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Cosmopedia:
Natural Dyes in Japan

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Abstract

This article explores John Durham Peters' concepts of 'communication as (impossible) communion' and 'elemental media' by turning to the Japanese traditions of naturally dyed textiles. The article explores the politics of encounter that naturally-dyed textiles enable and links them to the question of world-making. It further examines how the extraction and application of color from the environment engages not only with humans and culture, but with non-human agencies and environmental politics as well. It links John Durham Peters' work with that of Yuk Hui, particularly through elaborating on cosmotechnics as the ethics of technics, understood here as transformative modes of relations to the world, to non-humans and to more-than-humans.

Keywords

Non-Human, natural dyes, communication, cosmotechnics, environment

My personal experience of reading John Durham Peters has always been one of being endlessly provoked, pushed into thinking in new ways and in new directions. What I mean is that *Speaking into the Air* and *Marvelous Clouds* are books to think with, to escape with and, as I focus on in this article, to *compose with*. And the theme that for me has always been most important in both books is this deep desire for communication as communion that *Speaking into the Air* so beautifully articulates, how it turns specifically to communion with the non-humans and the more-than-humans in *Marvelous Clouds* and therefore becomes a question of both material and environmental communication. The question of natural dyes in Japan further adds to such inquiry, linking such environmental and material focus on communication with non-western conceptions of nature, specifically Japanese conceptions of the relationships between humans and

nature (Kalland, 1995).¹ In so doing, it helps highlight how traditional practices of natural dyeing in Japan are not only remnants from an idealized (and non-existent) past where nature was respected, but directly articulate a politics of relationality for the present and which forms the basis on which to rethink the work of communication as the building of relations. In that regard, the impossibility of perfect communion as communication is always at once “bridge and chasm” (Peters, 1999: 5) and helps us highlight a renewed ethics of communicative relations, one that is always multiple, involving not only many humans, non-humans and more-than-humans, but also divergent forces that both create equilibrium and chaos.

But let me start again, with an example: in the spring of 2019, the exhibition *Living Colours: Kasane – the Language of Japanese Colour Combination* at the Japan House London (UK) offered the western public a rare chance to discover the Japanese tradition of textile and natural dyes. Featuring the work of Textile Yoshioka (*Somenotsukasa Yoshioka*), one of the most renowned natural dye companies in Japan, the exhibition was much more than just an exploration of colour combinations. This was not a colour design event, but an opportunity to explore how making colour by combining natural dyes and textiles has been a key medium in Japan, a language indeed (Yoshioka and Fukuda, 2000), not just for communicating with humans in sensorial ways as I explain in this paper, but also for communication with non-humans and more-than-humans. With natural dyes, colour is produced through the use of plants, muds and sometimes insects and molluscs (Cardon, 2007). In so doing, naturally dyed textiles constitute a unique and forgotten medium that articulates nature and culture via techniques in ways that are radically different from what we usually understand as (western) communication media. Western accounts see media as technologies of abstraction that encode information to make it storable and retrievable across space and time and that strive to make information malleable yet eternal, escaping material constraints such as decay and obsolescence. We see in the trajectory of dominant communication media systems a continuous effort to leave questions of materiality behind in actuality, but also through the denial of production and lifecycles of media devices and infrastructures. Current ideologies about the power of media promise the bypassing of both nature and the limits of human bodies altogether to reach self-sustaining artificial life.

Natural dyes put the dominant media model and teleology into question: they are entirely dependent on collaboration with nature as they mobilize non-human elements to create colourful textile objects. They entail technologies transforming natural materials into cultural modes of expression via a series of chemical transformations (Boutrup and Ellis, 2018), most of which require the assistance of non-human entities and environmental media such as water, air, and sunlight. In so doing, naturally dyed textiles embody a communion with the environment, a form of communication between humans and non-humans that has been understudied; the making of natural dyes necessarily involves the cooperation of non-humans, so much so that, I aim to show, it becomes a form of *composition*. I borrow the concept of composition from Deleuze and Guattari, who in *What is Philosophy?* describe the resonances between animal species by, in turn, citing Jacob von Uexküll (1934) at length: how not only the song of a bird will get other birds to answer in kind, but how different animal species each fashion their habitats, which cross over other habitats and in turn react or incite responses from other animal species. The spiderweb, say Deleuze and Guattari, contains the portrait of a fly as it is designed specifically with the qualities and characteristics of the fly in mind and indeed desperately calls for the presence of flies. Less lethal is the example of oak leaves which channel rain drops, and in so doing, not only fulfill biological needs, but also create a music, a rhythm. These, according to Deleuze and Guattari, are instances of melodic compositions (1991: 176), lively and changing exchanges that require engaging with divergent and other forces and in so doing, I argue in this article, create a world made up of constantly repeated, harmonizing, yet fragile relations. Natural dyes invite the humans in this process of composition of worlds, where moments of communion are rare and fleeting, but their ghostly presence can be captured.

