia, Sound Art relates to several traditions within sculpture and music, but is not entirely situated within any single tradition. Although there "has never been an identifiable group working exclusively in sound," sound has occupied a "diversity of functions and roles within various artists' work" (Furlong, 63).

This failure of sound to construct a distinct category for itself has in fact proved an advantage, given that categories in the end become restrictive and the work circumscribed and marginalised. Therefore, in spite of the frequency with which sound has been utilised within artists' work, it remains remarkably clear of prior associations, historical precedent or weight of tradition. Sound has in fact provided an additional ingredient and strategy for the artist with the potential of addressing and informing senses other than the visual. (Furlong, 63)
Cage's musical performances, which were designed to be seen as well as heard, encouraged visual artists to blur the boundaries between aural and visual arts. To Cage, theatre was "something that engages both the eye and the ear" which could be found even in a conventional concert performance by a symphony orchestra: "the horn player, for example, from time to time empties the spit out of his horn. And this . . . frequently engaged my attention more than the melodies, harmonies etc" (Conversing With Cage, 101).

Not only were Cage's performances seen as theatre, his scores could be exhibited as drawings. In May 1958, to accompany his 25 year retrospective concert at New York Town Hall, Cage exhibited the score of Concert for Piano and Orchestra: "... the pages of the piano part were exhibited in the upstairs room at the Stable Gallery (while Rauschenberg was having a show downstairs). Several of the pages were sold; Cage wrote them out again to keep the set complete" (Sylvester, 51). Dore Ashton, art critic for the New York Times wrote of this exhibition: "They are set down in a complex system of numbers, notes, letters, and geometrical formations . . . and each page has a calligraphic beauty quite apart from its function as a musical composition" (in Kostelanetz, John Cage (ex)plain(ed), 22).

Then, in 1989, Cage exhibited the same work again, at the Anthony d'Offay Gallery, London and the Tate Gallery, Liverpool, as part of the exhibition Dancers on a Plane: John Cage, Merce Cunningham, Jasper Johns. The fact that Cage had been producing prints and lithographs in between the exhibitions meant that "the piano part of the Concert for Piano and Orchestra is seen in an art gallery very differently
from how it was in 1958" commented David Sylvester. “Cage himself has elected
to show it, rather than recent prints or drawings, for his first exhibition in London,
perhaps because of the exhibition's context” (51).

Nam June Paik's *Klavier Integral* is a clear indication of the interpenetration of
music and visual arts, creating confusion about whether it should be considered as
a prepared piano or a sculpture. Paik is known more as a visual artist than as a
composer, which tends to deflect attention from his interest in music. However, as
Wolfgang Dreschler comments: “... when considering Nam June Paik as an artist
and phenomenon, one must always keep an eye on his starting point, his origins:
music” (41). According to the catalogue for Paik's 1979 Cologne exhibition
*Kölnischer Kunstverein*: “Only when it is not seen as performance art, theater,
demonstration or the like, but steadfastly perceived as music can Paik's
composition be understood for what it is: music that breaks with the concept of
music” (in Dreschler, 41). Fluxus artist Tomas Schmit explains the original
functioning of Paik's piano:

I press a key, the key moves the hammer, and that moves whatever is stuck on to or is
hanging from it; for example, it makes an old shoe dangling over a lid bob up and
down.

- I press a key, and it presses on a squeak-bag underneath it; or an electric switch: the
switches are of three kinds, like single buttons, toggle, and double switches, examples:
- If I press C sharp, a transistor radio is switched on; it goes off as soon as I release the
C sharp.
- If I press F, an electric motor screwed to the soundboard (!) starts to rumble; it stops
again when the F is pressed for a second time.
- If I press the C, a fan heater starts to blow warm air at my legs, the knob that switches it off again is hidden under the A.

As well as the things that have been mentioned, several transistor radios, one or more film projectors, a siren (and other things?) are operated in this way.

One key switches off all the lighting in the room (and on again, provided you can find the thing in the dark).

Otherwise, on these two pianos you can see, move, use: a doll’s head, a hand siren, a cow’s horn, a plume, barbed wire, a spoon, a tower of pfennig pieces piled on top of each other, all kinds of toys, photographs, a brassiere, an accordion, an aphrodisiac tin, a pick-up arm from a record player, a padlock, a loose key, lever, etc., etc. (in Dreschler, 45)

Cage's position on Paik’s blurring of the line between visual art and music seems surprisingly conservative - he defines visual art and music as quite separate things, and insists on seeing Paik’s work in visual terms:

His life is devoted, it seems to me, not to sounds, but to objects. He is a performance artist and a sculptor... Paik’s prepared piano Klavier Integral is in a museum, not in a concert hall. It is to be seen rather than heard. (“On the Work of Nam June Paik”, 22, 24)

Despite Cage’s objections, a large number of musical instruments are displayed in museums rather than displayed in concert performances, including many of the early pianos and harpsichords discussed in an earlier chapter. Most people would accept that while this may imply a rarity or fragility in these instruments, it does not affect their status as musical instruments. Otherwise, when Cage displayed his
score for *Concert for Piano and Orchestra* in an art gallery, the new context meant that it was no longer a musical score. In fact, of course, it simply demonstrated that the new notations could be interesting visually and function as a musical work - in exactly the same way that Paik’s *Klavier Integral* was both a prepared piano and a sculpture. Cage also complains that Paik’s performance with Charlotte Moorman of Cage’s 26’1.1499” *for a String Player* “. . . is not faithful to the notation, that the liberties taken are in favor of actions rather than sound events in time” (24). This separation between music and theatre does not seem typical of Cage’s usual attitude to the connections between visual and aural arts. Cage told Richard Kostelanetz that “. . . we have such a marvelous loss of boundaries that your criticism of a happening could be a piece of music or a scientific experiment or a trip to Japan or a trip to your local shopping market” (*The Theatre of Mixed Means*, 59). This suggests that it is perfectly reasonable for Cage’s prepared piano to inspire Paik to produce a sculpture, just as I have suggested that a prepared instrument may develop from ideas in the visual arts. However, for all its visual interest, Paik’s *Klavier Integral* did originally function as a musical instrument - it was not just a visual representation of a prepared piano, but a modified instrument which Paik performed on. It is both a sculpture and a musical instrument, in the same way that many of Cage’s performances were both musical performance and theatre, or that many of his musical scores were also visually interesting drawings.

It is not clear why Paik’s piano became a silent museum exhibit. Some of the objects may have been damaged and ceased to function, or Paik might simply have lost interest in performing on it. If a visually interesting instrument is not
performed on, it may be argued that it is therefore transformed into a work of visual art. Paik's instrument was originally designed as an instrument for him to play. Perhaps because it was not an instrument that other performers were able to use effectively, *Klavier Integral* has passed from its original function to become a museum exhibit that may be interesting to look at, but is not fulfilling its original function. This has been the case with several of Paik's musical works: "Relegation to museums has caused Paik's work of this genre to be withdrawn from use (not only *Klavier Integral*; also *Urmusik*, *Zen for . . .*, and *Violin with String*, among others) and reduced to their still-life appearance only" (Dreschler, 44). The result is the sort of frustration Harry Partch complains about:

Paintings and sculpture and many other museum objects are fulfilling their purpose in being looked at. Whether or not the dead can experience frustration, I for one feel an intense frustration for those artisans who created instruments to sound, when I see the results of their labor placarded with the injunction "Do Not Touch" or displayed in locked glass cases. (Partch, 137)

Partch feared the same fate would befall his instruments (although such an eventuality would surely not be enough to redefine Partch's instruments as sculptures, or change Partch from a composer to a sculptor). Partch believed that the solution was to write a significant body of music for his instruments, so that

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31 This change from a permanently prepared instrument to a sculpture or assemblage assumes that a prepared instrument necessarily produces modified sounds - an assumption which is examined in a later chapter (see pages 223-224).
... if this music is heard and approved, both the instruments and their acoustic conception will be eagerly sought and studied, and their values recognized. And the instruments will be snatched, at least temporarily, from the fate which is the ever-present dread of the musical pioneer - the jaws of the room marked "Rare Instrument Collection." (Partch, 137)
Nam June Paik. *Klavier Integral* (1958-63)
(Nam June Paik. *Video Time-Video Space*, 20)
Preparation and Improvisation

Prepared is part of theatre. Prepared is part of absurdity. Prepared is part of playing the guitar.
Prepared is part of music. Prepared is part of nature sounds, environmental sounds and electronic sounds. To me, prepared is not only an important bridge but a redefinition of these aesthetics — a sort of alternate aesthetic. (Garber, Auntie Nature, 183)

Spontaneity versus Predetermination

There is an apparent contradiction between the ideas of prepared instruments and improvisation. Despite all the difficulties inherent in precisely defining "prepared instruments" the concept seems to imply that the instrument is altered in some way before playing the instrument (whether before the commencement of the concert, or a moment before making a sound during an improvisation). This may be a way of distinguishing between preparation and extended techniques - if an object is brought into contact with the instrument simultaneously with the sound being produced (as in slide guitar, or hand held mutes), this may be seen as an extended technique rather than a preparation.

However, most definitions of "improvisation" tend to presume that decisions about the sound are made at the same time as the sounds are produced - if sounds are determined prior to their execution, the sounds are considered as composed rather than improvised.

Definitions will be considered in the next chapter.
Therefore, improvisation with prepared instruments implies a logical contradiction between spontaneity and predetermination. Indeed, the *Pocket Oxford Dictionary* defines extempore as “without preparation”, while *Roget’s Thesaurus* lists “improvise” and “extemporize” as synonymous with “Non-preparation”. This conflict between spontaneity and preparation is a complex issue if either term is adhered to rigidly. Nevertheless, most improvisors will admit to occasionally spending at least a few seconds contemplating the next sound to be made – it is not essential for *every* event in an improvisation to be absolutely spontaneous. The type of preparations used by improvisors are often intended to minimise the time taken in setting up, adjusting and removing them. However, even the use of permanently prepared instruments implies only the same level of predetermination as making the decision whether to improvise on saxophone or piccolo.

Improvisors have used a wide variety of methods to prepare, customise and modify their instruments, many of which have clear similarities to the modified instruments discussed in previous chapters. There are various reasons why improvisors are particularly attracted to the use of prepared instruments. Improvised music typically utilises a wider range of sounds than is common in most styles of music - this includes the use of unconventional timbres, microtones and noise, all of which can be produced using a combination of preparations and

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33 The assumption that *every* decision must be purely spontaneous in an improvisation is as questionable as criticisms of Cage’s compositions on the basis that some of his decisions are not made randomly.

34 “Noise” in this context refers to unpitched sounds.
extended techniques\(^a\). Preparations can add a degree of unpredictability which can serve as a catalyst for spontaneous music making (a possibility which will be discussed in a later chapter). They can also provide visual and theatrical interest, function as a source of humour, and may be useful as a publicity device: “It’s attention you’d never get just playing regular music,” says Eugene Chadbourne. “Not quite as much as you’d get committing a string of murders, but it’s pretty good” (in Shiurba).

Whatever the reasons, prepared instruments have been widely used by improvisors. Derek Bailey claims that “. . . at one time, in the 60’s, there weren’t any free players who didn’t prepare their guitars” (Bailey/ Dery, 78; his emphasis). Despite (or possibly because of) the example of John Cage\(^a\), the prepared piano has been somewhat less ubiquitous in improvised music than the prepared guitar. Roger Dean, for example, refers to “a handful of recordings which use the prepared piano in improvisation, as compared with the larger number using it in composition . . .” (New Structures, 121). According to Nick Cauldry, the integration of prepared piano techniques and the "more conventional expressive resources" of the piano is a "relatively under-developed" area in improvisation (21). However, while prepared piano improvisations may be outnumbered by prepared piano

\(^a\) “Extended technique” may be roughly defined as playing an instrument in an unconventional manner - allowing for the fact that what is considered as “conventional” is dependent on the idiom. Extended technique is distinct from instrument preparation, because it does not imply the use of additional objects. This will be explored in more detail in the following chapter.

\(^a\) There are, of course, reasons other than a fear of being seen as plagiarising Cage for reluctance to prepare pianos. The piano is usually an expensive instrument, and the property of the performance venue rather than the artist, which imposes obvious constraints on the performer’s ability to perform radical modifications.
compositions and prepared guitar improvisations, the prepared piano remains more common in improvised music than Dean implies - Steve Lake claims that on FMP recordings, "... pianos seldom escape spontaneous ‘preparations’ " ("Big Noise...", 45).

For the sake of convenience, the improvisors in this chapter have been divided according to the instrument they play. However, in the following chapter I will discuss the possibility that these divisions may be questionable in the context of prepared instruments.

**Guitar**

Although Derek Bailey abandoned preparations towards the end of the 1970s, preferring to rely on extended techniques (including harmonics, string scrapes, playing behind the bridge and the use of homemade plectra), his improvisations in the late 1960s and early 70s sometimes utilized an Epiphone 12-string guitar which was prepared with "bulldog clips etc attached to the strings" (Personal Correspondence) and "... loose strings and squeakers and all the usual stuff" (Bailey/ Dery, 78). This guitar also had more permanent alterations made to it - additional strings, a contact microphone attached to a portable amplifier, and a long wire "that kind of trailed behind to which might be attached all kinds of things" including, in one instance, "an amplified thunder sheet" (Personal Correspondence). Bailey played this guitar with Spontaneous Music Ensemble on *Eighty Five Minutes Part Two*, and on the solo recordings *Solo Guitar Vol. 1* and *Domestic & Public Pieces*. 
Derek Beiley and his 19 string (approx.) guitar
Photo: Robert Masotti; Courtesy of Incus Records
In a duet performance with Anthony Braxton at Wigmore Hall, London (30 June, 1974), Bailey used his guitar to amplify “a length of wire and muffled strings . . . [producing] what must be somewhere near the ultimate in guitar sounds; a harsh dry rattle that spells out random rhythmic patterns that contained no melodic or harmonic information whatever” (Cooke, 37).

He also recalls “a piece I played with four other guitar players where you got a bag of paper clips, things that would stick on the strings, and you stuck ’em on the string, and then you got something else out - four guys doing this for as long as you could stand it” (Bailey/ Dery, 78).

The compilation recording Guitar Solos 2 demonstrates some of the ways in which guitarists can combine a number of different preparations (either sequentially or simultaneously). According to the record liner notes, Davey Williams’s “Ezekiel” features “a 1969 Gibson Les Paul, a 1970 Peavey Musician, eggbeater, ’T’, polished stone, slave-made mortar, etc.” In “For A”, Keith Rowe plays

...two guitars simultaneously; an old Gibson through a Burns Orbit amplifier, prepared with metal, magnets and a small electric motor; a Dan Armstrong through 100 watt Marshall lead amplifier with ATC speakers, using a Big Muff and MXR equaliser and volume/wah pedals.

Keith Rowe has been improvising on prepared guitar since 1965, having played jazz guitar with the Mike Westbrook Band in London during the early sixties (Mostrom). For Rowe, as with many improvisors, the guitar “ceased to be a
melodic instrument and became instead a noise generator" (Mostrom). His performances have been described as visually resembling “a surgeon operating on a patient” (Mostrom), producing sounds which range “from the most delicate insectile buzzings to the most cataclysmic eruptions” (Sutherland, 208). Rowe primarily performs and records with the group AMM, although his solo recording *A Dimension of Perfectly Ordinary Reality* is, together with Fred Frith’s *Guitar Solos*, one of the essential recordings of solo prepared guitar improvisation. Rowe’s approach to the guitar has some precedents in visual art - his habit of playing the guitar laid flat on a table was, according to Roger Sutherland, “[i]nspired by Pollock’s ‘off the easel’ approach to painting” (206). This playing method strongly contrasts with the close physical relationship between guitarists and their instrument established by performers from Andres Segovia to Jimi Hendrix:

... the guitar ... is literally distributed across space as a wired-up instrument at the centre of an orbital system of electronics and wires, gadgets and bits of “junk” mostly occupying a work table, and for this recording, including a loose spring attached at one end to the bridge of the instrument and at the other, three feet away, to a wall. Among the various transformations undergone by the sounds for which the guitar is the immediate source, the first is multiplication. This effectively means that what we hear is several images of the guitar, skilfully mixed, but leading to ambiguity as to where, or what, the instrument actually is. Plectra for this instrument include battery-driven fans and radio receivers and these, together with other potential oscillators, allow sound constructions to be set into motion and then left to diminish or to function independently as ostinati until the musician decides to introduce a shift. Because it can be detached from the musician as a necessarily immediate energy source and because it rarely sounds like any known instrument (least of all a guitar!) the “guitar” helps to underpin the sense of environment by its ability to introduce a continuum. Its builder
[Keith Rowe] refers to it, not without humour, as a “continuo” and this usage reveals an underlying similarity of musical function: just as the continuo provides an anchor for the harmonic work built upon it and supports melodic structures, the continuum of the guitar generates a noise anchor for the entire group, a source and interference, one that can be musically analysed or ignored. (Mitchell, booklet with AMM Music; in Dean, New Structures, 137-8)

Rowe has been described as:

. . . master of an invented instrument made out of electric guitar, amplifier, speakers, various accessories (mostly quite ordinary), radios and himself. All this working as one entity, organic as well as agglomerated - variously seamless and discontinuous but overall entirely itself, with a life and activity originating in Keith’s head, though also, once activated, an intricate relay of feedbacks throughout the whole system. (Wolff, CD notes to A Dimension of Perfectly Ordinary Reality)

The notion that Rowe has constructed a new instrument in which the guitar is merely one of the components is a useful idea. However, as Rowe’s use of preparations constantly changes during an improvisation, it is more useful to think of this as a series of constructions, with the electric guitar featuring as a common element included in each new version.

Fred Frith, “the Orville Wright of deconstructive guitaring” (Dery, “New York Underground”, 36), began preparing his guitar in response to seeing David Toop playing guitar with alligator clips attached to the strings. At this time Frith had

"See page 39

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read John Cage's *Silence*, but had "... never thought of preparing the guitar... when I saw Toop’s clip’s, the light bulb cam on and I started attacking the guitar from a completely different angle" (Frith/ Dery, 79).

Frith coaxes a particularly varied range of sounds from his guitar. "Frith brutalises electric guitars. He pours rice and barley on them, paradiddles on them with drumsticks, beats them with jingle bells, scrapes them with scrub brushes, detunes and abuses them" (Dery, "New York Underground", 36). He also lies his guitar flat on a table, "... assailing it with paintbrushes, electric drills, and other inquisitional tools" (Dery in Frith/ Dery, 78); holds a transistor radio to the pickups, plays with a violin bow, uses "a technique involving a tin lid pressed down over the bridge pickup while that pickup is switched off; the other pickup is on, which produces extremely interesting feedback patterns" (Frith in Frith/ Dery, 79), and plays guitar with "the usual assortment of thimbles, bits of string, chunks of rock, and piano-tuning felt used by lounge acts everywhere" (Dery in Frith/ Dery, 78). He also combines preparations with an Ebow:

One of my favorite sounds was to let the Ebow drone on the string, and then gradually change the harmonic content of the note by placing objects across the string. The Ebow would be barrelling along, producing a pure tone, and then I'd put a metal bar across the string, close to the Ebow; the sound continued but it was slightly deadened, with an altered harmonic content. Putting other things on the string would change the timbre of the sound completely, depending on the density and weight of the added materials - cotton, metal, glass, wood of different thicknesses and shapes. I learned how to manipulate all kinds of parameters which are actually quite exact.
You can produce "musical machine" effects. Gradually, as you put more weight on the string, the oscillation of the string tends to compete with the added object, producing kind of a vibrato effect that gets more and more extreme. In the end it can be quite a complex rhythm, because the vibrations of the string are hitting against the different objects you've put across it. Often, in improvised concerts, I'll use that as a rhythmic basis, accompanying it on another instrument. (Frith in Dery, "Ebow: Singing Strings and a Little Black Box" 76, 79)

Frith’s "not-so-customary customization" of a 1963 Gibson ES-345 (used for his 1970s Guitar Solos recordings) involved an extra pickup added over the strings at the nut and the fingerboard being effectively split into two sections by a capo placed at the 12th fret. This enabled Frith to amplify the sounds produced on either side of the finger fretting a string, playing by tapping percussively on both sides of the capo (Dery “New York Underground”, 37). "Each segment of the neck," Frith explains, "has a separate sound source, and with volume pedals you can produce the effect of four different instruments at the same time" (in Dery, “New York Underground”, 37).

Eugene Chadbourne rubs balloons on his guitar strings, and attaches pipe cleaners to the strings to emphasise the harmonics - by moving them while playing, he obtains "nice scraping sounds." Playing his pipe cleaner-prepared guitar flat on his lap, Chadbourne "would drum on it with little sticks, just straight up and down, like ramming pegs into a pegboard. The sticks would practically bounce off the strings. You could get really nice rhythms going like that" (Di Perna, 11). Chadbourne also filled his acoustic guitar with "... seashells and stuff so if I shook it, there were a lot of weird sounds, a really intense combination of
harmonics... I had a bunch of coins and bells hanging from the tuning pegs; when I moved, they would ring and create different rhythms" (Chadbourne/Dery, 76). He has also built instruments and modified guitars using found objects including a toilet plunger, a garden rake, children’s toys and a dog’s skull (Chadbourne/Dery, 68, 70).

Peter Cusack prepares his guitar by placing a round 1/8” piece of bamboo over the strings "so that it rests on all the strings except for the D, which goes over the top and holds it in place" (Cusack in Dery, "Forging a New Vocabulary", 54). By placing the bamboo at different positions, Cusack obtains different tunings. Playing the guitar flat on his lap and plucking both sides of the bamboo, “the notes on each side of the bamboo fit with the notes on the other side - so you’ve got 12 notes to choose from” (Cusack in Dery, "Forging a New Vocabulary", 56).

Elliott Sharp has prepared his guitar with bent coat hangers, paper clips, popsicle sticks and saxophone reeds (Dery, "New York Guitar", 34), and two hand-shaped chrome glove-hangers which “transmit motion from one string to another, turning all the strings into one big, interactive system.” The “weird shape” of the glove-hangers, according to Sharp, “completely destroys any normal harmonic ratios. And they give a very gong-like sound, sort of like kicking a dumpster” (Sharp/Dery, 30). Sharp has also performed by “... covering the entire length of the strings with saxophone reeds and pulling them out, one by one, over the course of the piece” (Dery, "New York Underground", 34).
Canadian guitarist Lloyd Garber recalls that “as early as 1948 to 1950” he was preparing his guitar with pieces of whale teeth which washed up on the beach near his home in Nova Scotia (Personal Correspondence, 19 Mar 1990). “Whales’ teeth were excellent for this sort of thing,” explains Garber: “Very hard and brittle and yet the bottom was like a large bone brush” (Personal Correspondence, 10 Mar 1995). In the late 1940s, Garber “would mix the strings of different instruments,” and repaired broken strings using “rabbit wire connected to the existing broken string making it long enough to reach across the length of the fingerboard. . . . We didn’t call it ‘prepared’ then, but it was great prepared sounding. I had altered the timbre considerably” (Personal Correspondence, 10 Mar 1995). In the 1950s, he constructed “a strange gadget” which enabled him to fret 12 major chords on the guitar with his left foot, while strumming with his right foot (Personal Correspondence, 19 Mar 90). Later, playing swing and blues in Archie Beganson’s Orchestra, Garber would insert cardboard between the guitar strings to simulate drums, a practice which subsequently evolved into using “clothes pegs and chunks of wood” (Personal Correspondence, 10 Mar 1995).

He never used drums. I would (at times) select the correct sort of cardboard and wiggle it in and out of the strings near the sounding hole. I could make it sound like a drum (a nice pleasant sound) and still keep a fair chord sound there also. . . .

The preparations were made as a functional thing. One guitar would act as a bass guitar and I would invent ways of muting the strings. Then I got to putting clothes pegs and chunks of wood in areas of the strings . . . and using different picks. This way I could put more of a “guts” sound to some of the blues and boogie-woogie and even the swing stuff. (Personal Correspondence, 10 Mar 1995)
Keith Rowe’s prepared guitar (A Dimension of Perfectly Ordinary Reality)
Top: Fred Frith and Henry Kaiser \textit{(With Friends Like These)}
Bottom: Elliott Sharp \textit{(Sharp/ Dery, 24)}
Top: Hans Reichel (left: MCIllroy, 22, right: Reichel, “Crossing the Bridge”, 51)
Bottom: Fred Frith (Guitar Solos CD cover)
... TUNING

... ADDED MATERIALS

... PREPARED BRIDGE

... ALTERED ELECTRUMS

(d) Serrated picks

(b) Bottle neck

(c) Balloons

Drawings of prepared guitar by Lloyd Garber
(Auntie Nature, 205-208)
As an avant garde improvisor in the 1970s and later, Garber began to use preparations more extensively: “Pennies under the strings, washers, all sorts of metal bars and pins, loose balls of string, and adding extra strings to a guitar. Contact mics and unusual picks, amps with broken speakers” (Personal Correspondence, 10 Mar 1995). Recently he has experimented with using a backscratcher as a guitar preparation, “which makes the strangest sound when you tilt this long arm” (Personal Correspondence, 11 Sep 1996). He has also gathered “... a collection of dried out popsicle sticks that I use to do interesting things with” (Personal Correspondence, 19 Mar 1990)

**Violin, Cello and Bass**

Instruments which are traditionally bowed have also been prepared by several improvisors, although to refer to these as “bowed instruments” in this context is to disregard the variety of means such players use to set strings in motion (a consideration which will be discussed in more detail in the next chapter).

Jon Rose's violins and cellos move beyond preparing instruments, into the realm of permanent modifications which radically alter the instrument, often humorously. His “multiviolin frame” was mentioned in an earlier chapter. In 1993, Rose estimated that he had built

... over 20 different kinds of violins - violins with extra necks, more strings, joined together like siamese twins, controlled by wind or by wheels like steam train pistons

*See pages 78.*
with two bows on the end, all that kind of stuff. Plus interfacing with electronics, building electronics into the instrument, microamplification systems.

