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Alexandra M. Berry  
*Western University*

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## Weaving Child-Plastic Relations with Early Childhood Educators in the Ecuadorian Andes

Alex Berry  
Western University, Canada

*Abstract: In a small village in the Ecuadorian Andes called Racar, plastics are intimately woven into social and ecological structures. These entanglements move beyond human control and generate toxic dependencies between humans, plastics, and others. This requires a pedagogical shift in how early childhood educators understand and respond to plastics. Drawing on field research with educators in Racar, this paper attempts to interrupt human-centric discourses of the child as separate from Andean ecologies and resituates childhoods as differentially embedded in complex place relations.*

### Introduction

In the small Andean village of Racar, Ecuador, plastics are intimately woven into social and ecological structures. Forming roots that hold together riverbanks, bottling milk for young children, and framing lattices for new forest saplings – plastics are forging toxic relations with others who share this place. These contrary dependencies pose significant ethical and pedagogical implications for educators who are interested in early childhood education for sustainability.

To engage with plastics in Racar beyond the waste management framework of the three R's (reduce, reuse, recycle), our research group<sup>1</sup> embarked on a series of walks with children and educators through a plastic-debris-filled forest that neighbours their school. During these walks, we as a group sought to notice the ongoing life of plastics before, during, and after human use. In revisiting these walks with the educators through photos and field notes, it became apparent that children, not plastics, were the center of pedagogical interest. The educators praised the children for cleaning up litter or for gaining a developmental skill in their creative engagement with litter. In these initial encounters with the plastic-forest, persistent attention to the child as the sole protagonist of pedagogy erased possibilities for noticing the agency and relational life of the forest and the plastic materials that are so intimately enmeshed here.

This paper shares the emergence of an ongoing pedagogical project with early childhood educators that aims to rethink children's relations with plastics toward more sustainable futures in the Ecuadorian Andes (Berry, et. al, 2020; Climate Action Network, 2021; Pacini-Ketchabaw,

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<sup>1</sup> This research is part of an international project titled, *Transforming waste practices in early childhood education: Rethinking the 3 Rs through the arts*. The ideas in this paper emerged through ongoing dialogues with members of my supervisory committee, Veronica Pacini-Ketchabaw and Cristina Delgado Vintimilla, who generously invited me into this project. The pedagogical events shared in this paper were engaged by members of our research group at Santana school in Racar, especially educators Cristina Ochoa and Maria Paz Valenzuela.

2017). Through processes of pedagogical documentation (Rinaldi, 2006), this project seeks to support early childhood educators in creating ethical responses to the proliferation of plastics - responses that move beyond human censorship and control. The project takes place at an early childhood program in Racar called Santana, one of six international sites where researchers and early childhood educators are rethinking human relations with waste materials in pedagogical contexts (Climate Action Childhood Network, 2021; Pacini-Ketchabaw, 2017). Our research at Santana aims to unsettle recycling by noticing and attending to plastics' lively and contrary presences, considering these materials as co-shapers of place and culture in the Ecuadorian Andes.

This paper is underpinned by a key dilemma. Despite the research group's desire to understand plastics as dynamic co-shapers of the forest, our initial walks in the forest were often appropriated by the human-centered stewardship discourses we set out to disrupt. For instance, during the walks the educators consistently focused on the individual child exploring, gaining skills and maintaining the cleanliness of the forest through plastic clean-up. As the paper will discuss, this dilemma calls attention to human-centered dispositions that unwittingly divide and instrumentalize complex plastic-ecologies for the progress of the individual developing child. This tension is pedagogically generative; it prompts a consideration of educators' subjectivities and dispositions to place as an area of important pedagogical attention for rethinking how we might come to know plastics differently with young children.

