Co-Living Imagination in Early Childhood: Toward Education for Sustainable Development along Children’s Ways of Life

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The problem of sustainability has been caused by humankind.

Although it has been repeatedly reported that human activities have an irreversible impact on the global environment, humans have been unable to stop them. Facing the pressing issues of global warming, ecological change, economic disparity, and the disappearance of local cultures, we have recently begun to educate children to achieve sustainability. Particularly since the beginning of the twenty-first century, much debate has arisen over education for sustainable development (ESD), its theoretical foundations, and how it should be practiced. The critical viewpoints vary, such as shifting education from competition to coexistence, realizing both individual well-being and planetary well-being, starting ESD from early childhood, and protecting the rights of children to express their opinions and participate in society. ESD requires understanding sustainability challenges and their complex interlinkages, cultivating empathy and compassion for other people and the planet, and taking practical action for sustainable transformations in the personal, societal, and political spheres.

I do not disagree with the opinion that education from early childhood plays an important role in achieving a sustainable society. However, I wonder how children feel about their antecedents having brought the planet to the brink of sustainability. Will their well-being be inhibited by being given a large amount of deplorable information and preparing for an uncertain future?

In this paper, I focus on the animistic imagination of young children, or “co-living imagination,” to envision ESD starting with the well-being of young children. Their panpsychic and intimate relationship with all things—even with materials—and its exploration of their well-being teaches an alternative way of ESD. It is a shift from an education based on the thought of manipulating, which has been the premise of modern society, to one based on the thought of being with things—ways of knowing along with children’s lives.

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From the perspective of co-living imagination, ESD can be regarded as the expansion of this intimate relationship from familiar others to life at a distance—a movement to expand the circle of well-being. At the end of this paper, I describe, as a case study, the practice of indigo dyeing at a preschool facility in Japan. The children’s co-living imagination, which is demonstrated through indigo dyeing, helps them perceive the reality of life and expand their well-being, including other people and other lives. It can be concluded that education through co-living imagination forms a responsible relationship with life, creating a story of interspecies intimacy and a basis for scientific imagination of the multispecies ecosystem.

From Manipulating Objects to Being with Things

The history of civilization has been characterized by the development of technology that manipulates nature and other living things. Take, for example, the ideals of Francis Bacon, who argued that the purpose of scientific research is to torture and conquer nature and that science has developed technologies to do so. However, while science and technology have made life more convenient, they have also developed to the point of having serious global impacts, and 200 years after the Industrial Revolution, the global environment has been driven to the brink of death.

Conversely, humans, like nature, have also been subject to development. As Giorgio Agamben suggests, with the term “anthropological machine,” man has formed human culture by drawing a line between human and nonhuman, between speaking man and non-speaking animal. As the “anthropological machine” has operated by “excluding as not (yet) human an already human being form itself, that is, by animalizing the human, by isolating the nonhuman within the human,” so the man-ape, the enfant sauvage, the slave, the barbarian, and the foreigner have been regarded as immature and backward. Education has developed as a pedagogical technique (a technique of manipulation) to elevate immature subjects to human beings, as evidenced by the naive story of “the enfant sauvage,” educating wild children raised by animals to become human. This history continues today with the development of technologies to manipulate life, expanding the possibilities of biopolitics to design, produce, and manage “better” human beings.

To achieve sustainability, we must listen to the voices of beings once regarded as immature and voiceless. Nature, animals, and children have been subject to manipulation and intervention in the development of civilization. In order to change this situation, we must create a society in which their own life and diversity is respected. Attempts at decolonization, de-anthropocentrism, and new materialism in pedagogy can be evaluated as a reflection on the fundamental epistemology that has created an unsustainable society and a change in the direction of educational practice.

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9 Agamben, 37.
As a trend of such reflection on modern epistemology, the reevaluation of animism is underway in anthropology and other fields. In general, animism has been dismissed as a primitive and unscientific epistemology, or as a type of religion upheld by uncivilized peoples. Moreover, animism has been seen as a confused and erroneous way of looking at things, just as Jean Piaget saw it as an immature mode of cognition to be overcome by development. Contemporary anthropology, however, has dismissed these assessments as one-sided views based on Western epistemology and has come to regard animism as a way of perceiving the world that should be “taken seriously.” In other words, animism is being re-evaluated as neither a cultural mode that characterizes uncivilizedness nor a mode of thought that characterizes immature mental development but as an alternative thought to the dominance of Western epistemology.

