

ENTANGLEMENTS OF TIME

Kelsey Wapenaar

Abstract: Materials are entangled within complex assemblages that are constantly in motion (Lenz Taguchi, 2011). Drawing on Richardson and Walker's (2011) notion of an "event" being a time where relationships between bodies of materials and people come together in intersection, it attends to the dialogue between materials and human bodies. In this intersection of bodies, time is produced. This time of intra-actions becomes alive and entangled. It moves beyond chronological time to a rhythm of multiple time flows. Time is felt as an element of the experience rather than as a ruling presence. Grounded within Karen Barad's (2007) work with material-discursive relations, time is understood as living with the intra-actions as a component that is alive. To bring a feeling of tangibility to this idea, the essay explores a series of events from my work as an educator at a childcare centre, as well as my work as an artist. Specific encounters from these experiences are woven as a narrative throughout the article, illustrating the idea of material as an event where materials play an active role in assemblages and act with a sense of agency. This event was not intended to create "something"; rather, it was seen as a process of becoming, where bodies of things and people are entangled together in as assemblage.

Keywords: time, early education, rhythm, temporalities, layers, bodied time, duration, entanglements, assemblages

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Multiple rhythms live within curriculum, and it is within these tiny moments of time that curriculum becomes. Curriculum does not begin or end, rather it can be seen as

constantly becoming, emerging from entanglements between time, place, materials, narratives, artifacts, bodies, and histories. By acknowledging these entanglements we move beyond a unidirectional, binary approach to curriculum, “which operates in linear and sequential ways so that positions build on points already plotted” (Sellers, 2013, p. xv). This moves curriculum away from pre-established ideas and towards a multidimensional way of thinking that works in inventive ways to establish meaningful connections. Looking at curriculum from a relational materialist perspective opens a space that takes into account the non-human elements and forces that are also at play with children. It is within these entanglements at play in early childhood curriculum that I hope to bring attention to the intricacies of time.

This article aims to bring forth another way of being with time in early childhood settings that takes into account the environment and the materials that are at play *with* the child. Early childhood sites can be seen as places of relationality, rich with multiple entanglements and emergences. Our being is always within these entanglements, and it is because of these entanglements that I aim to express how time is not empty, but rather is an active force (Guerlac, 2006). Moving away from an anthropocentric position, I focus on the web of relations that humans are situated within. While challenging the habitual ways of seeing and understanding movements of human and non-human bodies, I engage with questions that have emerged from recent encounters in intra-active relationships. Or as Hultman and Lenz Taguchi (2010) state:

What, however, most of these perspectives have in common is that they take humans or human meaning-making as the sole constitutive force. From a relational material perspective this anthropocentric position is of course problematic. It reduces our world to a social world and neglects all other non-human forces that are at play. A turn to relational materialism, where things and matter, usually perceived of as passive and immutable, are instead granted agency in their intra-activities, can be understood as promoting a more ethical research practice. (pp. 539–540)

Various forces are at play in early childhood settings. It is not solely the teacher or child that is bringing life to passive materials (Lenz-Taguchi, 2011). Entanglements of humans and non-human bodies all play a role in *producing* time. Not acknowledging these forces reduces our world. It is this meeting of forces that becomes a place of emergence. Disrupting the binaries between passive and active, physicist and feminist theorist Karen Barad’s (2007) theory of relational materialism acknowledges the vibrancy of the material forces that we become entangled with. Time can then be seen as an “event” of forces and things coming together (Richardson and Walker, 2011). This provokes a textured, layered, alive quality of time that moves beyond a view of static, sequential time that is often expressed through a developmental perspective of children moving through predictable stages of growth. Expressions of time are produced from entanglements: How might time, then, become with the relations of a classroom or studio space? Complex and messy, time is not homogenized (Pacini-Ketchabaw, 2013). It leaves me dwelling with this question: How can time be lived and understood otherwise?

