

DIY (Do-It-Yourself) Electronics, Coin-Operated Relic Boxes and Techno-Animist Shrines

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ABSTRACT

The author uses creative practice and DIY electronics as the vehicle for a practice-led inquiry into the similarities between techno-animism and material agency. Combining technology with aspects of magic and religion, techno-animism is an emerging concept in postmodern anthropology used to discuss the sentient agency of objects and materials within the context of modern technological societies. This combination of seemingly disparate fields of knowledge is the basis of a postdisciplinary research into creative practices, attitudes and ethos using a series of artifacts that visualize the ideas of techno-animism, made by the author over a period of 30 years.

I have always had a fascination with taking apart objects of technology. Distant childhood memories involve seeing small, scattered piles of screws, wires, washers and unnamable mechanical parts, arranged by my father into mysterious patterns with a mixture of concentrated reverence and animated actions. The spectacle of these butchered objects of technology, brought mysteriously back to life, was often accompanied by stern parental reminders to “watch out” that the minute parts were not disturbed, or upset, like their human counterparts were liable to be.

For me, as a child, there always seemed to be a sentient force to these dismantled objects, as if the positions in which they sat on the spread newspapers were imbued with a fetishism that went beyond the material worth of their everyday functions as electrical starters of cars or toasters of bread. Later I began my own concentrated, ritual-like meditations on dismantling and reassembling the complex components of household technologies, understanding the level of concentration needed to “watch out” for the order and placement of the scattered parts. As my informal apprenticeship continued, I began to value the dismantled anatomies of technology in much the same way early medical doctors cherished their stolen and dissected cadavers: I would “body-snatch” broken parts from behind repair shops

and scrap yards, ignoring warning stickers and even “taking to bits” newly purchased objects.

These informal studies influenced my attitude toward technology: I perceived it as a malleable, “hands-on” interface between humans and the multitude of tiny components contained within. This relationship forms a techno-animist cosmology of strangely-operating-and-revered-deities in which science seems to converge with the magico-religious origins of art, in mysterious self-organizing assemblages. While there may be concerns of cultural appropriation associated with the use of religious images and animist beliefs, the emphasis of this article is the articulation of the creative processes and ethos of a Do-It-Yourself (DIY) maker for whom the revered objects and deities of technology become objects of appropriation, mutation and adaptation.

Using examples from my own practice of DIY electronics [1], in this article I examine the interdisciplinary overlaps between anthropological concepts of animism, DIY technology and material agency.

The electrical coin-operated shrine shown in Fig. 1 is part of a series of religious machines I made, with imaginary functions suggested by names such as Electrical Spirit Box, Electronic Reliquary, Random Divinity Selector and Mechanical Divination Machine. This shrine shows an eclectic assemblage of electronic symbols, messy bare wiring, rusty “fetish” nails and Christian religious iconography. Its crudely assembled electronics are not concealed by protective casings nor contained by circuit boards but instead are allowed to “float” freely between the metal objects of the shrine, significantly increasing the risk of short-circuit and malfunction. The church icons, similarly, are affixed by decaying nails rather than by concealed glue, giving the appearance of a crude, homemade, makeshift and highly personalized collection of fetishized objects.

The visual linking of religious iconography and electronic symbols, through complex colorful wiring, suggests an intrinsic connection between spiritual and electrical energies and the materials and objects within. The intention is to materially present “a fetish box of energized objects” as a visual-