Specifically, I explain in the following pages that the resulting naturally dyed textile objects are the result of cosmotechnical processes and should be understood as cosmomedia objects: objects that result from the formulation and formalization of an ethics of relationships with a world, with a cosmos. It is the trace of such composition combined with the sensorial communicative qualities of textile that enables forms of transmission that create, as I aim to show in this paper, new temporalities of encounters. Naturally dyed textiles from Japan allow for an exploration of two of John Durham Peters' concepts: that of communication as communion, as explored in

Speaking into the Air, and that of *Elemental Media*. What links these two concepts is *cosmotronics*, further explained by Yuk Hui (2016) in *The Question Concerning Technology in China: An Essay in Cosmotronics*; the ethics of relationships with a cosmos that is expressed by different technologies and technological systems.

Cosmological Culture

Textile Yoshioka is one of the few natural dye companies left today that continues the millennial Japanese tradition of natural dyeing. As with all craft that encountered the industrial revolution and mass capitalism, natural dyers all but disappeared throughout the second half of the nineteenth century the world over, and with them the immense knowledge of the natural world as a source of colour. In the west, natural dyeing is being rediscovered today as awareness of climate change and mass scale pollution, of which the mainstream textile industry is one of the main contributors (Anguelov, 2015), and requires finding alternatives or, in this case, reviving craft that almost disappeared a century and a half ago. Japan is in a unique position: as a country that underwent centuries of economic, political and cultural isolation from the rest of the world during the Edo period (1603-1868), its later mass industrialization did not completely erase a millennial tradition of natural dyes and textiles that played a crucial cultural role for elite and folk cultures and economies alike. In particular, it is important to see the function of textiles in Japan as one of augmentation of the human body and psyche, and further as indeed extensions, in McLuhan's sense, into time and space, but from a very material place rather than the virtual one touted by western digital media technologies. Textile and fashion studies have shown that textiles communicate but not like traditional media. Rather, textile is a sensorial medium and, as textile scholar Mary Schoeser argues, textile consists of "three-dimensional objects within which structure, texture, insertions, additions, manipulations and movement can interact. In fact, it is more accurate to define textile not as a visual art, but as a sensory art, one that calls into play all of the senses: touch, sight, smell, sound and – for curious infants – taste" (2012: 463). Following this, it is more appropriate to look at the colours and imagery on textile as having not simply visual effects, but haptic ones as well: one never just looks at textile even if it is behind a glass, but always has a prehension of how it would feel against one's skin: textile prompts sensorial imagination. And this is a key

way in which to understand how textile communicates: by sensorial closeness, even at a distance. Naturally dyed textiles extend and augment human bodies, not only by providing protection, but also by inscribing individuals in sensorial relations to one another, and to the world. To wear naturally dyed textile is to gain a social identity that is necessarily mediated by nature.

This mediation via nature is something that was explored to its full in high-end clothing in Japan. It was used to establish a system of tripartite relationships between wearer, viewer and nature that resulted in defining a cosmological culture, in that in any textile-based expression human relationships recognized the importance of a cosmos with complex logics, rules and processes that escape human control. Culture, in other words, was not abstracted from nature, but rather heavily indebted to nature, both in the sense of the non-human, such as materials (plants, roots, flowers, etc.) but also the more-than-human—the elemental processes (e.g., the filtering of water through rocks) that develop over thousands of years. In *The Power of the Weave*, Yuko Tanaka explains the combination of haptic and visual processes in Edo-period landscape naturally dyed silk kimonos:

The artisans of the Edo period took the techniques of weaving, embroidery, and tie-dyeing to new heights. The result was the unique “landscape kimono”. When spread out, each robe formed a seasonal vista like a painting [...]. Plant-extract hues had long stood for nature, but in landscape kimono people could clothe themselves in nature in a very concrete way. As in other cultures, textiles were a medium between humans and the divine or natural world [...] (2013: 22).