Engaging with the scholarship of Silvia Rivera Cusicanqui (2012) helps situate Andean relations with place (and plastics) as dynamic, inconsistent and multiple. Her conceptualizations of Andean relationalities interrupt dominant EuroWestern categorizations of nature and figurations of the human as separate and superior to plastic ecologies. As a white scholar from the North, in this paper, I think with Cusicanqui's propositions while cautiously attempting to enact an obligation to research and pedagogies that are non-extractive, situated, and responsive to Racar. As part of a collective work with educators, researchers, and children, our research group endeavours this by disrupting 'universal' visions of the child present at Racar, as they are deployed through dynamic colonial developmental frameworks. This disruption happens through pedagogical processes that make tangible how dominant developmental visions of the child show up at Santana. As I will discuss, pedagogical documentation supports us in noticing where this projection of the child emerges, fails and is consistently interrupted by longstanding knowledges in the Ecuadorian Andes.

In this paper, I<sup>2</sup> draw on documentation from the first year of pedagogical work at Santana to tease out minor but impactful moments in the plastic-forest. I begin by situating our project within the specificities of Racar, and then discuss the theoretical orientations that enable our research group to rethink prevailing human-centered rationalities. Next, I discuss pedagogical documentation as a research method and pedagogical process that helps us to notice dominant discourses which separate educators from complex relations of this place and, in turn, plastics. I then share documentation from a moment in the plastic-forest that gestures toward a shift in educators' sensitivities to child-plastic relations. This moment was selected because it demonstrates how educators and children began to encounter plastics differently by paying attention to the materials' distinct presences and entanglements in the forest. Importantly, given careful attention, this moment created an occasion for educators to consider longstanding ancestral weaving practices as an artistic process with immense pedagogical possibility for

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<sup>2</sup> I arrive to this pedagogical work as a settler with European ancestry living on the lands of the Valdivia peoples in Santa Elena, Ecuador, with settler relations to what is now known as Canada.

thinking childhoods and plastics together in Racar. The documentation illustrates a move toward pedagogical dispositions that might be capable of inheriting and responding to the contrary natures of child-plastic relations in the Ecuadorian Andes. Finally, the paper ends by offering curricular provocations for early childhood education's initial teacher education projects.

### **Situating Pedagogy in Racar, Cuenca**

Santana is a non-profit private school nestled along the fringes of the Cabogana mountain in the neighbourhood of Racar, Cuenca. In Quechua, the language of the Indigenous peoples who tend to these lands, Cabogana could be interpreted in English as 'assault' (Encalada Vasquez, 2002), a testament to the uneasiness of this mountain's complex landscape<sup>3</sup>. The Cabogana boasts some of the highest peaks in the area at 3700 meters. In Cuenca, it is said that the Cabogana is sacred, a place where the land touches the sky. The material remains of Cañari rituals from pre-colonial times lay here along the mountain's highest tops (Reinoso Hermida, 2017). Santana's campus is located at the base of the Cabogana, at the end of a long winding street that travels outward from the city centre. Here the concrete ends and a dirt road begins a trail that edges the base of the mountain. Through small farmlands and the houses of brickmakers, driving on this road to Santana is like moving into a microcosm of contemporary Andean culture and weather. Smells of roasting clay and grasses – affective traces of potters and brickmakers whose ancestors have moulded the aesthetic of this neighbourhood and the city below for centuries with hues of oxidized red and amber. Small storefronts sell local vegetables, fresh yuca bread, Coca Cola and corn tortillas; their outer concrete walls are marked with bright yellows, blues and reds - plastered with names and numbers of political candidates from past elections. Men on horses pass alongside modern family vehicles that have come from the city below and are lined up to enter the school grounds for morning drop-off. A woman in a long traditional skirt drives an all-terrain vehicle, carrying large bundles of grass on her back. There is a moodiness to high-altitude temperatures much different than the mild climate below in the city centre; the mountain can create intense inconsistencies of cold mornings felt deep in the bones and strong afternoon sunlight that burns the skin. Encountering the complex Cabogana requires attentiveness to these distinct lived experiences, temporalities and affects. As Cusicanqui (2010) discusses, Andean time moves in 'cycles and spirals' where the past-future is contained in the present (p. 96). Shaped by spiralling forces of regression and progression, Andean neighbourhoods like Racar become a contemporary conjuncture of paradoxical relations. With Cusicanqui (2012), these relations 'both discern and realize' a possibility for life beyond schemes of capitalist modernities (p. 96).