Tim Ingold argues that the first principle of anthropology is “taking others seriously” and that sharing the animistic world provides a clue to the question of how to live in a world where sustainability is threatened. Ingold explains this by citing the ethnography of Irving Hallowell’s survey of northern Ojibwa ontology. In this profound conversation, Hallowell asks William Berens, the Ojibwa chief, “Are all the stones we see about us here alive?”, because the word for “stone” in Ojibwa grammar appeared to be of a class normally applied to animate rather than an inanimate entity. Berens thought long and hard before answering, “No! But some are.”

Ingold respects Berens’ words as offering a way of looking at the world coming into being. They lead us to question much that we otherwise take for granted. What is it about our own approach to reality that makes the idea of moving, speaking stones so obviously fantastical? After all, stones do wander, descending scree-strewn slopes under their own weight, or carried by water, ice or ocean waves. And they do make sounds when struck, against each other or by other things. It is as though each stone had a distinctive voice, as humans do. If by speech we mean the way we humans have of making our presence audibly felt, then might not the same be said of stones in their resounding? In this sense, they too could speak.

Western culture has the custom of objectifying things as nouns and attribute properties such as “animate or inanimate.” In contrast, in the Ojibwa’s ontology, life is not a property of objects but a certain condition of being. While it is obvious that stones do not routinely move on their own in their natural environment, to the Ojibwa, they appear to move and speak by themselves under certain circumstances, including ceremonial scenes. In this sense, it is more appropriate to say that “the animate stone is not so much a living thing as a being alive,” which indicates a view of the ever-forming world.

Gaining a perspective on the world being alive means that one learns to see the world by active verbs rather than by static nouns. For example, Ingold quotes another instance of a report of Richard Nelson’s account of the Koyukon of Alaska, in which they call “‘streaking like a flash of fire through the undergrowth’ not a fox, and ‘perching in the lower branches of

18 Ingold, Anthropology, 19.
19 Ingold, Anthropology, 22.
spruce trees,’ not an owl.” For the Koyukon people, animals are not objects taken as nouns but movements expressed by verbs. Ingold calls this movement a life of lines that can tangle with others, and this entanglement can be described as “the meshwork of lines.” For example, a tree may be recognized as an object that has a name and fixed meaning. However, the boundary of the tree is ambiguous, and one can tear the bark and find tiny creatures buried beneath it. Microorganisms live in its roots, and water and air circulate within the tree and around the earth. In other words, seeing a tree as a fixed object is a limited perspective, and there exist other perspectives seeing the world as the entanglements of lines generating things and meanings.

Thus, Ingold argues that anthropology is “a generous, open-ended, comparative, yet critical inquiry into the conditions and potentials of human life in the one world we all inhabit,” and that it overlaps with education, in resonance with John Dewey’s philosophy, in that it encounters a world in change and is driven by communication. This is an attempt to shift the way of modern society, which has been oriented from “of-ness,” a thought of objectification and manipulation, to “with-ness,” a thought of correspondence to others.

Where “of-ness” makes the other to which one attends into its object, and tick it off, “with-ness” saves the other from objectification by bringing it alongside as a companion or accomplice. It turns othering into togethering. To start with the principle of habit, rather than that of volition, is to acknowledge that awareness is always awareness with before it is ever awareness of.

Reflections on the epistemologies that have shaped unsustainable societies are moving away from manipulating life toward being with life. Anthropology teaches that learning from an animistic worldview allows having a different perspective on the living environment.

Co-Living Imagination and ESD

If anthropology and education are learning from and “taking others seriously,” then ESD must also begin with being with children, not in the direction of manipulative pedagogy.

When ESD practices are attempted, is the animistic world of young children taken into account? Is the model that “leads” to the realization of sustainability a vestige of the structure by which only adults know what a sustainable society is, and children should be educated in that direction? Is there no alternative view of life on which ESD should rely?

22 Tim Ingold, Lines: A Brief History (London, UK: Routledge, 2007), 84.
24 Ingold, Anthropology and/as Education, 58–59.
25 Ingold, Anthropology and/as Education, 26.
To answer these questions, it is necessary to focus on the imagination of young children living in animistic worlds. By focusing on young children’s imagination with other life, we can find clues related to ESD, which includes aesthetic and scientific inquiry. The following is about a boy whom the author met during fieldwork in a preschool education program. In this case, the boy, like Berens, feels that the stone is “alive” and uses his imagination to envision the future.

