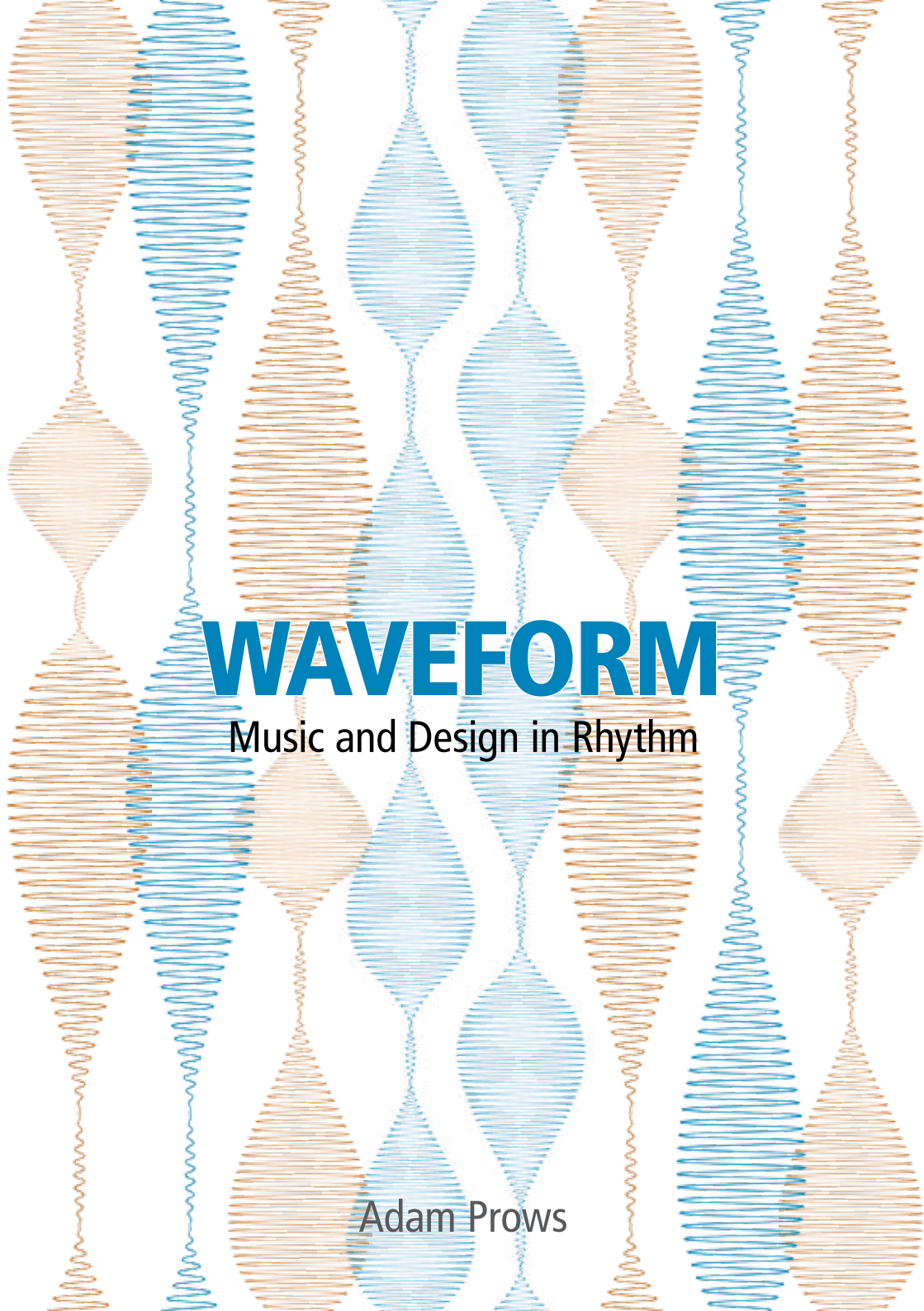


WAVEFORM

Music and Design in Rhythm

Adam Prows

4 Timeline

6 Stealth Iconography

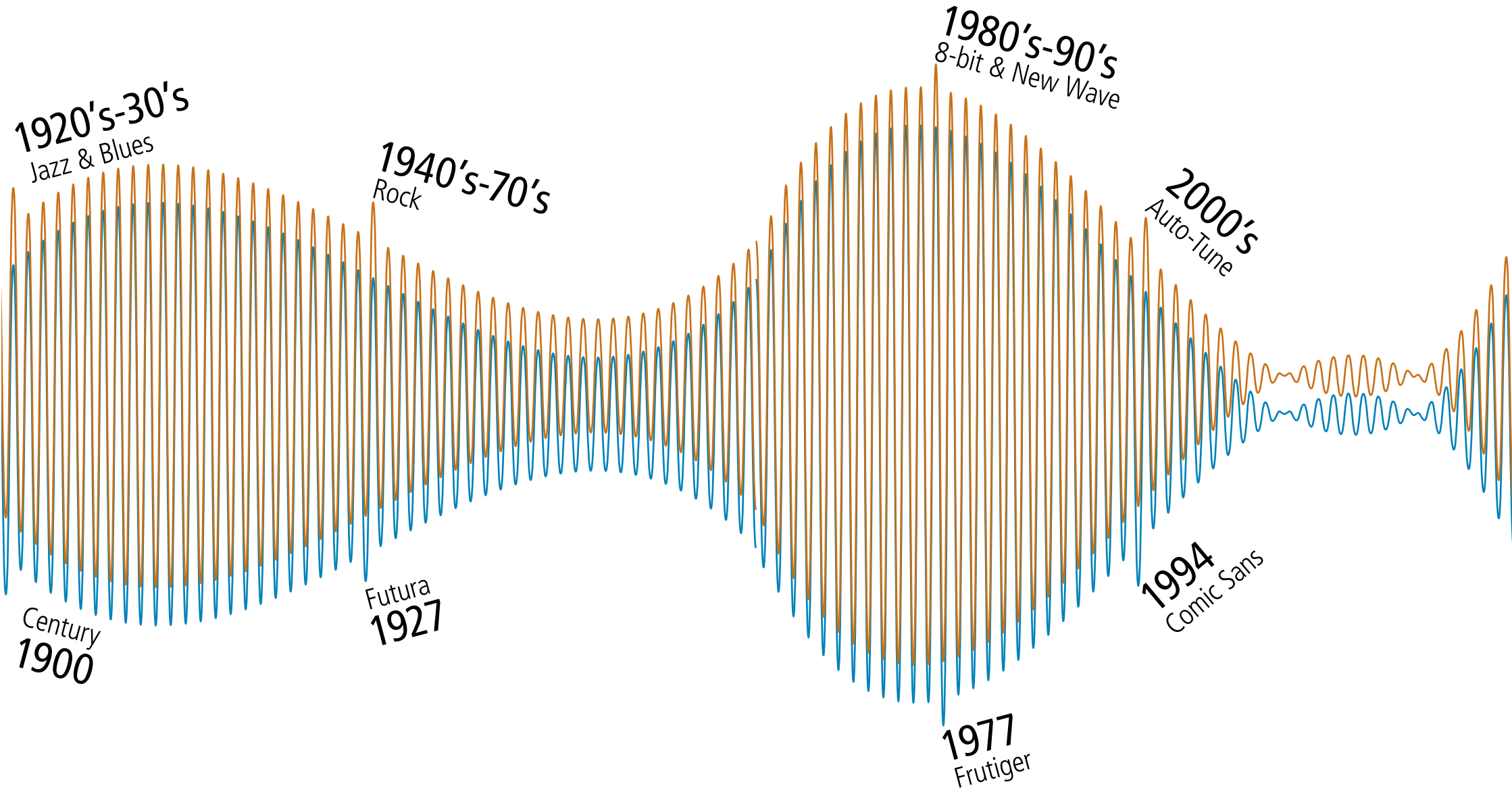
12 Computer Based Math

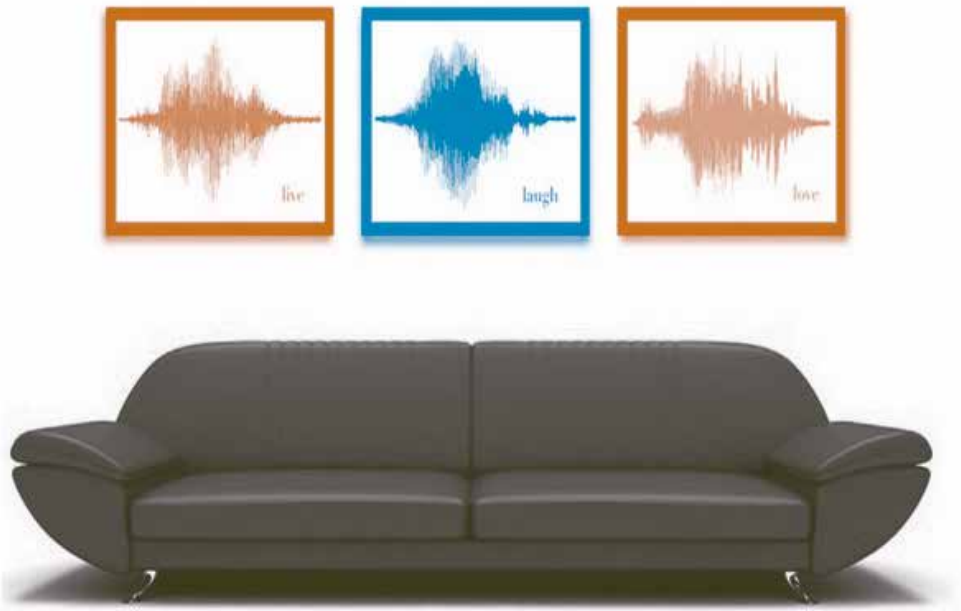
10 First Things First Manifesto 2000

14 Peter Saville

16 8-bit Punk

Timeline


1920's-30's
Jazz & Blues
1940's-70's
Rock
1980's-90's
8-bit & New Wave
2000's
Auto-Tune
Century
1900
Futura
1927
1977
Frutiger
1994
Comic Sans



BeSpoken Art, via PSFK

Stealth Iconography:
The Waveform

Rob Walker

What visual sign says "music"? Notes remain the most typical answer – particularly, it seems, beamed eighth or quarter notes (see the iTunes icon); the solitary eighth note with its jaunty flag; and the clef. The disc shape has had a pretty good run, and you still see instances involving headphones (Napster's logo, for instance). Maybe representations of speakers and guitars would make the list, too. But if you want to suggest music in the digital era, how about the waveform?

