

A History of Japanese Hacking and DIY music

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Is it unreasonable to start a history of Japanese hacking and DIY music with the year 1924?

That was the year TAKAMIZAWA Michinao, perhaps inspired by Luigi Russolo's *Intonarumori* instruments, took some bicycle wheels, metal strings and empty cans and combined them to create his Sound Constructors. (The creator of Japan's first robot manga, Takamizawa later became a famous cartoonist under the name TAGAWA Suiho). The documentation is sketchy, but it is clear that these devices were used by the Japanese Dada group MAVO in dance and theatre performances where they were played by people with no musical background. They might be the first Noise Improvisations in the history of modern art. Three decades later in 1956, TANAKA Atsuko, a core member of the avant-garde group Gutai, created her *Electric Dress*—a mass of light bulbs and wires that she wore fully lit, despite the risk of electrocution, on stage. A year earlier she exhibited a work in which twenty bells could be rung in sequence when visitors pressed a button, a very early example of an interactive sound installation.

As in the United States and Europe, in Japan the 1960s were critical years for art as well as politics. Among the members of the Group Ongaku, founded in 1960, were two important pioneers of electronic experimental music, TONE Yasunao and KOSUGI Takehisa (1938–2018). Tone created one of the first artworks using a tape loop for the “Yomiuri Independent exhibition,” a critical occasion for avant-garde art, in 1962, and in 1965 transformed the body of a Volkswagen into an interactive sound object. This interest in the transformation of content through changes in media—audio tape to visual object, automobile to musical instrument—would remain consistent through Tone's career. Kosugi, who was familiar with electronics from repairing radios in his youth, created ethereal electronic sounds by heterodyning closely tuned radios (see David First's audio and video tracks on the website). He built his own Theremin and altered his live violin performance through filters and delay pedals to gently transform sound and space.

A unique attribute of Tokyo, essential to the development of Japanese electronic music, was the Akihabara district—the urban temple of electronics. After World War II, Akihabara was the epicenter of the black market in the destroyed city center, and later small shops selling military surplus vacuum tubes and radio parts crowded the area around a local school for electronics. The narrow arcade was so jammed with vendors it was difficult to pass, but how exciting to survey the precisely organized arrays of parts and junk, and chat with the sometimes-difficult shop owners. Akihabara nourished Japanese DIY culture: you could find new or old things at incredible prices, and every Akihabara regular would have had a map of it imprinted in their brain. It offered a mysterious flow of imagination not to be had through catalogs or mail order. You might go to buy *things*, but you would leave with ideas—a modest collusion of capitalism and creativity. By the 1990s Akihabara had devolved into a purlieu of *anime* and video-games, but one can still catch a glimpse of older times in a bin of electric parts labeled “new old stock” not found on the Internet. Some have been there for decades.

Several engineers had significant roles in the 1960s development of electronic music in Japan. OKUYAMA Junosuke began as a recording engineer collaborating closely with composer TAKEMITSU Toru (their film work is a précis of the best Japanese film of the sixties) and went on to support and influence many experimental musicians, including international visitors to Japan. He met John Cage and David Tudor in 1962 when they were invited by the Sogetsu Art Centre, then the heart of the Tokyo contemporary art scene (though it strains credibility, Sogetsu was sponsored by the Ikebana flower arranging school Sogetsu-ryu). Okuyama was the resident sound engineer, and his relationship to Cage was cemented when he built in one night a 50-channel mixer for Cage's 50 contact microphones (the microphones had been made in Japan but, curiously, brought by Cage from America). Perhaps more importantly, for the subsequent history of electronic music, Okuyama, who could not speak English, took Tudor, who did not understand Japanese, to Akihabara. Cage wanted to bring Okuyama back to the US, but this did not happen. Instead Cage took home technology and the spirit of Zen, a form of Orientalism Western intellectuals like; while Tudor brought back a fascination with live electronics that blossomed instantly. Okuyama continued to assist musicians by building multipliers, filters, ring modulators and other devices. Cage's pupil ICHIYANAGI Toshi used these tools in performing his own compositions, and at times Okuyama himself got up on stage. While the nation's most important electronic music studio, NHK Electronic Music Studio (under the aegis of Japan's national broadcasting corporation, NHK,) was mainly interested in tape music, Okuyama's work greatly expanded the field of live electronics.