Such contrary relations are present in the forest that neighbours Santana. Directly beside the school, on the other side of a chain-link fence is a dense eucalyptus forest rooted in ancestral clay. Plastics are deeply entangled here, woven between spiralling tree roots. In the forest, plastics nestle between small stones in networks that frame the banks of a creek that moves through the mountain and across the schoolyard at Santana. Plastics are an integral part of this

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<sup>3</sup> The Cañari peoples of the Andes speak Quechua, which is a language of lived meanings that are situated in ancestral land relations (Kowii, 2019). Words and phrases gather and produce meaning because of their relations within a living, complex Andean knowledge system. Quechua cannot be simply reduced to English; in this context, it is used to gesture toward the uneasiness of living alongside the Cabogana mountain.

place, yet, in a pedagogical context that centred the developing child, plastics were left out of the pedagogical documentation of our initial encounters with the forest.

### **Rethinking the Human in Early Childhood Education**

A key interest of our research partnership with Santana is to unsettle prevailing discourses and practices that position the individual child at the centre of curriculum and attend to the complex interdependencies of humans and others within increasingly synthetic ecologies. This research uses a common worlds framework (Hodgins, 2019; Taylor & Pacini-Ketchabaw, 2019) that decenters the human as the sole pedagogical protagonist by resituating the child within shared, yet uneven, common worlds (Latour, 2004). This decentering interferes with dominant Euro-Western imaginaries of the human as rational and autonomous from the world; a colonial epistemic projection underwritten by white, heterosexual masculinity and ability (Wynter, 1995, 2003). In this first phase of the project, our focus was to challenge this idea of the human as it emerged through discourses of ‘the child developing in nature’. The ‘child in nature’ acts upon/for nature, but is not part of it (Taylor, 2013).

This figuration of the human subject as divided from nature is common in early childhood spaces (Nxumalo, 2019; Taylor & Pacini-Ketchabaw, 2019) and requires ongoing attention to how the discursive effects of this separation play out in pedagogical situations. As Walcott (2021) tells, the European invention of the rational freely acting human continues to re-invent itself within diverse and dynamic 21st-century colonialisms. This EuroWestern human produces oppressive conceptual categories of thought through dominant scientific knowledge systems (Walcott, 2021). In the context of early childhood education for sustainability, interrupting these knowledge systems involves attention to categories which separate this human from vulnerabilities to/with nature. Waste scholar Liboiron (2021) suggests the very language of ‘nature’ as a category of thought can be viewed as one of these EuroWestern colonial mechanisms of separation that classifies and divides plastics from entanglements with real-world ecologies.



**Figure 1: The child of discovery as protagonist**

At Santana, these dominant framings were present in photo documentation of children with magnifying glasses in hand, described as ‘little scientists’ of an unknown forest. Accompanied by notations describing children as ‘setting out to discover the forest’s magic and mystery’, these pieces of documentation depicted the Cabogana as a natural haven, untouched by plastics (Figure 1). This documentation makes visible how colonial human-centric discourses showed up in ordinary encounters in the Cabogana forest and divided children from the damaged places they were entangled with. This conceptual frame made Racar’s living contradictory plastic-natures, as described above, unthinkable. Brazilian education scholar Andreotti (2019) affirms that such contradictions disrupt modern colonial ontologies that “seek coherence and are averse to paradoxes” (p. 63). An educational project that is interested in re-thinking plastics in Racar, then, must be open to inconsistencies and ambiguities of place while encouraging thinking beyond dominant discourses. By decentering the human, our research group sought to invite pedagogical opportunities that accounted for children’s complex entanglements with multiple nonhuman others, particularly plastics (Berry, et. al, 2020). This rethinking of the human subject informs how we approach documentation as both a research method (Hodgins, 2019) and a pedagogical practice (Dahlberg, et. al, 2013).