As iconography, the waveform's rise has been even more stealthy than the Google Maps pin: It's not really associated with any specific service or product—although I may contradict that slightly below—but rather with digital sound in general. But as with other distinctly visual forms encountered mostly via bits, its progress can be gauged by the fact that it has inspired some to de-digitize it into the physical world.

My friend Marc Weidenbaum, on his indispensible site Disquiet, has written about this manner of looking at music several times. Late last year, after Nonesuch announced the winners of a Steve Reich remix contest, he looked at the results and wondered: "How do the waveforms of winners compare and contrast with



By 9 0 0 0, via Flickr

those of the losers?" His full consideration of that question is here, but in short he suggested that three winnings entries "show considerably less internal variety than do the ones that they bested, at least in the manner this waveform algorithm indicates." He's also written about "looking at" the sound of fireworks, and in a recent email exchanged observed: "If you look at a radio pop song's waveform, it is, to me, absolutely disheartening how the chorus looks the same every time it pops up."

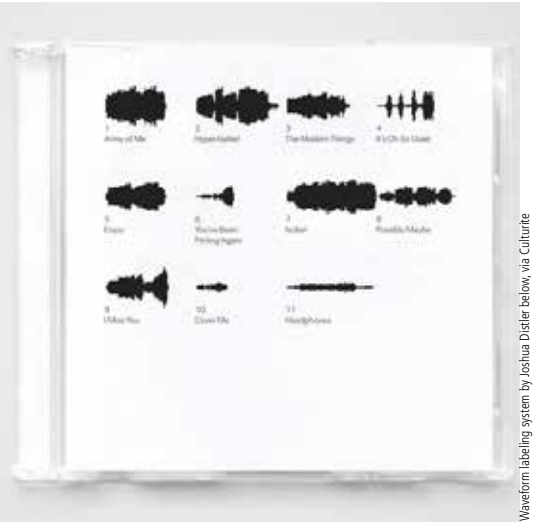
Music-sharing site SoundCloud should get a lot of credit for advancing the waveform as a sonic-signifying symbol. Users of that service upload musical creations that are always represented by the resulting waveform, which the site asserts "not only makes sound look good, it makes it social." (Other users can leave comments at specific spots along the waveform.) There are even SoundCloud groups that are explicitly waveform-centric, such as Pretty Waveforms ("tracks with unusual, pretty or downright gorgeous waveforms," regardless of genre) and Waveform Art. Perhaps we're still a ways from adopting the waveform labeling system suggested by Joshua Distler below (via Culturite) — but it's easier to imagine a future for that scheme than for the compact disc.

The waveform is also a symbol that suggests more than music. As Marc pointed out to me, field-recording database Freesound.org actually made the waveform central to its visual identity prior to SoundCloud. And more recently, David Bizer's Waveform Necklace (via FashioningTech.com) can be based on "any kind of audio sample," including a recording of your voice. (Earlier, geeksugar noted a Bizer-made bracelent, evidently part of his thesis project, that took the form of a bracelet physically manifesting the waveform resulting from "parents imparting advice to their teens about drug use; via The New Aesthetic.) Sakurako Shimizu's "waveform series" (via Craft) has included jewelry based on the sounds of sneezes, giggles, and a church bell. Barreling up to, if not beyond, the kitsch border, BeSpoken Art (via PSFK) offers to convert recorded phrases, or a song, "pet sound," or "company slogan," into wall-displayable format.

Anyway, drawing conclusions about sound by looking at a waveform has some resonance with "reading" musical notation, but it isn't quite the same thing. Then again, given how many people first encountered waveforms via Pro Tools or other editing software, it's a symbol that suggests something beyond listening (as a disc shape or headphones might). Precursors to today's digital waveforms have been used to initiate music — lines drawn on film and fed into a Variaphone is one example; Oramics is another — but it seems more accurate to associate them with revising music (in addition to listening, of course).

At the same time, a waveform captures something precise. Consider the cover of composer Ken Ueno's CD. Yet again I have Marc to thank for bringing it to my attention: He tells me that in a Twitter exchange not long ago, Ueno said the cover "has a waveform painted-in with my blood." And as you can see, that image is overlaid by handwritten musical notation. It's a useful and clever juxtaposition: Notes on sheet music are meant to be interpreted, but a waveform is a visual record of a very specific interpretation. It's an image that speaks of the human tradition of music and, thanks to the presence of that increasingly familiar waveform, a suggests something about where that tradition is headed, right now.