The landscape kimono was as much a testament to human craftsmanship as it was a display of the expressive power of nature as source of colour and as enabling indeed a language, a grammar of colour. The landscape kimono, like other garments reserved for elites worldwide, separates the wearer from common people. But at the same time, it asks about the recognition of one’s place in relationship to a cosmos. The importance of the environment—both as source of expressive material and as asking the question of the ethics of a relationship with the entire and more-than-human environment—highlights the cosmological aspect of traditional textile in Japan, one that does not proclaim the superiority of the human over nature contrary to western modernity but

one that sees virtuosity in the capacity to work with nature according to cosmological relations. At the same time, it is important to notice that the landscape kimono expresses relation to a specific kind of nature: one that has been idealized (Kalland, 1995: 250); in this context, the rendered nature has been tamed by human hands.

This tripartite relationship—that cultural expression among humans always requires recognizing one’s place in the cosmos—was not limited to high end traditional Japanese textiles. For common folks, naturally dyed textile was a question of necessity, and the kinds of cultural aesthetics that emerged from it reflect an economy of relationship with scarce and valuable materials. Being cut off from the world and with a geography and climate not susceptible to the growing of common sources of textile fibers such as cotton, sheep or camelids, Japanese common people had to rely on domestic fibers for weaving: hemp, ramie, banana and pineapple leaves, but also kozo paper twisted into fine fibers, and wild wisteria that grow in the mountains (Nagano and Hiroi, 1999). Overall, cloth was rare and time-consuming to make until after WW2. Similarly, colour was scarce for common folks. Historically, bright colours were reserved for the nobility and common folks mostly had access to neutral colors, with the exception of indigo. The plant for producing indigo in Japan—*polygonum tinctorium*—could be cultivated in the Japanese climate and was the source not only of some of the brightest blues—from sky blue to the almost black blues—but also served practical purposes. Natural indigo dye reinforces cloth, making it more durable, and it is also a natural bug repellent. Being labor-intensive and made up of scarce materials, and yet very much needed for everyday life, the cloth culture that emerged in Japan for common folks involved aesthetics borne out of preservation. Mingei (folk craft) aesthetics reflected such necessity and forced economy in dealing with materials, and that translated a unique kind of communicative care towards textile as both object and interface to the world (Japanese Garden Society of Oregon, 2011).

A key instance of this is *boro* (“rags”) which at first glance is the careful mending, upcycling and recycling of fabric (Tuzuki, 2009), but should be understood as a form of generational communication through temporal transmission. A farmer’s jacket, for instance, would be patched with scraps of textiles and reinforced with stitch-overs. When it started falling apart, it would in turn be cut up into scraps to sew or patch other clothes. Scraps too worn to be sewn or stitched together would be used as

bedding fillers or rags. Yuko Tanaka explains that *boro* is a form of communication in that it is a patchwork of different times and existences—it is a quiet, subtle mode of cultural transmission that nevertheless fostered a unique aesthetic. *Boro* indeed is the precursor to a form of Japanese embroidery known as sashiko, where aesthetic expression and the reinforcement of cloth through stitches work together. A *boro* farmer's jacket, which paradoxically now would be highly sought after as a collector item, embodied generational presence: one wearing such a jacket would be surrounded by ancestors, in a very material way. *Boro* thus “bears witness to the people who wear and use it” and “is charged with their life essence” (Tanaka, 2013: 171). The practice of *boro* made possible the encounter in the present of pasts and futures.