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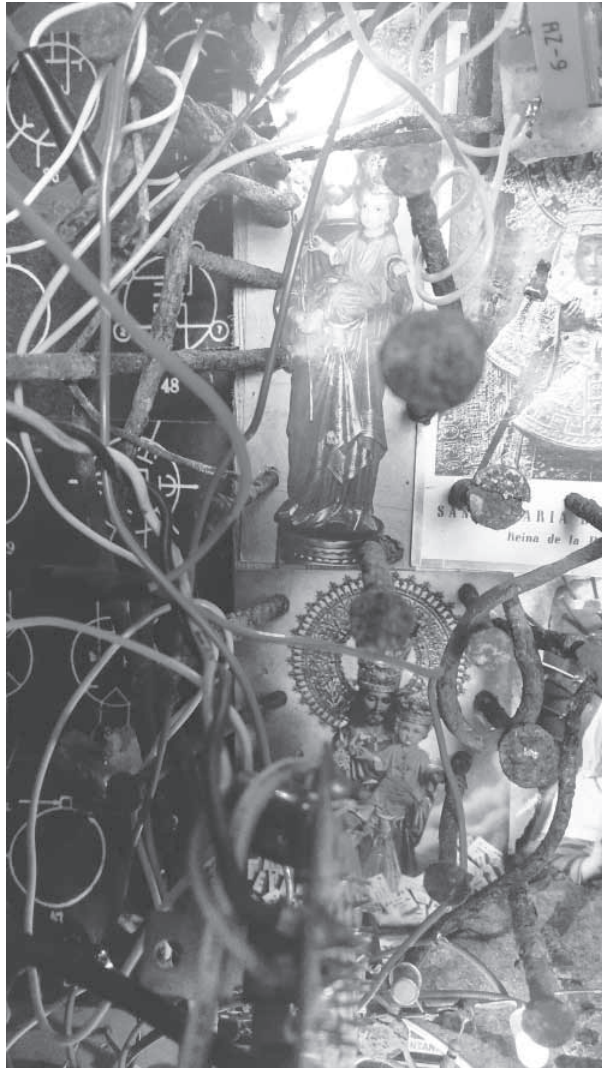


Fig. 1. Electronic “animist” shrine combining decaying materials with religious relics and iconography, 1993. My first electrical shrine. (© Emit Snake-Beings)

ization of techno-animist practices that blurs the distinction between technology and religion.

My personal interest in techno-animism began in the early 1990s while I was walking the Camino de Santiago in Spain. Here I discovered that coin-operated electrical prayer machines had been installed in many of the churches along the way. These machines seemed to utilize randomly selected electric light bulbs, instead of the traditional candles used as prayer offerings [2]. I copied down the address of the supplier, then I requested and received a printed brochure from a factory that made these religious machines. The brochure detailed several different designs, which I referred to in further speculation on the idea of religious machines in a series of over 30 coin-operated electrical shrines between 1991 and 2017.

Further research revealed a vast number of patents for religious technologies filed in the London patent office, including the light-bulb prayer machine, a musical prayer carpet and a schematic for an electronic fortune-telling device (the latter patented by Casio in 1982). The electrical shrines

I built were glass-fronted wooden boxes containing objects highlighting the interconnection between religious and technological thought: They resembled a traditional animist diorama of fetishized objects, situated within the technological landscape of discarded electronics, redundant devices and objects found in surplus electronics stores.

The term *animism* has traditionally been associated with nontechnological societies and “religious beliefs involving the attribution of life or divinity to such natural phenomena as trees, thunder, or celestial bodies” [3]. In traditional ethnographic reports, animism is entrenched within a religion-based world view that associates “fetish” objects with divinatory powers and sees them as displaying some evidence of sentience.

The questions I asked through my practice were: What is the form of animism that exists in the context of an industrialized, technological society? Can ideas of material agency be linked to technological animism through the attitudes of DIY makers?

This use of animism within a technological setting resonates with the ideas of Alfred Hornburg, who acknowledges the invisible forces of materials: “There is something mysterious about technology. Something that strangely seems to escape us, both as social scientists and as citizens” [4]. As per Jensen and Blok, Hornburg holds that (postmodern) “animism is not, in fact, an exclusive property of specific indigenous cultures” [5]. These ideas are the prelude to an animist dialogue, including an investigation into techno-animism and its connection with contemporary ideas of nonhuman and material agency [6].

