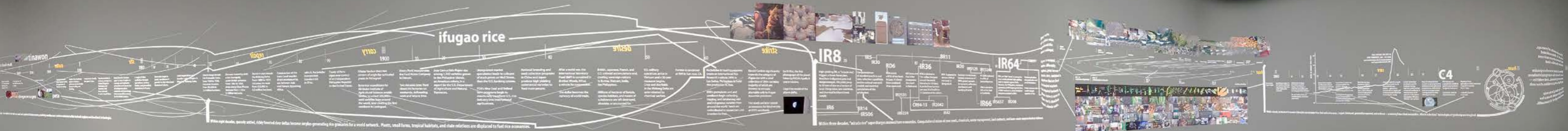


ELAINE GAN
RICE CHILD (STIRRINGS)

Wall plot, photographs, 0.67 x 15.70 m, 2011
HMKV Exhibition at Dortmund U, 2014

Elaine Gan's installation *Rice Child (Stirrings)* maps how particular varieties of rice emerge through multiple temporalities of technology, history, memory, and matter. Rather than following a single chronology driven by humans, events are presented as interactions between many humans, nonhumans, environments, and machines. By asking how different rice seeds come to be, Gan invites viewers to follow fragments and threads through many worlds.



MAPPING RICE / MAPPING TIME

ELAINE GAN

Neoliberalism thrives on deadlock. One of six humans alive today is starved, while seven out of ten have settled in a city disconnected from direct means of subsistence. Human exceptionalism breeds new transgenic species while committing others to extinction. Hydraulic rice systems that sustained communities for centuries are rendered obsolete, while decomposing bacteria in monocropped fields emit levels of methane gas that destabilize global climate patterns. Transnational gene banks store hundreds of thousands of seed varieties *ex situ*, while multispecies entanglements from which the seeds emerge are stripped and severed. There is much at stake in accounting for massive structural transformations that asymmetrically reproduce scarcity, alienation, and slow unspectacular death. The engines of progress have overwhelmed countless ways of life, situating us in the Sixth Mass Extinction Event. Indeed, our world is dying.

What is the work of art in rendering the complex and often incommensurable processes through which seeds come into being and situate particular kinds of worlds? Like never before, we need new tools if we are to understand and connect with life that exceeds and deconstructs the monsters, as well as myths, of neoliberalism. Thus, there is a great deal at stake in experimenting with different apparatuses. We need speculative viewfinders that spark imaginaries, articulate new realities, and composite alternate performativities.

Rice Child (Stirrings) is an installation that experiments with mapping entanglements of time. Images, text, and vectors constitute a visual diagram of cycles, rhythms, and patterns that emerge from practices of rice cultivation and exchange. As

people walk alongside the installation, they are, in a sense, moving through time. There is no single vantage point from which a complete view is given. Every stop affords a partial and temporary view.

I begin with a description of the overall structure of the installation and then offer some of the project's challenges and openings. It is not a solution, but one of many iterative experiments in animating multispecies ecologies.

RICE CHILD (STIRRINGS)

The installation maps four temporalities: the time of technology, matter, memory, and a calendar year.

TIME OF TECHNOLOGIES

A time of technologies occupies the main horizontal axis. Text narrates a series of events from the first century CE, when irrigated rice begins to flourish in the Mekong Delta.¹ It ends in an unidentified present. Events appear as partial fragments and do not offer a complete history. They connect through various historical vectors that enable the emergence of many varieties of rice. Today these varieties constitute the most land- and labor-intensive agricultural economies.² Starting with one variety, the fragments and vectors were thus assembled “backwards.” For example, in the case of IR8 rice (fig. 1): the seed was developed by the International Rice Research Institute (IRRI) from indigenous *peta* (Indonesia) and *degeowoogen* (Taiwan) varieties and relied on fertilizers, irrigation systems, extension agencies, and credit systems. Each of these then link to



Above: Terraced pondfields awaiting planting season in Banaue, an Ifugao mountain province in northwestern Philippines. Photo: Wanda Acosta



Left: Rice seedlings at the International Rice Research Station (IRRI) in Los Baños, Philippines. Photo: Elaine Gan