Cosmotechnics

The necessary cosmological cloth cultures of Japan are inseparable from a very unique conception of techniques for extracting and applying colour. And here, the Japanese natural dye tradition offers an illustration of cosmotechnics, that is, the set of ethical principles for relating to a cosmos that are embedded in a given technological system. As Yuk Hui argues, cosmotechnics offer a necessary correction to the monotechnological thought that is dominant today: the belief that the only technological model available is the one that emerged in the west from modernity, capitalism and colonialism, and which involves the ruthless extraction and transformation of materials, workers' exploitation and the assumption that technology is a means to exert absolute human control over environments. The techniques for extracting natural dyes in Japan compared to the rest of the world are telling in offering a contrast between two very different cosmotechnical systems as far as natural dyes are concerned. But first, let me offer some pointers as to how natural dyes are extracted.

Natural dyeing has a long history—it was the only means of producing colour up until the invention of synthetic dyes in 1856. Today, we have those little packets of instant dye that dissolve in water, but before, the making of colour required careful use of living materials, some of which are only available at specific times of year and in small quantities. Further, it required craft in extracting colour from leaf, bark or roots, some

of which had to be further processed through, for instance, months of composting in the case of indigo leaves. Furthermore, to be able to coax deep, bright, long-lasting colours from natural elements requires an immense amount of skill and knowledge as other materials with chemical properties are required to fully bring colour out and onto textile. Indeed, textile itself has to be properly treated in order to maximize colour fastness, from processing textiles before dyeing—a process called mordanting that involves substances such as alum or tannin rich plants (Garcia, 2016)—to post-processing once the dye has been applied, for instance through the use of a protein bath (e.g., in soy milk) in order to more firmly bind colour to cloth. Finally, textile itself plays a key role in that different textiles will react differently to natural dyes; safflower, for instance, produces bright pink on cotton, but coral orange on silk. Overall, while one could throw a bunch of leaves or flowers in hot water and dunk textile into it and obtain some kind of colour, the ability to not only produce bright, lightfast and steadfast colours, but also to be able to maintain consistency of results over time, requires an immense amount of skill both in scientific knowledge and in constant years of practice.

The natural dye tradition in Japan is unique in that it pays attention to temporalities and seasonality, specifically how seasons both demand and structure specific and appropriate human activities (Kalland, 1995: 253). By contrast, the dominant natural dye tradition that emerged in the west applied a whole different set of techniques that obeyed the tripartite logics of modernity, capitalism and colonialism. Today even, the Japanese natural dye tradition continues to distinguish itself by insisting on closeness to the seasonality of nature. For instance, natural dye extracts, either in liquid or powdered form are common tools used in the west. They are easy to store, are portable, and derive from a long history of the global exchange of colour, from the Silk Roads onwards (Phipps, 2013). By contrast, the Japanese natural dye tradition distinguishes itself by generally refusing the abstraction of natural dyes from their environment: importance is placed on collecting leaves, bark, flowers and other sources of natural dyes and using those directly in dye baths. This is not to say that the Japanese natural dye tradition is any less complex than the western one: rather, it actualizes specific ethics about how humans should relate to non-humans and more-than-humans, one that recognizes the need to compose with rather than find ways of asserting human control.

This becomes particularly evident when looking at the parallel histories of natural indigo in Japan and within the western colonial system. Indigo is a unique dye because it is a source of colour found in many plants across the world, from tropical to temperate climates. In order to obtain deep blues, the plants need to be processed to extract indigotin, which in turn further requires transformation so that it becomes soluble and adheres to textile fibers. For extraction, the western colonial system adopted a water-based method originating from India: the leaves are rinsed, submerged in water, heated and/or fermented, then alkalized, oxidized and filtered. Out of this process indigo is extracted as a concentrated blue powder that can then be pressed into cakes. The Japanese indigo tradition makes use of a compost method, wherein the leaves are chopped, sun dried and then spread inside to compost, getting turned over and watered on a regular basis over the winter months (Ricketts, 2021). The resulting product is loose and contains lesser concentration of indigo than in the plants and methods originating from India.