It was in Akihabara in 1963 that the engineer ABE Shuya met artist Nam June Paik, who had studied in Japan and was a frequent visitor. Together they built *Robot K-456* (1964), who performed in the groundbreaking street performances. Later Abe designed the Paik-Abe video synthesizer, based on specifications from Paik, as part of a project with WGBH television in Boston.

The tradition of art-oriented engineering in Japan can be traced back to the legendary UCHIDA Hideo (one story has it that he was the actual inventor of the transistor.) In 1962, having previously worked at the NHK research laboratory, he opened a shop in Akihabara (the store remained in the same place with the same name until quite recently). Later he devoted himself to elucidating paranormal phenomena through electrical engineering. Echoes of Uchida can be heard in the work of artists SHII Kei and MURAI Keitetsu. In the 1970s Shii had studied with Kosugi at Bigakko, the base for anti-academic education at the time. He has since provided electronic devices for many artists, and with other Kosugi alumni is a member of Marginal Consort, which employs a wide range of electronic instruments. MURAI Keitetsu assisted Kosugi with electronics in later years, and is known for solo performances, most memorably those using a candle flame to trigger an array of oscillators to produce a resounding roar.

YOSHIDA Minoru, a member of the Gutai group, developed his work using technologies in a psychedelic way, and in 1974 built synthesizer components into a plastic jacket. Wearing this synthesizer jacket, Yoshida suspended himself with ropes and performed mid-air—linking wearable electronics and Sun Ra.



Figure 1 Synthesizer jacket, YOSHIDA Minoru, . Photographer Unknown courtesy of Midori Yoshida and Ulterior Gallery, New York, used by permission.

I would like to take this moment to correct a misperception about Japanese culture common among Western readers—namely the idea that Japan has nurtured its own consistent and continuous culture, independent of the United States, Europe and other places. As already observed, there was Dadaism in Japan in the 1920s, and the Japanese avant-garde of the 1960s was perfectly synchronized with that of New York City. There was always influence from the West, but there is no need to lament “cultural imperialism.” Dadaism may have reached Japan from Berlin, but it was accepted in Japan only because similar things had already taken shape there. Similarly, the musical work of Group Ongaku commenced without direct knowledge of

Cage or of Fluxus, but when their ideas were imported, they resonated with the Japanese avant-garde. In other words, Japan shared in the Zeitgeist of the 20th century.

That said, one possible, and unfortunate, peculiarity of Japanese culture is a dearth of communication between different generations and different regions in Japan. Thus there was little relationship between 1920s Dadaism and the 1960s avant-garde in Japan—somehow the distance was much greater than the (mathematically equivalent) one between Duchamp and Fluxus. The physical distance between Tokyo and Osaka, the two cultural poles in Japan, is only 400 km, but the cultural gap seems greater than that separating New York and San Francisco. The meeting point for Group Ongaku (Tokyo) and Gutai (around Osaka) ran through John Cage's loft in New York City.



Figure 2 Turnhat, IMAI Jiro. Photo © IMAI Jiro, used by permission.

In the 1970s and early 1980s, a new DIY culture, punk, exploded in Tokyo. For better or worse, there was no Japanese equivalent to Malcolm McLaren, and the punk scene remained an underground phenomenon. IMAI Jiro, who was involved in the strangest band, Pungo and the most self-destructive band, Taco (“octopus”), expressed the DIY spirit with honesty and humor. Around 1990 he started Jirox Dolls Show as a solo effort, using dolls and rubbish combined on stage with light bulbs, cheap turntables, electric fans and other household appliances. A performance using an electric mixer to turn a disc placed above a hat conveyed a meaningless purity. Imai died in 2012, but during his final days in hospital, he photographed objects created from hospital food, images that still speak to us about what is hacking, what is DIY, what is art, truth and love. In Osaka also the punk scene boomed, characterized by the use of effects and unusual explosive sounds that later became common to Japanese noise music¹.



Figure 3 Food art, IMAI Jiro. Photo © IMAI Jiro, used by permission.