The postmodern animist dialogue, between human and nonhuman, can be seen in the material engagement of the DIY practitioner and, indeed, any maker of artifacts who interacts with the essential forces of materials to negotiate the making of an object, acknowledging a two-way interaction between materials and the human [7] that extends agency beyond the flesh and blood of the artist. This negotiated process of material agency is a dialogue between human and nonhuman agencies: an animating essence of objects and materials that the DIY practitioner engages with, crossing boundaries between human and material.

In recent years, ideas of animism and technology have become connected through their association with Japanese electronic toys—“techno-animism is a style that is deeply embedded in material practices of [Japanese] commodity consumerism” [8]; Richardson has identified a hybrid connection between spirituality and technology, in which “technological animism thus emerges from the interaction between a religious or cultural context, fictional models, and technoscientific production” [9]. In contrast to the specific contexts of Japanese techno-animism, the works I present here are situated within my own eclectic religious and cultural practices, reflecting an ongoing desire to speculate on the visual forms of animism within a technological context. This desire relates to John Clammer’s view, as described by Jensen and Blok, of “a vital animism, within a complex, modernized and advanced techno-scientific [society] . . . rethinking relations with the non-human world” [10].

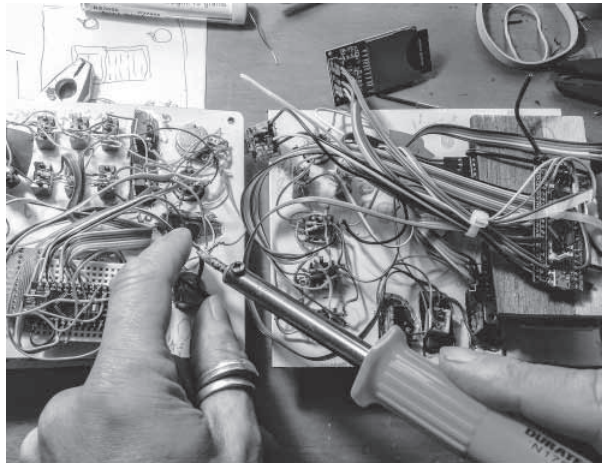


Fig. 2. Handmade construction processes of DIY electronics, utilizing Arduino programmable circuit boards connected to multiple interface switches and controls, 2018. (© Emit Snake-Beings)

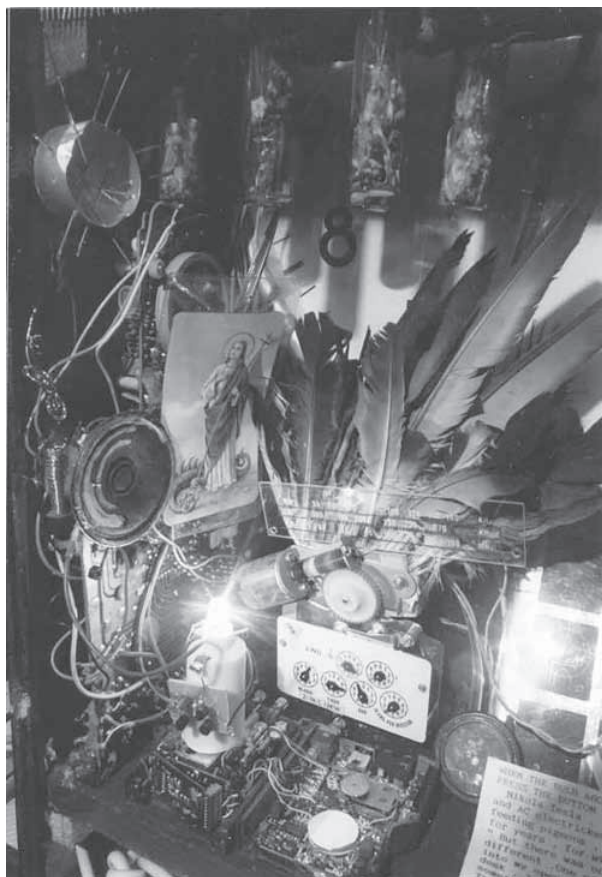


Fig. 3. Shrine to Nikola Tesla, 1995. (© Emit Snake-Beings)

