Often, an activity only becomes recognizable as an art form after years to decades (or longer) of innocent practice. Over half a century after Paul Hindemith & Ernst Toch’s Grammophonmusik concert was presented in Berlin in 1930, the record turntable became widely recognized within pop music as an expressive musical instrument. If the turntable remains the iconic example of a passive playback device rediscovered as a flexible creative tool, it was preceded by another musical instrument of communications media, which subtly invited audiences to hop the fence that divided consumer and producer. As early as the twenties, the radio receiver allowed an individual to experience sound as a disjunctive collage, decades before other composers began formal musical investigations into the aesthetic. The intrinsic nature of the medium itself, broadcast in real-time, was also an essential factor in its comfortable early adoption into live musical performance: in the early decades of the previous century, the experience of living with recorded sounds was still too new to comfortably expand upon the never before questioned definition of “live music”: the liveness of radio was what made it instantly more exploitable as a musical tool. This essay connects three examples from the history of the potential of the radio receiver as musical instrument, from its early beginnings in the twenties as captured on a comedy record, to formal art experiments in the forties and fifties, to its nostalgic presence in one of the very first song-based pop music collage albums, which heralded the now familiar practice of sampling.

The technology for radio broadcasting developed slowly at the hands of enthusiasts during the first two decades of the twentieth century. Year zero for commercial radio in the United States took place in 1922: in January of that year, there were several dozen broadcast stations transmitting to roughly 60,000 receivers. One year later, the number of stations had grown to 500 transmitting to 1.5 million receivers. Across the Atlantic in the United Kingdom during that same year, radio manufacturers banded together to found the British Broadcasting Company. If the phonograph and the gramophone had been unable to break out of their perceived statuses as luxury items for the wealthy since their commercial introduction in the late 1890s, the earliest commercial editions of the radio receiver were almost immediately embraced as an indispensable lifeline that connected its audience to the wider world.

Price was not the issue: early radio sets were in the same cost range as the more inexpensive phonograph players, at around $100. But the medium of radio had an aspect rendering it far more approachable to the audience of the early twentieth century: the voices coming out of the speaker were, more often than not, living ones. Unlike the paradigm shift forced upon the listener by the phonograph, which confronted them with living sounds which were not strictly “alive” in the traditional sense and therefore in conceptual competition with the possessors of living voices, radio presented itself wholeheartedly as a live medium, with friendly announcers and live musical performances presented in real time to a communal if massively expanded audience. This immediacy made the radio seem less like an alien recreation than a socially essential purchase. As Richard Butsch noted in his study on early radio, “The Making of American Audiences” [1]:

Public listening occurred in many places... homes with radios also became centers of social gatherings... Announcers intentionally addressed listeners as if they were speaking to old friends. Broadcasts consisted largely of direct address to listeners and relatively little drama of even conversation among announcers and guests at the station. [2]

In other words, radio was a medium which managed to bypass any lingering psychological discomfort that early audiences slowly acclimating to the new media landscape might have experienced when confronted with a voice that they consciously knew not to be a living one. A record collector was by definition a historian, but a radio listener had his windows open to the present world. Broadcast conventions of friendly or casual direct address to the listener continued through the next few decades, using mannerisms that now seem naïve.

2 The text includes numbered references to a series of related links included by the editors.
3 Ibid., p. 187.
to modern listeners born into a world in which recorded media has long since saturated every known corner of urban and suburban experience. The rapid growth of receiver sales very quickly cut into the practice of communal listening; by the late twenties, increasingly affordable receivers were being marketed as domestic furniture to housewives, as a form of entertainment in direct competition with those other forms which required you to dress up, travel downtown and socialize with others on the way to your theatre chair. Or, as an ad for an RCA set promised, “When you own a radio, there is no place like home.”