Figure 1. Focusing on a seed variety, such as IR8, enables a mapping of seemingly autonomous events in different times and places

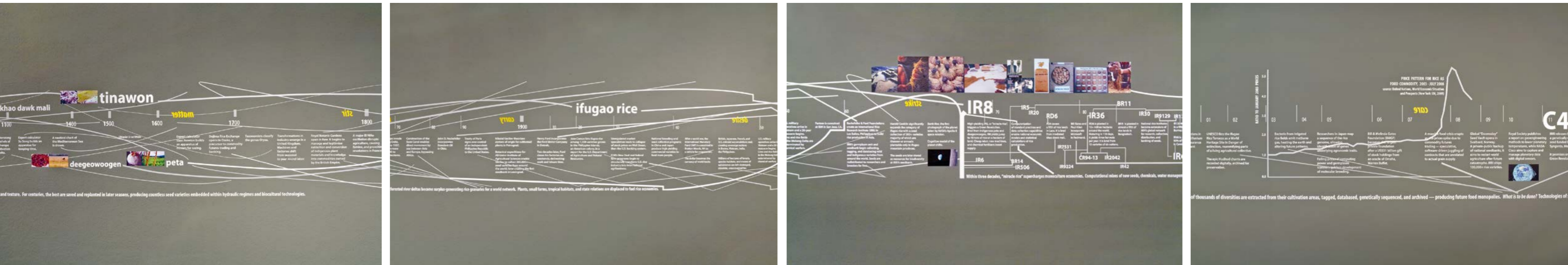


Figure 2. Representation of four periods, from left to right: (a) informal exchange, (b) colonial invasions, (c) monocropped rice economies, (d) futures markets

other events that had to have occurred at different times. For example, the creation of IRRI depended on prior events: the formation of the Rockefeller Foundation (itself preceded by the incorporation of Standard Oil in Ohio), the Ford Foundation (preceded by the Ford Motor Company in Detroit), a nation named the Philippines (preceded by American occupation), the Suez Canal, which enabled intercontinental passage, and so on. From a grain of rice, then, multiple material-symbolic webs flicker into focus.

Each event is described in a block of text. Multiple series of events populate the width of the wall, reconfiguring the familiar form of an historical timeline driven by human agency into an asymmetrical weaving of multispecies interactions. Date markers do not slice up the wall into equal units running in one direction across the wall. Rather, they index different kinds of events as inheritances and conditions of possibility. This articulates a formalism for social time, or the rhythms and regularities that become memorable because they are lived in common.³

Graphical lines signify four main periods in figure 2 above: (a) prehistorical events of informal exchange and reproductive synchronies, (b) colonial invasions and land transformations, from the 1850s to the 1930s, (c) creation of transnational research institutes and rice economies,

from the 1960s to the 1990s, (d) centralization of seeds/genetic resources and financialization of food, from the 1990s to the present day. Period a is represented by loose and fluid curves whose endpoints do not always connect specifiable events; period b is represented by increasingly linear and jagged lines whose endpoints connect events more explicitly; lines in period c articulate accessions or lineages between rice seeds bred by IRRI and distributed by state agencies; lines in period d consolidate into a price/timeline of the 2007/8 food crisis, then morph into a graphical timepiece for reassembling synchrony.

TIME OF MATTER & MEMORY

A time of matter and memory frames the time of technologies and connects inheritance, engagement, and emergence. This is represented by an account of time travelers. Rendered in a different font and graphically warped, allegorical entries about time travelers appear in three places: left end of the strip (for Western languages, the beginning of a text that reads from left to right); middle, which opens up a calendar year (described on the next page); and right end of the wall, which occasions a reversal. Texts on the left and right ends mirror each other (fig. 3).