As mentioned, the extracted indigotin in both cases is not water soluble and has to undergo a unique process of transformation that no other natural dyes involve. There are two ways of rendering indigo into a dye: either through microbial or chemical means. The microbial method is the oldest and consists of adding substances to the indigo vat to increase alkalinity and foster fermentation. The chemical reduction method is a more recent invention from the mid-nineteenth century (Balfour-Paul, 2011: 129-130) and involves ammonia to raise alkalinity and sodium hydrosulphate to provoke a reduction of the indigo into a soluble dye. The chemical vat allows for a large scale of dyeing—it is much faster and easier to control than the fermentation method, which is dependent on weather and temperature and a multitude of other factors. The western colonial indigo production system is one that actualized capitalist logics of never-ending expansion through high productivity. Combined with the existing colonial logics, it comes as no surprise that it was built on brutal exploitation of human labor including slavery in large numbers. The path of destruction of colonial indigo, from mass oppression, famines and massacres in India to the slave trade extended over hundreds of years, is still present today in the ways in which textile workers are treated as disposable and cheap labour. Further, the aim to control the indigo process resulted in the use of very harsh chemicals that are toxic to human bodies and the environment. The invention of synthetic indigo in 1897 further enabled

the appropriation of blue cotton within industrial mass capitalism. Today perhaps denim is the epitome of mass consumerism, with the pollution that it produces visible from space.

The extraction and transformation of indigo from plants to dye is key to understanding how what from the outside appear as different means to the same end actually express a politics and ethics of technology in relation to the world. The history of colonial indigo was driven by the portability of indigo cakes that could then be used as global commodity central to the triangular slave trade, which was organized around British and US “empires of cotton”. The Japanese indigo by contrast has small yields and is meant neither for travel over long distance nor mass scale production. The question of technology—of how to make things—comes to the fore here. Typically, making or techne is divided into two models: one where the human maker is central and in charge of the entire process of extraction and transformation, and the other where the human element becomes a cog in a broader complex machinery. The divide is between craft and industry, between holistic and prescriptive models (Franklin, 1999: 10-11), between creation (*poiesis*) and instrumentalization (Heidegger, 2013). All of these models assert the ability for the maker to control the process of creation. Through Tim Ingold, however, we access another definition of techne via the concept of textility. Ingold contrasts hylomorphism—the imposition of form onto materials (2010: 91) and textility—the weaving of materials, or “the way in which materials of all sorts, energized by cosmic forces and with variable properties, mix and meld with one another in the generation of things” (91-92). Textility redefines making as productive and transformative relationships between humans and non-humans, including plants and elemental media. The maker, in that process, emerges not as the main actor, but the one who helps non-humans and more-than-humans compose with each other. To further explain the composition of non-humans and more-than-human actors: the Japanese method of fermenting indigo requires the mobilization of bacterial actors, which have to be encouraged through proper heating and feeding. Just like the difference between making sourdough bread or using chemical yeast, with the fermentation vat, the maker can at most put together actors in the best set up possible but does not get to control how or when they will react together.

Further, when talking to indigo dyers about the most important aspect of a successful vat, respecting the temporality of bacterial activity was but one component. Another key element, or rather, elemental media, is water, they said: the quality of water determines the success of the dyeing process. City water is usually avoided for this reason, and many indigo dyers in Japan choose the location of their dyeing studios based on the quality of spring water available. Another key aspect for master indigo dyers is respecting the life of the vat, and here is another layer of complexity: the fermentation pushes oxygen out of the vat, which is key to successful dyeing. The dyer, in turn, adds oxygen by dipping textile into the vat: one of the first things one learns when dyeing with natural indigo is therefore how to properly and carefully dip textile into the vat, making sure to disturb it as little as possible. In any case, at some point the vat will require to be left alone in order to resume its fermentation. The vat is temperamental, a fragile equilibrium at best that the dyer is always trying to both manage and disrupt as little as possible. For master indigo dyers as well, the life of the vat is not only about its day-to-day existence, but also about its overall life. The life cycle of the vat starts indeed with vibrant and deep blues, but as the vat is used, more and more indigo is removed. This enables working with different shades and depth of blues; whereas a young vat will make it possible to attain dark blues, older vats make possible much lighter blues, so that by the end of its life the vat will give beautiful pale blues the same color as an early morning sky. It would be easy to keep adding indigo to the vat to try to maintain consistency, but Japanese indigo dyers, as master indigo dyers from other traditions, usually argue that the life cycle of the vat should not be interfered with. Knowing that one works with a living hybrid entity—the indigo vat—forces one to be in constant communication with the vat, a communication process that is based on respect of the agency of the vat itself. In so doing, highly skilled indigo dyers are able to produce up to fifty different shades of blue from indigo. Being able to consistently obtain the same shades given the temperamentality of the fermentation vat takes fine attunement to the vat using all the senses: not only what the vat looks like, but also differences in smell, and even taste, which some indigo dyers use to judge the fermentation process. Overall, this constant state of communication puts the human not in control, but rather as an interlocutor among many, as a facilitator that enables encounters between non-human and elemental media. It comes as no surprise

then, that the indigo and natural dyes tradition of Japan allows for communication with the more-than-human, especially with time itself.