Guitarist TAKAYANAGI Masayuki was a pioneer of the free jazz movement in Japan, from which he drew his methodology of “action direct” in the 1980s. Takayanagi placed a number of electric guitars on a desk; these were activated by motors and heard through a ring modulator and numerous effect pedals, accompanied by tape material and feedback. The result was an incredible, roaring sound performance. Takayanagi’s disciple IMAI Kazuo (like Shii, a former student of Kosugi’s), attached springs to a metal plate and performed with it as part of the Marginal Consort and in solo performances. OTOMO Yoshihide, another student of Takayanagi, created a number of “action direct” mechanisms, and had played twisted noise on an electric guitar to which he had added springs.



Figure 4 Action Direct, TAKAYANAGI Masayuki. Photo © SAITO Yasunori, used by permission.

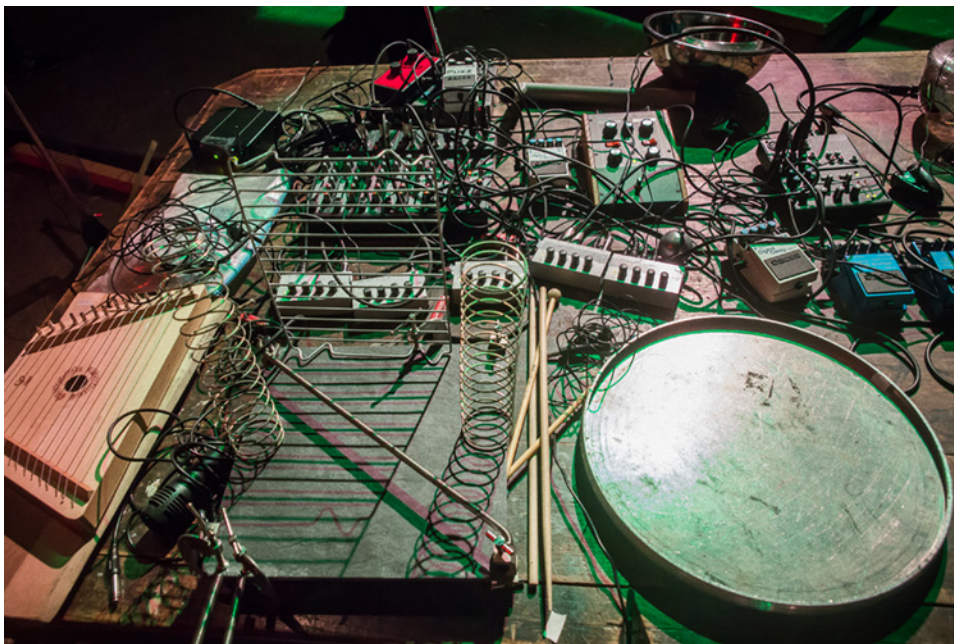


Figure 5 Table set-up for Marginal Consort, IMAI Kazuo,. Photo © FUNAKI Kazuyuki, used by permission.

Composer and pianist TAKAHASHI Yuji has had a large influence as a role model for anti-academic composers and performers in Japan. A student of Iannis Xenakis, Takahashi commissioned and premiered Xenakis's solo piano piece "Herma" (1961). Though it would be impossible to do justice to his extensive activity in hacking and electronics here, it is important

to acknowledge his computer improvisations of the late 1980s and early 1990. Working with Mac and a sampler, he often collaborated with the legendary improviser TOGASHI Masahiko , as well as with the American composer John Zorn, who lived in Tokyo at the time. He used the programming language Max, in which the user connects digital “objects” (discrete processing elements) with lines, mimicking the physical process of connecting components with patch cords: on stage Takahashi would sometimes work with his back to the audience so they could watch the screen as he added or deleted Max objects, clicking and dragging patching cables to connect or disconnect them. These performances could be described as “live coding,” but they might as accurately be dubbed “live cording.”

Bassist YOSHIKAWA Motoharu, like Takaynagai and Togashi, started in free jazz, where he became a leading figure. Always in the forefront of improvised music, he developed in the late 1980s a system in which a homemade vertical electric bass was connected to a DJ sampler and other effects, modified so that they could be delicately controlled with his feet as he played the bass. This enabled him to perform real time sampling and modulation, creating an orchestra-like accompaniment from vertically placed speakers, resulting in very lively improvised electronic music.

In the new millennium, the Internet has linked communities around the globe and facilitated our access to information, in Japan as elsewhere. I would like to mention seven artists among the many who have emerged in this milieu.