Time as an Educator/Artist

Currently I am working as an educator at a childcare center situated on a university campus on the west coast of Canada. The educators in the classroom where I work have been inquiring into the entanglements between humans, materials, ideas, time, space, and narratives. The classroom has become a *living* studio: materials are alive and at a play *with* the child. It is from these entanglements that our curriculum lives. Narratives from stories that we read linger throughout the day. They are with us as we draw, work in clay, put on our jackets; they move with us through transitions of time. Ideas and materials often move between the classroom and our studio space that is situated across the street. This studio space is a place where we work closely with materials and ideas. These ideas have also extended beyond the walls of the centre with me into my work as a student of the studio arts program. In the studio my curiosity about the multiple expressions of time has become an integral part of my work and who I am as an educator and artist.

In my work as an educator and artist, I have been paying particular attention to the assemblages of human and non-human bodies. These moments have been recorded through video, photography, notes, and traces of materials. Within these assemblages, I have taken note of encounters between human bodies and material bodies. Clay, charcoal, wooden blocks, and paper have become vital bodies in these experiences. Within these moments I have noticed the tempo of time that emerges and the *way* in which time is lived, embodied, and layered. It is with Karen Barad's (2007) theory of agential realism that I think of the classroom as a place of entanglements. From this position, the child can be seen as a part of an assemblage of moving bodies. Thinking with Barad (2007), I pay particular attention to the role of time in assemblages that make up our daily work with children. Time can be produced through materials in various ways: in multiple rhythms, slow stretches, intensities, periods of waiting, and spontaneous edges of time. In a search for a deeper meaning and understanding of the rhythms and tempos of time produced in these encounters, I use drawing as a way to "map" the many expressions of time. Through drawings and photography I attempt to bring tangibility to the multiple layers of time. I illustrate how time can be seen as a living active force that operates with multiple rhythms (Grosz, 1999). I attempt to inquire into the multiple layers and entanglements of time that are embedded within our daily rituals with children. To bring forth a more nuanced understanding of the timeliness of time, I must first establish the forces that are at play with the production of time.

Bodies as Becomings

When I use the term "bodies" I refer to bodies as a system of relations, composed of time and place, rather than a single unit: "A body as understood in physics that can be any kind of body; a human body, an organ, an artifact or any kind of matter" (Hultman & Lenz Taguchi, 2010, p. 529). Elizabeth Grosz (2005) states:

If the body is to be placed at the center of political theory and struggle, then we need to rethink the terms in which the body is understood. We need to understand

its open-ended connections with space and time, its place in dynamic natural and culture systems, and its mutating, self-changing relations within natural and social networks. In short, we need to understand the body, not as an organism or entity itself, but as a system, or series of open-ended systems, functioning within other huge systems it cannot control, through which it can access and acquire its abilities and capacities. (p. 3)

Clark (2012) draws on Deleuze and Guattari to describe the movement of bodies as, “continually shifting as new connections are formed and break apart. To describe a body in a particular moment, we can describe, for example, a child, but the child is continually shifting and changing” (p. 33). Thus, bodies are illustrated as holding various tempos and rhythms and motions and resist fixed boundaries (Clark, 2012). Lenz Taguchi (2010) states:

In the first place, a body, however small it may be, is composed of an infinite number of particles; it is the relations of motions and rest, of speeds and slowness between particles, that define a body, the individuality of a body. Secondly, a body affects other bodies, or is affected by other bodies; it is this capacity for affecting and being affected that also defines a body in its individuality. (p. 48)

Bodies are entwined within assemblages that are in constant motion. Karen Barad (2007) notes in her book, *Meeting the Universe Halfway*, that these shifting bodies are not static, “things do not have inherently determinate boundaries or properties, and words do not have inherently determinate meanings” (p. 138). Expanding on this idea, Barad further explains that, “[t]his account refuses the representationalist fixation on words and things and the problematic of the nature of their relationship, advocating instead a relationality between specific material (re)configurings of the world through which boundaries, properties and meanings are differentially enacted” (p. 139). Barad’s (2007) agential realism theory describes how bodies are always in relation, and are continuously becoming as they encounter other bodies. She states, “agential realism takes account of the fact that the forces at work in the materialization of bodies are not only social, and the bodies produced are not all human” (p. 34). This theory illustrates matter as an alive, agentic, generative, and responsive force. It sees matter in a state of becoming and involved in the process of *doing*.