Cosmomedia

Working with natural dyes in the Japanese tradition means working with time and temporalities: the temporalities of seasons and non-human life cycles, which then enable a work on memory, reminiscence, and imaginaries of encounters. A few Japanese and Japanese trained indigo dyers have become installation artists, using indigo blues in ways that highlight its magical radiance, its more than human characteristics which result directly from the kinds of composition it entails. Synthetic indigo can never get to the same radiance: the natural Japanese indigo blues are indeed alive and a celebration of encounters. Indigo artist Hiroyuki Shindo's installations of indigo-dyed panels and balls of fiber were among the earliest to rekindle an international appreciation of colour as a live and mystical medium (Taussig, 2009). Similarly, Japan-trained indigo artist Rowland Ricketts focuses on the life of indigo in his installation—not only its multiple shades but also its fading over time. Fukumo Shihoko is also another instance of an indigo artist working with traditional and vintage textiles such as wisteria and hemp to create pieces that have cosmological resonances, some of which achieve the kind of blue that the earth looks like from space, others look like the darkness in between stars.

The resurgence of Japanese indigo traditions on the international art scene has played an important role in rediscovering natural dye colours, and one can hope the *Living Colour* exhibition is the first of many to come to the western world. The language of Japan natural dye colour is one of multiple and layered entities and the hybrid lives that they enable and in so doing, open a space of communication that is nonverbal and deeply sensorial. For Living Treasure and Kimono weaver Fukumi Shimura, colour is felt not only through the eye, but also awakens smell, and it is worth quoting her at length to illustrate this:

Powdery snow was still falling when I visited the foothills of Mount Ogura one year. There I met an old man who gave me one of the branches he was pruning from the sakura trees. Back in my studio, I simmered it into

a dye that turned the fabric such a beautiful pink it seemed to fill my room with the fragrance of the blossoms. At that moment, I experienced what it was like to smell a color. Not as an actual scent, of course, but because all our senses seem to be connected at some deep level, elements of beauty perceived through one sense resonate subtly across the rest as well [...] When I received word that plants were afoot to trim the sakura near Omi ahead of the September typhoons, I practically flew to the scene to receive some prunings. However, the dye I got from them did not have the same ‘fragrance’ as before. The color was the same gray-tinged pink, but it lacked the previous batch’s radiance. Pondering this difference, I realized that plants, too, have their cycles. In late winter, when I had received the branch from Mount Ogura, the sakura had been preparing within its trunk to bloom to the tips of every bough. *That color was the very spirit of the sakura*, I thought (2019: 15).

What natural dye does then, is to fix a moment in the life of a non-human element, to capture life energies before they transmute into blooms, flowers, leaves and fruits. For Shimura as well, weaving designs further activate other senses, such as sound. In Shimura’s works (2019; 2009), one can see the multiple ways in which indigo blues are mobilized in conjunction with other colours: to recall the surface of a lake in winter, to call forth, in combination with yellows in a bold pattern, the memory of a summer music festival, or in subtle touches to evoke the haziness of rain under the moonlight. In Shimura’s work, colour combinations are woven into rhythmic patterns that resonate with natural energies that are then given back to the human in the form of unconscious, sensorial associations. These memories of a lake, of a music festival, of a misty night are not personal memories like the Proustian madeleine: they are impersonal yet deeply moving. When I look at Fukumi Shimura summer festival kimono, I experience echoes of joy and celebration, a nostalgia for a past that I never lived, but also an imaginary prehension of music approaching even though I do not know what Japanese summer festival music is like. Such cosmomedia does not only pay homage to the natural world: in capturing non-human energies it creates new temporalities, it awakens experiences that have not yet existed but are at the cusp of coming into being. In other words, it opens a world of potentials through triggering sensorial imagination.