My own conception of techno-animism, as it has evolved in the processes of DIY electronics, concerns the way that the emerging functions of DIY technology express an esoteric and mysterious quality, an indeterminate functioning rather than a logical design that results from human-centered intention. In recent years my methods of construction (see Fig. 2) often involve obsessive semi-improvised wiring between programmable components and multiple switches to provide human control interfaces that overflow with complexity.

Complexity of construction is one way for the human

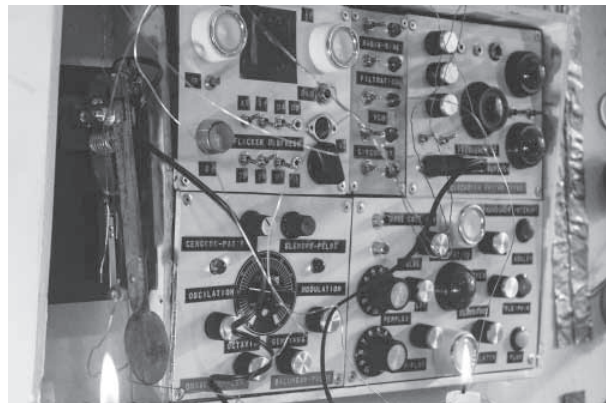


Fig. 4. Morse code sequencer device, with complex and confusing array of “controls.” (© Emit Snake-Beings)

practitioner to lose track of how the mechanism works, bypassing intentional design and allowing unexpected mistakes and accidents. The example in Fig. 2 is a complexity strategy arising from seeing what will happen if a switch or dial is attached to every available input on an Arduino circuit board, using programming to assign increasingly complex parameters of function. Creating complex “controls” for every minute aspect of a machine’s function becomes a way of bewildering human control: An excess of dials and switches creates more confusion than control, and a human operator becomes uncertain of how each control functions (as with the Morse code sequencer discussed below).

A shrine to Nikola Tesla (Fig. 3) is one such shrine that speculates on the interconnection of radio science and religion [11]. The combination of religious items, technologies and esoteric objects—insect remains collected from electrical lamp fittings, pigeon feathers—is a way of visualizing the postdisciplinary aura of early radio pioneers.

In the Tesla shrine, these postdisciplinary traits manifest in the radiomancy device—a divination machine randomly splicing the sounds of multiple radio sets, tuned to spoken word stations, to generate divinatory messages from the disembodied voices. This techno-animist machine comes with its own brochure, or operating manual, further describing the postdisciplinary functions of the artifact: “The selector switch allows the operator to tune the shrine to the most distant transmissions, the origin of which are in constant dispute between scientists, artists and theologians: Patent # 76399873-150” [12].

In a later shrine, built in 2018, I returned to this theme of animist radio and the redundant technology of Morse code. Figure 4 shows the complex control panel of the Morse code sequencer. Despite the relatively simple structure of Morse code (a series of either short or long sounds arranged with spaces of silence), the Morse code sequencer suggests a more complex operation. Its numerous dials affect functions that include nontechnological agents to influence its operations. In this way it has characteristics similar to the subtle features of transmitted Morse code that skilled operators could recognize as the particular rhythms and nuances marking the identity of the human operator.

This ability of Morse code operators to identify the origins of distant transmissions led me to include functions after an imagined style of Morse code transmitted by Indonesian sailors, incorporating gamelan rhythms into the basic Morse structure. Other functions in the Morse code sequencer machine include dials labeled with the names of Norse gods and mythologies—oxymoronic “chaotic controls” in the programming that result in unexpected, or uncontrollable, mutations of sound within the circuits (see Fig. 5). These incorporated chaotic controls give the device an indeterminate operation, constantly revealing glitches, ambiguous functions and dysfunctions during its operation.