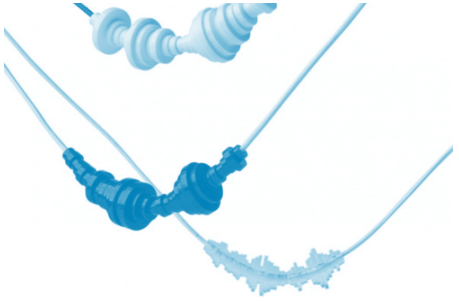
Design Observer © 2006- 2011
Observer Omnimedia LLC



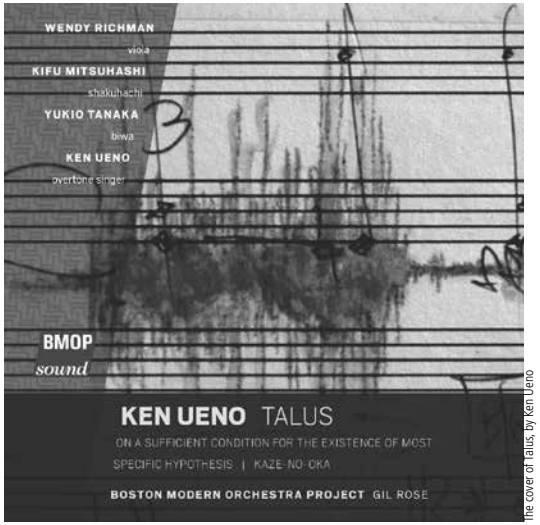
Waveform labeling system by Joshua Distler below, via Culturite



"Bell" (silver cuff bracelet based on waveform of church bell), by Sakurako Shimizu. via Craft



Waveform Necklace by David Bizer, via FashioningTech.com



The cover of Talus, by Ken Ueno

First Things First Manifesto 2000

Various authors

This manifesto was first published in 1999 in Emigre 51.

We, the undersigned, are graphic designers, art directors and visual communicators who have been raised in a world in which the techniques and apparatus of advertising have persistently been presented to us as the most lucrative, effective and desirable use of our talents. Many design teachers and mentors promote this belief; the market rewards it; a tide of books and publications reinforces it.

Encouraged in this direction, designers then apply their skill and imagination to sell dog biscuits, designer coffee, diamonds, detergents, hair gel, cigarettes, credit cards, sneakers, butt toners, light beer and heavy-duty recreational vehicles. Commercial work has always paid the bills, but many graphic designers have now let it become, in large measure, what graphic designers do. This, in turn, is how the world perceives design. The profession's time and energy is used up manufacturing demand for things that are inessential at best.

Many of us have grown increasingly uncomfortable with this view of design. Designers who devote their efforts primarily to advertising, marketing and brand development are supporting, and implicitly endorsing, a mental environment so saturated with commercial messages that it is changing the very way citizen-consumers speak, think, feel, respond and interact. To some extent we are all helping draft a reductive and immeasurably harmful code of public discourse.

There are pursuits more worthy of our problem-solving skills. Unprecedented environmental, social and cultural crises demand our attention. Many cultural interventions, social marketing campaigns, books, magazines, exhibitions, educational tools, television programs, films, charitable causes and other information design projects urgently require our expertise and help.

We propose a reversal of priorities in favor of more useful, lasting and democratic forms of communication —a mindshift away from product marketing and toward the exploration and production of a new kind of meaning. The scope of debate is shrinking; it must expand. Consumerism is running uncontested; it must be challenged by other perspectives expressed, in part, through the visual languages and resources of design.

In 1964, 22 visual communicators signed the original call for our skills to be put to worthwhile use. With the explosive growth of global commercial culture, their message has only grown more urgent. Today, we renew their manifesto in expectation that no more decades will pass before it is taken to heart.

Commercial work has always paid the bills, but many graphic designers have now let it become, in large measure, what graphic designers do.

We Propose … a mindshift away from product marketing and toward the exploration and production of a new kind of meaning.

Jonathan Barnbrook
Nick Bell
Andrew Blauvelt
Hans Bockting
Irma Boom
Sheila Levrant de Bretteville
Max Bruinsma
Sian Cook
Linda van Deursen
Chris Dixon
William Drenttel
Gert Dumbar
Simon Esterson
Vince Frost
Ken Garland
Milton Glaser
Jessica Helfand
Steven Heller
Andrew Howard
Tibor Kalman
Jeffery Keedy
Zuzana Licko
Ellen Lupton
Katherine McCoy
Armand Mevis
J. Abbott Miller
Rick Poynor
Lucienne Roberts
Erik Spiekermann
Jan van Toorn
Teal Triggs
Rudy VanderLans
Bob Wilkinson