Naturally dyed textiles become living interfaces, and the current interest in *boro* textiles mentioned above reflects this nascent understanding of cosmomedia. Tanaka explains that *boro* entailed that “cloth was a living thing, and as such it had a lifespan and should be kept alive until that time came” (2013: 167). The idea that textile could be considered as *living* is more than just provocative. Indeed, textile does not fall neatly into a category of what we consider “the living” in the standard sense of the biological. Artificial life is a popular topic these days, and it usually conjures up images of synthetic machines and high-end computing power. But looking at textile as a form of artificial life, as a living hybrid interface—and as something that had to be nurtured and protected through its life span—opens up our horizon about the encounters between the human, the non-human and the more-than-human. *Boro* reminds us that artificial life has a long history, and that it relied on a set of technically mediated relations between humans and the world. This insight stands in stark contrast to the contemporary discourses of artificial life as providing an *escape* from the limitations of biology and materiality, from the limitations of life and the world we live in. *Boro* as artificial-life-making was about the creation of new temporalities, memories, futures and lines of existence, relations that endured through the cycle of human life and death. What is key to note here is a kind of relationship with artificial, fabricated, technological objects that takes into account their particular life and changing agencies. Rather than thinking about technical agencies as *de facto* surpassing human capacities and therefore being stronger and unchanging, the practice of *boro* embraces technological decay. The cycles of *boro*, from reinforcing to patching together to layering to stuffing, follow textile as it degrades, as its threads get thinner and eventually fall apart. This is completely unimaginable in our western technological mindset oriented as it is toward immortality and incapable of thinking about degrowth in the first place: to account for the decay of fabricated actants as enabling important modes of cultural expression and transmission. Again, the ethics of a relationship with the cosmos—not only in its environmental but also temporal and more-than-human aspects—is key here: the time of human existence is articulated with the lifespan of fibers that get thinner and more brittle and colour that fades away.

To go back to the *Living Colours* exhibit mentioned at the beginning of this article: I hope to have shown in these few pages how something as seemingly obscure, from a western perspective, as the Japanese traditions of naturally dyed textiles actually opens

a door towards forms of communication that have almost disappeared: sensorial, cosmological based communication that emerges from the composition and entanglements of humans, non-humans and more-than-humans, from a technological communion that is deeply indebted to environmental media. In the time of the Anthropocene (Moore, 2016; Tsing, 2017; Tsing et al., 2017), such communication is even more needed to forge new connections to the cosmos that are emerging. Such communication is deeply political, because it is deeply transformative: the mobilization of nature enables new modes and temporalities of experience and of being to each other. In that regard, *Living Colours* was more than a celebration of an ancient craft and a nostalgia for a far-away place of always harmonious relations with nature. Such understandings are traps and in order to avoid them, it is necessary to focus, in turn, on the techniques of natural dyes, which are not only craft techniques, but also ways of coaxing forms of communication. The techniques put different elements together to create moments of resonance culminating in compositions that produce colours that in turn leave a trace of a fleeting, short moment of communion. For Textile Yoshioka in their *Living Colours* exhibition, colour combinations include such seasonality and temporality. What is important here is that as much as the colours from Yoshioka textiles are flamboyant and bright, they also translate a restraint, a recognition that such textile is indeed rare, and precious. And while it has been pointed out that natural dyes, for this reason, are not necessarily a universally eco-friendly alternative as they tend to require, for instance, lots of water, they nevertheless offer an example of how the power of communication can help rethink our damaged present: how it can be without words yet be a transformative experience of being in the world; how it teeters on the verge of failure and is so fragile and how it can nevertheless produce lasting sensations and profound transmissions; how it requires so many technical mediations to produce an already gone moment of direct communion among humans, non-humans and more-than-humans; how it has to be constantly reworked and should never be fully systematized, because it is a composition with the living, a being-with that is both material and abstract, present and refracted.

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Notes

¹ This article is based on fieldwork observations and interviews conducted with eight Japanese textile artists in June 2019 in Kyoto and Osaka.

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