Techno-animism suggests that material forces within technology are capable of operating as “agents” of change: There is a force within the materials that “animates” the process of making something. This can be thought of as a force that emerges between the human and the materials, an agency that cannot be entirely situated within either the human or the materials of making.

In recent years redundant analog technologies, such as vinyl record players and Super 8 video cameras, have attained an almost fetish status as artifacts that symbolize an almost alien, pre-Internet way of thinking. One such “fetish object,” for me, is the Morse code key, since its design is an early human-machine interface that can be contrasted with the appearance and operations of a computer mouse. The design of the Morse key has been optimized to produce rhythmic electrical switching, which is necessary for the transmission of Morse code. This function of the Morse key to generate rhythmic electrical switching became easily refunctioned as a device for generating a particular form of music that I label techno-animist [13].

To enhance the material qualities of the making process, I decided to build the Morse keys from recycled copper and redundant industrial switches (Fig. 6). This process was a way of connecting with the material qualities affecting the subtle rhythm of the Morse code generated. Using recycled materials adds a level of inconsistency, so that each handmade key exhibits slightly different qualities, just as the nuances of Morse code are affected by different human operators. Using whatever materials and tools were available gave me a feeling of engaging with materials on a basic level, somewhat like a prisoner-of-war situation in which a radio set could be made using carefully scavenged materials and limited tools. For example, I heated the copper on a stovetop to soften it for manipulation; I used a hand drill to drill holes in a wooden trunk; and I textured the metal by rubbing it on a concrete floor outside.

All the material variables influence the sound produced by the Morse key, in combination with low-tech sound-generating circuits; the complexity of controls, which allows parts of the circuit to override and influence other sections through electrical interference; and the hand-coded interconnection between controls used to drive “primitive” Arduino microprocessors. Artifacts like this—which seem to emerge from difficult-to-map, complex and “messy” processes—acknowledge the dynamic forces of making as a negotiation between the “intention” of the materials and the human [14].

This results in a machine that is not entirely controllable and that produces unexpected sounds, as if mysterious animist forces are emerging from the nontotalizing assemblage of the electronics.

I extended the engagement with materials in the exhibition stages, displaying raw materials together with the finished artifacts.

The title of my piece, *Ritual Remnants*, refers to the objects left over after a ritual performance of some kind [15].

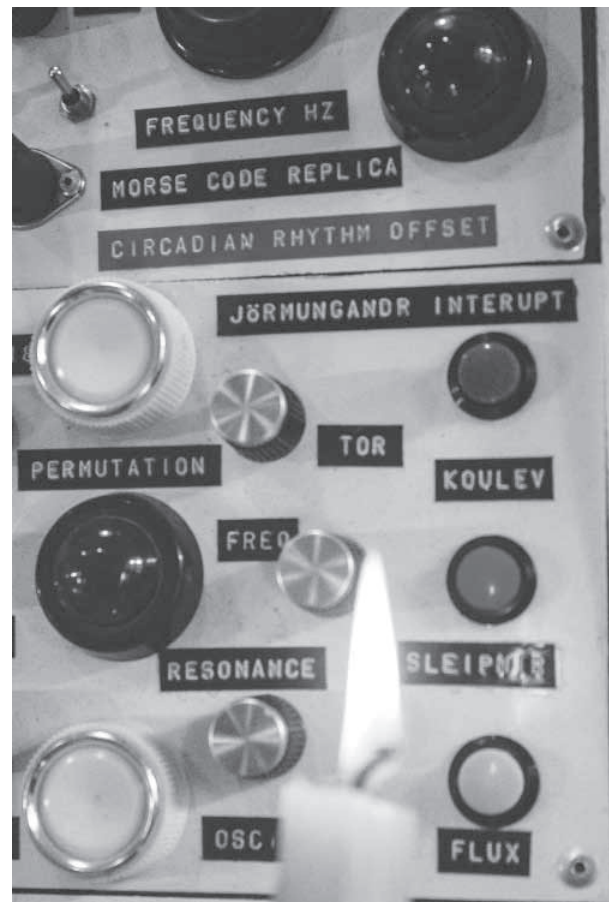


Fig. 5. Morse code sequencer detail showing “chaotic controls” evoking deities. (© Emit Snake-Beings)