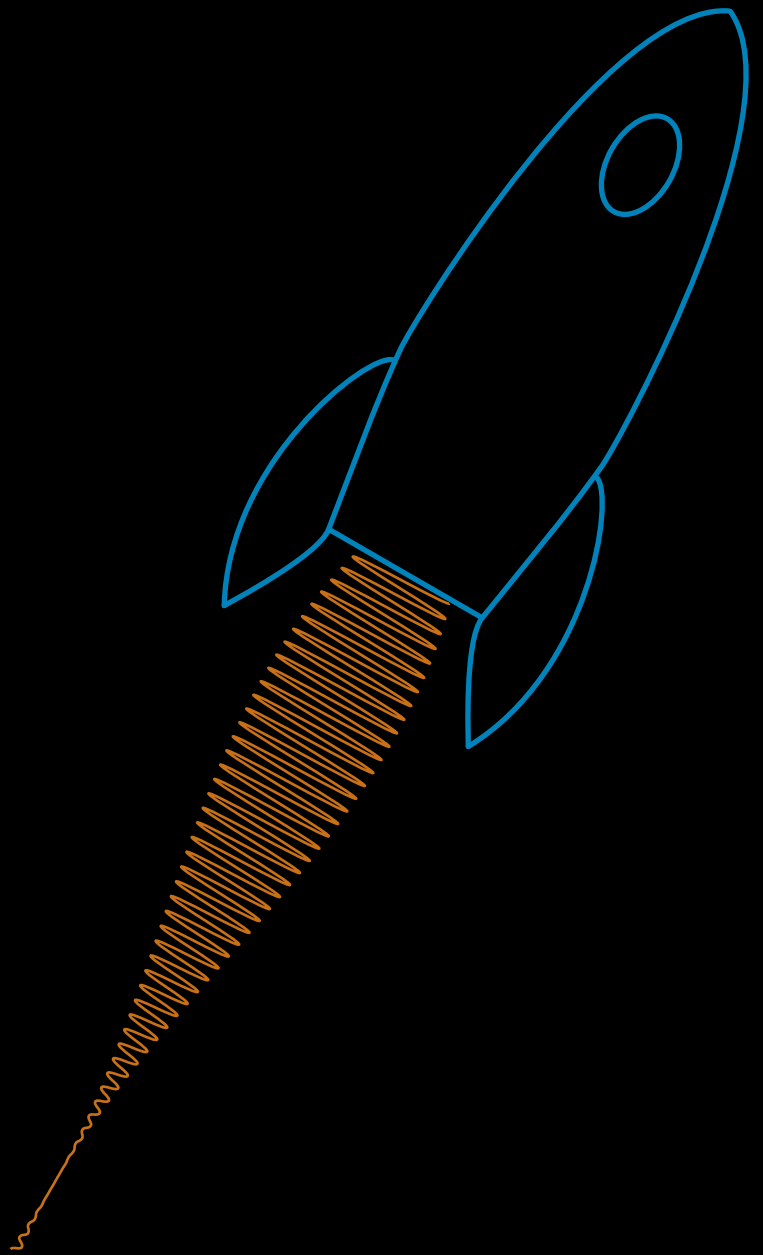
Solve Real Problems

Not Math Problems

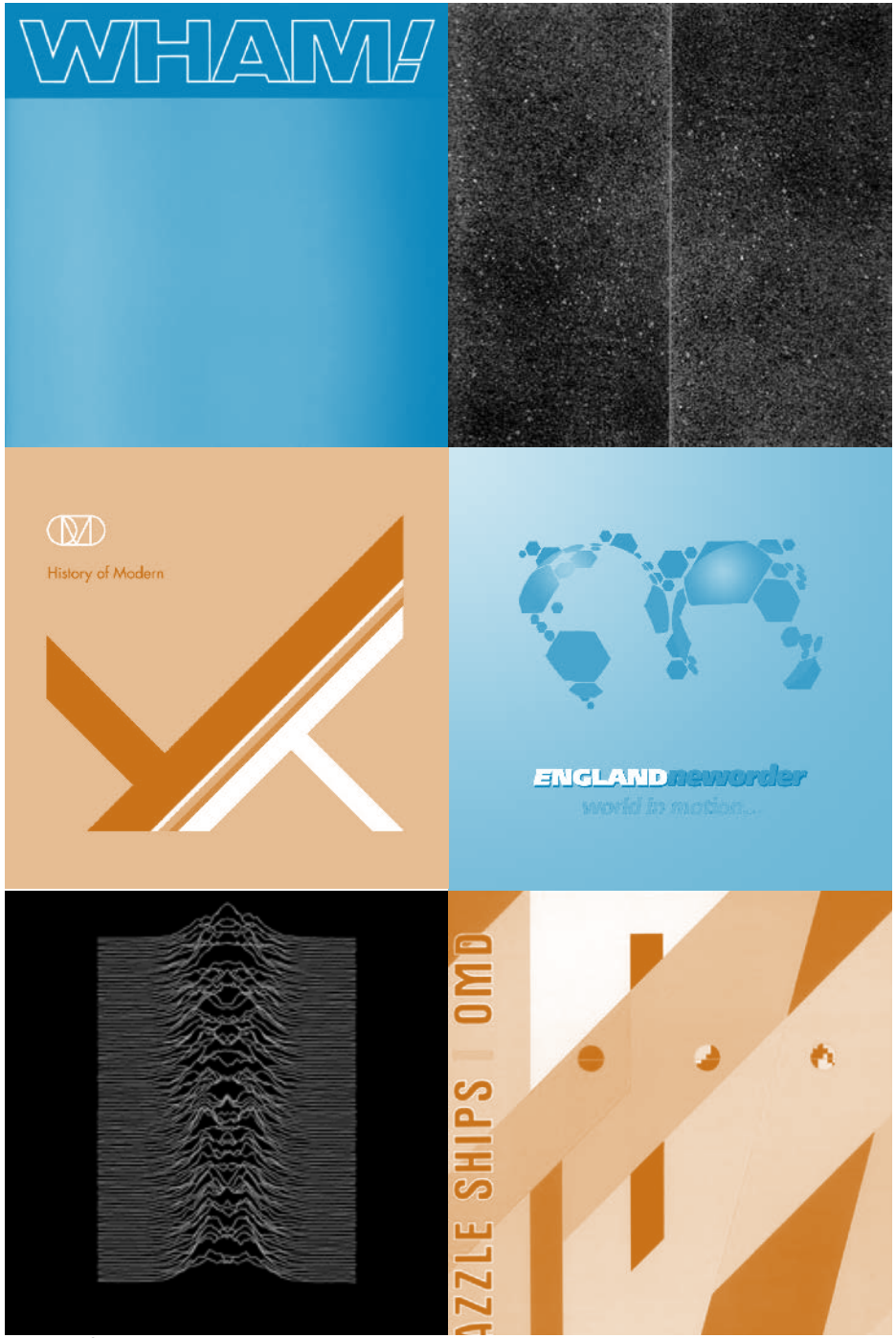
"The crucial point here is math is not equal to calculating. It's a much bigger subject ... Math has been liberated from calculating. See, I think of calculating as the machinery of math, it's the mechanism for doing it. But it isn't an end in itself. It's a means to an end and I think it's really important to stand on the automation we now have with computers to go further.