(Rose/ Corbett , 27)

By 1997, the number of instruments had grown to “over 25 deconstructed violins” (Rose/ Potts), and Rose was also exploring new ways of altering the sound using electronics and computer technology:

There’s one with wheels, like a lawnmower. Then I’ve always been interested in electronics, building amplifiers inside the violin, and in the last 10 years, using digital technology. One system I built is an ultrasound for violin with MIDI, which measures the movement of the bowing arm. The other system is bow pressure to MIDI. Both are improvisation mediums: they’re very unreliable in that you can’t get the same thing twice*, because a bow is “organic” - it depends on the weather, the room humidity, how tight you make it, how you use it. It’s the motor of how to play the violin, but it’s also the motor for the MIDI stuff. How they react is up to you as an improvisor. It’s a very schizophrenic existence. (Rose/ Potts)

Several of these instruments are illustrated in The Pink Violin and Violin Music in the Age of Shopping (Rose and Linz). His early experiments included electronics built into violins, an idea which later developed into the idea of a MIDI violin:

The first thing I started to do was build electronics - little analog electronics into violins. So there’d be little 6 watt amplifiers built in, radio mics and stuff so they would act not only as low level feedback things but also you could have the radio

* The idea that something is an “improvisation medium” because of it’s unreliability is significant. For preparations which behave unpredictably, see pages 269-277.
involved. I could also broadcast on people's FM sets, which was a very good idea. It was a sort of terrorist thing. You could sneak up in someone's garden who was listening to "Fine Music Radio" and you could jam it. It was a very cheap FM mic, so it only would broadcast on about 100 waves anyway. So that was the first thing. Then I started to look at the shape of the instrument, and I realised the fact that as regards cheap violins there's no reason why it should be that shape anyway. So I started to build violins.

There was a guy called Savvat in the 1800s who came up with this idea of a "rational violin", which was a very sweet idea. It was a trapezoidal shape. Very easy to make. So I built one of those. It cost me $4 or something. It sounded like an early music instrument. Then, with lots of cheap Chinese violins I started experimenting with adding more necks, lots of sympathetic strings, joining them together so you could have a double violin played with a double bow. Aeolian violins which worked from wind hitting a sail which drove it into the violin. There were other ones with wheels - a triple neck double piston violin. A lot of mobiles actually - I was very interested in the idea of "mobiling" the violin, taking the stuff around. Most of them had very cheap amplification. So I couldn't tell you which was first, it just went on. Like some kind of disease, taking more and more things with it. Most of this was started in the end of the 70s, although I did do a couple of things very early in the 70s, then I thought "This isn't the right way to go," but then I came back to it.

That's the main body of stuff. And then the idea of big long string installations, using violins to play them. So the violin becomes the bow. Also a lot of work with different bows. Different size bows, different shape bows. I got a lot of help from this guy, Harry Betiliotis, who's a violin maker in Sydney. A very good one, but he's also a bit of a rebel and he liked the idea of someone fucking around with the whole history of the instrument. He didn't like violinists anyway. He liked the instrument, but not the players. So one day he made me a really short, heavy bow which was
very good for fast stuff. So the idea of the bow as a weapon was very important.
And that continues to this day. For the last 10 years I've been very busy with bows
that are interactive. They work with pressure - the pressure is measured and this
becomes MIDI information. Or amplified bows. Bows with strings attached to them
also. So the bow thing continues to now. (Personal Interview)

Rose's most interesting instrument is probably the 19 string cello, which was
built "to replace a 19 string violin . . . which was stolen" (Rose/ Gray, 45). This
cello has frets added to the back of the instrument (the additional strings are on
both sides of the cello) suggesting either a guitar or a return to the cello's origins
as a viola da gamba. Rose attached the frets because he was interested in "the
idea of a programmed set of pitches" rather than the continuous pitches of a
conventional cello, but his unconventional placement of the frets results in a
personal scale which differed from the standard tempered chromatic scale as he
"just experimented with where the frets fell relative to the strings, eventually got
to something I liked and left it" (Rose/ Gray, 45). At first, the instrument
included "a lot of electronics . . . a total sonic . . . (cocktail? more like blitz-out - a
big cocktail)" (Rose/ Gray, 45). However, Rose found that he was "getting more
out of playing the cello than out of the electronics," and that, apart from
amplification and volume pedals, he rarely used the electronic components
because "the digital delays, phasers, ring modulators, compression - loads of
stuff - ends up getting in the way" (Rose/ Gray, 45).

In The Pink Violin, the story is told of Johannes Rosenberg's experience with
customs officers in East Germany. Seeing that Rosenberg has declared on his
form that he is carrying a cello into the country, the customs officer asks him to open the case:

That is not a cello," she says.

"Yes it is", says Rosenberg. "It is a special one, I constructed it myself".

But it says here on the form "One cello with case", and that is not a cello". She looks at Rosenberg and her eyes glaze over. She repeats herself slowly:

"Das ist aber kein Cello"

"It's a cello with 19 strings, to be precise".

"But a cello has only 4 strings," she counters with a look of triumph. (Rose & Linz, The Pink Violin, 89)

Rosenberg is then interrogated for several hours by a "'cello playing' policeman" (sic). Igor Lipinski recalls the incident:

I heard about a suspicious tourist two years ago, who had been in our country masquerading as a cellist. Luckily one of our border guards at Checkpoint Charlie is a specialist in this instrument and the suspect's fraudulent behaviour was quickly detected. His mistake was elementary - he had dust on his instrument - no correct cello player would allow that! (Rose, "Rosenberg Interview", 15)

Too strange for fiction, this is based on an incident which actually happened to Rose - as Warren Burt explained in a review of The Pink Violin, the border guards "... were so amazed at the appearance of his 19 string cello ... that they couldn't believe that nothing suspicious was going on." Rose confirms that the story is true: "They didn't know what it was. So if you don't know what it is, in that
situation you have to come to a rationale. So it must be a very expensive antique or something. You know, they couldn’t figure it out” (Personal Interview).

Barry Guy has applied preparations to the double bass. The idea to “explore different sticks and beaters” began when Tony Oxley accidentally threw his drum stick across the stage - Guy “caught it and started beating the pitches” (Personal Correspondence). Playing the bass percussively is an extended technique, but Guy progressed to preparing his bass by threading a stick between the strings of the bass, effectively dividing the string in two parts. The stick “. . . can be moved to alter the pitch relationships of the four strings above the stick, the four between the stick and the bridge and the four fixed pitches between the bridge and tailpiece. (A 12 note row!!!)” (Personal Correspondence). Guy also creates effects by pressing on the stick, with the tension of the strings causing it to oscillate at various speeds:

The stick can be oscillated by pushing it down and allowing it to spring back into place. This is useful because whilst the rattling/ oscillating stick settles, the player can be articulating something also - pizz or bowing. Multiple sticks placed along the string length not only have their own “settling” time but also of course the pitches are various and there can be interesting counterpoints according to which order they are struck. (Personal Correspondence)

Subsequently Guy collected several objects which could be used for preparations and extended techniques:
Over the years I've accumulated my "surgeons table" of implements, that include timpani beaters with heads of varying hardness, xylophone sticks, again with hard through to soft heads, jazz brushes, Japanese calligraphy brushes (for very soft sounds) a sauna brush and a shuttle. (Personal Correspondence)

Adam Bohmann plays a prepared violin laid flat on a table, in a similar manner to Fred Frith and Keith Rowe's practice of playing a guitar laid flat on a table. Bohmann's prepared violin is usually amplified, and used in conjunction with a collection of other noisemaking objects:

... virtually anything really that can be stuck down to a table top and bowed, plucked, scraped etc. I use all sorts of plastic items, cardboard, wood, glass light bulbs, ceramic tiles, plenty of metal based objects, all sizes of springs. Obviously, I use a number of handheld objects in addition to the table top ones. (Bohmann/Wastell)

Piano

Greg Goodman uses "ephemera appearing under nose" which may relate to thematic aspects of a performance. In Switzerland he performed with "... an avant-garde yodeller disguised in a sheet, who emitted strange yowls while Goodman strummed and scraped away on piano" (Doerschuk and Greenwald, "Unchained Mind", 33). In America he "found it necessary to sacrifice 12 gas cans and caps into the mouth of the piano in the name of the ongoing gas crisis" (Construction of Ruins record notes). An Australian performance used "artifacts" gathered in a train journey across the country:
nt and back views of Jon Rose's string cello. (Rose/ Gray, 44, 45)
Barry Guy (Photo Gudrun Edel-Rösnes; courtesy of Barry Guy)
Barry Guy (Photo Gudrun Edel-Rösnes; courtesy of Barry Guy)
Barry Guy: sauna brush with notches cut in handle to sound bass strings:

Tympani stick inserted between bass strings:

Shuttle (cut to fit between strings - achieves purer sound than tympani sticks due to curved fingerboard):

(Barry Guy, Personal correspondence)
Adam Bohmann: Table top violin.
(Bohmann/ Wastell)
2 Emu beer cans
7 cardboard coasters
1 2nd seating meal ticket
6 blue plastic straws
2 National Australian Railway postcards showing the "Indian Pacific"
1 NAR ashtray
2 bars Railway soap
1 NAR ticket & pass
1 Time and Location Schedule
1 2' x 3' National Australian Railway Map
1 NAR shoeshine packet
1 packet Railway coffee
1 packet Railway tea
1 teaspoon
1 packet NAR Complimentary Biscuits
2 NAR sugar packets, one depicting surfers, the other depicting penguins.

(Construction of Ruins record notes).

Goodman’s notes do not specify how he used this collection - some objects may have simply been struck or otherwise used as sound sources, but the aural evidence of the recording suggests that most of them were “sacrificed . . . into the mouth of the piano”.

Ross Bolleter progressed from extended techniques to temporary preparations:

Here is how I got embarked on this preparation business. I found that by exerting pressure with my fingers on the end nearest myself while playing those notes on the keyboard, I could produce a strikingly resonant drumming sound. As it was
inconvenient to have my right hand restricted by having to press on the strings, I strapped a Staedtler rubber there instead, giving an approximate duplication of the original sound. From this tiny but engrossing beginning, I proceeded to prepare all the other strings with a variety of rubbers, pegs, guitar jacks, cymbals, combs and pearl shells. The effect was an intoxicating mixture of gongs, tapping sounds, dead notes and buzzings. ("Improvising With Prepared Piano")

Bolleter also prepared his piano with guitar jacks inserted between the strings, in front of the strut, so that as well as altering the sound of the strings, they created semi-random percussive noises:

As the keys of the middle octave were struck the jack moved backwards and forwards, tapping the cross strut to create a series of rhythms in varying degrees out of sync with the played rhythm. These new rhythms were controllable to an extent but there was always a strong element of surprise. By using as many different kinds of guitar jacks as I could find, I was able to create an extremely variegated rhythmic forest. Some jacks, because of their size and weight, generated buzzes and gong sounds while remaining stationary. ("Improvising With Prepared Piano", 10)

Recently, Bolleter has progressed from the prepared piano to "Ruined" pianos which have been exposed to the elements. In effect, this is a permanently prepared piano, although the "preparation" is in fact damage caused by random environmental conditions.

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* Several improvisors have used preparations which are only partially controlled by the performer. This is discussed in a later chapter (See pages 269-277).
Ross Bolleter’s belief that “(a)lthough Cage’s ‘Sonatas and Interludes’ and other prepared piano pieces show the remarkable possibilities of this medium, they don’t in any way exhaust them”, led him to develop “a preparation of the piano that could be set up, changed during performance and dismantled quickly; a preparation whose flexibility was adapted to improvisational needs” (“Improvising with Prepared Piano”, 10). The nature of these “improvisational needs” may be seen as particularly focussed around the desire for spontaneity, a consideration that has affected the types of preparations chosen by several improvisors. While it is acceptable for a pianist performing Cage’s *Sonatas and Interludes* to spend a considerable amount of time setting up the preparations41, an improvisor may wish to alter the timbre as an immediate response to the sound of other members of the ensemble (or the ambient sounds of the performance space). The nature of improvisation implies different concerns to those of composition, and the type of preparations used may reflect this - as Lloyd Garber has commented, the central question is “Prepared for what?” (*Auntie Nature*, 60), and his answer is: “Prepared for the present.” There is of course a paradox here - even if the preparations are chosen so as to be placed as rapidly as possible, they cannot be placed instantly - there is inevitably a time lag between the decision to use a particular “prepared” sound and the production of

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41 Bolleter plays Ruined pianos on *The Country of Here Below*..

42 Nigel Butterley expects it to take “a couple of hours” to prepare a piano for Cage’s *Sonatas & Interludes for Prepared Piano* (CD notes). To perform several of Cage’s prepared piano compositions in the same concert could require “. . . half a dozen pianos if long breaks were to be obviated, so that Cage would personally prepare the piano, sometimes taking upward of ten hours, even for concerts by those such as William Masselos and Maro Ajemian who knew him and his music well.” (Revill, 98)
that sound, even though (as in Bolleter’s case) the preparations may be chosen to
minimise this.

Even the notion of choosing the preparations prior to the performance implies an
element of predetermination which contrasts with the ideal of spontaneity. Most
improvisors do use the same preparations at several performances, although
these may be supplemented with found objects fortuitously discovered at the
performance venue. In such cases, spontaneous responses are replaced by an
attempt by the improvisor to anticipate the need for a given timbre, and place the
preparation in readiness: “It’s like when you wind an alarm clock. At that point,
it is in a state of preparedness. It is not doing anything at that moment, but it is
‘prepared’. Prepared for that moment” (Garber, Auntie Nature, 60). This suggests
that the instrument is, in fact, prepared for the future. However, this should not
be overstated - an improvisor selecting a particular set of preparations to use in
performance is anticipating the sounds which will be used in performance, but
this is of no more significance than a saxophonist deciding whether to play alto
or tenor. The ideal that an improvisor should determine all aspects of the sound
during the performance is rarely carried out in practice.

When pianos are prepared, many improvisors favour preparations which can be
spontaneously added, subtracted or moved while playing, rather than the
Cagean practise of inserting objects between strings prior to performance. For
this reason, some players question the use of the term “prepared” to describe
their addition of objects to the interior of the piano. Stuart Broomer prefers the
term “preparing piano” for his use of tape reels and pie plates on the piano
strings, because “preparation isn't fixed in the performance but is both changing and being changed” (Personal Correspondence). Changes of this type are particularly useful in improvised music, where the spontaneous nature of the music requires variations in timbre which cannot be predicted beforehand - indeed, it is likely that many improvisors would prefer to prepare their instruments during a performance, or to remove preparations when the moment no longer requires them. Bill Smith describes one approach to changing preparations in a performance by Chris Burn:

Using the keyboard one handed, the other manipulating the grand interior with objects of various texture, he created an ongoing, ever changing dance, of which he was not only the perpetrator, but as well a gracious dancer. This continuously flowing, flowering terrain, was the result of the multiple conversations of the hidden voices of the grand dame. This was not really prepared piano, because he was continually working with the objects. From subtle drum rhythms co-generated from the vibrations of a Tibetan bell, or a plastic funnel wow-wowed, there was produced a great variety of sounds that appeared to fill up not only the piano, but the entire theatre. I suspect this grand pianoforte had never experienced such diverse pleasure. (Personal Correspondence)

Misha Mengelberg insists that what he played “was never prepared piano, because I have no plans [about] what I'm going to play” (Personal Interview). Insisting on the absence of planning in his music, the objects Mengelberg places in a piano are “always more or less spontaneous.” These spontaneous preparations typically consist of objects fortuitously available at the time of performance: “I throw jackets in the piano, or I put an ashtray in the piano - things like that” (Personal Interview). Nevertheless, it seems likely that
Mengelberg’s use of vibrators in the piano may have been planned to some degree (unless improvisation is returning to the whorehouse origins of jazz): “When I’m in a very lazy mood, I like to throw vibrators in the strings and then let it bump into other objects . . .” (Personal Interview).

Some improvisors prepare the piano in ways more closely related to Cage’s prepared piano. Roger Frampton’s prepared piano improvisations on *Totally Prepared* and *Two Pianos One Mind* are timbrally quite similar to Cage’s *Sonatas and Interludes*, because his preparations include similar materials to those used in Cage’s compositions: “A lot of metal screws . . . some wooden pencils . . . wooden clothes pegs . . . plastic wall plugs . . . [a]nd rubber erasers” (Personal Interview). These objects are inserted between the strings prior to performance, in contrast to those improvisors who spontaneously add or subtract objects while improvising. Frampton prefers the timbre of objects inserted between the strings - objects sitting on top of the string or held against the string by hand cannot produce the “donging” of a screw inserted between the strings. “And if you don’t want the piece to contain the sound of the screws going into the string - it’s only the sound after it’s been put in that you want - you know, there’s a problem straight away” (Personal Interview).
Ross Bolleter's prepared piano.
Top: Bolleter, 10
Middle: Bolleter, 2
Bottom: Jenkins, 20
Wind Instruments

Apart from the wide array of mutes used by improvising musicians, some preparations can also be applied to wind instruments. Ernie Althoff prepared an alto saxophone by inserting PVC pipe between mouthpiece and body "which dropped the pitch of the instrument down to bass and contra bass clarinet levels beautifully ... lovely rumbling, grumbling sounds . . ." ("Regarding Mirlitons"). Althoff also experimenting with inserting a set of pitch pipes in the PVC pipe, or adding a kazoo to the mouthpiece ("Regarding Mirlitons.").

The most common approach to modifying the sound of a wind instrument is the use of hand held mutes inserted in the bell of the instrument. These are conceptually the same as preparations, but as they have been used by so many players this is a topic which warrants a book of its own. Examples include Marcus Rojas stretching a tambourine membrane across the bell of his tuba (Pekar, 26), and Maury Coles' use of pie plates over the bell of his tenor saxophone (Garber, Personal Correspondence, 19 Mar 1990; Bill Smith, Personal Correspondence). The shape or length of an instrument could (theoretically) be permanently altered by drilling holes, sawing off parts of the instrument, or hammering it into a different shape; objects could be welded inside brass instruments to produce edge tones, slit tones, aeolian and sympathetic vibrations. Roger Dean suggests "... permanently closing an individual key so as to be able to use the other keys for microtonal or timbral effects rather than for intonation" (New Structures, 188). Roger Frampton comments that it would be possible to "pull pads out, or put them off-centre so the keys don't close
correctly, or pull a spring out of a clarinet” (Personal Interview). Frampton has experimented with playing the saxophone by attaching a vacuum cleaner set on “blow” to the mouthpiece:

The only problem with that is that sometimes the noise of the motor of the vacuum cleaner gets in the way of really hearing what the horn is doing. Kind of like a big background sound. But I did play around with it at home. I put the vacuum cleaner in the hallway and put the hose through the door, and closed the door as much as I could, so I could be in the lounge room and just listen to the horn. It’s quite amazing, the cycles that go on. It blows the reed so that... it’s really quite an amazing sound. One of the loudest sounds I’ve ever heard. And if you get bored with it, if it gets stuck in a rut, all you have to do is tap the body, you don’t have to finger anything, just tap it. The vibration just changes it. You have to put a brick on the hose to stop it from flying away. (Personal Interview)

“Wind” instruments can also be altered to permit playing in other ways which may not involve air currents. Nicholas Collins discovered that an Ursa Major digital reverb “made a great sampling machine - full editing, very flexible, with all these reverb algorithms” (Collins in Doerschuk & Greenwald, “Unchained Mind”, 38). Collins modified an old trombone to control the operation of this machine, attaching a keypad and using the trombone slide as a digital pot which “increments or decrements a particular register” by pressing keys and adjusting the slide: “The coup de gras is that I put a P.A. driver on the trombone mouthpiece, so the whole system’s sound actually comes out of the trombone” (Collins in Doerschuk & Greenwald, “Unchained Mind”, 38). As a result of the sound being fed into the trombone, when the slide is moved, the instrument’s
resonant frequency is altered, so that the instrument functions “like a wierd acoustic wah-wah” (Greenwald, “Nicholas Collins . . .”). Jonathan Impett’s “metatrumpet” is a trumpet “covered with sensors which enable a computer to react, not only to the sounds the player makes, but also to his physical movements, enabling him to conduct a highly controlled and interactive improvisation duet with his electronics” (Wills, 270).
INSTRUMENT CLASSIFICATIONS: THE DISORGANISATION OF ORGANOLOGY

"When I use a word," Humpty Dumpty said, in a rather scornful tone, "it means just what I choose it to mean - neither more nor less."

"The question is," said Alice, "whether you can make words mean so many different things."

"The question is," said Humpty Dumpty, "which is to be master - that's all." (Carroll, 317)

Challenges to Organology

Prepared instruments pose a challenge to organology in three ways.

First, there is the question of precisely what is meant by "prepared" - it seems clear that the definition of prepared instruments must specify the borders which separate it from extended techniques on one side and permanently modified and custom made instruments on the other, although these borders are frequently blurred.

Second, there are a number of different ways to prepare an instrument, which suggests that prepared instruments may be separated into several categories.

Finally, the use of prepared instruments and extended techniques calls traditional organology into question. Dividing instruments according to playing technique (bowed, plucked, percussion etc) is obviously problematic when pianos and guitars are routinely plucked, bowed and hit with drum sticks. Defining the primary source of vibration (string, cylindrical or conical column of
air etc) is also questionable when the objects added to an instrument may contribute at least as much to the resultant sound as the original instrument.

**Definitions of “Prepared Instruments”**

Some definitions of “prepared instruments” are so broad as to be meaningless. For example, in Pete Prown’s article “Six String Sex Toys”, prepared guitar is described as “modifying the instrument in some way, such as changing the tuning or playing it with an unusual implement like a stick or a spoon (or, really, whatever turns you on)” (50). Describing tuning as synonymous with preparation is obviously ludicrous. What Prown apparently had in mind was the extreme scordatura of experimental rock band Sonic Youth, although even this is clearly not preparation (and even if scordatura was synonymous with preparations - which it is not - there is nothing in Prown’s “definition” to exclude standard tuning). Playing guitar with “an unusual implement” is at least related to the use of preparations, given the possibility of “setting the strings in vibration with the preparing object” (John Schneider, 184). However, the term “unusual” is dependent on context: to a fingerstyle guitarist, a plectrum may be considered an unusual implement, while Derek Bailey considered attaching bulldog clips to his strings as standard technique in the context of late 1960s improvised music (Bailey / Dery, 78; Personal Correspondence). Playing guitar with sticks or spoons is an extended technique rather than a preparation (assuming that the sticks and spoons are used to strike the strings rather than being inserted between them). However, as a percussive use of the instrument, it is related to the aesthetics of prepared instruments (and was mentioned for that reason in the
chapter on African instruments). Playing stringed instruments percussively is quite commonplace in blues and African music, so whether it should be considered as an “extended technique” is dependent on idiom.

A more serious attempt at defining prepared instruments is evident in Richard Bunger’s definition of the prepared piano as “... a grand piano on which the temporary addition of objects (usually between the strings) creates new timbres and pitches when the instrument is played in the normal manner (depressing keys which cause hammers to strike the strings)” (The Well Prepared Piano, 13). However, this definition is too narrow, as it excludes a number of options which do seem to be examples of prepared instruments. There are several assumptions built in to Bunger’s definition which require examination:

1) The prepared piano must be a grand piano.

John Cage’s compositions are, of course, intended for a prepared grand piano, but it is quite possible to prepare an upright or electric piano (or instruments other than a piano). Although Bunger does acknowledge that some preparations are possible on upright pianos, they are excluded from his basic definition. However, while an upright piano may be less effective than a grand, the addition of objects between its strings must still be considered as preparations - to say otherwise is no more productive than to state that an upright piano isn’t a “real” piano. Bunger did explain later that he had chosen to focus on the approaches he considered most effective and easiest for performers with limited experience in preparation:
Grands are much easier to prepare. The preparation of uprights poses significant problems. Most of the strings are behind the action. It’s hard to get at them. It’s even hard to open up the piano in the first place in some uprights. And since the strings run vertically, you can’t place or lightly suspend an object as you can on the horizontal strings of a grand. ("How, When, Why ", 38)

Despite these restrictions, it is possible to prepare an upright piano. Even an electric piano can be prepared - Chris Brown describes his “Gazamba”, invented in 1981, as “... essentially a prepared electric piano made from the shell of a Wurlitzer electric piano, fitted with percussive tone generators made from small metallic objects such as springs, twisted music wire, tuning pins, and strings” (Snakecharmer, CD notes). Understanding the application of preparations to other instruments, such as Fred Frith’s guitar and Jon Rose’s violins and cellos, also clearly requires extending our definition beyond the grand piano. Any object which is altered in a way which enables it to produce new sounds may be considered as a prepared instrument.

Even the voice can be prepared: L’s GA. by Salvatore Martirano requires the vocalist to inhale helium, altering the pitch and timbre of the voice. (Brooks, 343). On the recording Aberration, Hugh Metcalfe sings through a gas mask (Couldry, 19 n.86). Anick Nozati’s use of the Baschet brothers’ metal sculptures to resonate the sound of her improvised vocals was mentioned in an earlier chapter⁶.

⁶ See pages 155-156.
In what may be seen as an ironic twist on Cage's "Tables of Preparations", Russian improvisors Timur Novikov and Ivan Sotnikov prepared a table for a performance at the LTO-18 Club in Leningrad:

Old irons are hung from it with chords (sic), metal bars are fixed to it, a knife is stuck into its edge. Connection with the amplifier is provided by a pick-up microphone. Dull, shrieking and rattling patterns of sound are echoing out of the speakers while the various metal parts are set vibrating. (Kumpf, 78)

(2) The preparations must be temporary.
Later in his book, Bunger acknowledges that "[p]iano hammers are also subject to preparation", although this clearly contradicts the idea that preparations are placed between the strings. Bunger's main objection, however, is to the permanence of these alterations. Bunger mentions a piano technician "voicing" a piano, working on each hammer "to adjust the timbre of the sound it produces," but asserts that this is not a preparation because "the change is intended to be a permanent one" (The Well Prepared Piano, 38). Bunger neglects the stronger objection that this is not a preparation because it is not intended to create new timbres but to restore the original timbre (although it may be possible to subvert the technicians' methods to permanently prepare the hammers in various ways).