ITO Atsushiro had long included fluorescent lights in his installations, but around 2000 he began amplifying the sound of the lights with electromagnetic pickups in audio visual performances. He dubbed this instrument the Optron, and used it in collaborative efforts with other improvising musicians. In 2003 he reduced the system to a single fluorescent tube, held like a guitar. His performance style mimics rock guitar—the most sophisticated style of musical performance to be developed in the last 50 years. The guitar is abandoned. And the strobe is your own!



Figure 6 ITO Atsushiro, Optron. Photo © FUJISHIMA Ryo, used by permission.

Along with Ito, SUZUKI Manabu is a member of IMAI Kazuo trio mentioned above (in this group Imai acts exclusively as an outstanding jazz guitarist). In addition to building electric instruments for other artists, Suzuki performs his own work with a large number of eccentric electric devices, that translate chemical and physical motion data into sound. One performance work amplifies the electric potentials of an electrolysis of water; in he holds both his hands in a horizontal position for around 20 minutes; as the hands start to shake, sensors catch the movements and transform them to sounds.

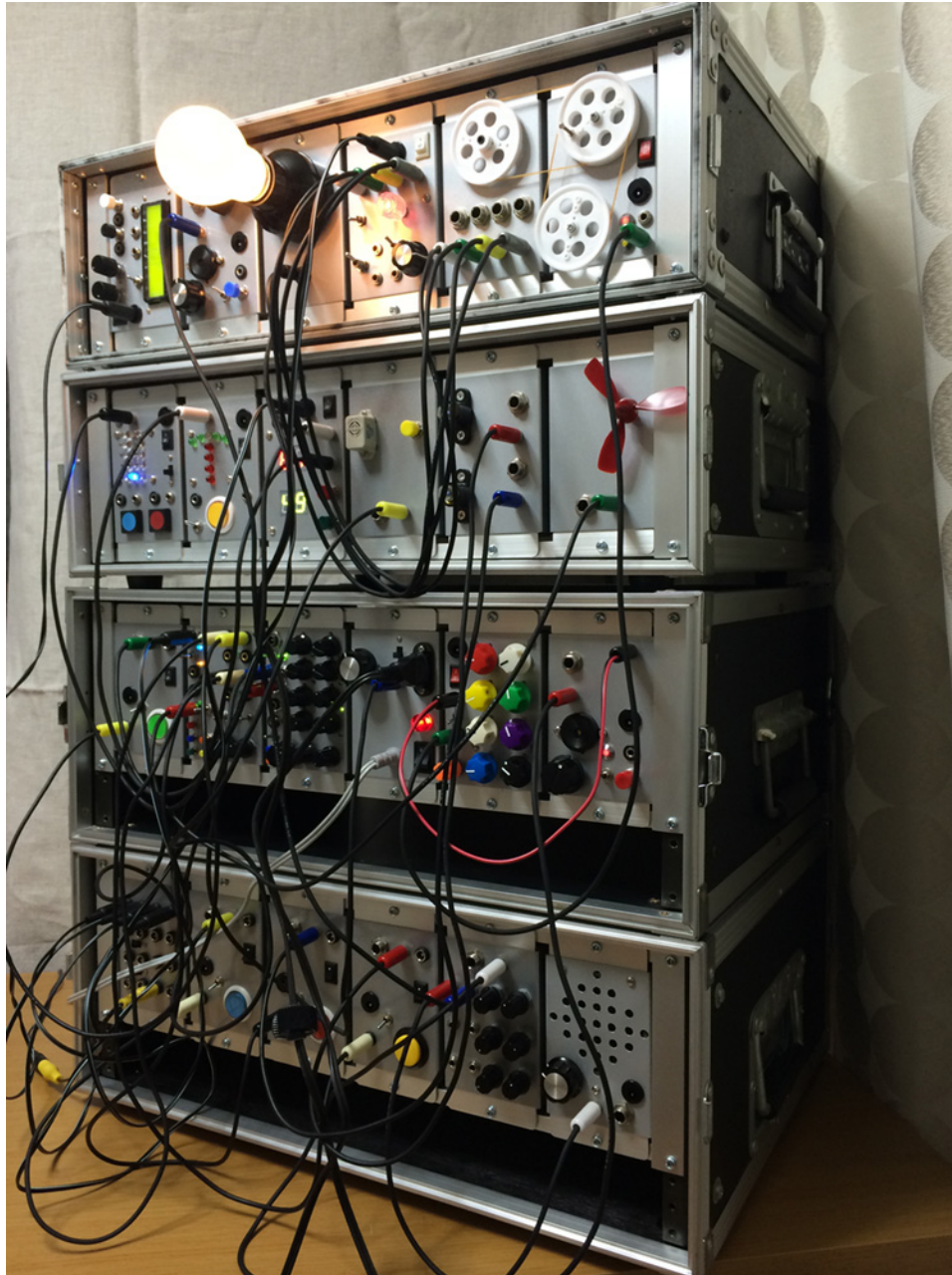


Figure 7 System Y, YONEMOTO Minoru. Photo © YONEMOTO Minoru, used by permission.