Figure 1. Assemblage of bodies - paper - brushes - scola-cel - shoes - ball and - and (Photo by the author).

Materials as Agentic

In describing assemblages of bodies, I refer to Bennett’s (2010) description of multiple bodies and forces coming together into play: “Assemblages are ad hoc groupings of elements, of vibrant materials of all sorts. Assemblages are living, throbbing confederations that are able to function despite the persistence of energies that confound them from within” (pp. 23–24). To depict this idea of an assemblage, I draw upon a scene taking place one morning in the classroom.

A pair of size 12 black rubber boots rest on top of a low platform. Discarded socks – toddlers’ bare feet – hands tearing – scholastic catalogues – brushes – scola-cel – morning sun – camera – voices all come into play to create an assemblage of bodies. Hands tear strips of paper that now cover the surface of the boots. It is here that something ordinary such as a pair of boots begins to become something else: These boots take on another meaning. In this act of paying

attention to the ordinary objects that live around us we began to notice the particularities of materials and we see them as an active participant. The tiny lines of the rubber, the places they travel to, and the tempos which they evoke in the classroom. It is within the meeting of these movements that new stories, ideas, and meanings are cultivated.

Materials play a crucial role in how time is lived and how it is produced; they hold memories and histories and provoke particular ways to be *with* time. Jane Bennett (2010), a political scientist, brings an awareness to how we live *with* materials in her book, *Vibrant Matter*. What happens to materials as piles of waste are becoming a norm in today's disposable society? What does this say about our relationship to and understanding of materials? Bennett (2010) encourages us to think about the binaries between viewing materials as passive and lifeless, and humans as active, arguing instead that humans need to be attentive to the active qualities of materials. Materials hold a sense of vibrancy and play an active role in events; materials, although they hold their own sense of agency, depend on collaboration and interactive forces of bodies. Bennett (2010) states: "A lot happens to the concept of agency once nonhuman things are figured less as social constructions and more as actors, and once humans themselves are assessed not as automatons but as vital materialities" (p. 21). As described previously in a moment from the classroom, materials are vibrant and alive and move with particular rhythms. Or as a recent exhibit, *Material Encounters* (2014), so beautifully depicts:

Materials *live* in the world in multiple ways. They can evoke memories, narrate stories, invite actions, and communicate meanings. Materials and objects create meeting places. In early childhood education we gather around things to investigate, negotiate, converse, and share. Materials – a block of clay, pots of paint, a brush, a colourful wire, a translucent sheet of paper, a rectangular block – beckon and draw us in. (p. 3)

Early education tends to focus on humans holding agency and materials as passive elements of children's play. However, as the *Material Encounters Exhibit* (2014) expresses, materials, places, bodies, time, and objects all become active participants. Thinking with Bennett (2010), how can we then see early childhood centres as vibrant spaces for caring relationships with materials? Dismissing the role of materials in early childhood would tell a dishonest story of the vibrant experimentation that occurs with materials. It is only through the encounter of a hand and a piece of black charcoal that the hand is able to become the hand of a 'black princess'; without the powerful, dark smudging qualities of the charcoal the hand would remain simply a hand. Can children's centres be places where time is taken to understand materials and the qualities they hold? When we begin to focus on materials in an attentive manner we are able to see how they act with a sense of agency. We are then able to see the role that materials play in the flow of time and how materials can evoke particular times. Jardine (2008) expresses how, "in light of such an empty measured-time, things are no longer understood to have a time of their own" (p. 8). Engaging with the timeliness of time brings forth a way of knowing deeply that moves with us, a feeling that lingers. What happens if we listen to these emergences of time?

Intra-active Relationships

What I refer to as a relational materialist approach is based on the work of Karen Barad (2007). Her work illustrates the agency that occurs *in between* bodies, arguing that spaces of intra-action is where meaning is cultivated. Intra-active relationships take place amongst assemblages that form between the material world and living organisms. Barad (2007) emphasizes that at the heart of intra-activity is how these assemblages cultivate meaning *through* intra-actions or, as she explains: “Through specific agential intra-actions that the boundaries and properties of the components of phenomena become determinate and that particular concepts (that is, particular material articulations of the world) become meaningful” (p. 139). Encounters between these forces reveal spaces of multiple meanings, tensions, and generativity.