December 8, 2015

A little boy, approximately 4 years old, planted seedlings in a flower bed with the help of his teacher. After he planted them, he looked satisfied. Soon after, he began digging the ground a few meters away with a trowel. I, as an observer, watched quietly to not disturb him. After a while, he put a leaf in the hole and covered it with soil. He looked at me and said excitedly, “I planted a leaf!” I responded, “Right, you did it! I hope a weed will grow from the leaf.” Shortly after, he dug holes and placed a stone in one of the holes. I remarked, “That’s good. You planted a stone.” He replied happily, spreading his hands, “You know, the sprout comes out from here and bears a lot of stones!” I was impressed by his words and imagined a big stone tree. I replied, “It’s true! It may produce a lot of stones.”

At this time, was my response, “It’s true,” appropriate? This boy’s imagination seems immature from the perspective of cognitive development. Scientifically, a stone cannot sprout and produce fruit. Should I teach him that the stone would not sprout? From a scientific perspective, this boy’s imagination requires correcting; however, from an affective standpoint, his experience contains an awareness of life and is filled with joy when living things grow. Namely, this experience seems aesthetic, and he is full of imagination, perceiving what is before him and considering what could be in the future. At this time, he seems to live with the stone, feeling the movement and dynamics of growing life.

Let me give you another example. The following happened when I was flying a kite with my three-year-old daughter:

December 20, 2020

It was a nice day with moderate wind, so my daughter and I decided to play with a kite at the park. My daughter seemed to be amused by the kite, which seemed to float on its own when the wind blew, and enjoyed flying it repeatedly with me while running around on the large grassy area. After a while, we started to put the kite away because we were getting tired, and the wind had decreased. As I was winding the string, I suddenly felt the wind pick up again. At that moment, she seriously mumbled, “The kite wants to fly,” and hurriedly put the string back on and attempted to put the kite into the wind by herself.

This episode expresses the girl’s fascination with the kite and her loneliness at the loss of the wind. Furthermore, when the wind blows again, the girl is eager to take the string in her hand again and tries to fulfill the kite’s wish. At this time, she deeply corresponds with the kite and appears to care for its life with empathy and responsibility.

Although these two examples are not scenes of my own educational instruction, they provide clues to learn from children’s way of life and develop ESD in a way that is in line with their well-being. First, these examples highlight the relationship between the child’s aesthetic experience and caring in an animistic world. In both cases,
the children encountered the living stone or kite with the joy of interaction and fulfilled vitality. The boy who buries the stone expresses joy with his whole body as he imagines the life of the stone growing, sprouting, and bearing fruit. The girl who hears the kite’s voice in the lively wind—what Tim Ingold calls “the dance of animacy”27—takes responsibility for flying him again. These are aesthetic experiences in which children get resonantly involved with the living and growing world. John Dewey describes this transaction with the world as follows:

Experience in the degree in which it is experience is heightened vitality. Instead of signifying being shut up within one’s own private feelings and sensations, it signifies active and alert commerce with the world; at its height it signifies complete interpenetration of self and the world of objects and events. Instead of signifying surrender to caprice and disorder, it affords our sole demonstration of a stability that is not stagnation but is rhythmic and developing. Because experience is the fulfillment of an organism in its struggles and achievements in a world of things, it is art in germ. Even in its rudimentary forms, it contains the promise of that delightful perception which is esthetic experience.28

Through aesthetic experiences, one learns the art of perceiving the world. Especially in the life of young children, encountering a living stone or kite is an interpenetrating experience that promises joy and invites responsible communication. The stone and the kite feel, speak, and live as I do, then call for caring. This imagination should be conceptualized as “co-living imagination,” which causes a sense of living and intimate responsibility toward other living beings. This point suggests the importance of taking children’s imagination seriously. It is a source of joy for them, and they grow through communication with the living world.