A Hand Left on the Dial

Two of the earliest successful personalities in this new medium were Billy Jones & Ernest Hare. They became a team at the moment they were introduced to each other live on the air, improvising jokes and songs for 90 minutes in one of the first broadcasts in Metropolitan New York in 1921. They would assume many different names as sponsors came and went, but were best known after being signed to their first big contract by the Happiness Candy Stores. Performing as the Happiness Boys, they would augment their radio appearances by recording their most successful radio skits for the Edison, Columbia and Victor labels, ultimately recording an estimated 4,000 of them by the tail end of their careers twenty years later.

In 1928 they recorded a tribute to their chosen medium. The success of this tribute lies in their decision not to depict the experience of radio from their own vantage point as broadcasters, but rather by simulating the experience of the listener at home, busily channel surfing between as many stations as possible. Over the single’s two sides, snippets of radio shows are continuously interrupted as the station is changed for you – ten times in eight minutes, five times in the first 45 seconds alone. Deft parodies of tongue-tied announcers, ludicrous “live in-studio” musical performances of country, opera, classical piano and jazz, bedtime stories and exercise routines all flit by your ears, each ultimately cut off by the sound of interference the second anything even remotely predictable threatens to try the listener’s patience. Note the initial announcer’s confusion over how familiar a tone to take with his unseen audience:

Evening frien – uh, fam, uh friend, family, I mean gang, I mean, pardon me, Ladies and Gentlemen. This is station O.U.C.H. at the New Writers Broadcast – broth – breath – broth – Broadcasting Company, pardon me again. Operating on a wavelength of 600 motorcycles, by the authority of the Federal Prohibition Agents. The first number on the program for this evening will be rendered – to be rendered, meaning to be torn apart – by the Silent Dozen Orchestra. They will play as the openin’ selection “People Who Live in Glass Houses, Shouldn’t”. There will be an interrupted vocal chorus sung by those famous entertainers, Pete and Repeat.

The music used is a combination of in-studio singing, live piano and banjo playing, and prescient needledrops onto six records (mostly released by their record label Victor, solving any potential copyright issues), making this one of the earliest (if not the earliest) records to “sample” previous records to create a new work. But notably, as fitting the conventions of live radio, these records are all presented as live performances occurring in the studio: the announcer introduces the pair Howl and Bellow as a disc of a tenor’s solo performance of the “Sextet from Lucia” spins up, which is then turned into a duo by one of the Happiness Boys, adding live singing which transforms the whole into a ludicrous parody of opera. The energetic march and jazz records are overcranked to play back subtly faster at improbable tempos, a sound manipulation deployed for comic effect when playing warhorses like Offenbach’s “Can Can”. The motif of radio interference is almost certainly simulated by what sounds as if it could be a pennywhistle and someone rubbing a cloth on a washboard – early foley sound artistry providing an effective stand-in for the real sounds. And the true identity of the medium presenting you this simulation is reaffirmed as an announcer fades down the music to announce: “There will be a slight pause in our program, until somebody turns this record… over” at the end of side one, and again at the bitter end: “This concludes our entertainment for this evening, and forever.”

This self-consciousness and the artificial foley work underline their lack of interest in using an actual radio receiver in live performance. They were more interested in a fixed composition, although the resulting piece demonstrated the potential and even encouraged the use of receivers as live performance instruments. As each generation to some degree feels itself to be the first to develop the aesthetics and find the pleasure in media overload, the experience of hearing media overload as documented from the perspective of a radio listener in 1928 provides both an enlightening reality check on what we consider to be modern, while at the same time exposes us to a level of innocence that could only have come from the first few years of a culture’s exposure to the new communications medium.

The Happiness Boys had tried a similar tribute before in 1923, and there were other attempts to present overlapping broadcasts as well: the Savoy Orpheans in 1926, and

4 Ibid., p. 195.
5 David Lennick, The Happiness Boys – Billy Jones and Ernest Hare, Living Era / Sanctuary Records, CD AJA 5628, 2006.

They're Just Playing my Piece

The existence of a piece like “Twisting the Dials” almost certainly reflects the Credo in Us

7 feathers… there” in the most musical manner imaginable. In another performance – the act of channel changing is already being demonstrated as an art on this record, as early as 1928 – even if the record itself proved too eccentric to garner many sales.