## Tracing Child-Plastic Relations with Pedagogical Documentation

The ongoing project entangles research with the school's daily curricular processes. Through educational processes that are enlivened through the pedagogical practice of documentation (Rinaldi, 2006), participating educators and children are considered co-researchers in the making of a living and emergent curriculum (Vintimilla & Kind, 2021). Pedagogical documentation is used *with* educators to gather traces of emerging curricular processes and to revisit and re-vision their meaningfulness (Dahlberg et. al, 2013). We use documentation to make visible not only what happens during our inquiries with children and educators, but also what is pedagogically significant (Rinaldi, 2006). Documentation is about both content and process (Dahlberg et. al, 2013); it is a practice of interpreting traces of lived experiences, thinking through their significance with others, and creating pedagogical responses that propel long-term curricular investigations (Vintimilla & Pacini-Ketchabaw, 2021). In this sense, pedagogical documentation becomes what Cristina Delgado Vintimilla calls in her pedagogical practice as both 'the memory and heartbeat' of our research and the school's curriculum. Thinking with Vintimilla, pedagogical documentation is the very 'pulse' of the project, as it tells the lived story of our collective inquiries and sustains their ongoing trajectories (Vintimilla & Kind, 2021).

Within a common worlds framing, documentation is not a mechanism for making visible children's learning or development. Nor is it an evaluative measurement tool. Rather, our research group views documentation as situated within dynamic, socio-political assemblages of discourse that shape daily events (Berry et. al, 2020). In this sense, the documentation that emerged in our inquiries with educators and children in the forest, such as photos, notes, drawings, artefacts and videos, are not viewed as representations of educators' or researchers' individual rationalities. This documentation is encountered as material testimony of the flow and concentration of discourse. Gathering around traces of these daily experiences, researchers and educators attempt to notice how dominant discourses of the human play out in ordinary moments with children. Dialoguing around documentation, we make collective decisions that attempt to disrupt the presence of this notion of the human and organize educational experiences in response.

The pedagogical desire to interrupt human-centric discourses that position children as champions of plastic removal and recycling is kin to waste scholar Hird's (2013) call for an ethic of environmental vulnerability. An ethic of environmental vulnerability resituates humans as mutually implicated with/in the ecologies they depend on - not despite, but inclusive of plastics. This pedagogical orientation takes seriously the notion put forward by some waste scholars that plastics act on their own, despite human attempts at management and control (Gille, 2010; Hird, 2012). With an interest in creating different sensitivities to plastics, we sought out encounters in the plastic-forest that might interrupt discourses of the freely acting autonomous human by attending to plastics as active agents in Andean childhoods and curricula.

This orientation interrupts developmental values for children's individual growth and autonomy, two progress-driven narratives that often saturate pedagogical dispositions in early childhood contexts (Land et. al, 2020). These pedagogical foci can be viewed as expressions of modernity's fixation with instrumentality and functionality that separate some humans from environmental vulnerability (Stengers, 2015) and produce subjectivities which sustain neocolonial relations with plastics in Ecuador. In this context, neocolonialism is legitimized through discourses of the goodness of childhood (underwritten by whiteness) and recycling from

the North that ignores the exploitation of Ecuadorian lands at the hands of big waste producers such as the United States and Canada. For example, during our first encounters with plastics in the forest beside the school, documentation often demonstrated a focus on children's removal, collection, and creative use of plastic waste materials. Through discourses of 'the good recycling citizen', the forest was positioned as a site of freedom and harmony within pristine intact nature. In the service of children's developmental needs and moral citizenship ideals, plastics were extracted from existing entanglements with forest ecologies and neutralized into art activities such as plastic hand-puppets, Disney characters, or classroom decorations. In these early days of the project, documentation illustrated how plastics were stripped of relations with this place and forged within dominant EuroWestern characterizations of childhood. Plastics became palatable under neocolonial symbolisms of childhood fun and innocence, and valuable only when they were understood as contributing to the pleasure or progress of the individual child.