As time continues, these size 12 black ordinary rubber boots have become entangled in multiple relationships. Layers and layers of paper continue to cover the black rubber, splashes of paint hide the images on the paper, and crumbled pieces of leaves are tucked in between papers. Constantly these boots change as piece by piece the black rubber is revealed and once again concealed with bits of paper. It is through the meeting of these bodies that the boots cultivate their meaning. The images in the Scholastic book orders that have become plastered over the boots continue to change with the season. Images of “Pete the Cat” sitting in the sun evolve to him wearing a Santa hat. Bits of paper that cover the edges of the boots have started to fade and become soft between my fingers. Day after day, papers are torn and bodies meet the paper with a history. Gathering around the boots, a particular time unfolds, a time of dwelling. Bodies slow down, almost transfixed by the rhythms of tearing, dipping and covering these boots. Stories are held within the collection of these papers. Black rubber boots, an ordinary object of footwear, transform with the movements of the room.

It is from the constant configuration and reconfiguration of bodies, boots, papers, scola-cel, children, educators that a particular time is produced. Time is entangled with the material forces of intra-activity and becomes a force itself in these becomings. The past then cannot be seen as a segment of time that passes, rather it becomes entangled within intra-active relationships of the present and future. Moving throughout the day in linear, sequential movements dictated by the clock, time becomes reduced to fragmented segments. However, time is not something we control or do something *to*, rather, it is something that *becomes* with assemblages. Understanding time in this way moves away from habitual, anthropocentric viewpoints of how time is produced and lived in early childhood programs.

Materials as an Event

Multiple forces are at work in producing time and it is not solely dependent on social construction. Time does not flow alone; it flows *with*, it is entangled and relational. Richardson and Walker (2011) draw on Deleuze's idea of "becoming" to illustrate how art making and the process of art can be seen as an "event", a combining of forces and bodies (time, cameras, paper, artist, the table, chair, feet, paper, rubber boot) that come together for a singular moment of time. This process is not intended to create "something"; rather it is seen as a process of becoming, where bodies of things and people are entangled together in an assemblage. There is constant movement, "at the intersection of thought and action" (p. 9). Sellers (2013) builds on Richardson and Walker's idea by describing event as follows:

an energy producing movement and affect as intensity of encounters generated in-between. The Deleuzo-Guattarian sensibilities - force, event and affect - work all - at - once with energy of matter through productive encounters that open ongoing possibilities for becoming - something different. (p.162)

At this intersection of bodies a generative force is cultivated, things are alive, and hold feelings of intensity and spontaneity. Sellers (2013) also states: "Events are not *things* that happen, they are *happenings* of speed, rest, flow and movement; similarly embodied in mo(ve)ments of becoming, humans are perceptible as becoming - children~becoming adult" (p. 171). It is in these intermingling of forces that time is produced in multiple rhythms.

Richardson (2013) aptly describes how time can be seen as an "event", where multiple moments and bodies of time come into intersection. Moments of fluttering and tearing of paper in the classroom intersect with moments of pressing and casting of paper in the art studio; these experiences can be seen as the "event of the boots". Moments in intersection tell a story, not a story that reads beginning to end but a story that holds moments of time and intersecting fluctuations. Elements of these stories speak to one another, as ideas from the classroom and studio travel back and forth and intersect. It is a meeting of these multiple times between different spaces that an "event" of time lives.





Figure 2. Paper is torn, boots are concealed and then revealed, boots travel to the studio, paper boots are molded and casted, fall leaves and discarded shoes intersect cultivating the “event of the boots” (Photos by the author).