"Piano hammers have also been prepared with thumbtacks . . . and refaced with glued-on metal foil" comments Bunger.
Novikov and Sotnikov with prepared table (Feigin, n.p.).
However, while “[t]he resulting rinky-tink and harpsichord-like sounds are fine for the basement upright,” they are “definitely not recommended for professional purposes” (The Well Prepared Piano, 38). The resulting permanent damage to pianos explains Bunger’s exclusion of such methods from his definition: “Oh, that’s horrible! It’s not prepared piano. Not by my definition” (“Why, When, How . . .”, 36). However, I would argue that this is a preparation - albeit a destructive one. The fact that something damages a piano does not mean that it is not a preparation.

Instruments can have their sound temporarily altered for a few seconds during a performance by objects which are added, subtracted or moved while playing (for example, a pie plate placed on piano strings). Preparations can be inserted between the strings (or otherwise attached) prior to a performance, and left there for the duration of the performance (as in most of Cage’s prepared piano compositions). Or they can be permanently prepared (which may include irreparable damage). These temporal differences indicate significant differences between preparations, but it seems unnecessary to consider only the second of these options as a prepared instrument.

Bunger assumes that the performer should avoid “anything that will permanently alter the instrument” (“Why, When, How . . .” 36) but, despite the

"For Bunger, “professional purposes” presumably means classical piano concerts. Despite the obvious difference in repertoire and technique, it is unnecessary to assume that Roger Woodward is a more professional pianist than Winifred Atwell.
problems inherent in permanently altering an expensive instrument, there are some people who do want to do this, and the instrument may be reasonably described as permanently prepared.

Financial considerations tend to discourage radical piano preparations which may damage the instrument, particularly as the piano being used in performance is generally not the property of the performer, so that the owner may forbid certain techniques. It is obviously safer to prepare your own $50 guitar than a club owner’s $10,000 piano. These issues are even more significant when instruments are permanently altered. Permanently prepared pianos are more likely to be found in art galleries than clubs or concert halls, although Jon Rose has permanently modified violins and cellos, and I have permanently modified several guitars. It is common to use cheap instruments that may have already been damaged in some way as a means of overcoming the natural reticence about damaging expensive instruments. Rose used “cheap Chinese violins” and homemade instruments costing approximately $4 to construct (Personal Interview). Most of my permanently prepared guitars have been obtained second hand for $20 or less. Instruments have also been deliberately damaged by musicians offended by being asked to perform on inferior instruments: Willie “The Lion” Smith, for example, “... refused to play a poor piano, and if forced to play one by circumstances beyond his control, he would soon render it useless by either hitting the keys so sharply that a hammer would break, or by the even simpler expedient of pouring liquor between the keys” (Kirkeby, 59).
If we accept Bunger's definition of preparation as involving "the temporary addition of objects" to an instrument, does the hand muting of piano strings constitute a preparation? Bunger suggests that, if not actually a preparation, hand muting is at least a forerunner of the prepared piano. The use of preparations in *Bacchanale* and *Imaginary Landscape No. 2* is seen as "simply a natural and expedient next step" from hand muting in *Imaginary Landscape No. 1*, "freeing both hands for the keyboard rather than tying one up inside the piano" (Well Prepared Piano, 84). In an interview with Barbara English Maris, Bunger expands his definition to include both hand muting and "surface preparations" as "conceptually the same thing" as prepared piano (35).

Similar considerations apply to preparing other stringed instruments. John Schneider defines the prepared guitar as "... somehow interfering with the normal string vibration, by adding some object onto or next to the string/s involved" (179). He gives the buzzing of a fingernail against a string in "Nocturne" from *Arcade IV* (1969) by composer Keith Humble and *Umbra* (1973) by Bent Lorentzen as examples of guitar preparation (183), and describes the technique of crossing one string over another, first used in Francisco Tarrega's *Gran Jota* (1872), as "[t]he first example of preparation in guitar music" (179). This has become, according to Schneider, "the most popular method of preparation for the classic guitar in this century" (181).

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4 Surface preparations are freely moving objects placed on top of, rather than inserted between, the piano strings. These are further discussed in the next chapter.
However, to include parts of the instrument or the performer as potential “objects” which may be used to affect the vibration of a string contradicts the usual assumption that a preparation involves the use of *additional* objects, rather than unconventional relationships between musician and instrument, which would seem to come under the category of extended technique. Furthermore, if our definition of prepared instruments is to include the use of a performer’s hands to affect the vibrations of a string, we may be left with a definition broad enough to include virtually all guitar and violin playing. Extending the idea to other instruments suggests that we would have to include not only the hand muting of horn and cymbals, but also pressing down the keys of a saxophone, trumpet or piano (which indirectly affects the sound by operating various mechanisms). Clearly this results in an unacceptably broad definition.

(3) The objects are “usually” placed between the strings.

Later in his book, Bunger goes beyond the notion that preparations are *usually* between the strings, suggesting that preparations which are left to move freely on top of the piano strings do not constitute “true” preparations. A prepared piano is not merely “an acoustic piano with some interesting junk rattling around inside on top of its strings,” insists Bunger, because “that simple form of preparation antedates Cage and only hints at what a true prepared piano can do” (*The Well Prepared Piano*, 65). His reasoning seems clear, if rather partisan. Bunger is aware of such predecessors as “Turkish” pedals on nineteenth-century pianos and paper inserted between the strings of honky tonk pianos, but remains committed to the notion that the prepared piano was invented by John Cage: “…Cage did indeed invent the prepared piano. But why the fuss? Cage was
certainly not the first to put mutes inside a piano” (The Well Prepared Piano, 66). Therefore, Bunger frames his definition in a way which excludes these earlier versions from consideration as preparations.

Bunger uses the term “surface preparations” to describe objects which are “laid upon the strings rather than being wedged between them” (Well Prepared Piano, 38). Bunger lists some of the “great wealth of imagination and size” in surface preparations which have been used by composers:

- a book (size specified) laid onto the strings

- ping-pong balls on the treble-register strings.

- a strip of paper (2” x 8”) laid onto the strings and slid forward beneath the dampers.

- a chalkboard eraser.

- a metal triangle beater laid on the strings between A3 and A4.

- metal protractors and 3” notebook rings linked and laid onto the bass strings.

- a nude woman lying on the piano strings inside the lid.

(Well Prepared Piano, 39)
Bunger goes on to enumerate the advantages of “internal preparations” (those which are fixed between the strings) over “surface” preparations. By fixing objects between the strings, Cage was able to:

1) synthesize an infinitely greater variety of sounds.
2) have greater control over the resultant sounds.
3) synthesize sounds which seemed musically and aesthetically superior to those obtainable by surface preparation. (*Well Prepared Piano*, 73)

Certainly the sound of objects inserted between the strings is different to the sound of surface preparations, but to describe sounds as “musically and aesthetically superior” is questionable in the context of Cage’s music. “If Cage had been satisfied with the sound of a pie plate bouncing on the strings of his piano, history would never have noticed,” claims Bunger. “But John Cage was not satisfied with the sound of the pie plate - and making the most pleasing, interesting, stimulating sounds is, after all, what all we musicians are about” (*Well Prepared Piano*, 73-4). However, this was precisely what Cage’s music was not about. Cage’s own statements suggest that at this time he was more concerned about the lack of control than by the timbre - Cage thought that the use of a pie plate on the strings “seemed to change the sound in the right direction”, what he was concerned about was the fact that it moved unpredictably so that “after a while, some of the sounds that had been changed no longer were” (foreword to *The Well Prepared Piano, Writer*, 118). Where Cage has been “noticed” by history, it has not been primarily because of his development of “aesthetically superior” sounds, but because of his openness to sounds which went beyond personal taste.
Surface preparations are different to objects inserted between strings which “... not only engage in their own acoustical life, but also encourage the multiple strings of a unison to interact in new and complex ways” (The Well Prepared Piano, 84). However, to reject sounds on such a hierarchical basis seems opposed to the spirit of a composer who considered the sound of passing traffic to be aesthetically equal to the sound of a Beethoven string quartet and claimed that an important function of music was “to undermine the making of value judgements” (Conversing With Cage, 42). Indeed, Cage himself said that in preparing a piano he “deliberately put in sounds which were unpleasant ...” (Cage/ Reynolds, 579-80)

Comparing other attempts at defining the prepared piano shows some variation on the question of where the preparing objects are to be placed. Some definitions of the prepared piano agree with Bunger in referring to objects being placed between the strings of a piano: “... a standard piano in which the strings were jammed with various materials that would either mute or increase resonance” (Holubizky, 242), “Mutes of various materials are placed (in a grand piano) between the strings of the keys used, thus affecting transformations of the piano sounds with respect to all their characteristics” (Cage, The Perilous Night, in Bunger, The Well Prepared Piano, 8). Others allow for the possibility of surface preparations: “... a standard piano with various objects, such as rubber stripping, felt, or bolts, placed on or between the strings” (Revill, Contemporary Composers, 157); “... the placement of objects such as nuts, bolts, and nails on, around, and between the strings” (Cope, New Directions in Music, 61), while some writers refer ambiguously to objects attached “to” (rather than “on” or
"between") strings: "... a piano modified through the attachment of various objects, such as metal screws and rubber wedges, to its strings." (Morgan, 21); "... applying foreign objects, generally of rubber, metal, wood, or paper, to the strings of a piano" (Griffiths, *Modern Music: A Concise History*, 116). Cage describes the prepared piano as "... simply an ordinary grand piano muted with a variety of materials: metal, rubber, wood, plastic, and fibrous materials" (Writer, 36). However, preparations can also function as resonators, and prepared pianos may use a variety of materials or just one (if only metal is used, the piano is still prepared). These definitions also exclude such possibilities as hanging rattles or windchimes from the side of the piano, modifications to the piano hammers, or the more extreme methods used by visual artists and comedians.

(4) Preparations create new timbres and pitches when the instrument is played in the normal manner.

Bunger’s insistence on the instrument being played in “the normal manner” is reiterated in a 1980 interview: “The use of the keyboard is necessary to my definition of the prepared piano, as it is to Cage’s” (“Why, When, How . . .”, 36). However, as preparations are often used in conjunction with extended techniques, it seems unrealistic to suggest that a piano with bolts inserted between the strings is not a prepared piano if it is played by strumming the strings or hitting them with xylophone hammers rather than using the keyboard. An example may be found in composer/improvisor Anthony Braxton’s *Composition No. 3* (1968): “The first percussionist (who plays inside the piano) can prepare the piano in any manner . . .” (*Composition Notes A*, 23). The cover of Han’s Keller’s record *Schwebungen Brechungen* shows a piano, with objects placed
on and between the strings, played by striking the strings with percussion mallets. Keller is also shown “depressing keys which causes hammers to strike the strings”, although his technique is not quite “in the normal manner”, as he is depressing the keys by pushing toy cars along them. Cage’s In the Name of the Holocaust (1942) combines plucked and muted strings with preparations; 34'46.776” For a Pianist (1954) is also for prepared piano, but includes notes to be played directly on the strings: Cage suggests “finger-muted; pizz.; muted and pizz.; struck with mallet, beater, fingers, etc.; strike or otherwise activate preparation . . .” (performance notes). It is also possible for a pianist to begin a performance at the keyboard and change to plucking the strings during the same piece. According to Bunger’s definition, this could instantly shift the status of the instrument from a prepared piano to something else (probably a stringpiano). Such changes in playing technique are quite common among improvising pianists, and can even be found in the pop song “Even and Odd” by the J. Geils Band. Inspired by seeing a Cage performance, Seth Justman (Geils’ keyboard player) prepared a Yamaha electric grand piano with T-shirts, rags, screws and plastic record. At the beginning of the song, Justman plays directly on the strings with a Stanley ball peen hammer and percussion mallets and brushes, later in the song he plays on the keyboard (at which point, according to Bunger’s definition, the piano becomes prepared) (Justman, 67-68).

This restriction is even more doubtful if we extend the definition to consider other instruments. The sound of the guitar can be altered in several ways:
Details of cover art: Han Keller, *Schwebungen Brechungen*
"... tuning the guitar weirdly, plucking or fretting the strings weirdly, playing with a slide, wiggling the whammy bar, inserting foreign objects between the strings and fretboard" (Powis), and although only the last of these can be described as preparation, they can all be combined. Keith Rowe and Fred Frith often play their prepared guitars lying flat on a table, so that objects placed on the strings remain in position. Their guitars are routinely bowed or struck with various objects, and while no one could ever describe them as playing their instrument "in the normal manner", both may be described as playing prepared guitar.

Adam Bohmann similarly plays a prepared violin laid flat on a table, having originally experimented with playing in the conventional manner he found that "... with all the metallic objects attached digging into my skin it seemed rather impractical - and of course painful as well!" (Bohmann/Wastell).

Jim O'Rourke plays his guitar using a battery powered hand-held fan, from which he removes the blades, replacing them with "ribbons, rubber bands, or fishing wire, which [he uses] to excite the strings" (O'Rourke). Nevertheless, the fact that O'Rourke's guitar strings have springs wedged under them or a letter opener threaded through them, implies that this is a prepared guitar.

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47 A handle which moves the bridge of the guitar, reducing or increasing the tension on the strings to alter the pitch. Also called a "tremolo" or "vibrato" arm (the words are - incorrectly - often used interchangeably by guitarists). See Mulhern for more information.
The insistence on creating new timbres and pitches also disallows the use of theatrical preparations - performers may be as concerned with how their preparations look as with how they sound. The creation of new timbres and pitches may be a primary concern, a secondary consideration, or an irrelevance. In some cases, playing the instrument may be optional, as in Ken Friedman’s *Variation for Food and Piano*:

A piano is prepared with food.

(The piano may be played.) (Friedman, 21)

The interesting possibility that is raised by this part of Bunger’s definition is the idea that a prepared instrument may be defined by its function - in other words, something may be understood as a prepared piano, not because of what it is, but how it is used. This would contradict the usual assumption that a prepared piano which is not being used is still a prepared piano - just as a saxophone remains a saxophone even when it is not being played. As a writer for the *Los Angeles Examiner* commented about Fred Frith: “To call him a guitarist ... would lead to some misunderstanding. He is not Wes Montgomery. But please consider this: if you used a carrot to shave in the morning, could you still call it a carrot?” (in *Step Across the Border*).

In 1914 Erik Satie put paper in his piano to perform *Le piège de Méduse*. This may or may not be “the first use ... of a prepared piano” (Orledge, *Satie the Composer*, 120), but I would consider it as a prepared piano. However, in 1898, when Satie had two grand pianos stacked on top of each other in his room, using the top
piano - which was never played - as a receptacle for unwanted mail (Orledge, *Satie the Composer*, 120; *Satie Remembered*, 61), this was not a prepared piano but an elaborate wastebasket. If Satie had played it, the act of playing would have instantly transformed it into a prepared piano. The same consideration may apply to Percy Grainger’s use of an upright piano as a laundry basket (Heary).

It may be more accurate to say that the sound would be altered *if* (rather than *when*) the instrument was played (in any manner) - or simply that a preparation alters the functioning of an instrument. Consider two pieces by George Brecht - wooden blocks are used to build a tower on the strings of a piano in part two of *Incidental Music* (1961), and a vase of flowers is to be placed "on (to) a piano" in *Piano Piece, 1962* (Friedman, 14-5). The first example results in a prepared piano, and the second does not, because objects are placed on the strings in *Incidental Music*, but on the lid in *Piano Piece, 1962*. The distinction does not arise because of sounds produced during the Brecht pieces, but because of how the piano would sound if subsequently played without removing the objects from the piano. There is no need to insist on the instrument actually being played, whether or not it is "in the normal manner" - a prepared instrument remains a prepared instrument, just as a violin sitting silently in its case is still a violin, or Satie’s piano was still a piano (and probably a prepared piano) even when he stored letters in it. Purely cosmetic changes to an instrument are, however, excluded from our definition - painting a guitar or installing mother of pearl inlays is not synonymous with preparation because the sound is unchanged.
(above) George Brecht, *Incidental Music* (Nyman, 65)
(Below) George Brecht, *Piano Piece, 1962* (Nyman, 65)
Bunger later insists (after his initial definition) that a prepared piano should be multi-timbral. What distinguishes Cage from his predecessors is Cage's use of "a variety of small muting objects between individual sets of strings," suggests Bunger. "He envisioned his modified acoustic piano as an ensemble of percussion instruments, as an entire orchestra of pitches and tone colours; in other words, as an analog percussion synthesizer!" (The Well Prepared Piano, 66, his italics)

By definition this should exclude those prepared works which only use one type of preparation (such as where the only prepared notes use bolts inserted between the strings), although pieces of this type are listed by Bunger as examples of compositions for prepared piano. Nineteenth-century pianos typically included several different pedals, and the rapid changing of preparations which may be effected easily with mobile preparations allow for a similar or wider variety of timbres, although the contrasts may be sequential rather than simultaneous.

I prefer to consider all of these as prepared instruments, but to divide them into two categories: multi-timbral prepared instruments and mono-timbral prepared instruments.

Apart from Bunger's restrictions, standard techniques may also be excluded from consideration as preparation. Slide guitar clearly involves changing the sound of an instrument by placing an object on the strings, but most guitarists would see this as quite different to prepared guitar. A capo is another object which is so routinely added to a guitar that it is generally not considered a
preparation, although there is no logical difference between adding a capo and adding a preparation\(^a\). A whammy bar is a conventional addition to an electric guitar, but would be a permanent preparation if fitted to a violin\(^b\).

Brass mutes are also commonplace enough to make their status as preparations doubtful. It may seem plausible to consider only unconventional mutes - but as hats and toilet plungers have been standard equipment since the early days of jazz, it is difficult to decide which mutes would qualify as unconventional. Maury Coles' use of pie plates as trumpet mutes is cited as an example of preparation by both Lloyd Garber and Bill Smith (Personal Correspondence). King Oliver establishes clear jazz precedents for this activity, with "... his practice of inserting mutes, cups, bottles, water glasses, a plumber's plunger, and even buckets into the bell of his instrument in order to obtain expressive tones from his horn" (Southern, 374). Buddy Bolden made similar use of "such make-shift mutes as half a coconut shell, a bathroom plunger and an old derby hat..." (Charles Edwin Smith, 28). Leonard Feather is one of many writers who have commented on the wide variety of brass mutes used in jazz:

\(^a\) The distinction becomes particularly questionable if the capo is modified in some way. Hans Reichel, for example, has utilised "... a specially designed capo that just touches the strings instead of pressing them" (Reichel/ Blackford, 9). I have experimented with fastening objects to a capo, as a means of suggesting the sound of "surface preparations" without the objects falling off the strings.

\(^b\) This line may also be blurred somewhat when the whammy bar has been installed by the player as a homemade modification. For example, in the late 1930s, jazz guitarist Eddie Durham attached a bent clothes hanger to the bridge of his guitar to enable him to produce tremolo effects - this could possibly be considered as a type of preparation (Siegel and Obrecht, 62).
A sharp, biting quality is obtainable from the straight tin mute; a softer and rather mellow sound ... is offered by the cup mute; a quiet and almost ethereal tone ... stems from the so-called Harmon mute; and the growl or “wa-wa” effect is produced by the rubber plunger. Trumpets also make use of derby hats for a reduction of sound, and for a special crescendo effect derived from the waving of these derbies in front of the horn; the felt hat or felt cloth mute has the effect of damping the tone in a mellifluous manner. (Book of Jazz, 73)

William Brooks suggests that jazz musicians have “been responsible for the enormous increase in the kinds of brass mute, undoubtedly because of the need to expand the limited range of timbres available in most jazz ensembles” ("[16 Dances]", 343). Brass mutes undoubtedly have been widely used to extend the range of timbres available, but whether it is reasonable to characterise jazz groups as suffering a “limited range of timbres” in comparison with similar sized combinations in classical music (string quartets, for example) is highly questionable. Brass mutes, however, are used so frequently that they would require a separate book, and are so varied, even from the earliest days of jazz, that to isolate some mutes as “unconventional” is essentially meaningless. If brass mutes are excluded from our definition, how is it possible to prepare a brass instrument? Ernie Althoff’s previously cited PVC-prepared saxophone may serve as a model. Dizzy Gillespie’s bent trumpet, could be considered as permanently prepared. However, the additional valves, mouthpieces and slides of Ben Neill’s “mutantrumpet” (featuring three bells, six valves, a trombone slide and electronics) (see Corbett, 29; Holtje; Neill, Torchtower CD notes), or Don Ellis’s “superbone” (a trombone combining pistons and slide) and quarter tone trumpet with four pistons (CD notes) may have to be excluded because they are custom made instruments rather than modifications of pre-existing instruments. Nicholas
Collins’ use of a trombone as controller for a digital reverb\(^{49}\), raises similar questions about what can be considered a prepared trombone.

The demarcation between permanently prepared instruments and custom instruments/sound sculptures depends on whether a standard instrument has been modified, or a new instrument has been created. The guitar-like instruments of Hans Reichel are new instruments, based on the model of a standard guitar, whereas Jon Rose’s 19 string cello is a permanently prepared cello because the starting point was a “normal” cello.

Further complications arise when an instrument is prepared with another instrument. When Marcus Rojas stretches a tambourine membrane across the bell of his tuba (Pekar, 26), it would presumably be considered a brass mute. On Cannonball Adderley’s recording 74 Miles Away, Jazz-Rock pianist Joe Zawinul uses a tambourine as a piano preparation, placing it “over the piano strings around the area of middle-C, constructing his solo using a mixture of tones distorted by the tambourine and ‘open’ tones” (Nicolson, 162). It seems reasonable to describe this as a prepared piano - if Bunger’s objection to “surface preparations” is disregarded, there is conceptually no difference whether a tambourine or a pie plate is placed on the strings. At the CPFC Improvisation Festival (Old Darlington School, Sydney University, Sun 17 Sep 1995), I saw Alister Spence improvising with a tambourine inside the piano. However, Spence began this part of his improvisation by striking the tambourine with a xylophone hammer, allowing the piano strings to resonate - which suggests that this was in fact a prepared tambourine (with the piano

\(^{49}\) See pages 204-205.
constituting a large tambourine preparation). Only later, when he began playing at the keyboard, did the instrument/preparation roles become reversed.

The distinction between a hybrid instrument and the use of one instrument as a preparation for another instrument can be quite ambiguous. Knowing that Vyacheslav Ganelin reaches inside his piano to strike an electric guitar or toy xylophone with percussion mallets (Mihaiu, 46) does not provide enough information to establish whether the guitar or piano is prepared, because it is unclear whether the instruments interact. If the guitar strings resonate sympathetically with the piano sounds, or if the guitar is placed on top of the piano strings (thus muting them) then it may be considered as a piano preparation. If the piano affects the vibrations of the guitar, then it may be considered as a large guitar preparation. If both instruments are unaltered in sound, then they are unprepared instruments placed one on top of the other. Ernie Althoff has made similarly ambiguous extensions to his saxophone, attaching

... a set of little "add-ons" at the mouthpiece end -- a little siren, a set of pitch pipes in a PVC tube, a party whistle and a KAZOO! I made two kazoo versions

... One sent the air through the kazoo into the saxophone, and the other sent the membrane sound into the saxophone. ... In both cases the keys of the sax worked more as timbral modulators than as pitch controllers, but this is more to my interests anyway. ... So, is this a prepared saxophone or a treated kazoo? Recipe: take two instruments and combine them to build a third. ("Regarding Mirlitons.")
pared, custom-built and permanently modified wind instruments.

- Ben Neill (Torchtower)
- Colas Collins (Greenwald, 37)
- Ellis (Nicholson, 289)
- Izy Gillespie (*Coda Jul/Aug 1996, 15)
- Althoff (Jenkins, 2)
Hybrid instruments.
Left: Mats Gustafsson playing flute with saxophone mouthpiece (Gustafsson, 27)
Right: Jon Rose’s Madonna and Child cello/ violin combination
(Rose & Linz, The Pink Violin, 60)
Below: Vyacheslav Ganelin. (Feigin, n.p.)
Ernie Althoff has made similarly ambiguous extensions to his saxophone, attaching

... a set of little “add-ons” at the mouthpiece end -- a little siren, a set of pitch pipes in a PVC tube, a party whistle and a KAZOO! I made two kazoo versions.

... One sent the air through the kazoo into the saxophone, and the other sent the membrane sound into the saxophone. ... In both cases the keys of the sax worked more as timbral modulators than as pitch controllers, but this is more to my interests anyway. ... So, is this a prepared saxophone or a treated kazoo? Recipe: take two instruments and combine them to build a third. ("Regarding Mirlitons.")

This approach is not restricted to the avant garde. In the 1920s, Bud Jacobson “produced a ludicrous tone by inserting modified Kazoo heads into his clarinet” (Steiner, 161). Frankie Newton used a “buzz mute” which suggested “the product of an illicit meeting between a trumpet and a kazoo” for his performances with John Kirby around 1937-41 (Feather, Book of Jazz, 76). Blues guitarist Brownie McGhee also performed on a “jazzhorn” made from a kazoo and a trombone bell (Oliver, Story of the Blues, 131). From here it is a very indistinct line to the combination of other wind instruments - Roger Frampton has played “saxorecorder“: plastic recorder with saxophone mouthpiece (Barnard, 19); Jim Denley plays “flax”: flute with saxophone mouthpiece (Jenkins, 63); Mats Gustafsson does the same, but calls it a “fluteophone” (Gustafsson, 27); Elliott Sharp plays “bass tubinet“: bass clarinet with tuba mouthpiece (Dery, “New York Underground”, 32).