In collectively revisiting documentation of these events with educators, we noticed how recycling activities distanced us from implications within the messy realities that shape the Cabogana mountain and how the human-centric logics we sought to interrogate remained unchallenged. This documentation highlighted how discourses of the moral recycling citizen do not disrupt, but rather participate in consumptive global waste systems. By soothing consumer guilt through trash removal and management, children were further separated from vulnerability to/with the forest as a place that is increasingly co-dependent on plastics.

Cusicanqui (2012) interrogates neoliberal moves of innocence that propose social change in the Andes under the guise of individual moral citizenship. She argues that these shifts inadvertently renew the effective processes of colonization and refers to such practices as "a change so that everything remains the same" (p.101). Inspired by Cusicanqui, our research group recognizes recycling as what she calls a 'cross-dressing strategy', or 'concealing mechanism' that generates ongoing colonial subjugation in the Andes (p. 100). The consistent emergence of recycling discourses in the forest can be viewed as part of a colonial epistemic legacy that assumes a human ability to control and live separately from relations with place and plastics. Recycling discourses from the North infer a sustainable future predicated on 'good' individual consumer choices (Hird, 2015), while ignoring the socio-political circumstances that determine such choices. As I will discuss below, children's encounters with plastics in Racar are mitigated within dynamic and uneven international waste networks. Central to rethinking child-plastic relations, then, is a decentering of human-centered frames that perpetuate an illusion of individual freedom and choice in encounters with plastic waste. Thinking with Cusicanqui (2012), such human-centered orientations to the forest are one of many neocolonial formations that shape contemporary Andean subjectivities. These rationalities both co-exist with and are often interrupted by, children's ongoing ancestral land relations (Pacini- Ketchabaw et. al, 2021). Thus, understanding Andean subjectivities as multiple and forged within dynamic place relations is relevant for early childhood pedagogies that seek to inherit and respond to plastics in Racar.

### **Place and Plastic Relations in the Ecuadorian Andes**

Cusicanqui (2012) articulates Andean place and culture as a co-existence of multiple distinct elements that work together with colonial capitalist flows and ancestral relationalities. Cusicanqui (2012) argues that these multiplicities shape Andean subjectivities. Both contemporary neoliberal presences and traditional sensitivities to land co-exist, without



becoming fused or assimilated. These conjugations between disparate forces generate distinctions in subjectivity that are not subsumed or appropriated, rather they are inhabited, sustained, and produce new ways of being (Cusicanqui, 2012). Andean subjectivities are thus dynamic, inconsistent, and situated within the particularities of these incommensurable presences within particular contexts (Cusicanqui, 2012). Cusicanqui's notion of subjectivity is significant to understanding how plastics might be inherited within educational framings in the Andes. In Ecuador, human relations with plastics are differentially mitigated through the discursive presences of both neocolonial waste flows and ancestral legacies that are distinct, yet held together. These presences show up in multiple and unique ways.

For example, with heightened social and ecological fragility caused by the COVID-19 pandemic, Ecuador is further positioned within exploitive international trade relations such as the recent record amount of imported waste, particularly non-recyclable plastics from the United States (McCormick et. al, 2019). Ecuador is now one of the biggest receivers of international plastic waste in Latin America, and 96 percent of these materials are buried directly into the land (Morán, 2021). Many of Ecuador's coastal towns have been, and continue to be, built on top of clusters of these unregulated landfills. In these coastal towns, it is common to encounter resurfacing plastic materials, emerging from beneath the edges of homes and within gardens. A friend from a coastal town once shared, 'Shovel a meter or two into your backyard soil and you'll probably find trash.' With intermittent public trash pick-up, plastic waste also frames life above the ground. Plastics are hung in many small, bagged bundles among the low-hanging arms of trees that line the streets, out of reach from scavenging animals. These neighbourhoods hold a particular aesthetic relation that speaks with an increasingly synthetic world both sustained and polluted by human co-habitations with plastics. Plastics are also present in the movements of traditional farming practices and economies. Coastal communities depend on various types of plastic sacks and baskets as reliable carriers of harvests – moving produce from land to markets, homes to curbsides and back to the land again.