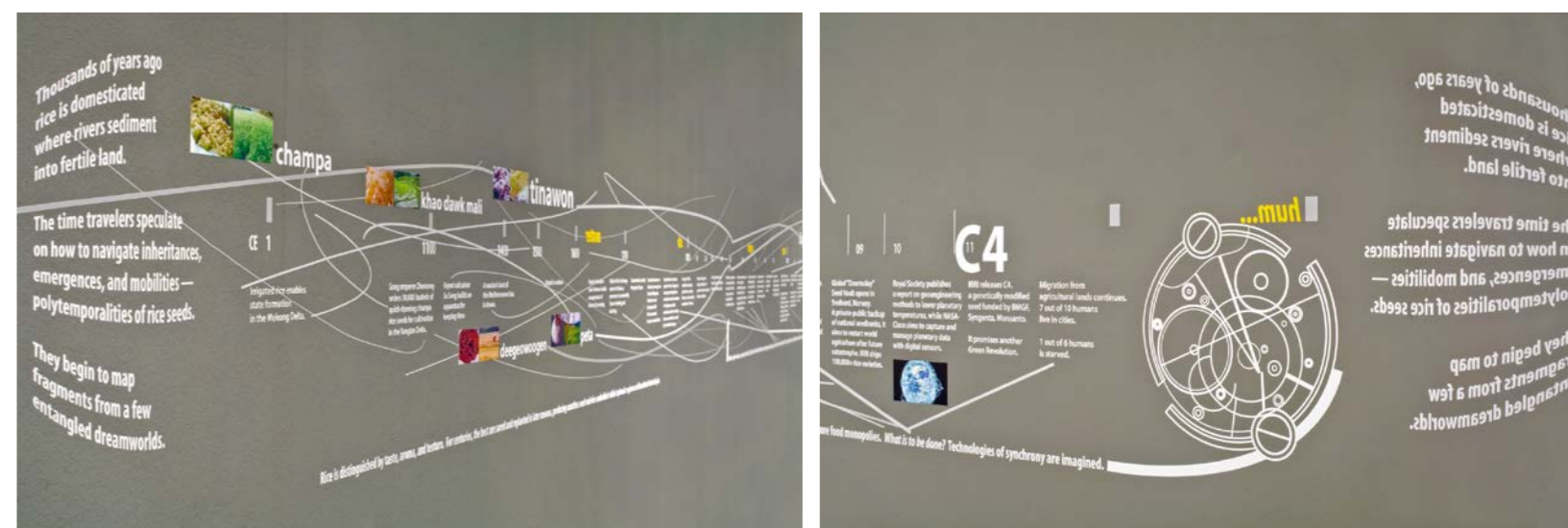


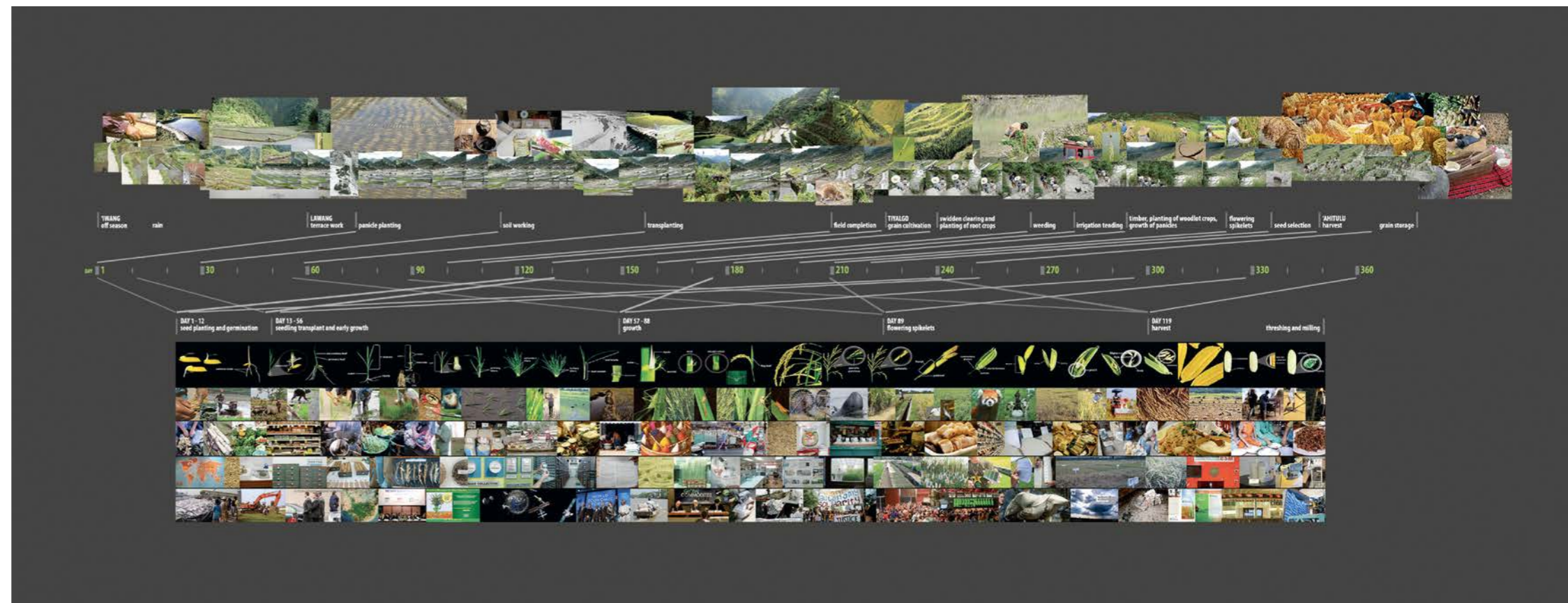
Figure 3. Left or recto: front-facing type on the left end of the wall. Right or verso: reversed type from the right