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*Robert Dick gives details of the use of various mouthpieces with a flute body in The Other Flute (136).
Although these do not seem to be prepared instruments in the strict sense - in a conversation with Denley (Cafe de Lane, Sydney, 11 Sep 1995) he described them as "hybrid instruments" rather than preparations, and Frampton later agreed with this (Personal Interview) - it seems that there is a relationship between hybrid instruments and the use of instruments as preparations, and that the distinction between an instrument and a preparation may be a question of how it is used. Objects may be divided into sound producers (instruments) and sound modifiers (preparations), and some objects may be effective in either role.

Another approach commonly associated with prepared instruments uses the simple fact that a guitar pickup responds not only to the vibrations of a guitar string, but to any piece of vibrating metal - including motors\textsuperscript{51}, speakers, springs and eggbeaters.

Davey Williams discovered that "using a violin bow, bowing [an] eggbeater contacted directly against the pickup . . . you could make very tiny noises directly against the pickups that, amplified enough, would be totally transformed"; this idea was influenced by Man Ray's Surrealist photographs in which he "would blow these photos up so that they were totally unrecognizable" (in Dery, "Forging a New Vocabulary", 62).

\textsuperscript{51} It is important to emphasise that only wind up or battery operated motors should be used - the use of cordless power tools, battery operated toys, vibrators and the like can be an effective source of noise, but electrical power tools which are connected to the mains can deliver a (potentially fatal) electric shock when used in this way.
Derek Bailey's use of guitar pickups to amplify the sound of a length of wire was cited in the previous chapter. Fred Frith and Keith Rowe often use a radio held against their guitar pickup. Eugene Chadbourne and others amplify the motor noises of vibrators. In addition to various motor noises, I have used a metal biscuit tin lid held over the guitar pickup with golf balls and/or wind up toys rattling around the lid, a palette knife and other metal objects attached directly to the pickup and scraped with nail files or sandpaper, and talking dolls, toy trucks, robots and telephones held against the pickup. Michael Welchman has discovered that the remote control from a video recorder emits noises when held over a guitar pickup.

It could be argued that these are simply a means of amplifying small sounds, that there is a significant difference between a prepared guitar and an amplified eggbeater. As such, these sounds may relate more to Cage's 0'00" than to his prepared piano music. Nevertheless, such sounds, even if not true preparations, are often used in conjunction with prepared guitar, and amplifying them through the guitar pickups (as opposed to holding a noisemaker next to a microphone) does assist in blending these sound sources with the sounds emanating from the guitar strings. As this approach involves both adding objects to a guitar and using an instrument in unconventional ways, although the guitar strings may not be used (the guitar is only used to amplify other sounds) it is not a simple matter to define whether or not this may be considered as a prepared guitar.

52 Michael Welchman was my guitar student, he used the remote control during a live radio broadcast we did together (Doing It Locally, 2 Vox FM, 3 July 1994).
Keith Rowe holding radio to guitar pickup. (Nyman, 109)
There should be a middle ground between Prown's approach, which is so broad as to include a number of things which are clearly not prepared instruments, and Bunger's approach, which is so narrow as to exclude virtually every preparation which is not directly related to John Cage's prepared piano compositions. My own attempts at formulating such a definition have invariably been rejected as either including things which are not preparations or excluding things which are. In the absence of a firm definition, I have preferred an inclusive approach to what material should be referred to in this thesis. Therefore, I have included references to extended techniques (Henry Cowell's stringpiano), instruments with rattles and mutes permanently attached as part of the standard instrument (African instruments, theatre organs and nineteenth-century pianos), permanent modifications (Jon Rose's violins and celli), sound-sculpture (Nam June Paik's Klavier Integral, Ken Unsworth's Rapture), and even visual representations of instruments. This is not only because of a reluctance to precisely define what is (or is not) a preparation, but also because, whether or not they are actually prepared instruments, they have inspired certain approaches to preparations. They also demonstrate attitudes towards the use of a musical instrument which are relevant to an understanding of the purposes of preparation.

While it may be useful to define preparations as different to extended techniques on the one hand and permanent modifications on the other, these distinctions are often blurred in practice. Techniques such as using the hand for muting strings and playing harmonics on piano, or crossing the strings of a guitar to produce a "snare drum" effect, can suggest approaches to preparation, just as Henry Cowell's stringpiano techniques influenced Cage's
use of preparations. Extended techniques can be used (as Derek Bailey has since the mid 70s) as an alternative to preparation. A temporary preparation may serve as a prototype for a permanent modification, or as a substitute for a commercially produced device which is unavailable - as in Ravel's previously cited use of paper in *L'enfant et les sortilèges* as a substitute for the luthéal (Orenstein, 258). An extended technique can also suggest a permanent modification, leading to a new instrument. Hans Reichel recalls seeing a guitarist using a common "extended technique" - playing the short piece of string between the bridge and the tailpiece of the guitar.

He was satisfied with the sound, but I wasn't. I replaced the fingerboard on my guitar with a new one with a closer succession of frets, and moved the bridge towards the fingerboard in accordance with the new, shorter scale. The result was a big portion of "leftover" string on the other side of the bridge, and plucking there made some surprising sounds appear on the regular side. For example, a lot of overtones appeared which I hadn't played at all. (Reichel, 48)

Reichel followed this permanently prepared instrument by building several instruments with additional frets behind the bridge. New York composer Glenn Branca uses a similar principle with his "harmonics guitar" which consists of strings mounted on a plank of wood (approximately 2 inches x 4 inches x 4 feet) with three bridges. The third bridge divides the string in half - one side is played using a steel slide, the other side is amplified with an electric guitar pickup (Hopkins, "Glenn Branca and the Third Bridge"). These are custom instruments rather than prepared guitars, but a related effect can be achieved on prepared electric guitar by placing an object under the strings and plucking the unamplified side.
As mentioned in the previous chapter, Ross Bolleter progressed from extended techniques to temporary preparations as finger muting gave way to a rubber, “giving an approximate duplication of the original sound”, followed by a variety of other preparations (“Improvising With Prepared Piano”). He later progressed from the prepared piano to “Ruined” and “Devastated” pianos. Clearly an awareness of extended techniques is useful in developing an understanding of prepared instruments - although the techniques are separate, innovations in one can lead to new discoveries in the other.

Types of Preparations

In defining prepared instruments, it may be useful to divide them into different types of preparations. Some of these distinctions have already been mentioned above, but I will reiterate the options here.

[1] Temporary/ Permanent

Cage’s prepared piano compositions usually involved an instrument which was prepared before a concert, with the preparations remaining in place throughout the performance.

Although some improvisors follow Cage’s approach (for example, Roger Frampton’s prepared piano recordings), many improvisors prefer modifications which are relatively permanent, or preparations which may be altered during the course of a performance. For example, Jon Rose’s instruments are generally altered permanently, Keith Tippett adds and subtracts objects while playing. Temporary preparations seem particularly
well suited to free improvisation, as improvisors need to be able to respond quickly to things which could not be predicted beforehand. Permanently prepared instruments need to be reasonably flexible, so that any modifications permit a wide variety of possible sounds (Jon Rose's 19 string cello is clearly open to more possibilities than a conventional cello).

[2] Surface/ Internal

Richard Bunger and Roger Frampton have both expressed a preference for Cage's method of preparing a piano with objects inserted between the strings rather than resting on top of them. The type of sound produced is different, as placing a screw between two strings causes a complex interaction between the vibrations of both strings and the screw, while objects such as pie plates placed on the strings generally either add noise elements to the normal piano sound or mute the sound of the strings. Surface preparations are much easier to add or remove while performing, so they are often useful as temporary preparations. Objects resting on top of the piano strings (which Bunger describes as "surface preparations") also behave less predictably - Cage's original objection to surface preparations was not to the sound quality, but to the tendency of such objects to move around so that it was impossible to predict which strings were prepared.


As mentioned above, some preparations behave in a relatively predictable fashion, others (particularly surface preparations) produce modifications of the sound which cannot be controlled or predicted by the performer. These
preparations are of particular interest to improvisors, and will be discussed in detail in the following chapter.


Richard Bunger suggests that Cage’s preparations are more significant than his predecessors (he cites 19th century pianos and the insertion of paper by blues pianists) because his prepared piano produces a variety of sounds. This suggests that we may categorise prepared instruments according to how many distinct timbres they produce (rather like the manufacturers of synthesisers and effects pedals listing the number of sounds available from a particular product). The use of pedals and/or surface preparations allows for rapidly changing from one timbre to another, although in some cases there may be limitations on how many different sounds can be played simultaneously (again this is analogous to distinctions between various synthesisers or effects pedals).


Cage’s preparations generally reduced the volume of the piano, while extending its timbral range. Blues pianists modified instruments to make them louder. The obvious difference is whether a preparation simply modifies the vibrations of the original instrument (in which case it will generally function as a mute) or whether it adds its own vibrations to the sound (functioning as a resonator).
Is a prepared instrument modified purely to produce a particular sound? Or does it also serve a visual purpose? Cage's insistence that Paik's *Klavier Integral* is essentially a sculpture (or visual assemblage) rather than a prepared piano seems to miss the point that *Klavier Integral* is an example of intermedia - it is both sculpture and instrument. However, Ken Unsworth's *Rapture* is obviously intended as sculpture, while Cage's early prepared piano compositions used instruments which looked, from a distance, like normal pianos. When the performer inserts, removes or adjusts preparations while performing, or when the modifications result in an unconventional performance style (Jon Rose's wheeled violins, for example), the preparation may be considered as theatrical.

The essential question is simple: what is most likely to engage the audience's attention - the sound, the appearance of the instrument, or the physical action of playing it? Can the instrument be understood by hearing a recording, looking at a photograph, or watching a silent video? Many preparations, of course, combine sound and vision in fairly equal ways - these may be considered as intermedial. The improvisors I asked about this question generally considered the sound to be the primary consideration, with the visual appearance of the instrument being of less significance (although this may not necessarily be the same view as the audience). An instrument which is purely visual may be considered as a sculpture or assemblage rather than a prepared instrument (as suggested previously, a test could be whether the modifications would alter the sound if the instrument was played) although some instruments of this type were discussed in a previous chapter as they...
may be relevant to an understanding of instruments which combine visual and auditory considerations.

(7) Destructive/ Non destructive

Bunger insists that piano preparation should be a “non-violent activity”, and rejects the insertion of thumbtacks in piano hammers because such practices damage the piano. This is essentially the same as his objection to permanent preparations. Certainly a performer should know whether a preparation is likely to damage an instrument, but this will not necessarily deter some performers. Damaging an instrument may only be considered as preparation if it results in an instrument which can subsequently be played, and which has a modified sound. Ross Bolleter’s “ruined pianos” are clearly a continuation from his earlier interest in piano preparation. Jim Denley describes them as “… like prepared pianos but with a whole other grunge element” (“Australian New Music . . .”, 16). If the primary concern is the act of destruction itself, then this may be considered as a playing technique. Instrument destruction will be considered in more detail in the next chapter.

All of these seem to me to be valid examples of prepared instruments, and give some indication of the diverse possibilities of preparation. It is difficult to find a definition which is broad enough to include all of these possibilities, making clear their similarities and differences, without including a number of things which are not prepared instruments. So far, the best definition I have found was offered by Roger Frampton: “a prepared instrument is something that’s had something done to it which causes it to behave in a different way, other than the way that was originally called for. . . . Basically you’re sort of
fucking up the normal action of the instrument. Doing something to make it
do something weird” (Personal Interview).

**Prepared Instruments and Traditional Organology**

Traditional approaches to organology become problematic when applied to
instruments which are played with extended techniques and preparations.
This is often the case in improvised music, where “(e)ven the sound of the
instrument is not viewed as existing in a fixed state” (Braxton, *Triaxium 3*,
249). Particularly in solo improvisation, there has been an increasing interest
in “... exploring the hidden sound potential of standard instruments”
(Couldry, 21), which includes unconventional methods of sound production
and the addition of extra sound sources and sound modifiers to an
instrument. As a result, instruments which are traditionally considered within
one particular category of instruments are made to function in ways more
typical of a different category of instruments, often moving freely between
several methods of sound production.

Traditional divisions of instruments into string, woodwind, brass and
percussion have obvious problems - deciding an appropriate category for
stringed instruments played percussively (hammered dulcimer, pianoforte)
seems arbitrary, and many woodwind and brass instruments are not made of
the material implied by their name. While it may have some value in teaching
children the basic instruments of a European orchestra, it is clearly
inadequate for a detailed view of instrument classifications:

The problem here lies in the fact that the criteria used in delineating these
classifications are not uniform from one category to the next. As a result they are
not mutually exclusive. In one case the distinguishing feature is the nature of the initial vibrator (stretched strings). In two others it *seems* to be the material of which the body of the instrument is made (woodwind and brass), but is actually the method of exciting the vibrating medium (lip-buzzed instruments on one hand, and instruments using air blown over an edge or a reed on the other). In the case of the percussion instruments the nominal key is the method by which the player excites the vibration, but this criterion is so inconsistently applied that it really isn't worth much. In general usage the grouping ends up serving as a sort of catch-all for miscellany. (Hopkins, "Musical Instrument Classification Systems", 10)

More detailed systems divide instruments according to the main sound source (stretched strings, a column of air, a solid or hollow surface) and subdivides these according to the method used to produce sound. For example, in the Sachs-Hornbostel system (first published in 1914) there are four basic classifications, each of which is divided into smaller subclassifications, which are then further subdivided to create a detailed taxonomy. The four types (based on the system devised in 1888 by Belgian organologist Victor Mahillon) are:

1 - Idiophones: The initial vibrator is solid material which vibrates by virtue of its own rigidity (it is not stretched).

2 - Membranophones: the (sic) initial vibrator is a stretched membrane, such as a drum skin.

3 - Chordophones: The initial vibrator is a stretched string.

4 - Aerophones: The initial vibrator is air, either enclosed in a chamber or free.

(Hopkin, "Musical Instrument Classification Systems", 10)
Other groups which have been suggested as additions to this list include electrophones (the initial vibration is electrons in a wire), hydrophones (the initial vibrating substance is liquid) and electro-acoustic instruments (the initial acoustic vibration is converted to electrical vibration). Each of these groups is then further divided, for example, chordophones have a suffix indicating the method of sounding the string:

-4 - Sounded by hammers or beaters
-5 - Sounded with the bare fingers
-6 - Sounded by a plectrum
-7 - Sounded by bowing

Stringed instruments are traditionally classified according to playing technique: plucked (guitar), bowed (violin) and struck (piano). However, in improvised music and avant garde composition, guitar strings are often bowed (mechanically or with an Ebow) or struck with xylophone hammers, violin strings can also be played col legno or pizzicato, and piano strings have been plucked by Henry Cowell and bowed by Stephen Scott (and many others). Several other methods of setting strings in motion have also been used, particularly by guitarists Fred Frith and Keith Rowe:

Each uses a great variety of preparations to transform conventional means of attack; they use not just hand and plectrum, but sticks, mechanical vibrators, drop objects on to the strings, leave objects under the strings which, because the strings are amplified, can generate audible sympathetic vibrations when other parts of the guitar body or the strings are struck. (Couldry, 12)
Bowed prepared guitar

Above: Davey Williams (Dery, “Forging a New Vocabulary”, 53)

Top left: Christian Wolff: (Schneider, n.p.)

Centre Left: Fred Frith (Frith/ Dery, 78)

Other potential sources of sound are also available as soon as the guitarist realises that there are a variety of wooden surfaces which can be struck, or rubbed with a wet thumb, the instrument functioning as struck idiophone or friction idiophone\textsuperscript{23}. Frets can be scraped (running a stick or fingernail along the length of the neck), or the string windings can be scraped (with plectrum or other objects). The hollow body of an acoustic guitar can be filled with various objects to serve as a rattle\textsuperscript{24}. Thus the guitar may be considered as several different types of idiophone.

The guitar can also function as a voice resonator and as a wind instrument:

(a) Voice sounds. Speaking, moaning, shouting and other voice sounds projected into the hole or 'F' holes of the guitar.

(b) Air sounds. Blowing or forcing air into the sound box of the guitar, in various ways to create sounds via that forced air. You can get whistles and humming noises like when you blow into a beer bottle. You can get effects like what you hear when you put your ear up to a sea shell. (Garber, Auntie Nature, 198-9)

The practice of using the guitar pickups to amplify other sounds (motors, metal objects etc) and the use of effects pedals to modify the resultant sound was mentioned previously, and suggests a variety of electro-acoustic instrument classifications. On realising that the only one of Sachs-Hornbostel's basic categories

\textsuperscript{23} Lloyd Garber describes several variations of this technique in Auntie Nature (195-198).
not covered here is the membranophone, the possibility of stretching a small drumskin over the sound hole of an acoustic guitar (in imitation of a banjo) immediately suggests itself as a possible preparation. An instrument which can be played as plucked, bowed or struck strings, or as struck idiophone, scraper, rattle and wind instrument becomes rather difficult to categorise according to fixed systems of organology.

There are similar complexities in defining wind instruments (aerophones). Wind instruments may be divided into reed and non-reed. Reed instruments can be further subdivided into "single mechanical reed, double mechanical reed, lip reed, air reed, and vocal-cord reed" (Olson, 108). Several factors may interact for more detailed instrument descriptions. The trumpet can be described as "... a system in which the reed tone of the lips, the edge tone of the jet, and the tone of the pipe are coupled together and vibrate as a coupled system" (Wood, 147). A clarinet may be considered as "... a coupled system, consisting of a cylindrical pipe closed at one end and a reed" (Wood, 140). However, the actual situation is more complex: "On the one hand, the tube is not cylindrical. It has a pronounced flare at the foot, and the mouth-piece is very irregular in shape" explains Wood. "On the other hand, the reed end is not strictly closed, the air stream never being completely stopped, and the vibrations in the tube communicating themselves through the reed opening to the air in the mouth and chest of the player" (141).

* This was previously discussed in reference to Lightning Hopkins (Africa) and Eugene Chadbourne
It is, of course, the interaction of several factors which accounts for the different sounds available from piccolo, tuba and clarinet. However, it is possible (for example) to remove the mouthpiece of a saxophone and play the body, or to combine the mouthpiece of one instrument with the body of another (the “hybrid” instruments mentioned earlier in this chapter often constitute new instruments which combine characteristics of two or more standard instruments).

Henry Cowell’s use of clusters and stringpiano introduced the idea of music which could not be accurately transcribed for another instrument, as they derived from an exploration of the sound possibilities inherent in the instrument:

Up to that time, pianos had only been used for the performance of music which could conceivably also have been played on other instruments. Cowell’s feat was to experiment with sonant properties that are entirely the piano’s own and cannot possibly be produced by other instruments. (Stone, 14)

Randal McIlroy comments that avant garde guitarists including Bailey, Reichel and Frith use guitar as “. . . a pure sound source, with only tangential reference to the basics of strings and fingerboards” (23). Their music may only make tangential reference to such conventional musical concepts as scales and chords, but in the absence of such conventional reference points, a performer can see a guitar as a collection of wooden and metal surfaces including strings and fingerboard as well as tuning keys, enclosed air chamber, electronic amplification and any other sound generating/ modifying devices which can be added to the instrument.
Wind musicians can similarly experiment with various ways of altering the vibrations of a column of air. Ornette Coleman asked Charles Moffett, "... have you ever thought about playing the trumpet from the way that it's built? Like from one valve's relationship to the other?" The suggestion that Moffett "could improvise from how the trumpet is built" provided a way of improvising without needing "to worry about playing from a chord structure to express myself" (in Lewis, 23).

This approach implies a systematic exploration of the variety of sounds which can be produced from a column of air, and from the instrument used to enclose the air - it may include the use of rattling keys as percussion sounds and vocal noises as well as the production of overtones, multiphonics and so on.

In preparing an instrument, several factors interact to produce complex effects:

The alteration of a piano tone by preparing the strings with various objects is a complicated matter, involving many physical factors, some of which are contradictory. The object adds mass to the vibrating string, thus lowering the pitch; heavier objects (such as large bolts) thus lower the pitch more than light ones (such as small screws). At the same time, the object stretches the strings, thus tending to raise the pitch and making the diameter of the object an important variable, as well. The placement of the object along the string is important, in that the muting object will effectively shorten the string; placement at a nodal point will produce a more or less distinct harmonic. Soft objects (such as weather stripping or rubber) will tend to dampen the tone, shortening the decay; at high registers, this effect is less noticeable, since the decay of these notes is already so short. Placing preparations only between the two rightmost
strings of a triple-strung note means that the altered sound of these two strings will mix with the unaltered sound of the third string. Thus, such a note will maintain a certain amount of its original pitch, but the altered sonorities of the prepared strings will perhaps conflict with this, causing beating. The *una corda* pedal can be used to silence the unaltered string by shifting the hammers to the right, thus allowing for two different sounds to issue from the same note. All these factors combine to produce sounds that are complex, inharmonic, microtonal, and hence percussion-like. (Pritchett, *The Music of John Cage*, 23)

In addition to altering the vibrations of a string, preparations can add sounds of their own. Don Ihde mentions the impossibility of separating the sound of two interacting objects: “When I use a pen to strike the water pitcher, you hear both the sound of the glass and of the plastic, simultaneously in a duet of voices and things” (in Dyson, 406; n. 25). Chains, bells, rattles and windchimes may be added to an instrument. If a pie plate is placed on the strings of a piano, the physics of the vibrating pie plate may be at least as significant as the sound of the muted piano strings. All prepared instruments may be considered as “hybrid instruments”, as they combine the sound of the original instrument with the sound of the objects used as preparations. Improvisors often make use of found objects as sound sources:

In the use of junk, the admission as instruments of literally any object which can make a sound, and the developing of this as a consistent practice, an almost standard part of the “repertoire”, free improvisation has developed in a most distinctive direction. (Couldry, 21)
However, performers using “junk” noisemakers have still in the main preferred to use a conventional instrument (or at least the relics of one) as a basis for their explorations. To take two examples: Keith Rowe’s work on prepared guitar . . . or among the younger generation of performers, Adam Bohmann’s work which centres around a prepared violin but encompasses a large range of sound objects which are laid out alongside it and may at any time be brought into the performance by contact with the violin strings or body. (Couldry, 21)

Clearly any description of a prepared instrument must include the conventional instrument (guitar, violin . . . ) together with any objects which have been added (pie plate, vibrator, mechanical fish . . . ) and the method of sound production (plucking, bowing, scraping, . . . ). The range of possibilities becomes so large (virtually infinite in fact) that any attempt to organise them becomes unrealistic. Instead of categories of instruments, one is reduced to describing the array of elements used in producing each individual sound:

That’s an alto saxophone with a football shoved into the bell, that’s a bicycle chain being dragged across a pickup and into a wedge of styrofoam glued to the side of an old Harmony guitar. (Chadbourne, “In Memory of This Music”)

Traditionally, composers have altered timbre by orchestration - flutes convey a particular kind of timbre, violins a contrasting timbre. In this conception, an instrument is a “source of stable timbre, but variable pitch” (Wishart, 16), timbre being “the characteristic which enables the listener to recognize the kind of musical instrument which produces the tone” (Olson, 201). Some instruments do, of
course, produce more than one timbre - violins, for example, can be played pizzicato or col legno. Even so, there is generally a fixed (usually rather small) range of timbres which are to be expected from a given instrument - and one of these is usually designated as the "normal" timbre. Therefore, the use of preparations and extended techniques to alter the timbre of an instrument affects our understanding of what an instrument is - for example, Cowell and Cage both insisted that "stringpiano" and "prepared piano" must be considered as distinctly different instruments from (not merely different usages of) a standard piano: "An instrument having convincingly its own special characteristics, not even suggesting those of a piano, must be the result (Cage, *Amores*).

The idea that an instrument has a fixed timbre enables a listener to distinguish which instrument is playing: "... the essential difference between the musical instruments resides in the overtone structure. It is in terms of timbre that we differentiate the tonal character of musical instruments, of voices, of animal sounds, of insect sounds, and of warning signals" (Olson, 201). This timbre is expected to remain relatively constant, even when other parameters change: "... musical instruments are designed to retain their own characteristic tone colour, whether they are playing loudly or softly, higher or lower" (Chanan, 243); "The essential function of an instrument is to hold timbre stable and to articulate the pitch parameter. This conception contributes to the myth of the primacy of pitch (and duration) in musical architecture" (Wishart, 16). However, this is not achieved absolutely, as demonstrated clearly by the distinct registers of the clarinet. Arnold Myers also points out that timbre in brass instruments is related to
pitch and volume - loud, low notes having a richer spectrum than soft, high notes (20).

Pierre Boulez was “among the first to notice that the prepared piano, by loosening the relationship among the individual notes of the keyboard, is a heterogenous timbral collection rather than a traditional ‘instrument’” (Schwartz and Godfrey, 103). Or, as Cage states in 45' for a Speaker, “... fortunately the piano is there and one can always prepare it in a different way. Otherwise it would become an instrument” (Silence, 187). Rather than functioning as an instrument with a particular timbre which is relatively stable, a prepared instrument may be conceived as a variable collection of stretched strings, columns of air or surfaces which can produce sounds in diverse ways.

The various approaches to instrument preparation demonstrate that one common feature is an unwillingness to accept any notion of how an instrument “should” be played: “An instrument exists to produce sounds. There are no laws governing the procedure of this production” (Berendt, 32).
INDETERMINATE AND DESTRUCTIVE

PREPARATIONS

The combination of prepared piano with randomly changing elements and improvising at the keyboard was, for me, a remarkable discovery, an extraordinary feeling of freedom, not only to act but to act within an environment that was shifting in part of its own accord and creating sonic events that were at once related to what I was doing at the keyboard but also free of it. There’s nothing like feeling freedom from causality. (Broomer, Personal Correspondence)

Improvisation and Unpredictability

Of the several approaches to prepared instruments discussed in the previous chapter, two are of particular interest - indeterminate and destructive preparations. As was seen in that chapter, some commentators question whether these should be considered as preparations at all. Richard Bunger, for example, assumes that the person preparing an instrument should exert control over the resultant sounds, and that permanent damage to the instrument should be avoided. For most situations, this may well be true. However, there are performers willing to utilise uncontrolled and destructive preparations, and preparations of this type may serve as a metaphor for the general effect of preparations in rendering conventional notions of an instrument indeterminate or obsolete.