And the critical thing to understand, this is no small problem. My calculation is that on an average school day in the world, we use up about 106 average lifetimes in students learning hand calculating ... So this is a pretty massive human endeavor. Worse, it's not even fun for most of them! They weren't even a fun 106 lifetimes!"

— Conrad Wolfram



ComputerBasedMath.org



Peter Saville

Peter Saville is an English art director and graphic designer. He came to fame for the many record sleeves he designed for Factory Records, of which he was a director.

- 1955 Born in Manchester, England.
- 1978 Graduates from Manchester Polytechnic in graphic design. Designs poster for Tony Wilson's Factory club.
- 1979 Co-founds Factory Records and creates artwork for Joy Division and OMD. Moves to London and becomes art director of Dindisc, a Virgin Records label, where he meets the photographer Trevor Key.
- 1980 Designs for Ultravox and Roxy Music. Collaborates with Ben Kelly on the design of the Haçienda nightclub.
- 1981 Starts a 13 year collaboration with Brett Wickens. First New Order project.
- 1983 Opens his own studio, Peter Saville Associates, with Brett Wickens.
- 1984 Designs for Wham!.
- 1985 Identity for the Whitechapel Art Gallery, London.
- 1986 Collaborates with art director Marc Ascoli and photographer Nick Knight on catalogues for Yohji Yamamoto. Designs for Peter Gabriel.
- 1988 Graphics for Magiciens de la Terre exhibition in Paris.
- 1990 With PSA in financial crisis, he joins the Pentagram group as a partner.
- 1991 Creates on-screen identity for Channel One in Los Angeles. Collaborates with Nick Knight and architect David Chipperfield on a gallery for the Natural History Museum,

8-BIT PUNK

Malcolm McLaren, the subculture hacker who created the Sex Pistols, discovers the new underground sound. It's called chip music. Can you play lead Game Boy?

We live in a karaoke culture. The Japanese word means "empty orchestra"—a lifeless musical form unencumbered by creativity and free of responsibility. Simple, clean fun for the millennial nuclear family. You can't fail in a karaoke world. It's life by proxy, liberated by hindsight.

Authenticity, on the other hand, believes in the messy process of creativity. It's unpopular and out of fashion. It worships failure, regarding it as a romantic and noble pursuit—better to be a flamboyant failure than any kind of benign success. Karaoke and authenticity can sit well together, but it takes artistry to make that happen. When it does, the results can be explosive. Like when punk rock reclaimed rock and roll, blowing the doors off the recording industry in the process. Or when hip hop transformed turntables and records into the instruments of a revolution. Now it's happening again. In dance clubs across Europe and America, young people are seizing the automated stuff of their world—handheld game machines, obsolete computers, anything with a sound chip—and forging a new kind of folk music for the digital age.