Credo in Us [123 4] in 1942 calls for a turntable and radio operator in addition to two percussionists and a pianist. The traditionally notated score’s part for the radio operator simply instructs him when to change the channel, and when to turn the volume knob up and down in coordination with the other players. Though the use of the radio means that the composer has relinquished control over exactly what sounds are going to be introduced during any one performance, the sudden entrances and exits of the radio’s voice are carefully timed with the instrumental parts. The shortwave interjections in most performances of Credo in Us tend to sound anything but random – in a performance from 1971 by members of Ensemble Musica Negativa, a motif of pounding piano chords seems to effortlessly punctuate the track “Tuning in on the Radio” [123], variously credited to Kaufman and Company and the Broadway Comedy Players on different issues. But it’s the rapid pacing and gear shifts of “Twisting the Dials” that best capture the disorientation of being able to change the channels from one living reality to another, individuals seemingly transformed into other individuals as they stand on a virtual stage in your living room – the act of channel changing is already being demonstrated as an art on this record, as early as 1928 – even if the record itself proved too eccentric to garner many sales.

Credo contrasts the random element of the radio broadcasts by suggesting Dvorak, Beethoven, Sibelius or Shostakovich as appropriate materials to be played on the turntable, the most programmed symphonic composers from the time of the piece’s composition. The sight of four musicians on a stage “producing” the sounds of a full symphony orchestra is only one of the tensions explored by the piece: there’s a further contrast between the pre-recorded classics and the random spontaneities being injected by the presence of the radio. The dangers of this spontaneity are acknowledged in Cage’s score with a note recommending that the radio player “avoid news programs during national or international emergencies”, a reflection not just of the wartime climate in which the piece was composed but a respectful consideration of the powerful intrusions these broadcasts could force upon an audience.

This, Cage’s response to his friend Morton Feldman’s complaints about the increasingly inescapable presence of transistor radios with built-in speakers, was given in 1967, fifteen years after the publication of his “Imaginary Landscape No. 4” [123 4 9] for twelve radios. Once again, the score is provided in traditional musical notation, indicating the frequency each radio is to be tuned to, and the dynamics of the volume level. As with his other pieces written during this period, he aimed to avoid any aspect of self-expression from manifesting in his composition through using the I-Ching as a random value generator.9 One result was that the musical texture was somewhat sparse:


It’s a compositional technique now well known to every listener of pop and electronic music from the past thirty years: a seemingly random fragment of dialog or a jarring sample from another song fades up during a perfectly poised moment of silence… right before the rhythm kicks back in.

They drew pictures of them on their caves. And so I simply made a piece – I think, “Well, they’re just playing my piece”… and I listen to it with pleasure. By pleasure I mean, I notice what happens. I can attend to it right before the rhythm kicks back in.
The first performance had almost no sound in it. Two friends of mine at the time, Henry Cowell and Virgil Thomson, both attributed the absence of sound to the fact that it was late at night – it was nearly midnight. However, I know that the piece was essentially quiet through the use of chance operations & that there was very little sound in it, even in broad daylight, so to speak... ["Radio Music"] was written more of less to please the people who were disturbed over the “Imaginary Landscape No. 4" because it was so quiet. I forget what I did, but it can be played so as to be loud.10

Recordings of 1956’s “Radio Music” 10 10 indeed document a much more raucous version of the same concepts revealed in “Imaginary Landscape No. 4”. But again, as in Credo in Us, the random structures determined by chance operations almost never actually come across as truly random: the real-time qualities of radio itself unite all the sources, opening multiple windows to the living world in progress outside the concert stage, and giving them a framework in which they have opportunities to harmonize rather than antagonize. Cage’s radio pieces cultivate coincidences that then seem to be less like accidents and more like simple facts. Even moments when the sounds seem to clash force a question as to why they seem to be clashing, given the number of times that the different sources seem to naturally blend and compliment each other. Live performances of Cage’s radio pieces frequently come across as being present on the scene as a time capsule is being assembled and sealed, being witness to a wide-angle view of one’s own culture as it is happening. And although Cage was notoriously ambivalent if not hostile to the concept of his concert works being recorded, historical documents of these pieces work in a similar way, as an opportunity to take that cultural time capsule out of the ground and rediscover it anew.