The wall thus functions as a two-sided manuscript: recto contains the time of technologies; verso contains a series of disjointed verbs, everyday counter-technologies, or dispersed Brechtian stoppages that insist on the partiality of memory, language, and image.

The verbs represent a barely legible trail of counter-actions that are too easily lost in the big time of technologies (see figure 3, image on right). Might these small tactics constitute worlds otherwise? I propose that they are openings into post-capitalist constellations that do not register on neoliberal viewfinders trained to locate consumption and production:

- hum* Gilles Deleuze would hum in the morning to disrupt the repetitive motions of getting his body/machine ready each day.⁴
- care* Maria Puig de la Bellacasa calls for an ethos and politics of care, a feminist reading of Bruno Latour's matters of concern.⁵
- feast* Ifugao harvest occupies the shortest period of the year but occasions the greatest number of feasts; practices synchronize collective bodies.
- carry* Ursula K. Le Guin recalls that the first tool was not a weapon of domination but a holder, a carrier bag for subsistence and care.⁶
- matter* Karen Barad writes: materializations matter.⁷
- stir* To mix, to awaken, to recall Sergei Eisenstein's *Strike* (1925).

Who are the time travelers? This is left undefined. I suggest that it is a collective memory of imaginary livable futures embedded in material forms: memories of seeds exchanged through generations or frozen in gene banks; memories of soil held indeterminately by fungi or rendered infertile by chemicals; memories of rivers that sediment to sustain mangroves; memories of computers and archives from agricultural research stations; or memories of markets that manifest as prices.



Detail from Elaine Gan, *Rice Child (Stirrings)*, 2011

CALENDAR OF CONTINUITY & CHANGE

The time of a Gregorian/Christian calendar year,⁸ or 365 days, is positioned as an interstice before the turn of a new century. It does not represent a specific year and instead visualizes coordinated actions that occur in multiple locations within a finite period. The big time of technologies and the warped time of memory are graphically split into two temporal registers, represented by two corresponding image-assemblages.

The split between two temporal registers visualizes an important problem. Marx's famous theory of surplus value is grounded in the notion of socially necessary labor time. How does profit derive and accumulate from relationships of reciprocity? Through alienation, or the separation of nature from culture. The number of hours in a working day translates differences and incommensurabilities into calculable currencies or disposable tokens for market exchange. Qualitatively different processes are extinguished and quantified into market prices. We must consider then that the primary site for the production of surplus, or the exploitation of labor and land in order to extract and multiply surplus, is not literally and exclusively the factory or a bounded geographic location, but temporality—or experiences and affiliations constituted through life. We cannot stop there but must go on to the more difficult questions: What defines temporality? What kinds of relationships constitute time?