Second, this “co-living imagination,” in addition to providing relational well-being, is a source of relational learning about what sustains life. Dewey describes the imagination at work in aesthetic experience as follows:

Esthetic experience is imaginative. This fact, in connection with a false idea of the nature of imagination, has obscured the larger fact that all conscious experience has of necessity some degree of imaginative quality. For while the roots of every experience are found in the interaction of a live creature with its environment, that experience becomes conscious, a matter of perception, only when meanings enter it that are derived from prior experience. Imagination is the only gateway through which these meanings can find their way into a present interaction; or rather, as we have just seen, the conscious adjustment of the new and the old is imagination.29

According to Dewey, prior experiences influence present experience through imagination, which applies not only to aesthetic experience but also to the conscious experience of everyday life and the learning process. The aesthetic experience of being alive forms a “co-living imagination” that constructs subsequent experiences.

This is not, as Ingold points out, an imagination that makes us perceive the stable things by of-ness but the process of things by with-ness.

29 Dewey, Art as Experience, 281.
As Ingold suggests, the of-ness worldview perceives the world as a set of objects and its relationship, separated from the self, as a network of mutually independent points and straight lines that connect them. Ecosystems and the web of life, as learned in schools, are also based on this perspective. The with-ness worldview, however, perceives the world as a tangle of lines in a process of generation and change. Stones, kites, and humans all change in the intertwining lines of life, generating the meaning of each encounter—a “meshwork” worldview by which we correspond with each other. In other words, the “co-living imagination” is the only gateway to learning about the ecological relationship in the current of the lifeworld where the self participates.

The child who imagines the future of a living stone, sprouting and fruiting like seeds, perceives the world as growing together. It is an imagination that will be corrected scientifically or biologically in later learning. However, what is important is not to wither the roots of the with-ness imagination by later learning but to make participating in the world compatible with scientifically exploring the world.  

Co-Livingness and Responsibility

ESD must combine children’s joy of living with learning about the ecological relationships that sustain life.

The concept of “ecological imagination,” developed by Steven Fesmire from Dewey’s ideas, provides clues for promoting such learning. He interprets Dewey’s concept of imagination as follows: “All active intellectual life, poetic or theoretical, is imaginative” to the degree that it “supplements and deepens observation” by affording “clear insight into the remote, the absent, the obscure.” In Fesmire’s view, empathetic projection and creatively tapping a situation’s possibilities are two recursive themes in Dewey’s writing and are issues of imagination. He writes that “imagination in Dewey’s central sense is the capacity to concretely perceive what is before us in light of what could be.”

Imagination expands the possibility of awareness of things, their backgrounds, and the various aspects of ecological relations. Ecological imagination works in daily life and renders humans more sensitive to aspects of the relational network around them. For example, one

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31 Steven Fesmire, NEED PAGE .
rarely notices that the two-dollar hamburger and coffee are made available through deforestation for the sake of ranches and low-paid labor of coffee farmers in developing countries. The meaning of commonplace things is grasped and amplified by imagination, which crystallizes the possibilities of the present condition for thinking and acting. As a result, ecological imagination promotes ecological thinking and moral deliberation to make pro-environmental decisions for sustainability.

Co-living imagination in early childhood can be considered a primary form of ecological imagination. In early childhood, children often heighten their vitality when they live an aesthetic experience, which dissolves the boundary between self and environment. In this experience, they participate in the world and discover various meanings in commonplace things. After absorbing the sounds of wind for a moment, they may ask teachers, “Where did the wind come from?” After gazing at the beautiful red flower, they may ask, “Why are the seeds green and the flowers red?” or hypothesize, “Maybe because they are embarrassed to be seen?” This sense of wonder shows not only an intimate relationship with commonplace things but also the beginning of scientific inquiry. In this ecological inquiry, the self is entangled in the relationship between living and dynamic environments. Considering Ingold’s argument, when children work their co-living imagination, they participate in the meshwork of life. Instead of being objectified and detached from the world, they experience a relational, responsible world.

Fesmire also indicates that experiencing things in a relational way brings responsibility. He insists that ecological imagination generates this relational and transactional experience of things, and the lack of it means the loss of responsibility.

The terms “bee, bird, or tree” signify not only an object one can point to at a simple location, but also “an organized integration of complex relationships, activities, and events which incorporate a whole transactional field.” Because human choices and policies are themselves part of this transactional field, we tend toward irresponsibility whenever imagination fails to shuttle back and forth between things and those relationships relevant to intelligently mediating the situation at hand.\(^{35}\)

Sensitivity and responsiveness to the environment are developed through imaginative encounters. At the aesthetic level, where the self and the environment transact deeply, children correspond with the world. This experience affords their sense of wonder and allows them to explore their surroundings aesthetically and scientifically. As Fesmire insists, dramatic rehearsal in imagination is “a capacity for crystallizing possibilities for thinking and acting and transforming them into directive hypotheses.” \(^{36}\) This kind of inquiry, rooted in intimacy with things, can be said to be the quest to discover the meaning of the environment based on the reality of life.