Until recently, I was feeling stifled by the tyranny of the new. New corporate lifestyles for doing everything well. Too well. iPod this. PowerBook that. Listening to albums, like Madonna's latest, that were made using Pro Tools — software that reduces virtually every mixdown effect to a mouse click — left me with a depressing sense of sameness, like everything on TV. I had decided to make an album about the "look" of music: the visual gestalt of youth culture. For me, music has always been a bridge between art and fashion, the two realms I care about most. It's one of the most natural expressions of the youthful need for confrontation and rebellion. Now it was lost in the hearts and minds of a karaoke world. I couldn't find my place in it.

Then I discovered chip music.

It all began on a freezing winter evening in snow-capped Zurich, Switzerland. Some friends of mine had a vague relationship with a small-label dude who caught my attention at a party rattling on about lo-fi. He soon had me playing phone tag with a clique of "reversible engineers" working illegally in Stockholm. I didn't know what that meant, but I was eager to find out.

The quest led me to the outskirts of Paris: Ivry sur Seine, to be exact, dead south of Chinatown. In that desolate industrial district, I had a 10 pm appointment with two guys named Thierry and Jacques.

The address turned out to be a forbidding, semi-abandoned factory. I couldn't open the gate, so I waited nervously in the darkness. After a while, a suspicious, balding youth came out of the building—Jacques. He seemed to have trouble finding the keys to undo the heavy chains that secured the premises. Finally, the doors swung open. After a terse greeting, he led me up a concrete stairway and through dark, labyrinthine corridors of peeling plaster.

"What's that smell?" I asked, my nostrils assaulted by what seemed like a hot pot of hairy horse and curry powder. "It's the Cameroon embassy," he answered, smirking. Jacques, a shy young man whose teeth were nearly black because of his fear of dentists, explained that wood carvers, graphic artists, photographers, and hip hop kids from North Africa worked here. Only half the factory had electricity or heat.



Two flights up, Thierry welcomed us into a dim, tiny room at the far end of the building. To my surprise, I found myself in an Ali Baba's cave of outdated studio equipment. The chamber was stuffed floor to ceiling with hardware from the dawn of the 1980s: dinosaurian Amigas and Ataris once prized for their sound chips and arcane applications, giant echo plates, and knob-studded analog synthesizers. In the center was a pair of dusty turntables, one with a 45-rpm single on its platter. Thierry put the needle to the groove. I reeled as the record player emitted a din like screaming dog whistles. It sounded like a video arcade gone mad.

The low light revealed the Frenchman's T-shirt. Emblazoned across his chest were the words FUCK PRO TOOLS. The phrase described perfectly what I'd been feeling for months. Like any fashion victim who comes across a new and stylish idea, I was smitten. Fashion is most easily used as a disguise—it allows you to be something you're not. It's much more difficult to use it to express who you are. I understood immediately that this was no facile fashion statement.

"Who made this record?" I asked. In stark contrast to the silent Jacques, Thierry—once he started talking—could hardly stop. "Mark DeNardo from Chicago," he said. This twentysomething Puerto Rican artist, he told me, is the Velvet Underground of the 21st century, the next step in the evolution of rock and roll. "This is chip music," Thierry continued, "made on an old Game Boy. I don't like hi-fi. I can't afford hi-fi. To make this music costs only 15 euros. You can pick up an old Game Boy from the marché aux puces," the Paris flea market. He presented an outdated Game Boy and, maneuvering his thumbs on the keys, showed me how to create musical sequences.

Thierry spun another record. "This is Puss," he explained. "He's from Stockholm. He sings with a girl: 'I'm the master, you are the slave.' They're the new ABBA!" The album cover featured a simple photo of a Game Boy, nothing more. I loved it.

The next record was an EP—an extended-play 7-inch—by a Stockholm artist called Role Model. The last time I had come across this format was in the 1960s, when I bought my first Rolling Stones record. Role Model sounded like a videogame fashion show, as though Twiggy were somehow stuck inside Space Invaders. It was intelligent dance music made using analog approaches, distinctly human and more individual than simply switching on a drum machine. The more I listened, the more contagious it became. The names of emerging artists rolled off Thierry's tongue: Adlib Sinner Forks, Bit Shifter, Nullsleep, Glomag, The Hardliner, Lo-Bat, 8-bit Construction Set—an entire lost tribe of Game Boy musicians.

The room became hazy with the exhaust of these chain-smoking French guys. I felt like I was at the end of the world, but I also thought I could be happy here.

Chip music is made using processors from the antediluvian 8-bit past. (Pro Tools, by contrast, starts at 24 bits.) The genre's seminal moment occurred three years ago when Role Model (real name: Johan Kotlinski) created a custom Game Boy cartridge called Little Sound DJ—LSDJ for short—that takes over the palmtop's internal synthesizer and turns the device into a musical workstation capable of playing sequences and arpeggios, but not chords.

Role Model, who's studying for an engineering degree at Stockholm's Royal Institute of Technology, manufactured LSDJ in Japan and offered it on the Web for about $70 until he sold all the cartridges

LSDJ may be technically illegal, but who cares?

he had made. The software is a simulacrum of DJ culture, combining the Game Boy's native bloops and bleeps with samples of old drum machines like the popular Roland TR-808. LSDJ isn't the only such cartridge: Nanoloop, made by German art student Oliver Wittchow, does similar things, but without the samples. It's easier to generate sounds right away with Nanoloop, but LSDJ is more musical and therefore more popular.