With these in mind, I was trying to understand time in terms of collisions and coordinations between what we call “economies” or markets, and “ecologies” or habitats. In the center of the installation, two temporal registers for a calendar year try to situate these. A horizontal line of numbers in the center marks the intervals throughout the year. So 30 marks the end of January, 60 the end of February, 90 the end of March, and so forth.

Above the line, the top image-assemblage: rice terraces in the northwestern Philippines and activities surrounding the seeding, planting, and harvest of Ifugao rice, or *tinawon*. Tinawon cycles through approximately 210 days in pondfield

terraces constructed by hand over centuries, along steep mountainsides at altitudes of 2,500 to 5,000 feet. Anthropologist Harold Conklin's studies of Ifugao life describe a complex system of hydraulic engineering that binds multispecies forces in durational coordinations and shifting seasonalities.⁹ Conklin's calendar gives form to the top image-assemblage: the rhythm of rice is one of many. Water flows from rivers to terraced pondfields. Preparations begin in December, with planting in full swing by March. Harvest arrives in late June to July, celebrated with the most feasts and rituals in an Ifugao year. Over generations, seed selectors have been storing the best seeds for forthcoming plantings. Screenshots of video tracking shots that I recorded on field visits are patched together to form an otherwise impossible panoramic view of Ifugao terraces. Images of multispecies actors are patched onto this panorama as they emerge throughout the year.

Below the line, a second image-assemblage: activities surrounding commercial rice, a globalized rice circulating as crop, food, organism, archive, or commodity. These are mapped along five horizontal strips. From top to bottom: Strip 1 represents the morphology of rice, from seed to harvested grain, as engineered and scheduled at IRRI; strip 2 represents seasonal multispecies life in rice fields in Vietnam, Thailand, and the Philippines; strip 3 represents consumption in various places throughout Asia, where demand is highest (food and grain vendors, supermarkets, restaurants, homes); strip 4 represents activities at IRRI, from seed selection and storage to breeding, field rotations, distribution, lab research, germplasm scanning, and gene banking; strip 5 represents global circuits of capital, including shipping networks, government warehouses, satellite communications, trading floors, economic forums, and social movements. Strips 1 to 5, then, visualize activities based on variable scales (from seed to world) and metabolisms (from farms to transnational exchange).

One example of commercial rice is a semi-dwarf variety, IR36, which grows in 110 days—about half the time of tinawon and two months

faster than average commercial rice. Developed at IRRI, it was bred from thirteen varieties from six countries in 1976. By 1981, 2.73 million hectares, or 78 percent, of Philippine rice fields were planted to high-yield varieties—90 percent of which were sown to IR36. Six years after its release, it covered 11 million hectares of Asian rice fields, becoming the “most widely planted variety in history.” But accelerated cropping cycles, fertilizer saturation, and biodiversity loss disturbed patterns of interdependencies. Mutations of insects such as brown planthoppers, and viruses such as grassy stunt deformed the grain and destroyed yields. Newer varieties were developed.¹⁰ And thus the race between modern science and multispecies ecology continues.

Above the line, tinawon grows in 210 days. We see this branch out to one harvest per year. Below the line, commercial rice grows in 90 to 120 days. We see these branch out to three harvests per year. What is that difference telling us? Not simply that one grows faster than the other. More importantly: What relationships flourish in those 210 as opposed to 120 days? What has to be in place for these different kinds of rice to exist? What kinds of worlds, bodies, landscapes are made through the cultivation and exchange of particular kinds of seeds?

Here's the challenge I faced. For commercial rice (below the line), a chronology of events could be plotted. In the 1960s, the Ford and Rockefeller Foundations funded IRRI. They had been preceded by the Ford Motor Company and Standard Oil in the 1890s—an epochal shift from fossil fuels to oil.” In the late nineteenth century, the concept of collecting seeds from different regions or centers of origin may be linked to Nikolai Vavilov's Bureau of Applied Botany. The concept of banking rice could be traced to the seventeenth century, the Edo Period in Osaka, when rice brokers, samurais, and shoguns organized the Dojima Rice Exchange, a system for storing rice to compensate for bad harvests and price fluctuations. Moving forward in time, over the next four centuries, rice exchange evolves into trade boards, banking systems, and futures or derivatives trading. Moving

backward again to the first century CE, the ability to cultivate rice through irrigated systems in the Mekong Delta gives rise to the first stable formation that begins to resemble what we might think of as a state.