Fig. 6. Handmade construction processes of DIY Morse code keys, 2018. (© Emit Snake-Beings)

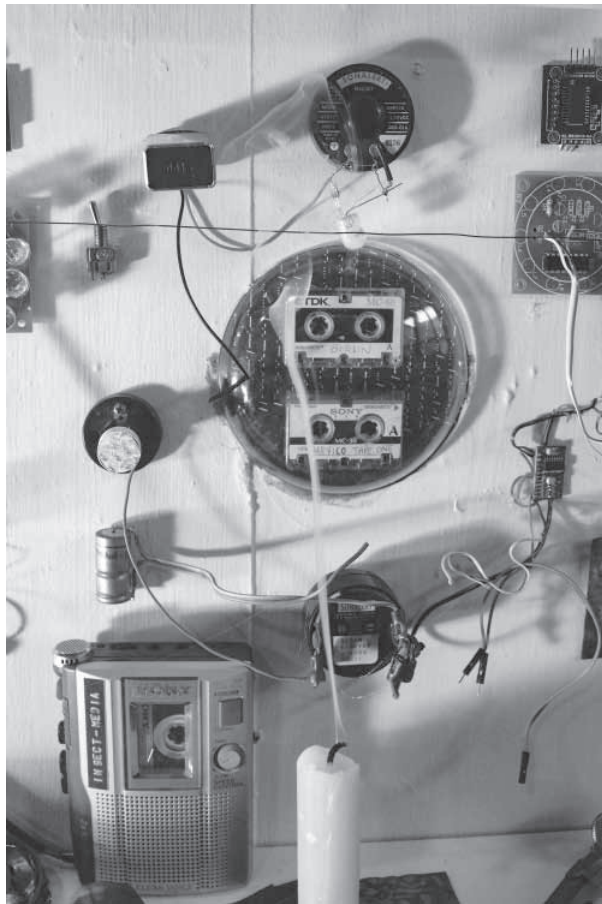


Fig. 7. Objects as “ritual remnants”: materials left over after the construction processes of DIY electronics. Exhibition Port Chalmers, New Zealand, 2018. (© Emit Snake-Beings)

The name came from a series of photographs I had made in India of the trash left around sacred shrines and temples after rituals had been conducted. I never found out if the leftovers, such as empty matchboxes, ashes and rotting fruit, were considered to be sacred or simply the spent and worthless vehicles of devotion. Figure 7 displays some of the raw components, discarded objects, microcassettes with sounds recorded and used in the finished machines, broken circuits and abandoned half-finished circuits that never made their way into the functioning machines. These were some of the items assembled into a makeshift shrine of fetishized technological objects.

In the *Ritual Remnants* exhibition, the leftover objects of “making” illustrate the animist forces of objects rather than the more human-centered idea that the value of these objects and materials are contained within the presentation of an individual’s artistic intention.