In Racar, these contrary presences are visible in the lands, rivers and practices of community members who are also forging complex dependencies with plastic waste materials, particularly woven plastic sacks called saquillos. In Racar, saquillos matter; they fold together storylines of ancestral weaving arts and Ecuador's growing plastic manufacturing industry. Saquillos were originally woven using local grasses such as cabuya and carrizo and are now primarily manufactured by large private companies using polypropylene. Many Ecuadorian weavers continue to weave saquillos, though they too often use plastics for their efficiencies. Unlike traditional grasses, plastics do not cause cuts or splinters. When met with intense high-mountain sunlight, discarded plastic saquillos in the Ecuadorian Andes engage in processes of photo-degradation, activating greenhouse gases which then permeate the arteries of Cuenca's infamous river systems (Michelutti, et. al, 2015; Royer et. al, 2018). Yet, Andean relations with plastics are not asymmetrical. For instance, paradoxically, as an effect of deforestation by cattle farming, networks of discarded plastic saquillos are now replacing tree roots that once reinforced riverbanks. Sustained by plastic waste materials that are deeply woven into the lands, Racar's riverbanks are becoming toxic cradles that sustain the flow of these waterways. These contrary allegiances unsettle Western recycling discourses that continue to deny the ongoing life of plastics as dynamic shapers of place and culture. While simultaneously poisoning waterways that enliven this valley, plastics participate in ongoing ancestral knowledges that move with an emerging, and disconcerting, conviviality of this place.

The notion that humans and plastics exist in entangled relations is important because it unsettles the EuroWestern colonial projection of the human that assumes separation from nonhuman worlds. As I have discussed, in an educational context guided by human-centric framings, nature and plastics were considered separate constructs. This separation is a growing concern within early childhood education for sustainability. As Nxumalo and Vintimilla (2020) suggest, the ecological challenges children unevenly inherit require shifts away from conceptual categories of the EuroWestern human and romanticized ways of learning. Rather, the authors suggest, pedagogies must take seriously nonhuman participants and emerge from the complexities of the damaged landscapes children are a part of. This notion is not new, as de la Cadena (2015) affirms that Andean cosmologies have presented and taken seriously the agencies of nonhuman beings for millennia. In Andean knowledge systems, nonhuman beings such as mountains and rivers must be deeply respected as they give and take away opportunities to others, make requests and can respond with serious consequences if ignored by humans (de la Cadena, 2015). As one of the educators at Santana stated, the great Cabogana is ‘moody, and demands respect’. While human-centrism was a strong discursive presence in the daily practices at Santana, there were also examples of disruptions to these narratives as educators imagined and described nonhuman others as agentic and co-dependent. de la Cadena (2015) describes modern exclusions of these nonhuman others from knowledge-making processes as an effect of intensifying neoliberal political networks that continue to try to manage, control and exploit them. These neoliberal reasonings were made visible in the documentation that centred children’s agency over nature and plastics. Yet, these same neoliberal narratives were also actively contradicted by educators’ living ancestral sensitivities to Andean lands and culture. These sensitivities became tangible in dialogues around the documentation of a specific walk in the forest when the children came across a bird’s fallen nest.