Tempos of Time

Jack Richardson (2013) explains time as “unhinged” from chronology” (p. 92). When time is “unhinged from chronology” we are able to see time as fluid, active, and dynamic and as “multiple melodies” (Richardson, 2013; Posman, 2012). Orchestras consist of an assortment of sounds, instruments, and bodies; the notes come together in harmony as well as standing on their own. It is in the “multiple melodies” of an orchestra that we can see a resemblance to the duration of time; within the song different notes can be heard and felt, yet they are woven together in *one* song. There are similarities to time in that there are singular strands of varying times within one collective time. Henri Bergson’s (2001), concept of “duration” describes time as a series of “nows” in contrast to the conventional way of understanding time. Coleman (2008) draws on Bergson stating, “Time in this sense can be conceived as spatial; as a uni-directional line on to which time is plotted and which proceeds and passes externally to our bodily experiences of it” (p. 90). Karen Barad (2007) suggests to instead think of time as “temporality” where various speeds, rhythms, and motions of time can be felt. Here, I feel the necessity to quote Bergson (2001) at length as he speaks to his theory of duration:

Pure duration is the form which the succession of our conscious states assume when our ego lets itself *live*, when it refrains from separating its present state from

its former states. For this purpose it need not be entirely absorbed in the passing sensation or idea; for then, on the contrary, it would no longer *endure*. Nor need it forget its former states: it is enough that in recalling these states, it does not set them alongside its actual state as one point alongside another, but forms both the past and the present states into an organic whole, as happens when the notes of a tune, melting, so to speak, into one another. (p. 100)

Bergson's (2001) concept of duration also proposes that time is pure movement, a movement that within it holds multiple rhythms and a myriad flow of time. Or, as Guerlac (2006), who draws on Bergson, states, "Duration implies a mode of temporal synthesis that is different from the linear narrative development of past-present-future. It involves a temporal synthesis of memory that knits temporal dimensions together, as in a melody" (p. 66). Dwelling with Bergson's (2001) theory of time as a duration, I draw on the *tempos* of time living in the classroom in one morning scene:

Rain streams down leaving tiny droplets dripping down the window. The movements within the room mirror the rapid rain and dawdling drops. Within this space, multiple movements of time are visible. Charcoal is crushed and is slowly spreading across bodies. Busy hands become immersed within the movements between the charcoal and the grinder. As time goes on, I see bodies becoming blacker and blacker. Braided amongst this intense time are moments of stillness, and moments of waiting. Bodies move slower as they gather around the clay. Movements are weighted by the density of the clay. Walls around me speak the stories of the past and echo with the documentation. There is a familiarity within the relationship to paper that floats around the room. Hours of tearing, cutting, and covering with this paper has established a deep awareness to the touch of paper. This "time of the classroom" consists of an orchestra of sounds.

Conventional modes of understanding time are often associated with the ticking of a clock, routines, and efficiency. As Posman (2012) explains, "When scientists study time as an absolute, objective phenomenon that they can take apart and measure, they miss the point that time moves, that the flow of time escapes subdivisions" (p. 108). Organizing and maximizing time often becomes the dominant way in which time is lived in early childhood settings. Jardine (2008) problematizes the notion of "empty time" with this explanation:

Once it is compositionally and topically unheld, fragmented time can only try to become fulsome through accelerating (this again is a lived-experience in schools caught in empty time and its effluence). Cut off from the while of things, there is nothing to hold memory and attention and experience in place, nothing to call it to collect itself or attend or return. Time speeds up. (p. 9)

In these plurality of times that exist within the classroom I am provoked to think about how rhythms unfold within individual bodies, within the block of clay, the basket of paper and within the charcoaled hands. Over time, I have watched a pair of rubber boots become covered in tiny tears of paper. Slowly the black of the rubber begins to disappear. Small moments of time involving slow rips of the paper being carefully placed

on the boot – quick movements of scattered paper covering the boot – fluttering paper and sudden shedding of the boot’s paper only to become covered again. Peeking out from the collage of Scholastic papers I see the remainders of a fall leaf. Pieces of moments have become entwined together. Each of these bodies holds their own time, yet they encounter each other forming, a composition of varying tempos. What becomes of time when it’s temporality is so regulated? Time lives throughout our days, yet, I wonder: What is our understanding of time?