My cledonancy machine (Fig. 8) is a coin-operated divination shrine that selects and plays randomly selected sound snippets from several spoken-word folders within its built-in MP3 audio player. Cledonancy, a form of divination sacred to the Greek god Hermes, traditionally involved using scraps of randomly overheard conversations as a source

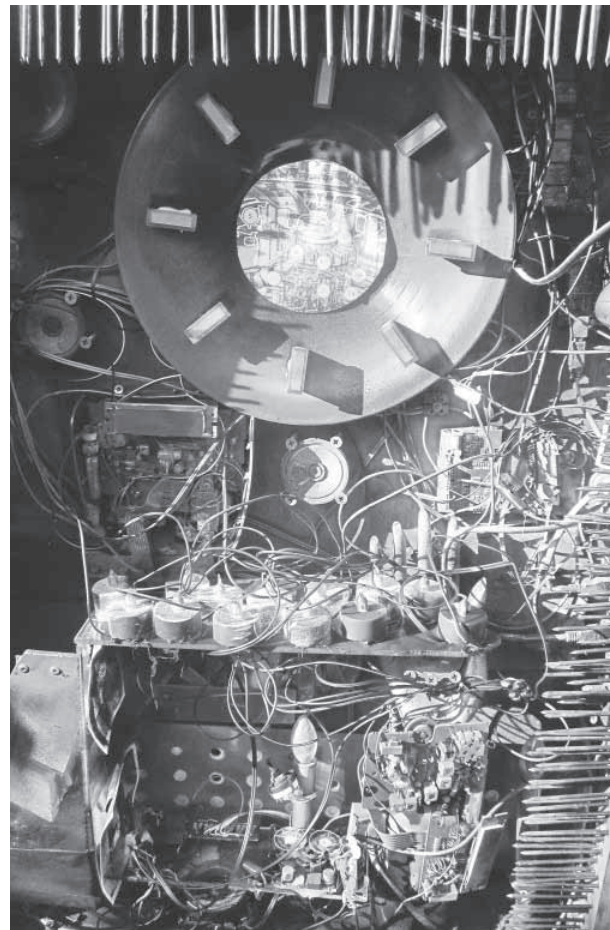


Fig. 8. Detail from the cledonancy divination machine, 2017. (© Emit Snake-Beings)

for the purpose of fortune-telling [16]. The traditional practice was to block the ears and then uncover them for a few seconds in a busy public space, such as a marketplace, taking the fragments of conversations overheard as part of a sacred divinatory dialogue. The machine shown in Fig. 8 is an electronic version of the traditional cledonancy ritual, providing configurations of words and sentences beyond conscious human intention. On the insertion of a coin, as well as through the desire of the listener, the cledonancy machine connects with the “extended mind” [17] of the operator, allowing access to the loosely formed meanings that occur as a result of randomly configured words and sentences. This use of technology to produce randomized messages is a variation of the fortune-telling practices of cartomancy and other forms of divination that provide a chance encounter with forces outside of human intention. In this sense, technology is playing the role of the animating spirit of divinatory materials and functioning as a material agent with which the human operator enters into dialogue.

A techno-animist approach to technology, as in the examples in this article, creates artifacts that resonate with the multiple forces and agencies that often lie beneath the conscious process of making. These nonhuman agencies,

traditionally described as animist spirits, can be repackaged as material agency, but the outcome in both cases is that the human is displaced from the center of the process. In practices such as DIY electronics, which engage with entangled agencies and a messy, intuitive and exploratory engagement with materials [18], there is an acknowledgment that forces other than the human are involved in determining the functions of the artifacts. Techno-animism and material agency are two ways to describe a dialogue with the indeterminate forces contained within technologies, whether in a fortune-telling device using radio, an electrical shrine, or a religious machine located in a mainstream church; the interconnections between electronics and animism are a subject that has yet to reach its full potential for exploration.

These few examples of the many religious machines I have built provide a brief survey of the interconnections between animism and the material agency of technology. The spiritual practice of techno-animism is an emerging phenomenon that has yet to be clearly defined. In this article, I have sought to provide some insight into the thoughts and ethos behind the making of artifacts that claim to promote such a view.

More examples are available on my website [19], as well as through the literature referenced in this article. These examples and references are suggested as sources for further research into the interconnection between an emerging techno-animist philosophy, creative practice and contemporary views of material agency.

References and Notes

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