According to Bunger, an improvisor using a prepared piano “should know what general pitch, timbre and resonance may be expected from each piano key” (The
Well Prepared Piano, 43). If an improvisor’s actions are to have predictable results, and a degree of control is to be maintained, then this sort of knowledge is necessary - otherwise, an improvisor who expects to play a dull thud may be accidentally confronted with a loud clang. To this end, Bunger suggests that “various coloured stick-on markers or bits of plastic tape” be attached to the keyboard to denote the type of preparations used. “Examples: A round green marker identifies a note of metallic timbre and short resonance. A square red marker immediately denotes a resonant woodblock” (The Well Prepared Piano, 43).

Such an approach may be useful for a classical pianist who is “dabbling” in improvisation, but serious improvisors usually accept a degree of unpredictability. Indeed, the presence of unpredictable factors can be a useful stimulus for improvisation, while absolute predictability encourages the use of cliches and predetermined methods. Unpredictability is facilitated by improvising with other musicians, responding to sounds of the environment (including the audience) and using instruments in which “[c]auses and effects get disconnected” (Conversing with Cage, 119). In a group situation, the improvised contributions of other players “compound the unpredictability that makes improvisation so attractive to begin with” (Schwartz and Godfrey, 414). Improvised music implies “the possibility of an individual musician facing an event generated by another which was unexpected, even initially undesired” explains Roger Dean. “It was not surprising, therefore, that improvisers should develop a preparedness for such events, and even extend the sources of such events outside the activities of the musicians themselves” (Dean, New
Structures, 183). In some cases, these events may not have been intended by any of the performers, as demonstrated by Rahsaan Roland Kirk “who, when he hears the question about what happens if the guy playing the nose flute gets a booger in it, yells down the bar, ‘It’s all part of the music!’” (Keil & Feld, 157). Eugene Chadbourne allowed one performance to be significantly affected by faulty equipment:

... during this concert there was something wrong with the jack and the cord kept coming out of the instrument. They [Chadbourne's daughter and her friend] were bothered by this because they thought just as I would get something cool going I would have to stop and plug the thing back in. But I liked it because that interrupted things and made me have to try something else. I like interruptions because there is an opportunity to go in a completely different direction. (Chadbourne/Johnston)

Preparing an instrument in such a way that the improviser cannot entirely predict or control the resultant sound is a useful method of generating similarly unpredictable sounds and "interruptions".

The Desire To Possess Sounds

When Cage was choosing preparations for Bacchanale, he experimented with newspapers, magazines, ashtray, books and pie plates, and although these "seemed to change the sound in the right direction, making it percussive," the sound was uncontrollable because "they bounced around too much" (Tomkins, The Bride and the Bachelors, 90). This meant that "... after a while, some of the
sounds that had been changed no longer were”. He tried a nail55, “and the
trouble was it slipped.” Finally he tried “a wood screw between the strings and
that was just right” (Conversing With Cage, 58). Cage later discovered other
materials which altered the sound while fulfilling the basic requirement that
they “would stay in position” (“Foreword to The Well-Prepared Piano”; Writer,
118). The decision to use bolts and screws because they were determinate and
predictable, rather than pie plates which were indeterminate and unpredictable
indicated Cage’s “desire to possess sounds (to be able to repeat them)”
(“Foreword to The Well Prepared Piano”; Writer, 119). This attitude seems
curiously at odds with his later desire to renounce control and and emphasise
unpredictability and the impossibility of repetition. In attempting to standardise
the sound of his prepared piano pieces, Cage’s specifications become
increasingly precise - having selected the preparations to be used for a
composition, “he would measure them with a wooden ruler and note the result
with a meticulousness which increased with the years” (Revill, 98; my emphasis).
However, as late as January 7, 1952, Waiting included the instruction “prepared
or unprepared if prepared (at pleasure)”, although David Revill points out that
“this instruction was removed when the piece was later published” (157).

55 This may be the source of Roger Dean’s suggestion that Cage’s preparations were “often nails” (New
Structures, 92), although Cage in fact abandoned the use of nails because he didn’t want his preparations to
slip. A possible solution to the problem of keeping nails fixed in place is suggested by George Maciunas’s
Piano Piece No. 13 for Nam June Paik, in which all the keys of a piano keyboard are nailed down. (Kahn,
For a time, Cage made boxed sets of preparations for each composition. However, this practice was soon discontinued, Doris Leland Harrel being informed by Cage’s publishers that “...the kit is no longer available and that Cage would like the performer to do whatever he feels sounds best. So the preparation, in line with Cage’s more recent philosophy, has become indeterminate” (135). In fact, Cage had realised that differences between pianos meant that the same preparations would sound differently in different pianos, and the only way to avoid indeterminacy would have been for Cage’s publishers to provide a piano with the preparations. When Nigel Butterley tried to obtain a set of preparations, Cage wrote that he no longer provided preparations because “There are not only differences in screws & bolts but also pianos (of the same make and size).” Instead, he sent a list of preparations which specified the preparation in remarkable detail. However, to compensate for different pianos, some adjustment could be made to give the desired sound, treating the Table of Preparations as “a set of suggestions”: in a successful preparation, the objects "do not become dislodged or in other ways stand out from the music. You will often be able to tell whether your preparation is good, by whether or not the cadences ‘work’”. In contrast to his usual philosophy, Cage even permits the imitation of a recording of the Sonatas and Interludes (Letter to Nigel Butterley).

Instead of precisely specifying the position and size of preparations, it is probably more accurate (or more determinate) to indicate the approximate type and placement of the preparations together with a detailed description of the desired sound. Cage occasionally did this - In the Name of the Holocaust calls for small screws to be inserted between two notes “in such a way that they give a
metallic rattle sound”. The instruction in Amores to “[d]etermine position and size of mutes by experiment” is accompanied by detailed references to the desired effect:

If the screw is too small in diameter, an undesired metallic buzz will occur when the proper key is played. The screw must be large enough and so positioned on and between the strings as to produce a resonant sound, rich in harmonics. . . . Choose nuts that are large enough to slide freely on the screw, yet small enough so that they do not slide off the screw-head end. . . . When the proper key is played, a resonant sound . . . will be produced, but in addition, a metallic rattling sound occurs, due to the free movement of the loose nut on the screw, between the screw head and piano strings. Also, the nut, which is made to move by the vibrating strings, comes finally to rest on the strings, stopping their vibration and thereby shortening the duration of the sound. . . . The strings of three keys . . . are prepared by placing in each case one end of a strip of rubber (approximately 4” x 1” x 1/8”) between two adjacent strings (e.g. 1st and 2nd), then the other end between the remaining adjacent strings (e.g. 2nd and 3rd) and, finally, pressing the rubber firmly down against and between the strings. The rubber may then be pushed into such a position along the strings that it will produce harmonics when the proper key is played. Because of the nature of the material, however, the sound produced is dull, thud-like, rather than rich. If rubber cannot be obtained, absorbent paper or cloth, folded several times, may be substituted. (Amores, performance notes)

Although this does increase the indeterminacy with regard to which preparations to use and where to place them, it actually makes the sound less indeterminate, as the performer is able to make adjustments to allow for idiosyncrasies of the particular instrument played.
**PREPARED PIANO:**

**MATERIALS PLACED BETWEEN FOLLOWING STRINGS**

<table>
<thead>
<tr>
<th>SCREW</th>
<th>2-3</th>
<th>3/16</th>
<th>3/16 carriage bolt x 1½&quot; long</th>
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</thead>
<tbody>
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<td></td>
<td>no. 12 gauge x 2&quot; flat head iron wood screw</td>
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<td></td>
<td></td>
<td>8-32 x 1&quot; eye bolt or machine screw eye</td>
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<td></td>
<td></td>
<td>no. 1¼ gauge x 2&quot; long flat head iron wood screw</td>
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<td></td>
<td></td>
<td></td>
<td>no. 12 gauge x 2&quot; long flat head iron wood screw</td>
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<td></td>
<td>13 gauge 1¾ long washer head furniture screw</td>
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<td></td>
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<td></td>
<td>no. 12 gauge x 1½ long flat head iron wood screw</td>
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<td></td>
<td>1¼ gauge x 2&quot; flat head iron wood screw</td>
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<td></td>
<td></td>
<td></td>
<td>12 gauge x 7/8&quot; flat head iron wood screw</td>
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<td></td>
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<td></td>
<td>no. 10 x 1&quot; long round head iron wood screw</td>
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<td></td>
<td></td>
<td></td>
<td>8-32 x 1&quot; eye bolt or machine screw eye same size</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>no. 10 x 1¼ flat head iron wood screw</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>¼/20 sq. iron nut</td>
</tr>
</tbody>
</table>

**DETERMINE POSITION AND SIZE OF MUTES BY EXPERIMENT**

Increasing detail in Cage's tables of preparations.

Top: *Amores*

Middle: *Sonatas and Interludes for Prepared Piano* (extract)

Bottom: Same notes, detailed list of preparations (courtesy of Nigel Butterley)
An analogy might be to compare instructing a string player (without specifying violin, double bass etc.) to raise the pitch by a semitone with instructing the same player to move the hand 3.7 centimetres towards the bridge - no matter how precise the measurement, the resulting interval would depend on scale length and position. No matter how precisely he specified the preparations in his score, Cage could not predict the exact sound. In this respect the indeterminacy of Cage's prepared piano music is comparable to that of *The Art of Fugue*, having only the type of variation which any composer might find as his pieces are played by various performers (even on ordinary unprepared instruments).

What is interesting (although it would be unremarkable from any other composer) is the extent to which Cage struggled against this lack of control. Examining Cage's preparation tables we see a progression from "Place bolts or screws between the following strings . . ." (*In the Name of the Holocaust*) to specifications of which pair of strings to use, distance from damper, and whether to use "small bolt", "long bolt" or "furniture bolt" (*Sonatas and Interludes*) to the detailed list sent to Butterley ("10 gauge 3/4" long flat head iron wood screw"). No matter how precisely he defined the preparations to be used, variations in the manufacture of various pianos made it impossible to fix the desired sound, and Cage realised that "not only are two pianists essentially different from one another, but two pianos are not the same either. . . . Instead of the possibility of repetition, we are faced in life with the unique qualities and characteristics of

* See *Silence*, 35.
each occasion” (“Foreword to The Well Prepared Piano”; Writer, 119). Richard Kostelanetz explains that preparations introduced indeterminacy into Cage’s music because “the aural results would include unexpected sounds that would not only never happen with unimpeded piano strings but probably would not happen in subsequent performances either” (“Keystone“, 44).

Cage’s gradual acceptance of the inevitable variations between different performances of his prepared piano pieces ultimately led to “the enjoyment of things as they come, as they happen, rather than as they are possessed or kept or forced to be” (“Foreword to The Well Prepared Piano”; Writer, 119). This acceptance of the inevitable had important repercussions for Cage’s later music: “Variation in gongs, tomtoms etc. and particularly variation in the effects of the use of preparations, prepared me for the renunciation of intention and the use of chance operations” (Conversing with Cage, 60-1). When William Duckworth interviewed him about the Sonatas and Interludes for Prepared Piano, Cage drew attention to this connection between preparations and indeterminacy:

C: . . . Many people have been attracted to playing it. And I think anyone will have to remark eventually on the fact that all of the performances are different, because my table of preparations is not precise, and only suited the piano that I was actually working on. So that the result is that everyone’s performance of the Sonatas and Interludes is a fresh experience. And this is a feather in the hat of indeterminacy, I think. Or it could be a black eye on indeterminacy, according to how you look at it. I think David Tudor feels that the Sonatas and Interludes only existed when I played them on the piano for which they were composed. I think he thinks that the work has disappeared in the various transformations that have taken place.
D: But I would think that you'd like the idea that they change every time that they're played. Is that not true?

C: I didn't like it when I first wrote it. I was persuaded to like it through what I call practicality and circumstances. And it was one of the things that committed me to indeterminacy and chance operations. (20)

The prepared piano was significant in Cage's chance and indeterminate compositions. His first composition to use chance operations was the *Concerto for Prepared Piano* (1950-51). Chance operations were used in the third movement of the concerto, and James Pritchett suggests that Cage's original interest in the *I Ching* "may be traced to its singular appropriateness to the message of the concerto" (71). The fact that pressing a single prepared piano key can result in a combination of sounds "led to the gamuts of tones, intervals and aggregates in the *String Quartet* and subsequent pieces" (Cage in Kostelanetz *Anthology*, 76). Chance operations were used to determine the preparations for *34'46.776" for 2 Pianists* (1953):

10"

The preparation of

the pianos

is also
determined by chance.

The various materials

20" that exist

are placed in the following categories:

P meaning plastics, bone, glass, etc.

M meaning metal,
C meaning cloth, fibre, rubber,

30” W meaning wood, paper,

X meaning other materials, special circumstances,

free choices etc.

coins are then tossed. ("45' for a Speaker", Silence, 156)

The introduction of unspecified preparations in 34'446.776" for 2 Pianists was part of Cage's move from chance operations into indeterminacy:

In 34'446.776" for 2 Pianists, instead of specifying the piano preparation, I not only specified it only roughly with regard to categories of materials like plastic, rubber, metal, and so forth, leaving the decisions free to the performer; but another element entered into the musical composition which was X, in other words, something not thought of at all. So that it gave a freedom to the individual performer (Conversing With Cage, 67)

However, in these situations the performer was free (and likely), to determine the preparations as Cage had previously, "deciding their position according to the sounds that resulted" (Conversing With Cage, 62). So although Cage had

57 Chance and indeterminacy are often confused, although Cage clearly saw them as separate. In chance operations, decisions are made which reduce or remove the composer's control of the outcome (for example, tossing coins to write Music of Changes), although the results may be precisely notated. In Cage's indeterminate notations (eg. Fontana Mix) the performer is given more freedom than usual to interpret the composition in several ways - such compositions may consist of instructions which the performer uses to devise a performance. The use of indeterminate instruments removes the performer's ability to control the sounds which will be produced.
removed his own intentions from the process, he had not effectively removed the performer’s intention. He later discovered that he could turn “intention towards nonintention” by using “instruments in which there is a discontinuity between cause and effect” (Conversing with Cage, 60). Using an instrument to produce sounds which a performer could neither predict or control made it possible for Cage to permit improvisation without the intrusion of the performer’s taste. Cage was interested in “… an improvisation that is not descriptive of the performer, but is descriptive of what happens, and which is characterized by an absence of intention” and this could be achieved by asking the performers “to play an instrument over which you have no control, or less control than usual” (Conversing With Cage, 222). Cage considered Child of Tree (1975) and Inlets (1977) to be “… a move in the direction of improvisation” (Conversing With Cage, 91). His “indeterminate instruments” for these were natural materials such as a cactus (Child of Tree) or a conch shell (Inlets):

In the case of the plant materials, you don’t know them; you’re discovering them. So the instrument is unfamiliar. If you become very familiar with a piece of cactus, it very shortly disintegrates, and you have to replace it with another that you don’t know. So the whole thing remains fascinating, and free of your memory as a matter of course.

In the case of Inlets, you have no control whatsoever over the conch shell when it’s filled with water. You tip it and you get a gurgle, sometimes; not always. So the rhythm belongs to the instruments, and not to you. (Conversing with Cage, 91)

Radios can also be considered as uncontrollable instruments. Cage composed for radios in several compositions in the Fifties: Imaginary Landscape No.4 (1951),
Water Music (1952), Speech (1955), Radio Music (1956) and Music Walk (1958) (Peters catalogue). Improvisors have also found the radio a useful source of unpredictable sounds to use as a basis for improvisation. The video Sound? shows both Cage and Roland Kirk playing radio (Fontaine). Australian improvisation ensemble Teletopa also used a radio in their performances in the 1970s, Roger Frampton describing it as “. . . probably the most unpredictable of all the instruments we use” (in Lowe, 22). Fred Frith and Keith Rowe both use a portable radio amplified by holding the radio speaker against a guitar pickup. Lloyd Garber uses a radio to accompany “Voyage of the Desert Weirdo” on the recording Energy Patterns. This idea is, however, not necessarily (or even probably) Cage-inspired, because it is quite a common practice for improvisors to practice by improvising to whatever is on the radio - Derek Bailey’s recording with D.J. Ninj (Guitar Bass ‘n’ Drums) came about as a result of Bailey practising his guitar improvisations with jungle music on the radio (Bailey/ Jaworzyn, n.p.).

In Cartridge Music, more than one performer is responsible for the sound, so that the performers are “getting in each other’s way” and although they are acting intentionally, their intentions cancel each other out: “if one person is playing a cartridge with an object inserted in it, another one is turning the volume down independently. I’ve never liked the idea of one person in control” (Conversing With Cage, 221). Cage fails to acknowledge that many improvising ensembles interact in ways which are intended to subvert the intentions of other performers - even when the intent is the sort of “dialogue” which Cage opposed in improvisation, there are times when the lines of communication are broken (either accidentally or intentionally) and each player is interfering with the intentions of the others. Sonny Sharrock’s collaboration with Chick Corea on
Miles Davis's *Tribute to Jack Johnson* is quite similar to Cage's idea in *Cartridge Music*: "... I was on the Echoplex, with Chick working it as I was playing - messing with the tape, affecting the speed" (Sharrock, 76). Sonic Youth's guitarist Lee Ranaldo also recalls a song where "I played the guitar and Thurston played my amp, doing the modifications" (Dery, "New York Guitar '86", 102). Similarly, it is possible for one performer to add preparations to an instrument (or remove or adjust preparations) which another is playing. On Kev Hopper's *Spoombung - New Music for Electric Bass* assistants move preparations while Hopper is playing, in the interest of "greater textural variety and unpredictability" (Blackford, 53).

It was left to improvisors to discover that preparations which were allowed to move freely, or which were inserted differently each time because of the impossibility of making precise adjustments in an improvised situation, could produce similar results to Cage's cacti, conch shells and radios.

**Indeterminate Preparations**

Although Cage rejected the use of preparations which moved unpredictably, several improvisors have found these randomly changing preparations to be useful. Preparations which are not under the control of the improvisor can serve as a means of keeping improvisations fresh and steering players away from cliched patterns. Improvising guitarist Henry Kaiser achieves similar effects with the use of random and complex settings on his electronic effects:

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* Although Sonic Youth are a rock band, the guitarists Lee Ranaldo and Thurston Moore are interested in improvised music, and have given some performances with improvisors.
Remember, when you improvise with another person, you never know what’s going to happen, but it’s certainly more fun than playing alone. It’s bringing in something that’s outside of the closed system that is all of us; you react to it, it reacts to you, and the world suddenly gets so much bigger. I use random or complex effects because it’s exciting to try to react to it in an intelligent way. (Kaiser/ Baley, 65-6)

Jon Rose improvises with a customised violin bow, which converts bow pressure into MIDI information. This is used to operate computer driven effects in semi-random ways, although Rose insists that because he has set the parameters of the system he retains some degree of control. Like Kaiser, Rose relates this to the experience of improvising with other players:

You’re aware, if you’re a good improvisor, that a situation with other players is pulling you in a certain way. And it’s the same with how you can set up a computer program to use live. You’re aware that the parameters have been set, and things pull.

... I programme it, I know what’s in it. And I set it in such a way that it will continue to surprise me. So it’s an organic thing. Anyway, with the bow, it’s a very amorphous instrument. You play a note, and then the way the hair tensions up again is never the same. Depending on how hard you played the last note. Also it connects up with the humidity, how hot it is ... all these things, how hard you tightened it up in the first place. For improvising it’s great, it’s never the same. (Personal Interview)
Roger Frampton comments that in his (improvised) *Suite for Prepared Piano* "(d)uring one of the movements, attentive listeners may hear the jangle of some preparations coming adrift. I enjoyed the results of this happy accident and continued playing regardless" (*Totally Prepared*). However, Frampton recalled another improvisation during the same recording session in which the same thing happened, and he terminated the piece when he heard the preparation becoming dislodged (Personal Interview). Although Frampton may react improvisationally to the sound of a preparation coming adrift, such situations are always accidental for him: "I don't think I've deliberately used anything that moves around." (Personal Interview)

Other improvisors have expected (or encouraged) preparations to "come adrift", or chosen preparations which move freely. Preparations of this type, where the sound cannot be fully predicted or controlled by the performer, may be described as *indeterminate preparations*. Particularly for solo performing, indeterminate preparations can be effective for generating ideas and disrupting cliched phrases. In this way, Ben Neill uses his mutantrumpet as a means of "...striving to set some kind of process in motion where I'm not absolutely sure what the outcome is going to be. In that sense, what I'm doing is getting away from making art that is just based on what you want, which was really one of John Cage's most significant ideas" (Holtje).

In 1967, as a student at the Royal Conservatory of Music in Toronto, Stuart Broomer was exploring the possibilities of preparations which moved freely:

> I would place things on the piano strings and then improvise at the keyboard. From the start I wanted things that would move as I'd play, things that would bounce up
and down creating their own rhythmic patterns. The first things I started to use were empty tape reels - - the smaller and lighter the better, so I’d use 5” and 3” spools as well as 7” ones, particularly the smaller ones on higher strings, where I could get the most reaction. I’d also use the empty cardboard boxes the tape reels had come in, tucking them in amongst the strings. I’d use a common type of small glass ashtray as well. Everything was unfixed, so I could change them, remove them, add more while I was still playing with one hand - - either the keyboard or scratching (with fingernails and flat guitar picks) and tapping strings (with fingers and a variety of hard and soft percussion mallets and the objects being used to prepare the strings). (Personal Correspondence)

This led to the use of pie plates, as tried (and rejected) by Cage.

Looking for objects that were even lighter and more reactive - - more unpredictable and noisier - - I hit on aluminium foil pie plates, which eventually I’d buy in every available size from small tart and custard cups to pie size, combining them with the tape reels. It could go without saying that they were also far less dangerous to pianos and their tuning. At the time I hadn’t heard, or heard of, Bacchanale, and didn’t know that Cage had ever thought of using pie plates, or rejected their use as too random. (I didn’t hear of this until much later, in the mid-1980s I think, and I was of course pretty amused by it.) (Personal Correspondence)

After the pie plates, other objects followed, including loose rubber washers and strings of plumber’s soft lead (Personal Correspondence). Broomer’s indeterminate preparations can be heard on his duet recording with Bill Smith, Conversation Pieces, particularly the track “An Outline of Miniature Potted Trees”, in which Broomer’s preparations “… introduce an element of
indeterminacy into the process of composition and improvisation, since objects move about the strings during the performance, changing overtones and reverberating at will” (Smith & Broomer). Smith recalls that Broomer's pie plates were

... close to becoming a legend in Toronto circles, often in a negative way; especially from the straight jazz community, who mostly thought our music to be rubbish, and in Stuart's case specifically, that he was damaging the piano as well. It has been shown that they were wrong on all counts. (Personal Correspondence)

British improvisor Keith Tippett uses freely moving pieces of wood in his piano. However, despite Roger Dean's assertion that “of course, this technique relates to Cage's work with the prepared piano” (New Structures, 92), Tippett insists that his piano “is not prepared in the Cagian sense,” because the objects are moved during performance, rather than being fixed in position for the duration of a piece. The unpredictability of the sounds is important to Tippett: “I don’t know myself which way they will be moving around, so it is a fun thing for me as well” (13). It is also significant that the objects Tippett places in his piano are found objects, as improvisors do not have the same concerns about replicability which are a necessary consideration for composers:

The piece of wood I use, I just found in a field. Putting a piece of wood in the piano is not new, it's been going on since the 1930's. But I haven't heard anyone else doing it quite in the way I do it. The pebble was given to me at a friend's father's funeral.

* As was mentioned in the previous chapter, I consider it useful to consider instruments as prepared if they have been modified to alter the sound. The mobile preparations of Tippett and others should be
He didn’t have in mind that I would use it this way, it was just from the garden and given to me as a gift. I discovered that it works wonderfully on the strings, and it rolls well because of its egg shape. Now I also add some plastic pan pipes, which give a cymbal-like sound when placed at the end of the strings, and this is something I’ve stolen from my child’s toy box (when they were still small). Finally, I let the bells hang down from the open piano lid, they look nice and I can shake them too if I wish. And when I’m playing at open-air festivals, they blow in the wind, so I can play along with that. (13)

Although there is a degree of indeterminacy, Tippett is also free to intervene in the process by deliberately rattling the bells or moving the piece of wood. This is the central difference between Cagean indeterminacy and the use of chance by improvisors: Cage sets up a system and allows it to run its course, free of his desires and intentions, while improvisors typically use chance to suggest ideas not determined by personal taste while retaining the option of spontaneously intervening in the process at any time. As Jon Rose explains of his chaotic MIDI programming: “I basically have a global control over it. I can turn it off” (Personal Interview). While Cage uses chance as a means of writing music which does not express ideas and emotions, improvisors typically use chance as a source of unforeseen events providing a stimulus for spontaneous invention.

The use of freely moving preparations is more appropriate for a piano than a guitar - even when the guitar is laid flat, most objects simply fall off the strings if there is not some mechanism for keeping them in place. However, some indeterminate preparations are possible. Roger Smith used pieces of plastic inside his acoustic guitar which would resonate with some notes:

distinguished from Cage’s approach of preparing a piano prior to performance, although it is unnecessary to argue that they are not prepared instruments.
It comes as totally unexpected; sometimes it sounds like the telephone ringing, and you can start playing on that, like a rock musician plays with distortion. To me it's a lot more interesting though. The distortion disappears because the rubbish moves, and it re-appears somewhere else. To me that kind of thing is ok - its the old chance bit and all that. (Smith/ Beresford)

Eugene Chadbourne's previously cited use of seashells inside an acoustic guitar would produce similar results. Chadbourne also prepared his guitar by covering the fretboard with tin foil: "That was a lot of fun, because you would destroy it as you played. The tin foil would start to come off and the sound would keep changing" (Di Perna, 11). With preparations of this sort, the change in the nature of the sound occurs as a process which is beyond the control of the performer. In a similar context, I have used a balloon inflated in the soundhole of an acoustic guitar - the sound of the strings is muted until the unpredictable moment when the air escapes from the balloon. Such an approach is reminiscent of the use of "natural time" in certain Fluxus events, in which the length of a composition may be determined by the time it takes for a candle to burn out, or for a block of ice to melt.