**Broadcasting Sound, Not Notes**

It is no accident that of the dozens of electronic music studios that were founded in the two decades after 1948, many of them were initially adjuncts to radio stations, where much of the essential technical equipment had already been collected. Of the first five major studios, four were nationalized European stations: GRM Studios at RTF (French National Radio-Television) in 1948, Studio for Electronic Music at WDR (West German National Radio) in 1951, Studio di Fonologia at RAI (Italian Radio) in 1953, the Electronic Music Studio at NHK (Japan Radio) in Tokyo in 1953.11

Pierre Schaeffer’s 10 pioneering works of Musique concrète in 1948 at the first studio, GRM, followed several years of work as a sound engineer for radio dramas, where the distinction between the disciplines of producing Foley sound effects and cueing dramatic music slowly seemed to vanish.

Everything about any radio studio at this point in history would have seemed to invite if not demand the practice of appropriative collage: given multiple tape recorders and turntables all routed through a mixer, the only real question left to ask is not why Musique concrète happened in 1948, but what then kept it from happening everywhere else. It is difficult to imagine that these studios were not occasionally if surreptitiously utilized as the musical instruments that they are now known to be. But these were not seen as creative sites, and access was certainly carefully restricted to the trained commercial and government engineers employed by the stations. Going through the early works of Musique concrète produced at GRM, a careful listener can detect the occasional snippet clearly sourced from previously existing recordings. But what is more noticeable overall is the restraint shown by composers holding them back from wholesale appropriative collage; for years, the accent was to remain on the production of new sounds, or anything that could clearly and safely be identified as a “composition”.12 One feels an almost palpable reticence to interfere with a recording’s status as a finished work of art, even within these radio studios that seemed, by design, to embody a demand that this aesthetic be explored.13

The explosion of popular radio in the fifties was the primary factor hastening the final transition of the Hit Parade (which measured the popularity of a song through its sales in sheet music form) to the Top 40 (which strictly tracked recording sales). This was the decade when a hit song stopped being defined as something written on paper, and started being a specific performer’s recording of it. This transition was an essential paradigm shift that needed to take place before “musical collage” could begin to find its own aesthetic ground, and the early landmark appropriative collages bracket this exact period of transformation: John Cage’s “Imaginary Landscape No. 5” 11 11 from 1952, and James Tenney’s 10 10 “Collage No. 1 (Blue Suede)” from 1961.


11 The sole exception was the Columbia-Princeton Electronic Music Center in the United States, which struggled with its own semi-official status within the university, even after achieving national visibility through radio and television coverage of their early tape-music concerts. In 1959, a sizable grant from the Rockefeller Foundation finally afforded them a higher degree of security. Wikipedia reference: http://en.wikipedia.org/wiki/Computer_Music_Center.

12 Even if, strictly speaking, the word composer derives from “compositor”, one who sets type, or in it’s original definition, is that of someone who “puts things together”.

13 The landscape was not entirely barren: the work of KPFA broadcaster Henry Jacobs comes to mind, whose programs were certainly wilder than the one record of excerpts eventually released by Folkways, Radio Programme No. J in 1955. Easier to imagine are late night innocent mixes perpetrated by DJs who might have hesitated to call their collages “art”, but were simply having a blast playing various things at once – though this can only be speculation about events that are (most likely) now lost to history.
Temporarily Evaporated Wall

In the wake of James Tenney’s Elvis-sampling zeitgeist capturing work, much of this reticence towards sonic collage evaporated and a wider number of composers began exploring the new aesthetic. Unsurprisingly, the artifacts of shortwave radio interference are a constantly reappearing sonic motif throughout many of these pieces.\(^{14}\) This is not just evidence of a work method reliant on the use of the radio to obtain source material (although it certainly is also that), but a reflection of the very aesthetic that would be instantly recognizable by most listeners of that era; the experience of collage was something they had been introduced to precisely through channel surfing themselves, and those artifacts were part and parcel of that experience.