LSDJ may be technically illegal, but who cares? It's the only way Role Model and his cronies can afford to make their music. It's Le Resistance. Chip musicians plunder corporate technology and find unlikely uses for it. They make old sounds new again—without frills, a recording studio, or a major record label. It would be facile to describe the result as amateurish; it's underproduced because it feels better that way. The nature of the sound, and the equipment used to create it, is cheap. This is not music as a commodity but music as an idea. It's the Nintendo generation sampling its youth.

The essence of chip music is in reverse engineering an electronic interface—whether it's a Game Boy or a computer's sound chip—and subverting its original design. Chip music can be made using run-of-the-mill equipment, like a Casio keyboard, but first the insides must be scrambled. The lo-fi sound of the White Stripes and their ilk has a certain aesthetic kinship with chip music, but it's less tech-centric and not nearly as subversive. Kraftwerk might be the grandfathers of chip music—like today's reversible engineers, they invented many of their instruments. As for programs like Pro Tools, chip musicians don't think they're really creative. The sound isn't generated by circuitry, and you can't alter it by twisting a knob.

As DeNardo puts it, "The digital medium may have more accuracy, but it doesn't have as good a vibe. Playing with an analog machine that has an inaccurate bpm"—beats per minute, the dance-floor gauge of tempo—"can be a bitch. But when you can hear the sequence and feel it, it's like listening to a live band rather than someone singing along with a digital karaoke machine."

The urge to breathe some genuine fire into moribund electronica has spurred the chip music underground to embrace vinyl. When I first met Thierry and Jacques, they were waiting for a shipment of 3,000 EPs from a pressing plant in the Czech Republic. Why do chip musicians insist on using such a perversely obscure medium? In a world where information is free and experience is virtual, delicate vinyl discs, black and fetishistic, are precious. They're treasured, collectible, real. And, unlike CDs, they can't be reproduced easily. Chip musicians scorn CDs as cheap, disposable, and, at best, no more ecofriendly than vinyl.

Chip musicians can be found all over the world, but they're mostly in places where Game Boys are popular—the US, Sweden, Japan, Switzerland. Some are into the technical side of it, like Nullsleep, who graduated from Columbia with a degree in computer science. Others are just into the music. They like being pop-culture pirates, and they have little use for the mass market. Their output is deliberately inaccessible to radio and TV, indeed to anyone in the music industry who still believes in hi-fi. At this stage, they don't necessarily aspire to have an audience beyond that of their own choosing, which means friends. This will probably change. Most early punk gigs—the ones that are continually mythologized—had audiences of about 20 people, though today it seems like everyone was there.

I began working in Ivry Sur Seine, programming Game Boy sequences, then overdubbing analog synths, guitars, and vocals. I sent an MP3 to DeNardo, who, I learned, is a classically trained violinist and keenly aware of Steve Reich's orchestral minimalism and John Cage's I Ching-driven randomness. He'd picked up LSDJ from Björk's Web site thinking it would make his music different. He created a Game Boy sequence to accompany one of my favorite old blues tunes, "Mighty Long Time" by Sonny Boy Williamson. Then he rewrote the lyrics and roughed out the chords on an acoustic guitar. We called the new track "Fashion Horse."

I remained in the factory for the next few months, cutting and pasting the ruins of Jimi Hendrix, John Lee Hooker, and Muddy Waters into a videogame wall of sound. I rocked with Adlib. DeNardo flew in from Chicago. We translated the modernist classical music of Francis Poulenc into Game Boy sequences and arpeggios. I went to China and developed a post-karaoke sound with Wild Strawberries, an all-girl group from Beijing. I found the look of music. This was fashion at its most cutting edge. So chic!

I found the look of music. This was fashion at its most cutting edge. So chic!

Chip music is still underground, but the scene is becoming less insular. Collaborations are beginning. It's easy to swap MP3s over the Net or daisy-chain a track, sending it to other chip musicians who embellish it in turn. F2F gatherings are starting to rumble in Paris and Chicago. The fashion for record players is growing—just look at the display window of Colette on the rue Saint-Honoré, or in the pages of Jalouse and Vogue. Soon tribes devoted to their favorite retro noisemakers will emerge in bars and clubs everywhere, sliding effortlessly through holes in the karaoke culture, personalizing electronic music and taking it to the next level, whatever that might be. Perhaps it will be games for writing music, or mobile phones with MP3 capabilities that let you listen and modify at will.

Chip music is mutating into a growing taxonomy of styles — post-karaoke, rock-and-roll Game Boy, bastard blues—that represent the most anarchic display of the antihero in pop culture. The sound is raw, noisy, and at times poorly played and sung. Still, repurposing defunct devices to end-run a music industry in total decline constitutes a revolution. Chip music is the final repository of the marvelous, its makers the last possessors of the wand of Cinderella's fairy godmother.