### **Encountering the Woven Plastic Nest**

*Walking in the forest, a child notices a fallen nest. Delicately woven by the beaks of ‘Diglossas’ (in English, ‘Flower Piercer’ birds), this prickly home is composed of knotted fibres – fine sticks, dried grasses and muted blue, plastic candy wrappers. Each piece is distinct, indispensable, and carefully structured. The children ask why the bird left his house here. They decide to leave it on the ground in case he returns for it. The next day in the forest, we find the nest again still empty and on the ground. The children suggested we should bring the nest back to the classroom, as it might need repairs for the bird to return to his home.*



**Figure 2: Woven plastic nest**

Together with the educators, Cris, and Maria Paz, we revisited notes and photos of the children's encounters with the nest and discussed this moment as a pedagogical opportunity to think differently *with* plastics. We considered the metaphoric qualities of the nest, an entanglement of Andean grasses and plastics that shapes a home. Documentation of the nest generated questions about what it might mean to find refuge in a shelter both comforting and toxic. Ethical questions also arose, as the nest's structural dependency on plastics created hesitation about habitual practices of extracting and moving litter from the forest. Noticing the delicate woven architecture, Cris was reminded of her family's weaving traditions and over several weeks she shared these memories with the children. Cris shared that throughout her life she had woven often alongside her mother, grandmother and uncles. The nest became a figure that helped us to think about how we might create pedagogical conditions kin to nesting in the classroom. Nesting requires a particular process and involves the gathering of distinct filaments to make a home. Nests are hospitable to difference and require sensibilities to how particular fibres can be held together, toward the structural purpose of sustaining life. Attempting to maintain the nest's existing and inconsistent relations inside the school, the classroom was curated into a 'nesting room' with bundles of grasses, rolls of plastic yarn, saquillo bags, needles, scissors, and other materials prepared over a large woven rug for close experimentations.



**Figures 3 and 4: Weaving with plastics**

Over several months children and educators wove together using Cris's family's weaving methods and the children's improvisational strategies (Figures 3 & 4). A massive nest began to shape the classroom. As if the classroom nest was holding the group as they wove, educators and children braided various homes and structures for animals of the plastic forest using cabuya grasses and long plastic threads unravelled from saquillo bags. The aesthetic of these nests both animated our ongoing involvement with the plastic forest and intensified the human-centric impulses we needed to make perceptible to engage with the forest. For example, the abundance of nests attracted the attention of educators from neighbouring classrooms who voiced concern about how this inquiry was supporting children's developmental learning needs. This prompted a gathering of researchers and educators around the documentation of our inquiry processes, an occasion to re-enliven dialogue about the discourses that shape pedagogical desires and concerns. Importantly, we returned to questions about the kind of human our collective project sought to create; 'Who is the child of the Cabogana's plastic-forest?' In response to these questions, the research group assembled traces of weaving processes that further enlivened the paradoxical allegiances the nests rely on. Attempting to shift focus from the individual child, we highlighted correspondences between plastics, grasses, humans, and nests in-the-making process. Documentation such as photos, notes, woven artefacts, and children's drawings was arranged in the room to draw attention to emerging ideas about these contrary homes, their itinerant structural dependencies, and the conditions for existence they might make possible.

Pedagogically slowing down through the uneasy processes of nesting with plastics, we made decisions to engage in small, ordinary acts of attention (Manning, 2016). For example, at



the end of each day of weaving, children, educators, and researchers laboured together in re-spooling excess wool and plastic yarn, and re-bundling leftover grasses and saquillos. In these instances, educators encountered plastics not for their instrumentality in children's developmental progress, but as dynamic shapers of a shared space. Through these minor acts of attention, we noticed subtle differences in the ways of being that plastics and grasses generate. For instance, we noticed how used plastic yarn was forgiving, given it could be immediately re-stretched and re-spooled as if it were new again. Cabuya and carrizo grasses have their own singularities; they hold marks like a script of unknotted knots. The grasses must be soaked in water for some time to loosen before they can be used again. Because of the grasses' material inefficiencies, they decelerated the processes of inquiry and demanded a different form of engagement. The distinctions of these materials shaped our responses to them, each proposing a particular process and way of being together. Several of the plastic nests were returned to the forest, carefully arranged in trees by the children as a proposition for the bird who had lost his home.