Cage’s audiences grew as Pop Art became a household concept, with some of his mixed-media performances attracting audiences of thousands. A vinyl pressing of his “\textit{Variations IV}”\(^{16}\) was released in 1966, offering a noisy mix of dozens of sources from tapes and live radio up to the audience as “the sounds of John Cage”\(^ {15}\). The same year, Keith Rowe of AMM\(^{16}\) used a radio in concert, with his band clearly listening to the found sounds of his receiver audible on the improvisation “\textit{Ailantus Glandulosa}”\(^11\).\(^ {12}\) And also at this same year, Stockhausen began work on both \textit{Telemusik} and \textit{Hymnen}\(^{12}\) for tape, world music collages in which sources are intermodulated in ways that launches the aesthetics of shortwave radio surfing into overdrive, threading dozens of sources from around the globe together with the sound of electronic interference, and then cut to the chase with his follow-up work for live performance \textit{Kurzwellen} in which instrumentalists directly emulated the sounds they heard coming over their receivers.

And while it was Karlheinz Stockhausen who appeared on the cover of Sgt. Peppers, John Lennon was only one degree of separation from Cage through his new source of inspiration, Yoko Ono, by the time he decided to incorporate a live radio broadcast during the mixdown of “I Am the Walrus”\(^ {11}\). Unlike all other Beatles songs from that period, which exist in mono and stereo versions, the original master of “Walrus” exists only in mono: the use of the radio as a live instrument transformed that mix into an unrepeatable live performance. A second mix for stereo using sounds from an entirely different broadcast might have been the truly avant-garde thing to do, but it is the mono mix of the song that has become the published composition. Archivists have since turned up the snippet of the radio play that happened to be on the BBC that night (the death scene from \textit{Richard III}), and a recent contemporary recreation of the song for stereo dutifully inserts the master tape of the play along with simulated radio interference, obeying the recording of the original indeterminate moment as one would any other written score.

Native Idea

The following year in Cologne, Holger Czukay\(^10\) founded the rock group Can with two other fellow students of Stockhausen (including one of the tape editors for \textit{Hymnen}, David Johnson). In a tape of their first improvisation, later released on cassette under the title \textit{Prehistoric Future}, Czukay adds the sounds of shortwave radio to the band’s completely improvised instrumental jam. And later that year, smuggled into Stockhausen’s WDR studios late at night by Jackson, Czukay and his colleague Ralf Dammers composed the amazing world-music collage \textit{Canaxis}, placing a pair of Vietnamese vocalists above a carefully harmonized loop of fifteenth century choral music by Pierre de La Rue and wedding them with his own bass playing on the record’s first side, and presenting a mysterious fog of barely determinable ethnic music samples glued together by ring modulation and shortwave artifacts on the other.

Czukay was more than Can’s bass player; he was their live recording engineer, capturing their improvisations to stereo tape as they played. Most importantly he was their tape editor, collapsing the wildest moments of those recordings down into structured compositions for final release. In 1974, the purchase of a 16 channel multitrack recorder upset his role in the band. Each member began recording their parts individually, introducing a spirit of perfectionism that not only changed the nature of the music from the outset, but tempered Czukay’s previously held carte blanche as “final editor” of the results. As the band moved increasingly towards traditional musicianship and pop song structures, two new members were drafted from the pop band Traffic, virtuosic bassist Rosko Gee and percussionist Rebop Kwaku Baah, allowing Czukay to drop his old instrument and develop a new one: a collection of Dictaphone tape machines, a telephone, and several shortwave radios, all routed through a Morse code tapper which acted as a sonic gate, allowing him to sync the outputs of his found sounds with the rhythms of the band by simply tapping them into the mix.