Rhythmic Time

Long waits, spontaneous moments, and pulsating moments of intensity combine to produce the *flow* of time. How do these moments continue with us as we move throughout the day? Pacini-Ketchabaw (2013) explains that spaces of time are complex: “They are messy and unpredictable. They don’t leave things behind; they look into the future; they are the past” (p. 227). Instead of seeing moments as “ending” and a “new activity” beginning, what if we thought about how spaces of time can move with our bodies? Time progresses with an intensive flow of rhythms. Grosz (1999) elaborates, saying, “the essence of time that is not regulated by causality and determination but unfolds with its own rhythms and logic, its own enigmas and impetus” (p. 4). What would we notice if we recognized the movement of time in this way?

How do the movements and ideas carry with us as we transition to lunch, on our walk to the studio or when we travel home? Materials move out of the centre and our ideas travel with us across the road to our studio space. Our rubber boots, concealed in paper mâché, bring with them the stories of the Dogwood Room yet they continue to become with the assemblages of the studio. Within the layered tears of paper, narratives of “Max and the Wild Things” move with us; we do not leave them behind in the “past”. These narratives of stories, ideas, and happenings do not come to an “end” when we move to new spaces, rather these spaces become more complex. Another layer becomes entangled within their existence. Stories, moments, and engagements live with us; the life of these moments are not synchronized to the ticking of the clock. This space between the studio and the centre opens itself to a pace in between, a generative crack of time, a time of pause, and a time of movement.

Narratives of moments live with us, they stay with us as we move from space to space; they do not simply end when the graphite pencil we drew with rests. Rather, these stories that emerged from the drawing move with us throughout the day. Moments become layered within us, and we carry the past in our present.

Embodied memories of tearing and fluttering paper, histories of the material, the now, and the future are entwined. Entanglements between the past, the future, and the now co-exist as children move from the studio to the classroom, carrying with them the transformative, airy qualities of the paper. How do we see these complex spaces in between? Travelling across the road to the classroom with tiny ground pieces of charcoal stuck in the crevices of their clothes, emerging from the cracks to encounter other fluxes of movements. Our bodies become distanced from the intense intra-actions in the studio,

yet the force of time continues to move with our bodies. How do we live with the rhythm of these moments of intensity throughout the day?

To understand the rhythms of time, I look to artist Andy Goldsworthy (2000), who works with the passages of time in his book, *Time*. He illustrates the rhythms of time through his art, playing with the changes of seasons, weather, and light to cultivate new meanings. In his piece, “Sand holes” he works *with* the tide, as it encounters the sand it becomes *with* the water. Working with these rhythms and tempos of time, he attends to the entanglements that time is positioned within. As the tide moves out and in, the tempo changes. Goldsworthy (2000, p. 30) wrote the following on a piece where he stacked rocks in an arch formation and worked with the tempos of the tide:

Eleven arches
made between tides
followed the sea out
working quickly
waited for its return
sun, wind, clouds, rain

His work acknowledges the past that it held within the moment, noticing the tide that comes in not as a single, segmented wave, rather as a part of a larger assemblage of bodies.

Time as Layered

Layers of moments, stories, and histories are held within the artifacts, places, and lands that we live with. As we move throughout the day, moments of the past, present and future move with us, our bodies holding these layers. Time as layered illustrates an understanding of time as entwined within the past, the present, and the future (Grosz, 1999). Leah Oates (n.d.), an artist whose work photographs transitory spaces, exposes the layers of time that are contained within a single space. Her work speaks to the multiple motions, movements, questions, and intensities that exist at once. Capturing the multitude of energies and tensions that exist in a moment of time, she creates a feel for how time can be seen as *alive*. Fluctuating layers intersect and expose the multiple energies that exist at once. I imagine that these layers are not sedimentary in composition, rather are a merging of multiple tempos and rhythms perhaps composed of fluid layers that come together and flow apart. Richardson (2013) also writes about the past, present, and future becoming entwined, in the following:

Here, Deleuze challenges our understanding of time as merely a chronological sequence of moments and experiences by suggesting that time is evoked by a coincidental overlapping of pasts, presents, and futures occurring simultaneously. Experience occurs as events each producing a particular time by including or excluding other events. (p. 94)

Thus, time can be seen as a layered strand that speaks to relations between the past and present co-existing (Coleman, 2008). It is also possible to think about how time can be seen as braided; a braid that consists of various strands, all holding individual tempos and rhythms, yet formed together to make one braid, or *one time*. It is within the different strands of the braid that time holds different temporalities.