**Figure 5: Offerings to the plastic forest**

### **Curricular Provocations**

In Racar, plastics are already knitted in what Andreotti (2021) calls the 'living metabolisms' of land and culture. These dependencies are both toxic and lifegiving and help to situate the material basis of children's place relations in Racar as shaped with, not despite, plastics. This poses significant onto-epistemological provocations for Santana's emerging plastic pedagogies, and calls for a conceptualization of plastic waste as materials existing in the world which simultaneously inform how we come to know them (Pacini-Ketchabaw, 2017). Thus, our

project continues to seek ways to create conditions where educators, children and researchers might notice differential intimacies in relentless, lively, and incongruent plastic relations.

When encountered through their complexities, plastics have an educational impetus. Plastics help complicate existing conceptual categories that seek coherence and simplicity, inviting pedagogies that refigure the coordinates from which early childhood's protagonists think and act<sup>4</sup>. At Santana, this involves remaking visions of the child we educate toward, particularly by interfering with EuroWestern ideations of the developing human whose growth is considered as linear, accumulative and autonomous. Plastics bring the idea of this human as protagonist into question by entangling the child with the metabolizing forces of an uncertain synthetic forest. Within the circumstances posed by a life with plastics, human growth might be considered as non-linear, (de)generative and existing as an effect of conflictual dependencies with others. The entanglement of childhood and plastics offers an invitation for early childhood education's initial teacher education projects to begin rethinking the prevailing human-centered discourses that may be framing orientations toward sustainability, such as separation, control and the purity of 'nature' (Berry, et. al, 2020). Experimenting with sensitivities to place through curricular processes that are situated, circumstantial, and open to ambiguity requires hesitation toward grand solutions or transcendental educative models (Vintimilla & Pacini-Ketchabaw, 2021). Initial teacher education projects that are interested in shaping future early childhood educators for sustainable pedagogies must be increasingly attuned to what it might mean to consider environmental vulnerability as a foundational disposition for making curricula. With educators at Santana, this disposition began to emerge through mundane encounters and small acts of attention to materials, their distinct affordances and tensions.

At Santana, the presence of the children's plastic nests throughout the forest became a visual and ethical provocation that linked classroom processes to an imperfect nature. This modest gesture speaks to a shift in educators' and children's relations with the plastic forest. Slowing down curricular processes and decision-making through dialogues with educators around documentation, it became evident how human-centered discourses were shaping pedagogical desires. Within a common worlds orientation, documentation generated an occasion to trace and rethink the onto-epistemological framings that figure pedagogical imaginaries and sensibilities to place. Within early childhood initial teacher education, this reframing is important because it calls on emerging educators to critically question how human subjectivities are produced through pedagogical inquiries. Following Cusicanqui's (2012) ideas, contemporary Andean subjectivities are multiple, inconsistent, and engage with both colonial and ancestral presences that are mitigated within particular circumstances. These forces are distinct but co-exist, and offer propositions for how pedagogies in the Ecuadorian Andes might become capable of thinking plastics and childhoods together. As Cusicanqui suggests (2012) unsettling colonial structures of thought in the Andes requires more than a critique of discourse. Unsettling requires pedagogical responsiveness, or a *doing* – a practice that refigures human-centric educational attachments by actively renewing and remaking longstanding Andean knowledge systems. At Santana, this responsiveness was slowly and imperfectly enacted through pedagogical documentation and daily weaving processes that composed different ways of being together. Importantly, these responses emerged from the complexities of Racar and continue to contribute

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<sup>4</sup> The intersection of plastics and pedagogical thought in the Ecuadorian Andes generates energizing questions for this educational project. These questions are made possible because of the context with which we orient to pedagogy. This context emerges from a vision of pedagogy in early childhood education proposed by Cristina Delgado Vintimilla and Veronica Pacini-Ketchabaw (2021).

to an educational project that is specific to Santana. Weaving with plastics became a collective and modest process of experimenting with subjectivities through minor material sensitivities, threading a tentative and emerging image of the 'child' of Racar's plastic forest.

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