An element of indeterminacy also tends to enter into any use of mobile preparations. When preparations are changed quickly, it is almost impossible to position them accurately - the improvisor does not have the luxury of spending a number of hours preparing the instrument before a concert, so it is a matter of

« The possibility of intervention remains - if the muted sound continues too long, I sometimes deflate or burst the balloon."
luck whether (for example) a preparation is placed precisely on a particular nodal point. This is implicit in Peter Cusack’s comment on inserting matches between guitar strings: “It takes a lot of care to get a predictable tuning out of it on live gigs. I usually just put them in, because it’s the timbre that I’m interested in, rather than the tuning” (Dery, “Forging a New Vocabulary”, 54). However, the timbre would also be somewhat unpredictable, because the placement of the match relative to nodal points determines whether specific overtones may (or may not) be emphasised. To precisely adjust the placement of the preparation to obtain a specific tuning and/or timbre is possible, but too time consuming to achieve accurately while improvising. This type of preparation may therefore be determinate in situations where the preparation is set up prior to a performance, but indeterminate when added or altered during the performance.

Misha Mengelberg’s spontaneous addition of objects to the piano similarly produces sounds which are not predetermined. The spontaneous nature of these preparations leads Mengelberg to separate them from Cage piano preparations which are carefully set prior to a performance:

It was never prepared piano, because I have no plans [about] what I’m going to play. But it can happen that while playing I feel a necessity to alter something in the situation, so I throw jackets in the piano, or I put an ashtray in the piano. Things like that. Or a vibrator or something in there. When I’m in a very lazy mood, I like to throw vibrators in the strings and then let it bump into other objects . . . . (Personal Interview)

Visual Art and Randomness
It is worth emphasising the fact that Cage’s approach to chance and indeterminacy is not the only possible way - and it is perfectly possible for improvisors to use chance in ways that are not at all Cagean. As Marcel Duchamp has said: “Your chance is not the same as mine, just as your throw of the dice will rarely be the same as mine” (Tomkins, The World of Marcel Duchamp, 26). Chance was particularly important to the dadaists, becoming a “trademark” which they followed “like a compass” (Richter, 51). There was also a political dimension to the use of chance in Dada, as chance was used “… not as an extension of the scope of art, but as a principle of dissolution and anarchy” (Richter, 48).

Marcel Duchamp’s use of chance seems, like Cage’s chance operations, intended to create a distance between the artist and his work, creating a pseudo-scientific effect in his Standard Stoppages:

If a straight horizontal thread a meter long falls from a height of one meter onto a horizontal plane, deforms itself as it wills and creates a new figure for the unit of length - 3 examples thus obtained under similar conditions: in their relation to each other make an approximate reconstitution of the unit of length. The 3 standard stoppages are the meter diminished. (in Erickson, 110)

Tristan Tzara’s instructions for writing a Dadaist poem are similarly unemotional and ironic, although less elaborate than Cage or Duchamp’s chance operations:

Take a newspaper. Take some scissors. Pick out an article which is as long as you wish your poem to be. Cut out the article. Then cut out carefully each of the words
in the article and put them in a bag. Shake gently. Then take out each piece one after
the other. Copy them down conscientiously in the order in which they left the bag.
The poem will resemble you and you will find yourself to be an infinitely original
writer with a charming sensitivity even though you will not be understood by the
vulgar. (trans. in Peterson, 35-6)\textsuperscript{61}

The musical corollary to this would be Duchamp’s composition of notes drawn
from a bag; \textit{Musical Erratum}. A similar process is used in Jean Arp’s chance
collages:

Dissatisfied with a drawing he had been working on for some time, Arp finally tore
it up, and let the pieces flutter to the floor of his studio on the Zeltweg. Some time
later he happened to notice these same scraps of paper as they lay on the floor, and
was struck by the pattern they formed. It had all the expressive power that he had
tried in vain to achieve. How meaningful! How telling! Chance movements of his
hand and of the fluttering scraps of paper had achieved what all his efforts had
failed to achieve, namely expression. He accepted this challenge from chance as a
decision of fate and carefully pasted the scraps down in the pattern which chance
had predetermined. (Richter, 51)

However, as Alastair Grieve has pointed out, Richter’s description may not be
entirely trustworthy because, despite his involvement in Zurich Dada, he was
not present when Arp produced his chance collages (in Mann, 88). According to
Philip Mann, Arp’s \textit{Collage Arranged According to the Laws of Chance} (1916-1917)
"displays clear signs of having been consciously composed and ordered by Arp

\textsuperscript{61} There is a slightly different translation in Mann (88).
\textsuperscript{62} Two versions of \textit{Musical Erratum} are included on the Duchamp recording \textit{The Creative Act}
...” (90). It seems that although chance may have been a component in the construction of these collages, Arp nevertheless intervened in the process so that the works combined “the laws of chance” with the taste of Arp:

Crucial to Arp was the fact that these collages were impersonal, unaltered in their initial phase when the artist selected papers at random and threw them to the ground. However a second stage was involved, both in these and in his related “automatic” drawings of the same period, in which Arp consciously altered the chance configuration of his materials until they achieved a level of completion satisfactory to him. In all instances, the process entailed two separate and distinct stages, the first of random or chance occurrence, the second of conscious formal resolution. This two-part procedure influenced Ernst’s Dada collages and also figured in the later development of Surrealism. (Waldman, 133)

The Surrealist painters took the manipulation of chance images further, using ink blots or random rubbings of wood grain as a starting point to stimulate the imagination, an approach subsequently adopted by Abstract Expressionists including Robert Motherwell. “I usually begin a picture with a ‘doodle,’ or with a liquid puddle like a Rorschach image (but not pressed together), or with a line and a dot, or a piece of paper dropped at random on what will be a collage.” explains Motherwell. “Then the struggle begins, and endures throughout in a state of anxiety that is ineffable, but obliquely recorded in the inner tensions of the finished canvas” (Motherwell, Collected Writings, 140-1). Improvisors using indeterminate preparations similarly engage in a dialogue between random and unpredictable events and the artist’s ability to spontaneously manipulate them.
Above: Marcel Duchamp, *Standard Stoppages* (De Duve, 54)

Left: Jean Arp, *Collage Arranged According to the Laws of Chance* (Mann, 89)
As Lloyd Garber explains it: "... the sounds are not predictable but they are in a general sound area and work on chance from there. I go for sounds I can control and at the same time, sounds which I cannot control" (Personal Correspondence, 10 Mar 1995).

George Brecht identifies two types of chance: "one where the origin of images is unknown because it lies in deeper-than-conscious levels of the mind, and the second where images derive from mechanical processes not under the artist's control" (3). Surrealist artists generally emphasised the first, Cage the second. Improvisation with indeterminate preparations combines both, using "mechanical processes" to stimulate the "deeper-than-conscious levels of the mind". Brecht describes both as chance because they share "... a lack of conscious design" (3). It may also be noted that images produced outside the direct control of an artist have been used to awaken "deeper-than-conscious levels of the mind" in artists from Leonardo da Vinci to Max Ernst, and are the basis of the psychologist's "Rorschach tests". Improvised music often utilises of the same sort of automatism used in the visual arts - most improvisors would appreciate Jackson Pollock's statement about his art: "When I am in my painting, I'm not aware of what I'm doing. It is only after a sort of 'get acquainted' period that I see what I have been about" (in Brecht, 6). The use of indeterminate preparations may serve as a useful means of encouraging similarly subconscious approaches in improvisation.

**Destruction**

As was mentioned in the previous chapter, Richard Bunger asserts that the use of thumbtacks inserted in the hammers of an upright piano should not be
considered as a preparation because it causes permanent damage to the instrument. For Bunger, this seems to be connected with his belief that piano preparations are restricted to temporary alterations of the sound. However, because I consider the distinction between permanent and temporary preparations to be a question of different types of preparation (rather than distinguishing between prepared and not prepared), Bunger’s objections will be disregarded here.

Instrument destruction has often been used as a source of humour - Charlie Chaplin’s *Limelight* being a celebrated example:

... Charlie is the violinist, Buster the nearsighted, bespectacled pianist. The sheet music falls all over the stage; Buster and Charlie cannot get their instruments in tune; the fiddle’s strings break; the musicians yank out a tangle of piano wires; Buster steps on Charlie’s fiddle; Charlie can’t find it because it’s stuck on Charlie’s foot. (Mast, 123)

Improvising pianist Steve Beresford mentions a Marx Brothers film in which Harpo becomes so annoyed with Chico’s playing that he smashes the piano with an axe (Burwell, Nicholson and Beresford, 6).

Paul Burwell once attended a piano smashing competition:

... about 200 people, 3 pianos smashed to pieces. ... It was peculiar, teams of four throwing pianos in the air, deafeningly loud, crang. Everyone cheering, drunk, all these international youths with hammers, road hammers ... (Burwell, Nicholson and Beresford, 4)
Burwell was also commissioned to compose a piece of music in which the piano was dismantled, as a way of disposing of an unwanted instrument:

We called it *Utility Piece no.1*. I did it under a pseudonym Examiner no. 12. I'm not into compositions. We took it to pieces and people watched us as we worked up a sweat. Screaming at the big screws some of which were 9" long. Hundreds of them. At a certain point you have to resort to violence. As each piece was dismantled I would take it downstairs breaking the stone staircase, which had to be repaired later and throwing it into the yard. (Burwell, Nicholson and Beresford, 4)

Visual artists have produced some of the more interesting examples of instrument destruction. Annea Lockwood's *Piano Transplant* installations included a "buried piano" in her garden near London:


dig a sloping trench and slip an upright piano in sideways, so that it is half interred. plant fast growing trees and creepers around and under the piano. do not protect against the weather and leave the piano there forever.

*set the piano down amongst young trees.* (Lockwood, 217; italics & punctuation sic)

Sounds would be produced as the piano was gradually broken apart, and the piano could also be played - a tree growing between the strings would function as a preparation. Lockwood was particularly interested in the way that "something like a daffodil could grow in between a couple of pieces of strong wood or metal, then gradually break them apart ..." (Doerschuk & Greenwald, 42). In another of Lockwood's installations, a piano was submerged in water:
Piano Drowning 1 (1972, Amarillo)

find a shallow pond in an isolated place. the pond should have a clay bed.
anchor it (by rope to a stake) against storms.

slide piano into position vertically, just off-shore

take photographs every month as it sinks.

Piano Drowning 2 (1982, Rimini)

bolt a heavy ship's anchor chain to the back leg of a concert grand.

chain an anchor to the piano leg and leave the piano there until it vanishes.

set the piano in the surf at the low-tide line at Sunset Beach near Santa Cruz, California.

open the lid. (Lockwood, 217)

A similar concept was proposed by Fluxus artist Mieko Shiomi in 1963:

EVENT FOR THE TWILIGHT

Steep a piano in the water of a pool.

Play some piece of F. Liszt on the piano. (Friedman, 46)

Paul Burwell also "... wrote a piece for small band, in which kit drummer and upright piano are lowered slowly into a swimming pool, playing underwater (Burwell, Nicholson and Beresford, 7).
For another performance/installation, Lockwood burned a piano. Her original intention to burn something as part of an installation led to the decision to focus attention on the sounds produced by fire.

It seemed to me that if I was going to burn something, it might as well be something that was designed to make good sounds one way or another... So I decided to burn some old pianos. It was a purely pragmatic decision, but it turned into a very strange, intense, and marvellous spectacle. People gathered around, and gradually got more silent and involved. It was quite beautiful.  
(Doerschuk & Greenwald, 42)

The basic instructions are simple:

Piano Burning (1968, London)
set piano upright in an open space with the lid closed, spill a little lighter fluid inside, near the pedals, and light.

*staple inflated balloons all over it, play whatever pleases you for as long as you can.*

(Lockwood, 217; italics & punctuation sic)

However, Lockwood has provided a more detailed explanation:

Best to use an upright piano - overtune the strings as high as possible so as to get maximum sound when they snap with the heat - cover two cheap dynamic microphones with insulation and fasten them inside the piano - place one near the hammers in the middle registers and one by the pedals and near the bass strings - feed the microphones to an amplifier - disperse the speakers throughout the area - be sure to wrap insulation around the microphone lead wires that are inside the piano and extend it to three feet outside of the piano - also firecrackers and rockets, especially if the burning is done at night - another option is to have
Burning an instrument may be considered as visual art, theatrical spectacle and musical performance. If setting fire to an instrument is considered as music, then it is ambiguous whether it constitutes a preparation or an unusual playing technique - it would probably be considered a preparation if the instrument was only partially consumed by fire, and then played; a playing technique if the fire was the only means used to produce sound from the instrument. Annea Lockwood’s burning piano was presented as a visual event, and Ken Unsworth (in *Elegy*) presented the charred remains of a piano combined with other objects and mounted on the wall of a gallery (Fenner, 362-3). LaMonte Young’s instrument immolation was more musical, burning his violin as part of a New York performance of the Concert Suite from Richard Maxfield’s *Dromenon*. Young recalls that he was given “free rein” for the performance, a condition which he “often asked for [his] performances of the works of other composers and artists during that period”, although the rest of the orchestra had fixed instructions to follow:

I had my violin and my music stand, and I had carefully stuffed the violin with matches and lighter fluid ahead of time. I didn’t tell anybody except Richard, who I thought should know, because I felt certain that they would not allow me to do it. Fortunately, they did not stop the performance; the instruments were playing, while the violin went blazing away. (Young in Kostelanetz, *Mixed Means*, 203)
Although he was performing in Maxfield’s composition, Young considered this to be a performance of “an aspect of my *Composition 1960 #2*, which calls for a performer to build a fire where the audience can see it” (Kostelanetz, *Mixed Means*, 203). Young wanted his fire piece to function both visually and aurally: “... a person should listen to what he ordinarily just looks at, or look at things he would ordinarily just hear” suggests Young. “In the fire piece, I definitely considered the sounds, although a fire is, to me, one of the outstanding visual images” (in Kostelanetz, *Mixed Means*, 192). By burning a violin, the violin ceases to function as a musical instrument in the conventional sense, while the focus of attention is “... displaced from the fire alone to the violin as combustible fuel for the fire” (Kostelanetz, *Mixed Means*, 203).

One of Jimi Hendrix’s roadies gave Frank Zappa the guitar which Hendrix had burned at a rock festival in Miami. The instrument “... was all tore up (sic). The neck was cracked off, the body was all fired, and the pickups were blistered and bubbled (Zappa in Zappa/ Rosen, 25). After displaying it on his wall for a few years, Zappa handed it to his guitar technician and said “Put this sucker back together,” subsequently playing it on *Zoot Allures* (Zappa in Zappa/ Rosen, 25).

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63 Zappa considered it necessary to point out that this was not the guitar Hendrix burned at Monterey - because the *Monterey Pop* video made this Hendrix’s most famous burned guitar, the charred remains of the Monterey guitar would probably be more valuable.
Several Fluxus artists used instrument destruction as part of their performances. In Nam June Paik’s *One for Violin Solo*, a violin is very slowly raised above the head of the performer, then suddenly smashed down on a table. George Maciunas performed *Piano Piece No. 13 for Nam June Paik* (1964) by nailing down all the keys of a piano (Kahn, “The Latest: Fluxus and Music”, 114). In *Block Piece for Guitar* (1962), Robin Page kicked a guitar from the stage, out the door, around the block, and back onstage (Stiles, 77; Kahn “The Latest: Fluxus and Music”, 114).

Some Fluxus pieces involved a series of destructive actions, at least some of which may be considered as preparations:

Robert Bozzi: *Choice 15* [1966]

A performers (sic) executes the following actions in succession:

1 nails down the great cover of a piano;

2 plays an extremely extended low note

3 strikes the keys with his fists alternating 4 low note strikes with 4 high note strikes

4 nails down the keyboard cover

5 lifts the end of the piano with the low notes and lets it drop

6 kicks at the end of the piano with the high notes

7 opens both of the piano covers with the claws of a hammer (Friedman, 12)

George Maciunas: *Solo for Violin (For Sylvano Bussotti)* [1962]

play any sentimental tune

scrape strings with a nail

loosen strings and pluck

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“In my interview with him, Misha Mengelberg attributed the piece to Nam June Paik.”
break string by overtensioning peg
insert bow between strings and soundboard & oscillate bow
hold bow to shoulders & bow with violin
strike with bow over sound board
scrape inside of sound box with bow
blow through sound holes
put pebbles inside sound box and shake violin
scrape floor with violin
push-pull violin over table and floor
scratch violin with sharp tool
saw violin or part of it
drill violin
drive a nail into violin
hammer violin with hammer
bite violin
step over violin and crush it
rip violin apart
drop violin over floor
throw violin or parts of it to the audience (Friedman, 39)

Jean Tinguely incorporated the sound of a piano being destroyed in one of the most famous pieces of destructive art, the self-annihilating construction *Homage to New York*, which "incorporated a piano with other mechanical elements, which consumed themselves in an act of celebration and self-destruction" (Holubizky, 249).

Possibly the most extreme example of a destructive/theatrical preparation was that used by Ralph Ortiz in *The Sky is Falling*, performed at Temple University in 1970. For this performance, a piano was filled with "one hundred live mice in a wire screen and two gallons of blood in plastic bags" -
the piano was then "ceremonially smashed, spraying the audience with blood and mangled or half-dead rodents" (Innes, 223-4). This was not an isolated event for Ortiz, who gave many similar performances in the late 1960s. In _The Life and Death of Henny Penny_ (1967), Ortiz crawled on stage holding a live chicken, repeatedly snarling "Daddy". Then he "strung the chicken up by its feet, and swung it out over the audience. He stood ready with shears, and as it swung back, he snipped its head off. He then beat a flamenco guitar with the chicken carcass till he'd smashed it. In one other event that year, he destroyed both a chicken and a piano" (C. Carr, 181). Due to his rural background, killing chickens seemed less traumatic to Ortiz than to his audience (some of whom attempted to rescue chickens he intended to kill in performances). "I grew up summers on farms and I used to help with catching the chickens and slaughtering," he recalled. "As an adolescent I worked in a chicken slaughterhouse. For me, this is no awesome thing" (in Carr, 181). He described his instrument destructions as a "giving back to nature - releasing the spirits that were bound up in this logical rational construct called 'piano' " (in Carr, 181). The use of destruction in Ortiz's performances was to some extent a reaction to the destruction he saw around him in society:

To destroy is the only act civilisation abhors. It is the only process of which civilisation is in awe. Think of all the ritual, religion and sport, that spring from and have at their core the act of destruction. Here in the United States we have a

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65 It may be observed that a piano filled with mice and bags of blood must be considered as a prepared piano, but smashing a guitar with a chicken is an extended technique - unless fragments of chicken flesh became wedged between the strings, such fragments becoming guitar preparations if they altered the sound of the instrument being destroyed.
destruction, stock car, derby. Cars crash into each other until all but one are demolished, the surviving car wins. It's an unbelievable sight. Buddhist immolations in Vietnam are the most religious destructions to have occurred in recent history. I feel that underlying Destructivist Art there is the aesthetic of both the destruction derby and the immolation. (Ortiz, letter to Art and Artists, June 1966; in Ortiz, 62)

The general theme running through Ortiz's work of this time seems to be the use of destruction and nihilism to free objects and the artist from socially constructed meanings: "... that which is made will be unmade, that which is assembled will be disassembled, that which is constructed will be destructed" (Ortiz, 63). To destroy a chair is to deprive it of its original function:

Each axe swing unmakes this made thing called upholstered chair; each destruction unmakes my made relationships to it. It is no longer for sitting; it is no longer hard or soft, beautifully designed or ugly, mid-Victorian or French Provincial.

Each axe swing takes me away from the chairness of the chair to the transcending complexity internal in all things. (Ortiz, 60)

Instrument Destruction as a Metaphor

Preparation has also been seen metaphorically as a type of destruction. It is presented as "... not editorial comment, but historical fact" that "[o]ne day in 1938, John Cage began to destroy music", an act which supposedly began with the composition of "countless tinkly pieces" which were "slightly comic and generally monotonous" (Lebrecht, 61-2). The same writer describes the prepared piano as "[t]he rape of a fine instrument" (265).
Annea Lockwood: *Drowning Piano* and *Piano Garden*  
(Doerschuk & Greenwald, 42)
Burned instruments:
Annea Lockwood (Doerschuk & Greenwald, 45)
Ken Unsworth, Elegy (Fenner, 362)
Jimi Hendrix (Murray, 59)
Frank Zappa (Guitar Player, Jan 1977)
Nam June Paik: *One for Violin Solo* (Kahn, 118)
George Maciunas: *Piano Piece No. 13 for Nam June Paik* (Kahn, 121)
There is NO p. 296 in original document
David Wainwright asserts that it was because Cage "... was frustrated in searching for 'chewns'" that he "added various foreign bodies - screws, indiarubbers, nails - and instructed the performer to pluck the strings and beat the case of the instrument, with or without the use of the sustaining pedal" (80). Michael Nyman describes Cage's prepared piano as "a unique cannibalisation of piano and percussion orchestra" (39), an image which is reminiscent of Greg Goodman's previously cited reference to objects sacrificed "into the mouth of the piano" (Construction of Ruins record notes). Fred Frith has described the history of his playing as "... a gradual demolition of the guitar over a period of about 15 years" (in Dery, "New York Underground", 36). John Tilbury insists that "... it is essential to negate the piano" (152). Even Cage has referred to the prepared piano as "an exploded keyboard" (For the Birds, 38). Frances Dyson connects preparation with the death of the piano:

... the parting and muting of the strings ... symbolized the parting of the instrument with its history. The piano's "preparation" suggested also a readying for death, death of the crowning technology of tonality, annihilation of its fixed and claustrophobic temperament, and marginalization of its once precise, notatable, and interpretable borders. (377)

Preparations are often used to make instruments noisier. Noise has also been considered destructive, particularly by Attali: "... noise is violence: it disturbs. To make noise is to interrupt a transmission, to disconnect, to kill. It is a simulacrum of murder" (26). Before acquiring its meaning in information theory as "a signal that
interferes with the reception of a message by a receiver”, noise had, according to Attali, “... always been experienced as destruction, disorder, dirt, pollution, an aggression against the code-structuring messages. In all cultures it is associated with the idea of the weapon, blasphemy, plague” (27).

It may also be noted that in making musical instruments into a transient phenomenon (something which seems particularly shocking when applied to an instrument like the violin, which is noted for its longevity, with musicians particularly prizing instruments a few centuries old), there is a link with the transience of improvisation. According to Cornelius Cardew, the “Acceptance of Death” is one of the “Virtues that a musician can develop” in improvised music. Improvisation is “the highest mode of musical activity,” writes Cardew, “for it is based on the acceptance of music’s fatal weakness and essential and most beautiful characteristic - its transience” (“Towards an Ethic of Improvisation”, xx). A fixed notion of how an instrument should be used is likely to be a serious restriction for an improvisor, and can only be overcome by destroying any preconceived ideas about what an instrument is. While literal destruction may not be necessary, there is value in Ortiz’s previously cited desire to release “the spirits that were bound up in this logical rational construct called ‘piano’” (in Carr, 181).

To many observers, the act of preparing a piano seems to be an activity which carries the risk of damaging an instrument (a real possibility in some cases). The sound of a prepared piano may even suggest to the uninitiated that some damage has already been done. Roger Frampton comments that “an ordinary straight
ahead musician" who unknowingly played a prepared instrument "... would immediately take the instrument to the repair shop. You know, there's something wrong with this. If someone came in, say a classical person sat down at a prepared piano. They'd immediately think there's something wrong" (Personal Interview).

When Frampton performed John Cage's *Cartridge Music* in the Verbruggen Hall of the Sydney Conservatorium of Music with AZ Music in the 1970s, the only element of the performance predetermined by Frampton and Geoffrey Collins was that the duration should be twenty minutes. However, the performance was interrupted:

> Unfortunately the performance did not last more than twelve or fifteen minutes when a member of the conservatorium staff, Francis Cameron, walked onstage and proceeded to remove the "radical preparations" and contact microphones placed inside the Steinway and lock the instrument in full view of the audience. Mr Cameron claimed the piano was being "vandalised". ("Teletopa, AZ Music ..." 22)

A similar interpretation (if less forcefully responded to) occurred when Cage toured with the Cunningham Dance Company:

> In the spring of 1948 Cage and I were touring, giving joint programs of music and dance. One of these was presented on a small stage in the Richmond Women's Club, the "oldest in the country," we were told. The oldest member had been informed ahead of the program about the prepared piano, so that when the sounds were heard she would not be too disturbed. At one point in the program there was a piece that Cage had arranged for piano and flute. She confided loudly to her companion, "Well, I

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*For more on this performance, see Gallagher, "AZ Music." (9-13), Barnard, "AZ it was." (18).*
understand how that other music came out of the piano, but if this one did, then our piano’s broken.” (Cunningham, 109)

Just as prepared instruments can suggest the sound of broken instruments to an unsuspecting audience, broken instruments can be used to produce sounds which resemble prepared instruments. Ross Bolleter’s “Ruined” and “Devastated” pianos may be thought of as pianos which have been permanently prepared by environmental conditions.

A piano is said to be ‘Ruined’ (rather than ‘Neglected’ or ‘Devastated’) when it has been abandoned to all weathers with the result that few or none of its notes sound like those of an even tempered upright piano. However a Ruined piano has its frame and bodywork more or less intact (even though the soundboard is cracked wide open) so that it can be played in the ordinary way. By contrast, a Devastated piano is usually played in a crouched or lying position. (Bolleter, The Country of Here Below CD notes)

There is an obvious connection between these instruments and Bolleter’s earlier work with prepared pianos. Jim Denley describes them as “…like prepared pianos but with a whole other grunge element” (“Australian New Music…”, 16).