We might fast-forward again to the present century and see that three trajectories at least—banking, politics, and rice—converge in early 2008 as a massive food crisis. Within a few months, rice prices more than doubled from \$393 to \$1,020 per metric ton. Resulting food shortages, particularly in the Philippines, were linked to rapid-fire futures trading and long-term structural adjustment programs—not grain supply.¹² Hunger induced by bookkeeping: a collision of clocks representing political cycles, information and communication technologies (ICTs), and human subsistence.

But there's more to this.

RHYTHMS OF COORDINATION

Sites of rice agriculture are also among the most biodiverse regions: the Mekong in southern Vietnam and Chao Phraya in Thailand, for example.¹³ The history of rice is largely narrated as a big story of technological progress or human exceptionalism. But to consider rice seriously is to unfold vibrant rhythms that emerge through coordinations between species.

Seeds do not arise out of labs and vaults but are extracted from many biotic and abiotic entanglements. (Consider an El Niño oscillation over the Pacific around 1788, which led to crop failures and weak harvests. Famine incites social unrest, and food shortages escalated into the French Revolution. These recurring oscillations have been shaping topographic patterns for the past 150,000 years.)

Attending to what anthropologist Anna Tsing calls the “inside details of things that happen, the yet-unexplored axes of human and nonhuman interactions,”¹⁴ the world is quite different. It is made through sedimentations of river deltas, topographic elevations, climate oscillations, wind and rain patterns, snails, grasshoppers,

earthworms, rats, chickens, crabs, dolphins, wild boar, ducks, sweet potatoes, and other multiplicities. These are underexplored entanglements and frictions that call for close critical study of multi-species temporalities.

An unquestioned assumption of a singular, homogenous time naturalizes a split. Multidimensional and polyrhythmic entanglements are forged into: (1) endangered ecologies in need of repair or charity; and (2) bulldozing economies in need of critique. Assuming a master sequence of equal time units introduces massive blind spots. Many actors are rendered invisible, obsolete, or incommensurable by these assumptions.

THE WORLD IS NOT FINISHED

The engines of progress have rendered time out of joint. And we are out of sync in grossly uneven ways. The proliferation of environmental and market crises challenges us to live worlds otherwise. More provocatively, crises tell us that worlds *do* live otherwise—despite “us.” We have to get back into the rhythms of things.

But how do we grasp intimacies and immensities, inheritances and emergences, seeds and worlds without resorting to genocides that we have learned to engineer, contextualize, and valorize? Indeed, we are playing with a monstrous fire that began hundreds of thousands of years ago. We face the daunting task of coordinating with aberrant worlds that no longer correspond. We have contaminated or privatized so many senses and signals, simultaneously generating unprecedented conditions for life and death. Playing with fire, we have extinguished the memory of home.

Through this installation, I consider different varieties of rice as entangled temporalities to find ways of navigating beyond the deadlocks of neoliberalism. I assemble small stories about the timing of seeds. Because in the making, there are other worlds that are always already here, and yet to come. As Donna Haraway reminds: “The world is not finished.”¹⁵

All images show details of Elaine Gan, *Rice Child (Stirrings)*, 2011, as displayed in the exhibition *World of Matter*, HMKV at Dortmund U, 2014. Photos: HMKV