I bring the idea of differing temporalities with me to my own work in the studio and attempt to make it tangible through the making of paper. As I make sheet after sheet of paper, I collect tiny traces of moments, pieces of drawings and forgotten papers. Tearing them in to tiny fragments they transform as they become pressed into paper. I think about the time that exists within these tiny papers and of the entanglements of this piece of paper. As I break the fibres down to form them together, the multiple colours, textures, and images remain. Each trace of paper holds the story of its own rhythm and tempo. As paper after paper form together in a synthesis, the layers build upon each other. Scraps of paper remain visible in the paper's new form as it continues to be sculpted and transformed. It holds within it multiple strands and entangled stories. To build on this metaphor of layering paper, I call upon Elizabeth Grosz's (1999) concept of the new, which brings forth ideas of time as becoming:

Time, or more precisely duration, is an extraordinarily complex term which functions simultaneously as singular, unified, and whole, as well as in specific fragments and multiplicitous proliferation. There is one and only one time, but there are numerous times: a duration for each thing or movement, which melds a global or collective time. As a whole, time is braided, intertwined, a unity of strands layered over each other; unique, singular, and individual, it nevertheless partakes of a more generic and overarching time, which makes possible relations of earlier and later, relations locating times and durations relative to each other. (p. 18)

This idea of braided, intertwined and relational time, builds on Barad's (2007) theory of agential realism where time is entangled within assemblages of paper-tearing boots.

A Dance of Time

Active time holds an element of suspense. It is felt throughout the body with a force and an awakening. What is it to feel the edges of time? Or to feel long of waiting? How do we think about time through our bodies or come to know something through our bodies? It is the powerful force of time that becomes incredibly generative, pulsating through the body. Coleman (2008) states, "According to Bergson, the contrast between 'Time' and duration is that while time is measured objectively and externally (for example by clocks and calendars), duration is intuitive, a bodily knowing" (p. 90). Time is particular to the body experiencing it, there is no 'one' time, rather time varies from body to body (Bergson, 2001).

Fatima stands on a platform; in front of her sits a large exercise ball covered in strips of paper. Strips of Scholastic catalogue are flowing out of the basket. Brushes are scattered amongst the platform and a small bowl of scola-cel sits

beside the ball. Her body begins to move with the paper as she places strip after strip on the ball. Creating a rhythm between her body, the paper and the ball, she begins to dance. Tapping her foot against the platform, she keeps a beat. Her body is immersed within the movements of paper, her dancing body mirrors the flight of the paper. Children around her are preparing to go for a walk. Fatima seems unaware of these movements, focusing only on the time produced through the paper and her body.

Richardson (2013) inspires the question, what kind of time does the material evoke? “What kind of time is produced through process?” (p. 107). Time is not a silent, invisible force. What does it evoke in the process? Asking these questions leads me to wonder how Fatima was experiencing this time as she works with the fluttering paper. What kind of time was evoked for her? What becomes the time of paper? How is it embodied through the day? Acknowledging the role time plays in process as we peel, reveal, conceal, we work *with* time; the product of the paper ball is what it is not only because of the work of hands tearing and papers forming with the glue but because of *time*. Barad (2007) views time as complex and dynamic; it is cultivated through interactions with human and non-human bodies. It is through the meetings of bodies that a particular time is produced (Barad, 2007). As the paper slips from Fatima’s fingers and slowly falls, what does this invoke within her body?