From this standpoint, experience with co-living imagination is reconsidered as an

\(^{35}\) Fesmire, “Ecological Imagination,” 199.

experience of a sense of vitality, togetherness of being, and intimate and responsible relationships rather than an immature viewpoint. This animistic reality forms a strong responsibility for other lives and further insight into the coming and going of life. Paul Gauguin once asked, “Where Do We Come From? What Are We? Where Are We Going?” To paraphrase this expression, co-living imagination in early childhood arouses the concern of “Where Do You Come From? What Are You? Where Are You Going?”

Children live with various companions, even stone or kite, and ask about their home, wants, and friends. They expand co-living imaginations along the meshwork of lines that connect the present with the past, future, far, and strange. Based on these intimate and future-oriented relationships with the living world, they develop moral deliberation and scientific verification relating to the living environment as our affair. When the animistic imagination of young children is combined with ESD, it can be envisioned as a movement to expand their relational well-being, including other people and other lives rooted in the feelings of intimacy and caring.

Practicing Co-Living Imagination in ESD in Early Childhood

I have presented the perspective of co-living imagination by using the concepts of Ingold and Fesmire, which opens the possibility of applying the animistic experiences of early childhood to ESD.

Finally, I shall describe and consider a Japanese preschool practice to examine the aesthetic and scientific learning of young children leading sustainability in their daily lives. The following are excerpts from pedagogical documentation and a research paper on indigo dyeing activities at Uji Fukushien in Kyoto. The parts with co-living imagination are underlined.

Permission to publish the document and photography was obtained from the president of the facility. Uji Fukushien, established in 1978, operates five nursery schools. The goal of Uji Fukushien is for all children to grow into people who care for life and understand each other’s perspectives. Indigo dyeing activity began in 2014. The children, who had been playing with dyeing plants and trees daily, wanted to bring out the blue color, and the teacher introduced the culture of indigo dyeing to them. The seeds used at Uji Fukushien were obtained from the Yura River indigo, which had been cultivated for 600 years but had declined and disappeared in 1926. However, in 1983, the local community began to

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revive the Yura River indigo by using the “Kojoko” variety of indigo produced in Tokushima. Uji Fukushien also uses the Yura River indigo, which is carefully cultivated in the local community.

Sowing and Caring for Tiny Lives

The series of activities begin with sowing and watering indigo seeds in the school garden. In this process of growing, children show co-living imagination and care for life.

One month had passed since the seeds were sown, and the sprouted indigo plants had gradually grown. The children looked at the indigo and said, “They are getting bigger,” and then noticed that the sprouts were growing densely: “It’s so small, I feel sorry for them.” From that, we had a class discussion and decided to plant indigo in a field where we made the second garden . . . The last thing to do was water the plants. The children expressed the water being absorbed into the soil as “they are gulping! Goku Goku” and talked to the plants, saying, “keep growing!”

In this activity, children corresponded with sprouts and felt intimacy day by day. When the crowded sprouts seemed too small and pitiful, the children shared ideas and found a solution to transplant them into a second field. At this point, the teacher assisted in organizing a dialogue along with the young children’s co-living imagination. They seemed to experience the reality of life by becoming plants that drink water and by talking to them with sympathetic care. This can be considered an aesthetic experience filled with joy and hope.

Relational Imagination along the Meshwork of Indigo Life

The children nicknamed the indigo and raised it as if it were their own friend. In the process, they experienced indigo in relation to various lives and imagined the meshwork of life.

The following happened during the indigo activity for the older children or the lily group. When they went to harvest the indigo they had grown, they noticed that the leaves were full of holes.

38 The phrase is onomatopoeiac. Japan has a rich onomatopoeic culture, as exemplified by the literature of Kenji Miyazawa. As Satoji Yano points out, onomatopoeia is “the music/word between landscape and human,” connecting humans to the wider world of life. See Satoji Yano, Education from the Perspective of Gift and Exchange with Soske and Kenji as Models of a Pure-Gift Giver (贈与と交歓の教育学) (Tokyo, Japan: University of Tokyo Press, 2008).