YONEMOTO Minoru has invented a large number of unconventional electric devices that explore the territory between conceptual art and fetishism. In performance, he manually sends 8-bit commands to an early digital music chip using a combination of switches and buttons, collapsing the distance between the human body and digital technology. With more than 150 modules, his System Y appears to be a normal self-made synth, but it contains a compass, an accessories case and a spring-powered walking toy. Until *Handmade Electronic Music* was translated into Japanese in 2013, Yonemoto's book *Fun Electronic Musical Instruments: An Introduction to DIY* (2008) was the only guide for experimental musicians written in Japanese².

One of the most prominent contemporary artists in Japan at the moment is MOHRI Yuko. Many of her kinetic installation works employ chains of devices and objects activated by solenoids and motors. Her projects combine a refined minimalist aesthetic and the unpretentious joy of self-made objects.

KUBOTA Akihiro teaches media art at Tama Art University. Active on the “live coding” scene, he also performs on an electric guitar into which he has incorporated a breadboard for prototyping circuitry, an Arduino, contact microphones, optical sensors and a video synthesizer.

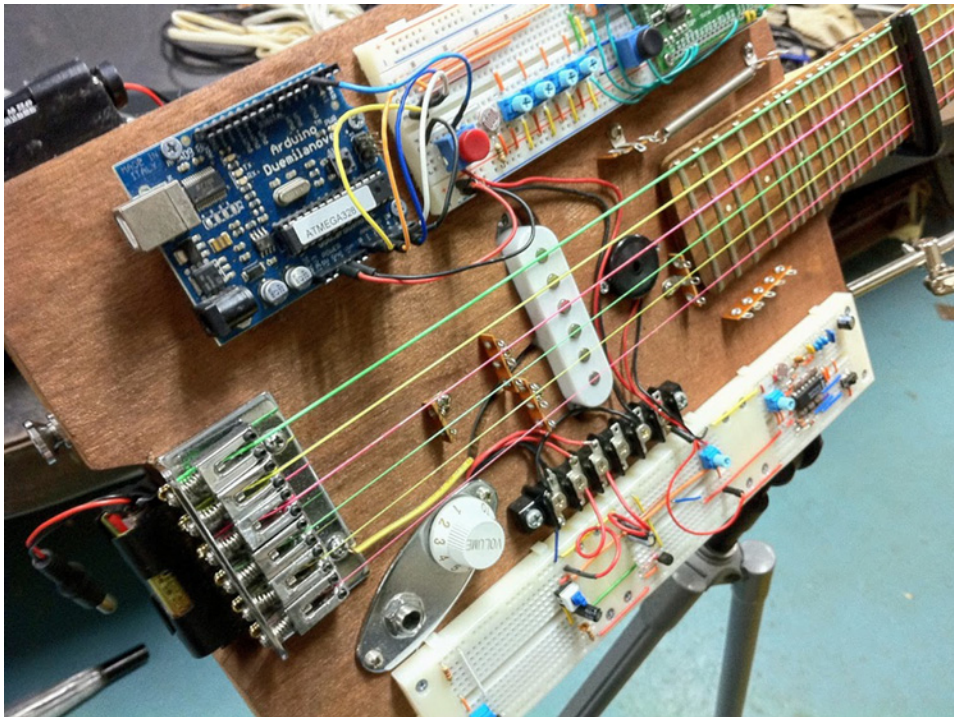


Figure 8 Breadboard Guitar, KUBOTA Akihiro. Photo © KUBOTA Akihiro, used by permission.