- 1 See Eric Wolf, *Europe and the People Without History* (Berkeley: University of California Press, 1982).
- 2 See Francesca Bray, *The Rice Economies: Technology and Development in Asian Societies* (Berkeley: University of California Press, 1994).
- 3 Pitirim A. Sorokin and Robert K. Merton, “Social Time: A Methodological and Functional Analysis,” *American Journal of Sociology* 42, no. 5 (March 1937): 615–29.
- 4 See Gilles Deleuze, *Difference and Repetition* [1968], trans. Paul Patton (London: Continuum, Gilles, 1994).
- 5 Maria Puig de la Bellacasa, “Matters of care in technoscience: Assembling neglected things,” *Social Studies of Science* 41, no. 1 (February 2011): 85–106.
- 6 See Ursula K. Le Guin, “The Carrier Bag Theory of Fiction,” in *Dancing at the Edge of the World: Thoughts on Words, Women, Places* (New York: Grove Press, 1989).
- 7 See Karen Barad, *Meeting the Universe Halfway* (Durham: Duke University Press, 2007).
- 8 This calendar is used because of four hundred years of Spanish Christian colonial rule in the Philippines. Anthropologist Harold Conkin represents the Ifugao agricultural calendar as nested within the Gregorian calendar. Additionally, IRRI’s initial naming of quick growth varieties as “miracle rice” speaks to long-standing alignments of Western rice science and Christian religious salvation.
- 9 See Harold Conklin, *Ethnographic Atlas of Ifugao: A Study of Environment, Culture, and Society in Northern Luzon* (New Haven: Yale University Press, 1980).
- 10 Donald L. Plucknett et al., *Gene Banks and The World’s Food* (Princeton: Princeton University Press, 1978), 171–85.
- 11 See Timothy Mitchell, “Can the Mosquito Speak?,” in *Rule of Experts: Egypt, Techno-Politics, Modernity* (Berkeley: University of California Press, 2002).
- 12 Walden Bello, “Creating a Rice Crisis in the Philippines,” in *The Food Wars* (London: Verso, 2009), 54–67.
- 13 Michael Adas, “Continuity and Transformation: Colonial Rice Frontiers and their Environmental Impact on the Great River Deltas of Mainland Southeast Asia,” in *The Environment and World History*, ed. Edmund Burke III and Kenneth Pomeranz (Berkeley: University of California Press), 191–207.
- 14 Anna Tsing, “Unruly Edges: Mushrooms as Companion Species,” *Environmental Humanities* 1 (2012): 141–54.
- 15 Donna Haraway, *When Species Meet* (Minneapolis: University of Minnesota, 2008), 8.

WANDERING SUBJECTS: RETURN OF/TO THE WORLD

EMILY ELIZA SCOTT

A turn to matter is a turn toward the worldly and away from the purely human-centric—a move beyond the social, political, and historical alone, and especially beyond a dominant economic paradigm that frames the stuff of the world as passive objects for human use and consumption.

The philosopher Michel Serres claims that we have “lost the world” through our rampant objectification of nature as something to be collected and mastered, and likewise through our disconnection from its time and weather (he reminds us that the French word *temps* means both). Whereas peasants and sailors once lived and worked out there in the world with things, in direct response to seasons, storm fronts, animal migrations, and the rhythm of night and day, most of us now live inside walls of our own making, inhabiting a strange, hermetic kind of time—one that is perpetually short-term and obsolescent, that folds in on itself, sealing us from and blinding us to everything outside of it. For Serres, this relegation of the world to the shadows now threatens our very existence. In *The Natural Contract*, he argues (or even pleads) for a radical re-orientation:

It could be said that the reign of modern natural law began at the same time as the scientific, technological, and industrial revolutions, with the mastery and possession of the world. We imagined that we’d be able to live and think among ourselves, while things around us obediently slumbered, crushed by our hold on them: human history could take pleasure in itself in an a-cosmism of inanimate matter and of other living things. History can be made of everything and everything comes down to history. Slaves never sleep for long. This period is coming to an end . . .¹

In addition to drawing our attention to things as being lively, obstinate, or even disobedient, a number of projects in *World of Matter* point to nonhuman, multispecies, or indigent temporalities. More generally, they ask if the realm of aesthetics might offer a window for slowing down, for looking closely, for becoming more attuned to the ways that the human and nonhuman are inextricably entangled with one another, both historically and materially.

¹ Michel Serres, *The Natural Contract*, trans. Elizabeth MacArthur and William Paulson (Ann Arbor: University of Michigan Press, 1995), 39.