Permanent alterations to an instrument can also seem destructive. When Gene Krupa tuned his drums, he “…punched holes in them with an icepick, … until they were just pitched right” (in Feather, Book of Jazz, 128). Link Wray applied a similar approach to his amplifier speakers:
When we went to the studio to record “Rumble,” I didn’t get that live sound like I did at Fredericksburg. I told Ray, “It ain’t makin’ it. It’s too clean! In Fredericksburg the fuckin’ Sears and Roebuck amplifiers were jumping up and down, burnin’ up with sound.” At the hop, Ray had stuck the microphone in front of the amplifier and it was just pouncing all over the place. The kids were going wild. Nobody stuck a microphone in front of the amplifiers in those days.

I didn’t get that sound in the studio. Ray said, “What are we going to do about it?” I said, “I’m going to fuck with the amplifier like it was fuckin’ up at the live gig.” I had a Premier amplifier with a big speaker on the bottom and two tweeters on each amp. It was a crossover head. I got me a pen and started punching holes in the tweeters. Ray said, “You’re just screwing up your amplifier.” I said, “Who cares as long as we get a fuckin’ sound, man!” (Wray / Gill, 22, 26)

The fear of inadvertently damaging an instrument can be a serious consideration for a performer using preparations. In The Well Prepared Piano, Richard Bunger explains that his book was intended to fill a need for “... a written manual that tells performers and composers how to plan and choose preparations that will not damage the piano” (8). Piano preparation, according to Bunger, “should be a non-violent activity” (18). In the section on “How Not to Damage Your Piano”, he concedes that preparations could damage the piano:

... But so can tuning, action regulating or just moving the piano from one room to another. Some people even feel that playing a piano damages it, so they carefully lock their instrument and play it as little as possible.
The point is that there are countless ways to damage a piano if one is careless or ignorant. But preparing a piano, just as tuning, regulating or moving it, will *not* ruin the instrument when done properly. (11)

At the Cleveland Institute of Music in the early 1980s, a piano was prepared, but the stage crew were not prepared. Moving the piano off stage after a rehearsal, they closed the lid of the piano, breaking the pencils which had been inserted between the strings, and driving bolts and pieces of metal through the soundboard of the piano. Following this incident, a piano was reserved for experimenting with preparations, and it was kept in better condition and tuning than the instruments which were not to be prepared (Houston Dunleavy, Personal Conversation, 7 July, 1998).

Of course, some performers are prepared to take the chance of damaging instruments in the interest of more radical preparations, or intentionally destroy them. This is usually done for theatrical purposes, but it is clear that destroying a piano produces sounds which can be heard in no other way - as Link Wray says (above): “Who cares as long as we get a fuckin’ sound, man!”. While there may be “countless ways to damage a piano if one is careless or ignorant”, there are even more (and more interesting) ways to damage an instrument if one is destructive in a careful, well informed and creative way. Instrument destruction has been used by several visual artists - presumably part of the reason is that, like mechanisation, destruction of musical instruments is a way of utilising instruments which is
visually interesting and produces sound without requiring specialised musical techniques.

The destruction of an instrument may be seen as a necessary first step in constructing a fresh view of an instrument, just as the first step in making a collage is to cut or tear (or otherwise destroy) the original source material. One of Hans Reichel’s earliest experiments with guitar (re)construction was around 1970 when someone left “a quite lousy plywood guitar” at his house. Reichel “… took it apart and put it back together again” (Reichel/ Blackford, 15). Preparing an instrument may be (metaphorically or literally) considered as an act of tearing an instrument apart and rebuilding it.
A Diversity of Precedents and Purposes

In my own performances of improvisations on prepared guitar, I have found that two questions are commonly asked: those who enjoyed the performance ask "Where did you get the idea?" and those who were baffled ask "What's the point?" This thesis is an attempt to answer both questions by examining some of the precedents and purposes of improvisation using prepared instruments. Listeners with experience in avant garde composition, however, often assume that they know the answers to both questions: 1. The concept of prepared instruments was "invented" by John Cage (and, therefore, to use prepared instruments six decades after Bacchanale is [a] dated, and [b] verging on plagiarism). 2. The purpose of preparation is to extend the available range of timbres (and therefore any theatricality in the use of preparations, particularly when it is done in a humorous - or foolish - manner is a distraction from the manipulation of sound).

This presumes a narrow, linear view of music history, in which prepared instruments have developed from Henry Cowell’s string piano to John Cage’s prepared piano, to other composers including Christian Wolff and George Crumb, with prepared instruments finally being adopted (or adapted) by improvising musicians in the 1960s. Improvised music may similarly be explained as a development from the alternatives given in certain works of
Henry Cowell and Charles Ives, Cage's indeterminate notations, Haubenstock-Ramati's graphic notation and the word scores of Karlheinz Stockhausen and Pauline Oliveros. An alternative viewpoint is found in books on jazz history which attempt to trace the progress (or degeneration, depending on the writer's viewpoint) from New Orleans and ragtime to swing, bebop, cool and modal, culminating in free jazz and improvised music. The principle is the same, the only issue being whether improvised music has developed from John Cage or John Coltrane. Many discussions of improvised music take one of these two approaches, depending more on the background of the writer than any identifiable emphasis in the music. Examples may be selected from improvisors with plausible links to either tradition - classical music critics may seize on Cornelius Cardew's links with AMM, while jazz historians prefer to discuss Coltrane's late recordings as the bridge between modal and free. Either approach is a gross oversimplification.

Improvised music is not only related to jazz and classical avant garde music. Audiences may also respond to the humorous aspects of the music (relating it to vaudevillians and circus clowns), or visual aspects of the instruments which suggest sound sculpture, or any number of other possible connections may be made (some of which may have no connection with the intent of the performer). This tendency for each individual to relate prepared instruments and improvised music to a different tradition (or combination of traditions) is reminiscent of the

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For example, the erroneous notion that AMM was "directed by Cornelius Cardew" (Schwartz and Godfrey, 149).
story of a group of blind men describing an elephant, having only felt a part of it - one feels the leg and thinks it is a tree, another feels the trunk and thinks it is a snake. Without a concept of the whole organism, it is impossible to ascertain the meaning of isolated fragments - and easy to mistake the part for the whole.

Any attempt to reduce the practice of improvisation with prepared instruments (or improvised music generally) to a single tradition misses the essential diversity of this approach to music. Prepared instruments have precedents in several diverse traditions, and an improvisor may spontaneously draw on several of these traditions, or may invent purely on the basis of using any available sound-making materials. An improvisor can admit many diverse elements into a spontaneous piece of music, which could include any of the topics discussed in this thesis. It is not difficult to imagine someone reading John Cage’s *Silence* in the morning, watching a Marx Brothers video in the afternoon, then dropping in on a Picasso exhibition at the local art gallery on the way to perform in a venue where the piano has been damaged in a bar fight. If this person is an improvisor, all of these events (and more) could potentially be incorporated into the evening’s performance. It is not at all improbable or whimsical to believe that music can be influenced by such a diverse range of events - it is more difficult to believe that it could be protected from such diversity. It seems significant that books by such leading improvisors as Derek Bailey and Anthony Braxton cover a much wider range than most books on the topic written by music critics.
Although my primary interest is in improvisation using prepared instruments, I have frequently referred to non-improvisors (including vaudevillians, composers and visual artists) and to uses of instruments which are not prepared (including extended techniques, hybrid instruments, rattles attached to African instruments and sound effects and percussion stops in pianos, harpsichords and theatre organs). In some cases, this is intended to question the definition of “prepared instruments” by including instruments and techniques which may or may not be considered as prepared instruments. More significantly, I see these as some of the areas which improvisors have been exposed to, and which need to be considered as part of the background to an understanding of the approach to instruments in improvised music and particularly the purposes for using prepared instruments. Improvisors may spontaneously draw on ideas from comedy, politics, world music, visual art and other sources for performances.

Several improvisors have explicitly acknowledged their debt to comedians. John Zorn cites Warner Brothers cartoon composer Carl Stalling as an influence, comparing his use of contrasted “blocks” of sound with similar techniques used by Stravinsky and Stockhausen. Zorn describes Stalling’s innovative musical form as the result of “following the visual logic of screen action rather than the traditional rules of musical form,” thus creating “a radical compositional arc unprecedented in the history of music” (in Davis, _Bebop and Nothingness_, 188). However, when Fritz Freleng needed a jazz score for _The Three Little Bops_, he enlisted West Coast trumpeter Shorty Rogers to write the music because, according to Freleng, “Carl Stalling didn’t know that kind of music at all” (Maltin, 273).
Han Bennink was asked by John Corbett whether the humour in his music was related to vaudeville. Bennink responded “of course it’s vaudeville”, noting the humour in the jazz film *Jammin’ The Blues*, and remarking that traditionally “a drummer always had chances to play with a cuckoo whistle - that belonged to the drum material, so it already was in that sound-effect world” (14). In a 1988 *Guitar Player* interview with Derek Bailey, fellow guitar improvisor Elliott Sharp mentioned vaudeville ukulele player Roy Smeck using “extended technique” in the 1920s:

... pure noise, tapping, hitting a chord of harmonics and then spinning the ukulele around to get live Leslie-type [rotating speaker] effects, doing amazingly complex right-hand frailing banjo techniques while doing melody, rhythm and “drums” on the ukulele. It was just astounding, always very vocal, very onomatopoetic (sic), and it was all in a vaudeville context, so he could be completely “out” and yet always be entertaining.” (Bailey/Dery, 76)

Sharp was not alone in finding connections between improvised music and comedy. Eugene Chadbourne includes W.C. Fields, the Marx Brothers, Charlie Chaplin, Laurel and Hardy, Jack Benny and Spike Jones among his diverse list of influences: “I learned a lot about timing from that stuff” explains Chadbourne. He also appreciates the humor of jazz musicians Fats Waller and Roland Kirk: “Roland Kirk used masking tape and duct tape to hold everything together. He wanted to play flute and harmonica at the same time, so he just taped ’em together and off he went” (Chadbourne/ Dery, 68).
Many early jazz players made their start in vaudeville, and several contributed to soundtracks for Walter Lantz's 1940s cartoon series *Swing Symphonies*: Darrell Calker was the musical director of these cartoons, and he was on friendly terms with jazz musicians including Nat King Cole, Meade Lux Lewis and Jack Teagarden. Part of his job was to "keep an eye out for when they were a little down and short of money, and then they'd invite them to come and do an evening's work" (Maltin, 171-2).

Matt Wand's tongue-in-cheek description of improvisation suggests that a slapstick approach is evident in some areas of improvised music:

"I didn't know we were improvising." Then you should have known!

Ear splitting shrieks, drum kits falling over, pistols going off in your face, entire cans of shaving foam being emptied into the bell of your tenor, all of these indicate that the rest of the musicians could be improvising. If you have any doubts about your suitability for this kind of event, then for safetys (sic) sake, leave the stage.

*(Company Week '92)*

However, such antics are not accepted by all improvisors. "I am fucking tired of jokes in music," complained Peter Brötzmann. The problem was not that Brötzmann was losing his sense of humour, but that a limited repertoire of jokes were being repeated at each performance: "For an audience, it's always a new thing. But if you work with a guy for years and years, you know it all" (42). Misha Mengelberg similarly complains that "all humour that really tries to be funny is somehow, for me, not interesting" (Personal Interview). In his duet performances with Han Bennink, Mengelberg was disturbed by those times
when Bennink's jokes seemed to derive from thinking about what would amuse 
the audience, rather than spontaneous responses to the situation at the time of 
improvising: “There are people laughing very loudly at that moment, but the 
whole situation is for me without any fun” (Personal Interview). René Lussier 
display a humorous attitude towards music, rather than performing scripted 
jokes and comedy sketches: “We don't prepare jokes,” insists Lussier. “We place 
ourselves in a humorous mood or in a performance mood. Humor is used to 
have fun and to reach the public” (32). The use of humour to gain an audience 
can be a double edged sword - while humour can draw larger crowds, it can also 
lead to difficulties in having the more serious musical aspects of a performance 
accepted by an audience which has been attracted by jokes. As Lloyd Garber 
complains:

... there were times when I used “theatre” and I'm sure I would not have had an 
“audience” otherwise. And this fact upset me (or it did at the time). It pissed me off 
that I could get a large enough audience to watch jokes and theatre skits and guys 
taking off their clothes. But could not get an audience of that size if I had only played 
serious guitar improvs. (Personal Correspondence, 24 May 1996)

Certain improvisations by some African-American improvisors require a 
consideration of the political implications of the Black Power movement and the 
approaches to timbre in African music. "Every action that we are involved in is 
political," insisted black activist Rap Brown, "whether it is religious, artistic, 
cultural, athletic, governmental, educational, economic or personal. ... The only 
division occurs around the question of whose political interest one will serve"
The use of African instruments and modifications which enabled European instruments to evoke the percussive sound of these instruments has clear political implications for some improvisors. Several writers have commented on the significance of African American politics in certain areas of free jazz:

The music itself describes the political position of Blacks in America just as their position dictates their day-to-day life, the instruments they play and the places where their music can be heard. In the case of African-American music, the fact that the creators are the colonised in a colonialist society has a vital bearing on the way the music has evolved, how it is regarded by the world at large and the way in which the artists are treated. To ignore the realities and continue to listen to the music is, to my mind, not only insulting but ignorant. (Wilmer, As Serious as Your Life, 14)

Accurate chronicling of music history demands not only a close look at how Black society dealt with its own music, the most powerful musical forms of our time, but also a look at how music fitted within the larger context of life, a context with a political side. (Vincent, 187)

Several improvisors have studied at art school, some have exhibited work in galleries. Improvising drummer Han Bennink mentions several improvisors who have worked as visual artists or studied at art school, including Tony Oxley, Daniel Humair, Sven-Ake Johansson, Jamie Muir, Rob van der Broek, Phil Minton, Wim Janssen, John Heward and himself. "There was a particular time in England that many of the improvisors came more from the art schools than music schools" explains Bennink. "Maybe art schools were more open than the
music schools or conservatories” (Bennink/Corbett, 15). Bennink studied at art school in Amsterdam for four years, and was “already very interested in dada” (Bennink in Corbett, 261). Although too young to be active in Fluxus activities, he describes his work as having “reflections from Fluxus”, and is personally acquainted with Fluxus artists Tomas Schmit, Wolf Vostell and Nam June Paik. Bennink has exhibited his visual art in “a very good gallery in Amsterdam”, and although he is “not selling a lot”, he nevertheless gets “appreciation all over now. Very famous people come in and say they like it” (Bennink in Corbett, 261). Drummer John Stephens and saxophonist Peter Brötzmann also studied visual art, although they subsequently became disillusioned with it (Carr, *Music Outside*, 44; Brötzmann/Corbett, 43, 46). It is also noteworthy that Brötzmann recalls meeting pianist Misha Mengelberg “… not because he was playing in some jazz club in Amsterdam with Monk tunes, but … through Fluxus activities” (Brötzmann/Corbett, 46). Brötzmann remained friends with Nam June Paik, having been “working for him, just fumbling around with his machines and things” (Brötzmann/Corbett, 46). Mengelberg recalls that in the early 1960’s, when Fluxus artists were “pouring into Holland”, he felt an empathy with their ideas, which seemed to confirm the validity of his own concepts: “… it was important for me to discover that I was not a complete lunatic in doing those things. And completely on my own there. I got an idea of … people involved in those acts and a mentality that I was quite familiar with” (Personal Interview).
wo documents showing Peter Brötzmann's Fluxus collaborations.

Jouve, Smith, Owen F., 27.

Stooss & Kellein (ed), Nam June Paik: Time - Video Space, 38.
Around this time, Mengelberg collaborated with Fluxus artist Wim Schippers writing theatrical texts:

One of the texts we wrote was a text for one actor in which he was giving a lecture on everything and nothing. And we did that for a whole evening. And the audience was very annoyed - they didn't like it at all, because they were - "What is it about?" "Well, it's what it is!" we'd say. Then people said to me, "Well, you are just a piano player." I said, "Well, this text for me is a kind of textual jazz!" That's, I think - not the play itself, not the thing, but this comment, I think, reflected a kind of Fluxus spirit. (Personal Interview)

Percussion stops in early pianos may be known to improvisors with an interest in classical and pre-classical traditions - Barry Guy and Stevie Wishart are two improvisors who have also performed Renaissance and Baroque music.

In considering the influence of various precedents, it is worth examining closely the assumption that improvisation with prepared instruments is necessarily indebted to Cage's prepared piano compositions. Several critics have explained improvised music in post-Cagean terms - in some cases this interpretation becomes an accusation of plagiarism. In a review of a performance by The Machine For Making Sense, a critic complained: "John Cage explored it in the 1940s. His experiments were then revolutionary and entirely unique... It has all been done
before" (Hille, 4). Don Ellis has been described as attempting to "become the John Cage of Jazz" (Berendt, 218). Derek Bailey and Evan Parker's collaborations have been described as "another successor to... post-Cage classical music" (Litweiler, *Freedom Principle*, 260). Fred Frith has been described as "an improvising Cagean" (Frith/ Dery, 78) who has "applied to the electric guitar John Cage's dictum that any noise can be the basis of music" (Evans, Tom and Mary Anne, 433). Jazz guitarist Joe Morris asserts: "A lot of what people do on the guitar is either Hendrix or John Cage. The Cage influence is shown by the table top guitar, etc." (19). However, while some improvisors are interested in Cage's work, others are ambivalent or even antagonistic towards Cage. As with many aspects of improvised music, improvisors show a diversity of views which may not always be apparent to the casual listener.

Some are strongly influenced by Cage. Le Quan Ninh, for example, "has a particular affection for the music of John Cage and has recorded much of it" (*Workshop Freie Musik 1994*).

Others deny Cage's influence: "My influences did not come from Cage at all," explains Bill Smith, "he was not really an improviser in my idea of that, but rather depended on the potential randomness of chance. . . . My influences came from

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*Of course, Cage was subjected to similar criticisms in the 1940s: Cecil Smith wrote in the *Chicago Daily Tribune*, March 2, 1942 "... we went thru all this once before in this (sic) 1920s, when George Antheil and Edgar (sic) Varese were at work, and I suppose we can go thru it again." (in Revill, 76)
Han Bennink, Paul Lovens, Roger Turner, Paul Lytton . . .” (Personal Correspondence).

Most improvisors, however, seem to be ambivalent about Cage. John Zorn, for example, has spoken strongly against Cage: “Cage would sit there for five hours, intoning syllables in different languages or scratching cactus leaves.” complains Zorn. “Fuck that shit, man. I don’t need that. It’s a bore” (Zorn/ Woodard, 35). Having worked as both an improvisor and a composer, Zorn is critical of Cage expecting improvisation from classical performers unaccustomed to improvising:

The Brooklyn Philharmonic called me up and wanted me to write something for next year. I'm going to write a chamber piece. No improvisation, entirely notated. Every note - because that world is not about improvisation. I'm not interested, like Cage, in giving a symphony orchestra a bunch of little pictures from Thoreau and seeing what they come up with. (Strickland, 140)

It may be because Zorn's music is so closely related to Cage that Zorn feels the need to emphasise the points of difference between them. It may well be that the easiest way to make this distinction clear is by attacking those aspects of Cage which he finds objectionable, and calling attention to less obvious influences. Nevertheless, it is not surprising that Zorn's music has been understood in post-Cage terms - from Zorn's free improvisations using duck calls blown in water to his "game piece" compositions which describe how to create the music instead of notating sounds, the connections to Cage's music seem clear enough:
Christian Marclay’s imaginative turntablism has roots in Cage’s *Imaginary Landscape* pieces, beginning in 1939 with one for piano, percussion, and two record players and moving on to others for twelve radios, etc. - a debt acknowledged in a recent Nonesuch compendium of new electronic music. The deliberately random quality of Cageian anticompositions, as well as Cage’s denial of the distinction between music and “noise,” anticipates the form and content of Zorn’s recordings and performances, albeit they are pervaded by later jazz and rock - and wit rarely in evidence in his precursors. (Strickland, 125-6)

Composer/improvisor Anthony Braxton has been influenced by Cage. Braxton’s recording *For Alto*), includes *DS-420-A*, with section 2 (of 4 parts) dedicated “To Composer John Cage.” During the UK tour documented in *Forces in Motion* by Graham Lock, Braxton’s compositions were performed simultaneously by several musicians playing independently of each other, a procedure which Roger Dean compares to Cage’s approach in *Atlas Eclipticalis* and *Concert for Piano and Orchestra* (157). At such times, Braxton dispenses with the interactions usually followed in jazz - “instead the emphasis is on simultaneity (unrelated materials co-existing in a common time and space) which is both post-Ayler and, in a larger sense, a part of the legacy of John Cage” (Lange, 124).

Composition No. 9, for four amplified shovels (1969) is Braxton’s “… first attempt

*See Lock, *Mixtery* (264-5) for more detail, including the possibility that the work in question is incorrectly identified on the recording.
to make use of the gains opened in the post-Cageian continuum of creative music” (Composition Notes A, 167), although Braxton does impose a musical structure on the shovelling, rather than letting the sounds be themselves:

... the reality of Composition No.9 is not simply exposing how four shovellers shovelling coal would sound in the traditional sense - one would hear that in the streets - which is to say that the aesthetic implications of this material is not from John Cage. I have instead chosen this context as a basis for material input. The actual reality of Composition No. 9 is offered in the same spirit as my conventional notated works. (Composition Notes A, 168)

Braxton, unlike Zorn, acknowledges Cage as a significant influence. Despite what he describes as Cage’s ”limited put-downs of jazz”, Braxton ”would follow him around like a little puppy, asking him anything he would let me ask him. He was one of my last heroes, Mr. Cage” (Braxton/ Corbett, 203). Sometimes, however, Braxton seems to exaggerate Cage’s influence on other improvisors. “There are no creative ensembles in western art music which have not been effected (sic) in some way - or on some level - by Cage’s activity (or by the post-Cageian movement)” claims Braxton. “Many of the avant-garde classical ensembles that now utilize improvisation and extended forms can be viewed as direct descendants of the post-Cage continuum” (Triaxium 1, 335).

Part of the problem here is a confusion between the three areas of improvisation, chance and indeterminacy. Braxton’s opinion that indeterminacy is essentially the
same as improvisation leads Braxton to a bizarre link between Cage and Duke Ellington:

Whether it was graphed process or rhythmic process that did not have the performer interpreting in any particular time zone - these processes have to be looked at in terms of their relation to improvised music and these processes also have to be looked at as being the direct result of the improvising sensibility. Cage himself doesn’t really talk of his music as such, and of course he does not give any credit to black creative music to my knowledge (if anything Cage has only shown contempt for all things African), but if we would look at his early music; his *Concerto for Prepared Piano and Orchestra*, and the devices he employed; we have no choice but to put his activity in its total perspective. For when John Cage was writing this music, not only had Duke Ellington been writing but the time period of Miles Davis’ and Gil Evans’ early orchestral works had already become known. (*Triaxium* 3, 49)

However, Braxton’s previous explanation of Composition No. 9 suggests an important difference between improvised music and Cage’s composition. Improvisors may use many sounds which are not conventionally considered “musical”, but these sounds are spontaneously combined in musical ways, not merely presented as sounds in themselves. Braxton declared himself “no longer an advocate of John Cage’s work” because he disagreed with Cage’s efforts “to make no distinction between sound and music. My contention is that music is not sound. Music is what’s under the sound, the vibrational information that’s being transmitted through sound . . .” (*Composition Notes A*, 378). Evan Parker makes a similar comment:
If you look at music as a continuum between two polar extremes, then at one extreme is a music that is totally predictable because you know everything in it from start to finish; at the other extreme there is music that is so surprising you have trouble understanding it as *music* - say an indeterminate piece by John Cage.

I guess I like to be closer to the pole that is about the unknown and the unfamiliar. But at the same time I want to feel that it’s *about* something, that it has meaning. So the aim is not to “let sounds be sounds”, or however Cage put it, but to acknowledge the fact that producing the sounds means something to you, being in control of the sounds means something to you, interacting with the other players means something to you. And have the outcome, the musical outcome, be at least an expression of these things.