TAKESHITA Yuma is a member of the emerging younger generation. He has attached numerous sensors and mechanisms—including one that can rotate a knob automatically—to an electric bass, allowing him to control effect devices and synthesizers in improvisations. He frequently collaborates with NAKADA Kayu who, unlike many of those involved in the Japanese independent music scene, has trained in traditional composition methods at the Sensoku Gakuen College of Music. Nakada regards circuit bending as an extension of the concept of the prepared piano (adding wires to an open can be seen as analogous to placing objects in the strings of the piano). Nakada extracts components from electric keyboards and

stacks them in large numbers to make electrical contact, creating unexpected sounds. These performances are representative of the best aspects of the Japanese hacking music scene in Japan today.

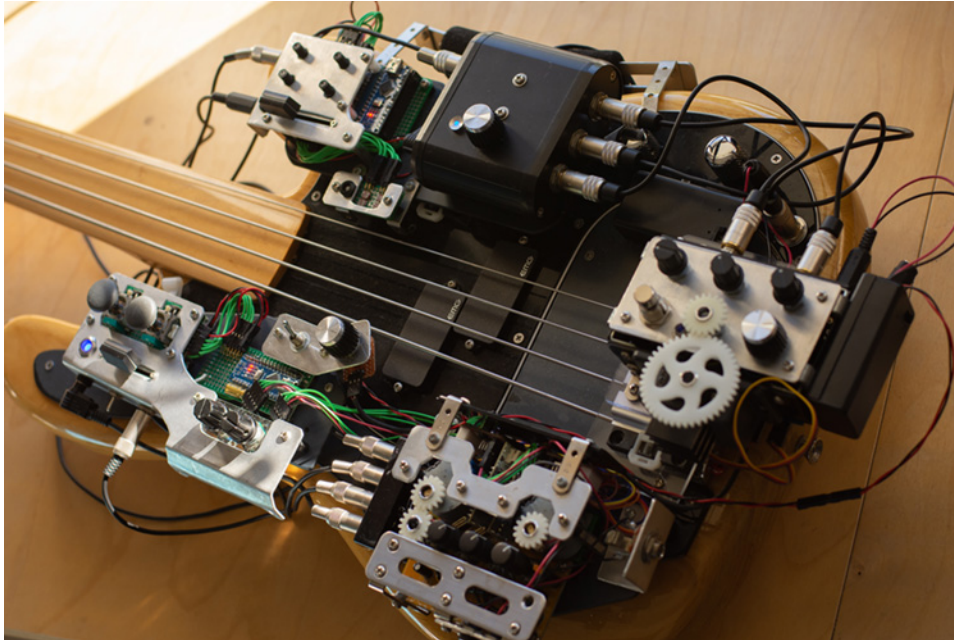


Figure 9 Electro-bass, TAKESHITA Yuma. Photo © TAKESHITA Yuma, used by permission.

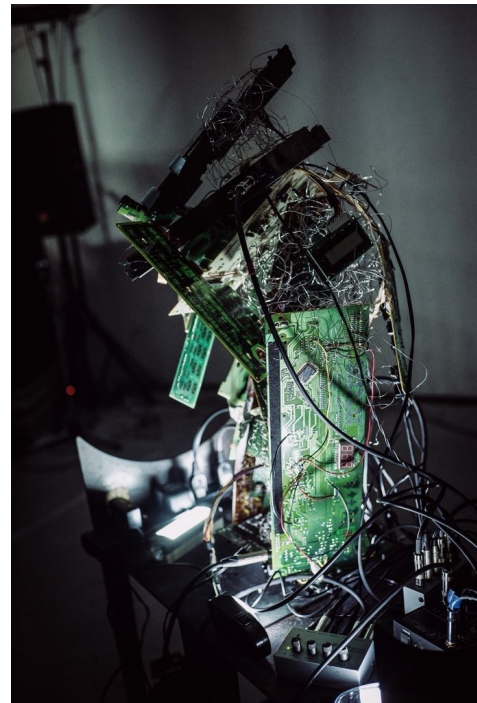


Figure 10 a & b: NAKADA Kayu, Bug Synth. Photos © NAKADA Kayu, used by permission.

¹ See David Novak, 2013, *Japanoise: Music at the Edge of Circulation*, Duke University Press.

² Minoru Yonemoto, *Tanoshii denshi gakki: jisaku no susume* [楽しい電子楽器 自作のススメ] (Tokyo: Ohm, 2008).

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