14 Help yourself to the sixties and seventies works of Pierre Henry, François Bayle, Pauline Oliveros, Folkie Rabe, Bernard Parmegiani, Ruth Anderson. Paul Boisselet, Karlheinz Stockhausen, AMM, and if I mention The Byrds and The Who, it is only to open a door on the countless numbers of rock albums using radio interference as a nostalgic sound effect referring to the medium they grew up on.

15 John Cage with David Tudor, \textit{Variations IV}, Everest 3132, 1966, documenting a performance in Los Angeles. When comparing this recording with a tape of the performance at the San Francisco Museum of Modern Art the same year, we find many of the same tapes in evidence, though combined in a different order. This could suggest that after the fifties Cage had grown even more comfortable with the use of fixed recordings over the use of live radio.

A fascinating excerpt from a 1977 television performance is available on the Can DVD, showing the entire band straightforwardly vamping on two chord funk while Czukay hovers over a table of exposed wires and radios, rhythmically tapping recordings of Persian flute music and an African vocalist into the band’s live beat17. But by this late point in the band’s trajectory, Czukay’s experiments had made him the odd man out.

I could use all possible sources of sound… the only problem was the disagreement among ourselves. Reebop, who later had also joined the band, thought that this music would steal people's soul. That’s a typical native idea, that someone can take your soul away by taking a photograph. Fine, you can have this idea, but you can’t get out of the middle ages with it. I had, moreover, a vision of special media-referent music. It even came to fisticuffs with Reebop. I should say, he hit me and I defended myself. Ten minutes before the start of a concert in Berlin. Of course he was sorry, and I’m only mentioning it because it was a clear sign to me that it was time to go my own way.18

Using the studio at night, he went back to work, recording new instrumentals as well as re-editing stereo mixdowns of earlier recordings of Can. But to fill the spaces normally occupied entirely by lead vocals, he began editing together a collage from hundreds of hours of shortwave radio recordings from around the world.

On Cool in the Pool I used cuts from the broadcasts of three radio stations: Radio Luxemburg, Radio France, and one from Russia. For “Oh Lord Give Us More Money” I used some ground tapes from [Can’s album] Landed. On “Persian Love”… I stole the voice of an Iranian poet through my short-wave radio. On “Hollywood Symphony” I made a few winks to Diana Ross. In total for the LP I used many thousands of hours of music. Sometimes I recorded many hours and I only kept a few seconds of, for example, a Korean Orchestra…19

Movies is the first song-based record in the genre of pop music setting “found” vocals into a musical composition of which the original singer had no knowledge, predating the work David Byrne and Brian Eno were just initiating in New York for their more widely heard album My Life in the Bush of Ghosts (1981) to be released two years later.20

It sits in a liminal space between later collage techniques in pop music, which availed themselves of the developing technology of sampling and the emerging practice of turntablism. But in 1979, those practices had yet to reach audiences outside of their incubators in the Bronx, or those capable of affording the $250,000 price tag on a Synclavier digital sampler.21 Whereas the referents for the turntablists of rap music would be of a generation that had safely transferred its musical affections over from the liveness of radio to the personal world of vinyl, Movies is still a record that fetishizes shortwave interference over scratchy vinyl, affectionately looking back on decades soaked with radio channel surfing. And though it anticipates the control that would soon be available through digital editing, it meticulously realized those same structures through the use of the classic tools of razor blades and tape. Each edit betrays the amount of care required to realize it; the time-intensive nature of the work needed to perfect every juxtaposition quickly winnows any carelessness out of the composer’s intent. If this record forecasts the sound of sampling records to come, it is no accident that this first foray into pop music is also a link to the past conception of collage, saturated by the sound of shortwave, posting the radio as the performance tool required to make the music live.