*(Lock, Chasing the Vibrations, 170)*

Derek Bailey was introduced to Cage’s music and philosophy by Gavin Bryars, as a member of the improvising trio Joseph Holbrooke, which included Bailey, Bryars and Tony Oxley. As Bailey was “thirty-two, thirty-three years old” at the time *(Bailey in Corbett, 233)*, and had already been working as a professional musician for some years, Cage’s influence (while it may have had some effect) should not be exaggerated in discussing Bailey’s music. Bailey describes the development of Joseph Holbrooke’s approach to improvisation as influenced by a combination of jazz and classical avant garde concepts which Bryars and Oxley introduced him to:

Simplified, the position was that Oxley provided the connection and interest in what were then contemporary jazz developments - from Bill Evans through John Coltrane and Eric Dolphy to Albert Ayler - while Bryars interest was in contemporary composers: Messiaen, Boulez, Stockhausen, Cage and their followers. This combination
of interests, enthusiasms, obsessions, which of course overlapped in all directions, led logically and organically to a situation where the only way to pool our efforts and the only comprehensive expression of this confluence was through a freely improvised music. (Bailey, *Improvisation*, 86)

Bailey continued his involvement with free improvisation, but Bryars later renounced it, finding improvisation to be incompatible with his interest in Cage's philosophy. In the mid 1960s, Bryars was "barely interested in jazz at all", and was ordering Cage scores on a weekly basis, finding "something strange about trying to reconcile that information with what we were doing. I had also got Cage's *Silence* by this time and the ideas in that had quite a strong effect on me . . ." (Bryars in Bailey, *Improvisation*, 91). After studying with Cage in America, Bryars briefly returned to the English improvised music scene, but was becoming "more and more ideologically opposed to improvisation" (Bryars in Bailey, *Improvisation*, 114). "I began to find that I was not enjoying improvising, that I was only bringing to improvisation what I already knew beforehand, and it was just coming out in different permutations" explained Bryars. "I felt that this wasn't only my problem but that it was a limitation in improvisation itself, so I stopped playing the bass altogether in 1966 and didn't touch it again until two years ago [early 1980s]" (in Griffiths, *New Sounds* . . . , 150).
George Lewis was offended by Cage’s interview with Michael Zwerin⁶ in which “two white guys go on to describe black people and their music but no black people can talk back. And they discuss it in very patronizing terms” (Lewis/ Cohen, 7). Although he criticised the idea of music as dialogue, Cage was at least aware of this aspect of improvisation: “I think that showed a real musician would make an observation like that. That’s a really great observation. Because that’s what a lot of African American music is about. It’s about personal narrative” (Lewis/ Cohen, 7). As Cage explained it in another interview:

In most jazz compositions I hear an improvisation that resembles a conversation. One musician answers another. So, rather than each one doing what he wants, he listens with all his might to what the other one is doing, just to answer him better. And what is called free jazz probably tries to free itself from time and rhythmic periodicity. The bass doesn’t play like a metronome any more. But even then, you still get the feeling of a beat. It remains “music” (For the Birds, 171)

Canadian pianist Stuart Broomer⁷ discovered Cage’s writing in the early sixties, subsequently reading Silence in 1966. Around this time, Broomer was more aware of “the big deafening electronic indeterminacy performances” than Cage’s prepared piano music, finding Cage’s live performances in Toronto and the recording of Variations IV to be “interesting as environments, but hardly as musical works,” which is the last thing they wanted to be, anyway.” Although

⁶See “A Lethal Measurement.” in Kostelanetz Anthology.
⁷The following quotes from Broomer are all taken from personal correspondence.
“much impressed” by reading *Silence*, Broomer was attracted “more by his thinking than by his music itself.” Broomer, like many improvisors, is somewhat ambivalent about Cage. Despite professing “a great regard for Cage, for his thought, his writing, and much of his music”, Broomer is nevertheless “struck and much irritated” by Cage’s attitude to jazz, particularly this passage from *A Year From Monday*: “Music as discourse (jazz) doesn’t work. If you want a discussion, have it and use words” (12). Broomer acknowledges that communication is central to improvisation, but rejects the notion that this is a problem. Broomer suggests that jazz “at its best (and even most of the time) ... is dialogue (just as there’s no discourse without the seed of dialogue somewhere). Besides, maybe music as discourse does work.”

Lloyd Garber, who has performed with Bill Smith and Stuart Broomer, recalled that Broomer “talked about Cage a great deal.” Bill Smith, on the other hand, told Garber that Cage “never interested him”. Garber chose not to pursue this conversation, as he shared Broomer’s interest in Cage (Personal Correspondence, 9 Mar 1995). Garber’s interest in Cage led him, like Bryars, to study with Cage. He visited Cage’s New York apartment approximately eight times during 1970-71. He studied Cage’s chance operations using the *I Ching*, although the conversation could also turn to other composers, visual arts and poetry (including Satie, Cunningham, Duchamp, Joyce and Thoreau). However, this did not develop into a close personal relationship, perhaps because “Cage knew [he] was into jazz and Cage didn’t like jazz!” (Personal Correspondence, 25 April 1996). Garber subsequently published “several chance pieces linking Cage’s chance with [his]
own concepts” in the book *Auntie Nature* although, contrary to Cage’s practice, these were used as the basis for improvisation”. Although he is aware of Cage’s prepared piano compositions, it is not clear whether Cage significantly influenced Garber’s use of prepared guitar - as noted previously, he was preparing his guitar with whale teeth before he knew about Cage’s prepared piano.

Garber also studied with George Russell, who held the common (and, I think, misguided) attitude of separating the ideas Cage espoused in his books from their application in music: “George Russell thought that John Cage was ultimate freedom, but George only liked his (Cage’s) philosophy and not his music” (25 Apr 96). I would argue that if Cage’s music is not interesting, then the ideas which led him to produce that music are also likely to be flawed. Cage’s compositions are produced in accordance with his philosophy, and it is necessary to accept both or neither if one is to remain consistent (although Russell’s position is one held by many people, I believe it results from a superficial understanding of both Cage’s ideas and music).

Australian pianist and saxophonist Roger Frampton progressed from Cage performances in the sixties to his current work as a jazz musician. Having “heard stories about John Cage” who had been described to him as “a jokester”, Frampton read *Silence*, “which had a profound influence on my thinking, and I decided to

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*Garber cites “Trip” “I am I am I am” “Voyage” and “Wertmuller” from this book as “pure chance pieces” (Personal correspondence, 14 June, 1996).*
reserve judgement until I heard his music myself” (Frampton, “Teletopa . . .”, 21).

Frampton later found himself “drawn to the element of chance in John Cage”, and described Cage’s recording of Fontana Mix as “... like a musical shower. When I’ve been listening to a lot of music I wash my head completely under it. It makes me feel open, almost vulnerable, and seems to clear the way for new ideas” (Frampton/ Clare, 6). Frampton was later involved in a performance of Cage’s Concert for Piano and Orchestra:

We had this really wild score where you more or less had to figure out for yourself what you had to do. You had to throw dice, you had a stop-watch, I had a piece of wood that I sawed in half at one stage, some book pages that I flicked, as well as blowing some notes and things . . . I thought this was all fantastic. (Frampton/ Myers, 12)

I asked Frampton about his reaction, as a jazz performer, to Cage’s dislike of jazz: “I just try to see things from his point of view, without necessarily agreeing. Or without necessarily letting it stop me doing something that I enjoy or get something out of.” Cage has influenced Frampton “from a philosophical point of view, and certainly some of his music, and I just think he influenced a lot of people, huge numbers of people all over the place” explains Frampton. “But I can’t say that I completely embraced, or I do completely embrace his philosophies now. At one stage it was, I felt, a very exciting avenue to pursue” (Personal Interview).
In *Violin Music In The Age of Shopping*, Jon Rose and Rainer Linz humorously suggest the discrepancy between Cage's philosophy and the working environment of jazz players (which also represents the origins of many improvisors):

So this Cage guy wrote nice books with nice ideas. I mean you couldn't disagree with them any more than you could disagree about motherhood. It's just nice. Like silence is environment friendly and it doesn't exist anyway. O.K. nice. But is it useful for a working musician? If I plug a contact mike into someone's green salad

1. The chef complains that I ruined his french dressing,
2. The customer walks out in a huff and
3. I don't get paid - like the working environment gets very unfriendly. (84)

In general, it seems that an interdisciplinary approach is the only way to gain any real insight into the way in which improvised music works. Ideas from politics, visual art and vaudeville can (and often do) intermingle in performances of improvised music. The way in which these diverse traditions interact is similar to the way in which "the complex dynamics of culture" can be understood as "a fluid system in which each of the disciplines is a current of information" (Weissert, 224). Each of these currents interacts with other currents in a complex system:

These currents are not isolated but are constantly intermixing their ideas in a process which could only be described as stochastic. Each current carries a quantity of information for a while, processes it, changes it, and then returns it to the central flow. Because people are influenced by the representations of their society, no discipline can remain isolated. Thus an idea or structure may arise in literature first before it makes its way into scientific formalism. But it might also be the case that a scientific theory
influences a work of literature. With this model, all the interesting dynamic structures of fluids come into metaphorical play: eddies, flows, bifurcations, feedback loops, mixing, and, of course, the most interesting feature of all, turbulence. In cultural dynamics, as in hydrodynamics, linearity must be abandoned because the flow of ideas is clearly nonlinear. As the culture flows from movement to movement, or from paradigm to paradigm, currents become complex. In this century, the most significant example of such a passage is the transition from modernity to postmodernity. As disciplines move beyond their modern boundaries, they generate ripples in the cultural flow, and these ripples influence the other currents in a nonlinear, random way. (Weissert, 224)

Influence

The idea that historical precedents have “influenced” contemporary methods is raised throughout this thesis. In some cases there is clear evidence of influence - some improvisors have used certain musical methods as a direct result of having experienced the work of another musician (someone who begins to play prepared piano in response to reading Cage’s *Silence* or hearing his *Sonatas and Interludes for Prepared Piano* may reasonably be described as having been influenced by Cage). However, it is not always so simple. Often the precedents are discovered afterwards - it is perfectly possible to discover the prepared piano with no prior knowledge of John Cage, but it would be difficult to perform prepared piano music for any length of time without someone mentioning Cage and suggesting that you listen to his compositions.
"I don't agree with the notion of influence," said Cage (Conversing With Cage, 258), arguing that he had found his ideas independently despite many of his ideas having been previously explored (particularly in Dada and Zen). "It's funny," he said; "I think of myself as an inventor, but I almost always find that what I think is really original in my work has been done before by someone else" (in Tomkins, The Bride and the Bachelors, 91). In exactly the same way, many improvisors began experimenting with chance, silence, radios as musical instruments and prepared instruments before they discovered the music and writing of John Cage. When similar ideas occur independently, this can not be described as an "influence", although it may still be interesting to compare the motivations of those who have "discovered" similar ideas. Although an idea may have been discovered independently, it can be reassuring to realise that one is not working in a vacuum - that there are other people interested in similar ideas. When conditions are right, several people may "discover" similar concepts at the same time:

I think that our ideas that seem to be novel are merely ideas that one or another of us is about to have. At the same time that I was using the Magic Square, Wyschnegradsky on the other side of the Atlantic was also using it, and I had no connection with him. At the time that Edison invented the electric light, someone else did it too but didn't get to the post office fast enough! (Conversing with Cage, 238)

John Coltrane has made a similar comment about his "influence" on jazz musicians:
I don't think people are necessarily copying me. In any art, there may be certain things in the air at certain times. Another musician may come along with a concept independently and a number of people reach the same end by making a similar discovery at the same time. (interview with Leonard Feather, *Melody Maker*, 19 Dec 1964; in Ormond, 183)

Prepared instruments are an idea which can be “discovered” independently of any knowledge of the history of the avant garde, by anyone who simply approaches an instrument with an open mind free of preconceived notions that the instrument is only to be played in the “correct” way. Eugene Chadbourne’s discovery of preparations started with a common mistake:

I picked up my guitar once, started playing and I thought “Oh no, there’s something wrong with the guitar.” And then I realised that I’d left the pick in the strings. That got me real interested because I thought, “That sounds kind of neat, and it’s such an easy way to change the sound of the guitar.” So that led to putting different types of paper on the fretboard. (Di Perna, 11)

Davey Williams recalls that around 1974, having left Johnny Shines’ blues band, he discovered what he called “object guitar”:

We were playing in this guy’s bedroom, and there was this polished stone, and I just grabbed it and started making high, sustained sounds with it. Once I’d stumbled onto that, I thought, “Wow, here’s a whole new thing!” (Dery, “Forging a New Vocabulary”, 62)
In Olga Samaroff's column in the *New York Evening Post* (3 Feb 1926), she claimed that her experiments as a child preceded Henry Cowell's innovations:

Mr. Cowell says he discovered the "string piano," that is, playing directly upon the strings of the existing piano inside the instrument. He didn't. I have been experimenting with the "string piano," without suspecting the magnitude of what I was doing, since I was five years old, and I am sure of the melancholy fact that I am older than Mr. Cowell. I have played upon it with clothes brushes, dust cloths and hairpins. I have a specially developed technique with a dinner napkin. . . . I gnash my teeth to think how I have misunderstood myself and my art. (in Manion, 160-1)

On the other hand, Henry Kaiser suggests that "*everything* influences the music - what you eat, how you spend your spare time, what you read, what movies you see, your upbringing, what your girlfriend or boyfriend's like. In fact, those things are probably more of an influence than all the records you've heard in your life" (in Kaiser/Batey, 68). If this is the case (and I believe it probably is), then so many factors can affect a musical idea that it is impossible to list them all. This thesis is an attempt to list some of the main influences on the use of prepared instruments in improvised music, and some potential influences and "kindred spirits", without any claim to completeness.

Derek Bailey has commented that ". . . only an academic would have the temerity to mount a theory on improvisation" (*Improvisation*, x). I have not attempted to mount such a theory here because, despite the research which has been necessary to produce this thesis, I consider myself primarily as a practitioner rather than an academic.
academic. I am interested in clarifying certain aspects of my own performances, and the music which I most enjoy listening to; I am not interested in producing an abstract Grand Theory of Improvisation which is unconnected with practical music making. No conclusions are reached about which precedents and purposes are most significant, because there is no general agreement among improvisors. However, knowing some of the possible sources of inspiration and motivation, one can then ask an individual improvisor about the relative importance of each of these in the music of that individual.

Instead of seeing improvised music as a development from either jazz or avant garde composition, improvisation is best understood as "a tradition woven of many strands" (Marley, 38). It has been suggested (in what seems rather an oversimplification) that the influences on improvised music can be divided into three categories:

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. (Wyatt, 18)

These strands, of course interact. Jazz and "art music" have adopted elements from each other. "World musics" are also significant in jazz. African music has been particularly significant for some improvisors, although the situation is more complex than a simple mixture of African and European traditions. James Lincoln Collier states that until 1890 there had been "three separate and distinct fusings of
African and European music” (his italics): ragtime, blues and white popular music (70). Then, according to Collier, “between 1890 and 1910 these streams converged” (71). Pat Thomas identifies wider “Pan Islamic” origins of jazz, including “Islamic Spain . . . West Africa . . . Arabia, Persia and North India” (“The Myth of Jazz: Part One”, 32). Jelly Roll Morton recalled that “New Orleans was inhabited with maybe every race on the face of the globe,” citing French and Spanish influences on the development of jazz - “In fact, if you can’t manage to put tinges of Spanish in your tunes, you will never be able to get the right seasoning, I call it, for jazz” (in Lomax, Mister Jelly Roll, 64).

Russian improvised music73 has three primary sources:

... one, the Russian avant-garde aesthetic of the twenties (not necessarily the musical avant garde); two, the folk music of the many nations that make up the Soviet Union; three, American and European free jazz, chiefly of the post-Coltrane period. (Barban, 18)

Many improvisors have used ideas from world music and popular music. Anthony Braxton acknowledges the importance of world music in his improvisations, including African, European, Asian and Hispanic music (Braxton/ Corbett, 198). Improvising guitarist Henry Kaiser recommends music from many cultures, including “Africa, India, China, Vietnam, Korea, Japan, Polynesia, Okinawa,

7 In the 1980s, English company Leo records began releasing recordings of Russian improvisors who had previously been virtually unknown in the West. See Feigin, Russian Jazz: New Identity.
Eastern Europe, North America, and Scandinavia” (“From Korean Folk to Western Swing”, 52). Jon Rose has played “country, West Indian reggae, serious composition, sessions, pop records, film music, jazz groups of various kinds . . .” (Rose/ Gray). Fred Frith’s aesthetic has been “. . . informed by New York art clank, British free improvisation, flamenco, Middle Eastern folk, French glitch rock (Etron Fou Le Loublan), Greek and Bulgarian village music, Japanese avant-garde singing . . .” (Frith/ Dery, 78). René Lussier is as “interested in folk music as . . . contemporary music, progressive rock, or Ornette Coleman’s free jazz. I equally like Messiaen . . . and Louis Tipou Boudreau, Johnny Winter, or . . . Naked City. It's the idea not to refuse anything. Esthetically, I do not reject anything” (Lussier, 32). Eugene Chadbourne’s music has been described as “free improvised heavy metal country & western bebop” (“Free Improvisation and Country Protest”). Chadbourne acknowledges the influence of “the music of Charlie Christian, Chuck Berry, Jimi Hendrix, Derek Bailey and Willie Nelson” as well as films and cartoons (Strings CD notes). During a single day at a festival in North Carolina, Chadbourne performed with “a Klezmer group, a blue grass group, a heavy metal fusion group, and a country group” (Chadbourne/ Johnston, 23). Diversity is essential to Chadbourne’s satirical approach: “There’s really no type of music that I don’t like; it’s important to be able to make fun of all types” (Chadbourne/ Dery, 68).

In combining ideas from a wide range of sources, some suggest that the differences between these things are less important than their similarities. Ornette Coleman has, according to one writer, “attempted to blend his jazz with nearly every music there is,” although Coleman would dispute the notion of blending because “he
only grudgingly recognises categories in the first place” (Rockwell, 185). “Classifications are sometimes convenient,” says Henry Kaiser, “but I don’t really pay much attention to them” (Kaiser/ Forte, “Dr. Know”, 79). Genres can be juxtaposed humorously - Kaiser has recorded “a cover of David Essex’s Rock On in the style of 70’s Miles Davis” (Kaiser/ Batey, 68), and his solo improvisations may reflect spontaneous answers to such musical questions as “Wouldn’t it be funny if a Chinese musician went to Madagascar?” or “What if Albert Collins was in Tahiti?” (Kaiser/ Batey, 68). Derek Bailey describes the various approaches to improvisation as “. . . like some kind of stew, all kinds of things mixed up together” (Bailey/ Martin, n.p.), a metaphor which echoes Alan Lomax’s description of jazz as “. . . a sort of musical gumbo” (Mister Jelly Roll, 11).

The influences on improvised music also have their own diverse influences. For example, the Fluxus movement has already been identified a significant influence on the improvisations of Mengelberg, Bennink and others. Fluxus is itself, of course, related to a wide range of precedents: “Music, theater, dance, literature, visual art, and even non-art factors inform Fluxus - without forcing it . . . to identify its principal roots” (Frank, 36). George Maciunas described Fluxus in his manifesto Fluxus Art-Amusement as “the fusion of Spike Jones, vaudeville, gags, childrens’ games and Duchamp” (in Armstrong, 16), although this is an abbreviated list - Maciunas’ Diagram of Historical Development of Fluxus and Other 4 Dimensional, Aural, Optic, Olfactory, Epithetical and Tactile Art Forms (1973, but constantly revised) traces the development from Futurist theatre through Duchamp and Cage to Fluxus, and also includes “church processions, medieval
fairs, international expositions, the three ring circus, games, puzzles . . . “ (Armstrong, 16). Each of these, of course, has its own array of precedents and influences.

Improvised music is a combination of several diverse traditions in which improvisors spontaneously mix ideas from a wide range of different sources. The way in which these diverse areas are brought together is different for each improvisor, and two players may produce apparently similar sounds or actions for utterly different reasons. The situation is further complicated by the collaborations which are common in this music - for example, Dutch percussionist Han Bennink has quite a different background to African-American pianist Cecil Taylor, but this has not prevented them from collaborating*. Derek Bailey and Henry Kaiser’s duet recording Wireforks demonstrates the complex interactions of these influences:

... in the case of Bailey - who played mainstream jazz and pop in his distant past - strains of everything from the 20th century musical theory and compositions of Schoenberg and Webern to the ancient Chinese zither known as the chin ... might be running through the vaults of his subconscious. While for Kaiser - who has recorded cover versions of rock songs by the Grateful Dead, Jimi Hendrix, and Captain Beefheart - the modern classical vocabulary of Ligeti, Stockhausen, Nancarrow, Ives and Xenakis also intermingles with the dynamics and timbres of Asian music, but especially from Korean and Vietnamese traditions. (Richardson, Wireforks, CD notes, 4)

* Spots, Circle and Fantasy. (FMP CD 5)
Improvised music is a wide field without the sort of tightly defined boundaries which would permit a simple assessment of the relative importance of each area of influence. "In a healthy culture," wrote Harry Partch, "differing musical philosophies would be coexistent, not mutually exclusive" (Genesis, xvii). Improvised music seems to represent the sort of "healthy culture" Partch was seeking. With "no prescribed idiomatic sound" (Bailey, Improvisation, 83), participants develop personal (even idiosyncratic) musical methods rather than a "correct" style as dictated by a "tradition" or "expert opinion", and yet these players often interact with other players who may have very different approaches.

A diverse background may even be considered a prerequisite for effective improvisation: "... a musician's experience in the conceptual and practical bases of more than one musical style contributed to a large degree to the 'success' of a session," concludes Briggs. "Broad experiences in music provide flexibility to meet the challenges of finding a basis for communication" (60).

The diversity of influences in improvised music may be partially attributed to the influence of recordings and radio. John Zorn comments that as a result of recordings, his generation has been "exposed to more music than any other in the history of the world" - Zorn, for example, grew up listening to jazz, blues, pop, rock and surf music (Zorn in Strickland, 129). He progressed to recordings of world music, avant garde composition and improvised music. "All of these musics made me who I am," says Zorn. "Today you're able to buy music from all over the world at the first record store you see. This is the music that results" (in Strickland, 336).
Zorn considered this experience to be typical of his generation, and it may be inferred that this exposure to a diversity of recorded music is a factor in the shift from modern to postmodern music:

What's happening today is a lot of composers of my generation were introduced to many, many different kinds of music as they were growing up, because so much music was available on disc. People of my generation who grew up in the 60s, were introduced to ethnic music from India, from Africa. They enjoyed mixing things together, and got involved in improvisation in one form or another. People like Ned Rothenberg and Elliott Sharp and others all share an interest in these varied genres. (Zorn/ Mandel)

When Harry Partch listed his influences as including "Christian hymns, Chinese lullabyes, Yaqui Indian ritual, Congo puberty ritual, Cantonese music hall, and Okies in California vineyards, among others," a reviewer dismissed his list (according to Partch) as "improbable or whimsical" (Genesis, viii). It is curious that, although Partch's reference clearly demonstrates that his music could reasonably be influenced by the diverse range he cited, John Grayson wrote (in 1975) that "Partch once whimsically cited as basic influences on his basic output . ." (88), totally disregarding Partch's refutation of the implication of whimsy.

Similar doubts may be raised by my assertion that the use of prepared instruments in improvised music may derive from sources as diverse as African instruments, nineteenth-century pianos, circus clowns, vaudeville performers, Fluxus performance art and Cubist paintings. It is always simpler to reduce history to a
single, linear process. Nevertheless, it is clear that most improvisors do show an awareness of several diverse traditions, and that prepared instruments have precedents in a wide range of traditions.

The purposes of preparations are also diverse. While the manipulation of timbre may be a central consideration for many players, it is by no means the only possible reason for preparing an instrument. Prepared instruments may be used for several reasons - to imitate other instruments, make jokes, destroy an instrument, establish political connections with African traditions and so on.

Aware of the risk of self-repetition which is inherent in improvisation, improvisors have embraced the unpredictable aspects of “Cage’s most notorious device for deflecting habit . . .” (Kostelanetz, “Cage’s Early Piano Music”, 39). This is an area of music using concepts which derive as much from Spike Jones as LeRoi Jones, and where the protagonists may be influenced by either strand of Marxism (as practised by Karl and Harpo75). Improvisations can literally go from the sublime to the ridiculous in an instant. Misha Mengelberg’s attitude is common to many improvisors:

One of the things that inspire me in making any gesture, musically and theoretically, is its relation with daily life in which there is no such thing as an exclusion. One moment

Contrast Eddie Prévost’s belief that “. . . music itself can be class based” and “[a] political dimension . . . is necessary” (“Improvisation: Music for an Occasion”, 33, 34) with Eugene Chadbourne’s preference for doing “the things that comedians do to make people laugh . . . .” (Chadbourne/ Dery, 72). Also compare Valerie Wilmer’s books with Jon Rose and Rainer Linz’s.
I meet you and the next I am washing dishes or playing chess. So many facets on many levels whether you like them or not. Of course, I don’t mean daily life transformed into music but in certain respects there are parallels between the music and daily life. For example in the respect that very vulgar things are happening near to very aesthetic things; people go pissing one moment and have deep philosophical thoughts the next. Or maybe at the same time. (Mengelberg in Bailey, 131)

It is important to avoid the error of “find[ing] resemblances and transform[ing] them into ‘influences’” (Finkelstein, 175). However, it is clear that at least some improvisors are likely to have both an awareness of and an interest in those predecessors I discuss. Considering these issues requires an examination of the motivation of a particular use of prepared instruments. If a serious artistic endeavour dealing with personal tragedy is similar to a performance by a circus clown, this may represent either a miscalculation by the artist or an inappropriate response by the audience, but it can hardly be described as an influence. Unintentional similarities of this type may, however, be significant on other grounds, as seen in the discussion of reactions to Cage’s *The Perilous Night*.

It is also useful to consider why it seems likely that improvisors could be influenced by the precedents I have identified. It is not enough to know that African instruments have rattles attached to them, unless we acknowledge that African-American improvisors have demonstrated a particular interest in African music - in this case a double connection, because the earliest blues and jazz developed from the music of plantation slaves, and the Black Power movement of
the 1960s inspired an interest in African "roots". It is relevant that vaudevillians used musical instruments in similar ways to improvisors Han Bennink or Eugene Chadbourne, because improvisors have acknowledged comic precedents and many early jazz musicians performed in vaudeville. Several improvisors have trained in art schools, implying that artistic practices from cubist paintings to postmodern installations may have been directly experienced. Understanding the precedents of prepared instruments in improvised music is connected to the purposes underlying preparation. There is little difference between saying that an improvisor is influenced by precedents in vaudeville, cartoons and the circus, and saying that he plays the electric rake for the purpose of being humorous.

It is for these reasons that this thesis does not have the sort of focused approach which is usually expected of academic work. Improvised music celebrates diversity, its practitioners each developing an individual approach to the challenges of spontaneity. Contrary to the academic tradition of focussing on a tightly circumscribed area, I have chosen to examine a wide range of topics. This seems to me to be more appropriate than attempting to reduce prepared instruments in improvised music to Cagean timbral manipulation (or any other simple formulation), particularly when considering an area of music in which, according to one of its leading practitioners, "Diversity is its most consistent characteristic" (Bailey, Improvisation, 83).

* White musicians have, of course, also shown an interest in African music, but the political implications are different.
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**Compositions For Prepared Instruments By Non-improvisors**


*This is a select list of the essential prepared piano compositions which have been
particularly influential in improvised music. More detailed discographies of compositions for prepared instruments can be found in:


**Miscellaneous**


Clusone Trio. ?