39 Miyuki Tanaka, “Towards the Width and Depth of Experience in Continuous Activity: Analysis of ‘One Year Indigo Dyeing Activity’ by Older Children” (継続的な活動において広がりと深まりが生まれていくために：年長児による「藍染の一年間の取り組み」の分析),” master’s thesis at Osaka University of Comprehensive Children Education (2017), 16.
“Was it because it was too hot?” “Was there not enough water?” “Maybe they were eaten by bugs?” As they were reaping the leaves, they found black lumps on the indigo leaves. “That’s poop!” Another boy who loves insects said, “This is caterpillar poop!” “No, I found a mantis! It might be a mantis!” Finally, the mantis and caterpillars were caught. The captured caterpillars were raised to determine what they might become. The caterpillars we caught were white, brown, and black. Some children wondered, “Why are the caterpillars different colors?” “Do they change color when they grow up?” “Maybe they have different fathers and mothers?” Other children wondered, “Why did they turn black when they ate Ailin?” The indigo leaves are green, and when dyed with indigo, they are light blue or blue; meanwhile, these caterpillars ate indigo, but they were different from any other color, puzzling the children.

After returning to the school, we drew pictures of the caterpillars and considered how to raise them. The children wanted to raise caterpillars, but they did not want them to eat the indigo we used for dyeing. The children contemplated and decided to use the indigo stalks in plastic bottles in which a teacher was experimenting with water root cultivation by the side of the room. A child said, “If I do this, I can make food!” Some children challenged the water root cultivation. Other children did not want to give the indigo stalks to the caterpillars, so they conducted experiments to determine if the caterpillars would eat different leaves. At first, the children treated the caterpillars that ate the indigo as criminals, but now, the caterpillars have become important members of the class, even obtaining nicknames.41

The holes and the droppings on the leaves seemed to stimulate the children’s co-living imagination, which expanded through multispecies, human-indigo-caterpillar-mantis relationships.42 The children followed the lines of each life, hypothesizing about who defecated, why the caterpillars were of different colors, and whether the food they ate affected their color. The children’s imagination demonstrates respect for the lives of both caterpillars and indigo and led them to a problem-solving attempt to hydroponically grow caterpillar food. The teacher documented the children’s questions and hypotheses and envisioned the next phase of care, supporting the children’s quest to coexist with the caterpillars and indigo.

Scientific Imagination in Fermentation and Dyeing

In the process of preparing for indigo dyeing, the children deepened their empathic relationship with indigo and developed their scientific imagination about them.

40 Ailin is the nickname of indigo.
41 Childcare record, August 29, 2021.
**Sukumo (栄)** is made by mixing dried indigo leaves and water and fermenting them, which is the preliminary stage of indigo dyeing. To make *sukumo*, we needed to remove chlorine from the water. Children said, “What’s chlorine?” “I can’t see it.” A teacher gave an illustrated explanation, and the children learned about the role of chlorine and how to remove it. They also enjoyed the fact that the dried indigo leaves have a different texture and smell from fresh leaves. They said, “It smells like tea” “It smells like old leaves” “It’s so crispy!” “They were in the sun, so they must have sweated” “Maybe they had been dried because it was too hot. I think they are thirsty.” Based on their own experiences, they were able to predict the phenomenon of the indigo leaves becoming dry.

In the process of determining the ratio of water to indigo leaves, the children became familiar with numbers such as weight and volume. They also wondered why the bulk of the leaves decreased when the dried leaves and water were placed in a barrel and stirred. A teacher used tape to show the bulk of the leaves before stirring, and when the children stirred the leaves, the bulk was indeed reduced. The children then compared the dry leaves to the watered leaves and found that “the wet leaves were soggy and smaller!” In the future, we will be stirring daily and discovering the science of fermentation.

The explanation of the chalky process made the children realize that the fermentation of indigo is supported by other microorganisms that are not visible to the eye. Through the drying and fermentation of the leaves, the children learned about numbers and quantities, experiencing an elementary scientific experiment. It is noteworthy that the intimate relationship established through the naming and care of the indigo juxtaposes aesthetics and science; the scientific experiment becomes an exploration directed toward symbiosis rather than a mere manipulation of the object.

**Cultural and Artistic Expression Based on Co-Living Imagination**

The history of living with indigo heightened the children’s cultural activity. The following case of artistic activity, just before graduation, shows that their learning through indigo dyeing was joyful and meaningful enough to be a source of creative expression.