Archival Drone

Last year, Chris Cutler [01] participated in a performance of Stockhausen’s Kurzwellen, noting that it was almost completely impossible to perform an effective version of the piece at this point in history; the shortwave radio band once globally buzzing with music and unregulated communication has been almost entirely abandoned by humans in favor of the Internet.21 Most FM bands now merely broadcast recorded music, serving as advertisements for the products of the music industry, and talk radio formats have largely abandoned the informality of direct address that was early radio’s hallmark: the audience has become too cynical, too acclimated to a world in which most voices are pre-recorded to feel comfortable with an over-familiar tone coming out of a speaker. The audience now knows better than to assume that there is anything “live” left about the radio (or any other) medium. The comforting distance of the pre-recording is now seemingly preferable to most other forms of entertainment; live bands are perceived to be in a losing competition with their own studio records. When sample collage crossed over into the pop charts in the eighties, the signature instrument was not the radio, but of course, the turntable—the referent was no longer the living airwaves but rather the curated record collection of an individual, the signature artifacts of radio interference giving way to the clicks and pops intrinsic to vinyl.

17 Can DVD, Mute Records, 2006. One of the vocals used is almost certainly not from a radio, as it reappears over the completely different music performed on their proto-sampling studio track “Animal Waves” from 1977.
20 David Byrne and Brian Eno, My Life in the Bush of Ghosts, Sire Records, 1981. If Byrne and Eno's work was initially inspired by the environment of late seventies discotheque DJ culling and the Fourth World experiments being pursued by their colleague Jon Hassell, they had almost certainly heard the album before their album’s completion. Bush of Ghosts is another record largely constructed from materials recorded from radio and shortwave sources.
21 Chris Cutler, personal correspondence, February 2010.
There is a sub-genre in the field of Industrial music that began to emerge as this final transition took place: extended suites composed entirely out of recordings of signal-free shortwave noise. William Basinski’s *The River*, John Duncan’s *Phantom Broadcast*, and the epic three hour long “Aerial” by Tod Dockstader offer the listener endless hypnotic waves of shifting atmospheric radio noise, cascading layers of pure sound composed out of the static “interference” in which no human content remains to interfere. If the communications media have migrated online, to an on-demand environment where the real-time broadcasts are indistinguishable from archived ones, the radio remains the original instrument in which so much of the musical vocabulary we now take for granted was first innocently encountered by those members of the audience who were learning how to do more than just listen.
In this essay Jon Leidecker connects three examples from the history of the potential of the radio receiver as musical instrument, from its early beginnings in the twenties as captured on a comedy record, to formal art experiments in the forties and fifties, to its nostalgic presence in one of the very first song-based pop music collage albums, which herald the now familiar practice of sampling.

Jon Leidecker was born in 1970 in Washington, D.C. to two physicists. Since 1990 he has performed appropriative collage music under the pseudonym Wobbly, improvising live with prerecordings to coax the harmonies out of the recorded sounds of individuals from disparate cultures. Albums have been released on the labels Alku, Phthalo, Illegal Art, Tigerbeats, Important and Vague Terrain. Previous and ongoing projects include the bands Chopping Channel (with Don Joyce & Peter Conheim of Negativland), Sagan (with Blevin Blectum, Lesser and Ryan Junell), the Freddy McGuire Show (with video artist Anne McGuire) and Amen Seat (with MaryClare Bryztwa), as well as live and studio collaborations with People Like Us, Matmos, Negativland, Thomas Dimuzio, Tim Perkis & Xopher Davidson, Hrvatski, The Tape-beatles, The Evolution Control Committee and Otomo Yoshihide. In 2009 he was commissioned by Ràdio Web MACBA to produce Variations, an ongoing radio show on the history of musical collage & sampling.
Three ways of binding your Quaderns d’àudio

1. **Dossier grapat**
   - Dosier grapado
   - Stapled Dossier

2. **Enquadernació japonesa grapada**
   - Encuadernación japonesa grapada
   - Stapled Japanese Binding

3. **Enquadernació japonesa cosida**
   - Encuadernación japonesa cosida
   - Sewed Japanese Binding

Llenceu aquest manual d’instruccions una vegada utilizat (no enquadernar).
Desechar este manual de instrucciones una vez utilizado (no encuadernar).
Throw away this instructions manual once used (do not bind).

http://rwm.macba.cat
www.macba.cat