January is when we decide the contents of the annual “Children’s Heart Festival (Dramatic Play Presentation)” held in February. Every year, teachers consult with the children, reflect on the year’s activities, and decide what the children will present. During a meeting, the children were asked, “Soon, we will have a ‘Children’s Heart Festival.’ I would like to do something that you enjoyed this year as a member of the Yuri class.” Many children raised their hands, saying, “Yes! Yes! Yes!” and answered, “indigo dyeing was fun,” “raising indigo baby,” “sukumo was stinky,” and so on. After discussing various opinions, they unanimously decided to perform a play about indigo dyeing that year.

The next question was what kind of content they wanted to include in the scenes that comprised the play. They decided on “watering the indigo, catching insects, protecting the indigo from typhoons,” “making *sukumo*,” “stirring the indigo liquid,” and “indigo dyeing.” They were able to learn numerous words and phrases through the experience, such as “*sukumo*,” “indigo construction,” “indigo flower (bubbles produced during fermentation),” “stirring,” and

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43 Childcare record, September 13, 2021.
“fermentation” . . . When they had to perform the lines they wanted to say in front of everyone, they appeared confident: “I have made an indigo flower,” “never be defeated by the storm,” and “I will drink lots of water and become big.” They were less likely to hesitate or forget because the lines were not decided by others but by the children based on their own experiences.\footnote{Tanaka, 54.}

The children learned and expressed the culture of indigo dyeing through a series of activities in which they dyed their own clothes with the indigo they had grown themselves. As the plays created by the children indicate, this is not given knowledge but creative learning that has been enhanced into a form of cultural expression through their own enjoyment of living with indigo. They learn and celebrate the fact that our necessities of life are made sustainable through interactions with various living things.

Making Sustainable Society from Co-Living Imagination

Uji Fukushien practices ESD through indigo dyeing, naturally combining the modern lives of children with traditional Japanese culture.\footnote{Kazuya Sasaki, Yuri Fujinami, Izumi Honda, and Miyuki Tanaka, “The Role that Indigo Dye Activities Serve as ESD in Childcare” (藍染活動が保育における ESD に果たす役割), The Research Bulletin of the Cooperative Faculty of Education Utsunomiya University, 8 (2021): 239–250.}

As Dewey and Fesmire indicate, the aesthetic and scientific aspects of imagination are reciprocal and aim to find an ecologically responsible way of life. By naming, growing, and dyeing clothes with indigo, children have varying emotions when encountering it; their lives and the indigo’s lives correspond deeply. They imagine the intertwined lives of the indigo in the multispecies meshwork of insects, soil, and fungi. Sometimes, it is a narrative imagination about the living indigo, called “Airin,” and at other times, it is an exploratory imagination about fermentation and dyeing. Through the layering of these imaginings, the meaning of commonplace things in the present becomes multilayered and deepens, and things are perceived with a relational reality. Learning with such a reality forms an attitude to think deeply about coexistence with other life as one’s own.

The children’s co-living imagination is supported by the teachers’ environmental composition and dialogue with them. The life of indigo, lived in convergence with the local culture over hundreds of years, is incorporated into the children’s living environment. Teachers “take children’s imagination seriously” and weave a story of living with indigo (“Airin”), sometimes exploring it scientifically. Teachers realize children’s well-being as the well-being of living with indigo. When the children become older, they will recall that dyeing clothes with indigo, which they have lived with, is a cultural aspect rooted in the lives of the local people, accumulated over hundreds of years, and they will imagine, learn, and act so as to protect indigo. This is not sustainability that is merely taught as knowledge—it is sustainability that is deeply connected to one’s own life.

Learning through experience and imagination has lifelong importance.\footnote{Maxine Greene, Releasing the Imagination: Essays on Education, the Arts, and Social Change (San Francisco, CA: John Wiley & Sons, 1995).} \footnote{Mark Fettes, “Imagination and Experience: An Integrative Framework,” Democracy and Education 21 (2013): 1–11.} Co-living imagination affords the axis of ESD practice for early childhood and later learning. It extends the child’s own well-being to other life—in other words, well-being is relational in the meshwork of life. As children respond to various lines of life, they imagine their companions’ past, future, distant, and apart; their perception and awareness of the living environment deepens. Their knowledge and skills become wisdom for coexistence by being rooted in co-living imagination.
A sustainable society develops from living with young children.

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