The force of time can be seen as a materializing force. In these moments of intensities, time becomes alive (Grosz, 2005). Further, Elizabeth Grosz (2005) explains how time can become *active*. Intensities are entangled with an active time where bodies are in motion. It is in this feeling of time that time materializes, and becomes “an open-ended and fundamentally active force – a materializing if not material – force whose movements and operations have an inherent element of surprise, unpredictability, or newness” (Grosz, 1999, p. 4).

One morning, we were investigating the materiality of blocks in the studio. As we were nearing the end of our time in the studio, after an announcement of “5 more minutes” (until cleanup), things quickly shifted. An intense time of spontaneity was provoked. Wooden blocks that had been still all morning, almost as if they were weighted in their place, suddenly began to take flight. Hands quickly moved materials, pieces of paper scattered, cardboard rolls were piled, and sticks were dispersed throughout the space. Hands and feet quickly moved throughout the room knocking, touching, pulling, stacking, and placing. This intense time set materials and ideas in motion with the tempo of rising from a slow melody to a peak note. Last minute moves to the blocks were being made as we began to walk out the door. Sarah, however, climbed to the top of a stool, and stood tall while tightly holding her yellow bucket and a driftwood stick. Drumming on the harsh plastic yellow bucket with a smooth piece of driftwood, Sarah chanted and sang and chanted and sang and chanted and sang.

Bodies moved with an intense momentum, materials took on a new force and became entangled with the *force* of time (Guerlac, 2006). This instance makes visible the

emergence of time from entanglements. Assemblages of blocks, knitted hearts, cardboard rolls, a stool, a yellow bucket, cameras, a doorway, an open classroom space, a walk across the street, lunch time, children, and educators combined for a moment to cultivate a spontaneous moment of time. Sarah's sudden urge to stand high on the stool and make as much noise as possible was almost a releasing of time. The meeting of the yellow bucket, the stick, the tall stool, the limited time, and Sarah's body became entangled together in an intense pulsation. Time in the studio holds a particular rhythm, it becomes, "studio time" that cultivates a particular feeling of time. Durations of time become intensified within this space and unfold with the movements of materials and bodies. Time is not static, it becomes alive and acts with a materializing force (Grosz, 1999). Guerlac (2006) explains:

Time becomes energy by passing, by the mere act of becoming. It acts as a force in conscious beings because it accumulates in them. Just as a solar panel collects and holds the energy of the sun, so our living body and memory hold the energy of time. (p. 79)

How was Sarah's body experiencing this movement of time? As we left the space, how did this pulsation carry with her? How, then, is time conducted through our bodies?

Time Through Touch

Ripping, tearing, curling paper. Time after time sheets of newsprint are torn into tiny pieces. What memories are held within these curled papers? As fingers glide along the text, searching for the paper's grain or a familiar image, what do they remember? Springgay's (2010) concept of "pedagogy of touch" instigates this question: What is it to know paper through your fingers?

On the carpeted floor sits Stephanie and the paper mâché tiger, a small wooden bowl, a few pages of the winter issue of the Scholastic book order catalogue. The painted layer of the tiger is starting to wear patches of newsprint peak through the orange and black stripes. Stephanie stares at the tiger and smiles, "Hi tiger, how you doing tiger? I missed you, tiger". With the bowl in front of her legs, she picks a piece of paper up. Rubbing the piece of paper between her fingers, she leans her head closer to the paper and pauses to look at it. Fingers rub against the grain of the paper, and she tears through the images. Again and again, the paper and her fingers rub together, and the paper tears again. Feet run by her, knocking the wooden bowl slightly, blocks pile up beside her, blocks fall beside her, hands come to touch her noodles, hands leave, the tiger falls, and the tiger is picked up. Moving bodies dance around and against Stephanie, the paper, the bowl, and the tiger. Again and again, the paper tears, slowly breaking down in to tiny curled pieces. Curled strands of paper are delicately placed in the wooden bowl for tiger. This piece of catalogue paper transforms in to tiny curled "noodles" over and over again.

Entanglements of the paper, the tiger, time, hands and the movements of the bodies surrounding this assemblage produce a particular time. The thin, weak fibres of the newsprint are easily torn and curled, they glide with Stephanie's body. It is through this configuration of bodies that a time of paper is felt through fingertips.

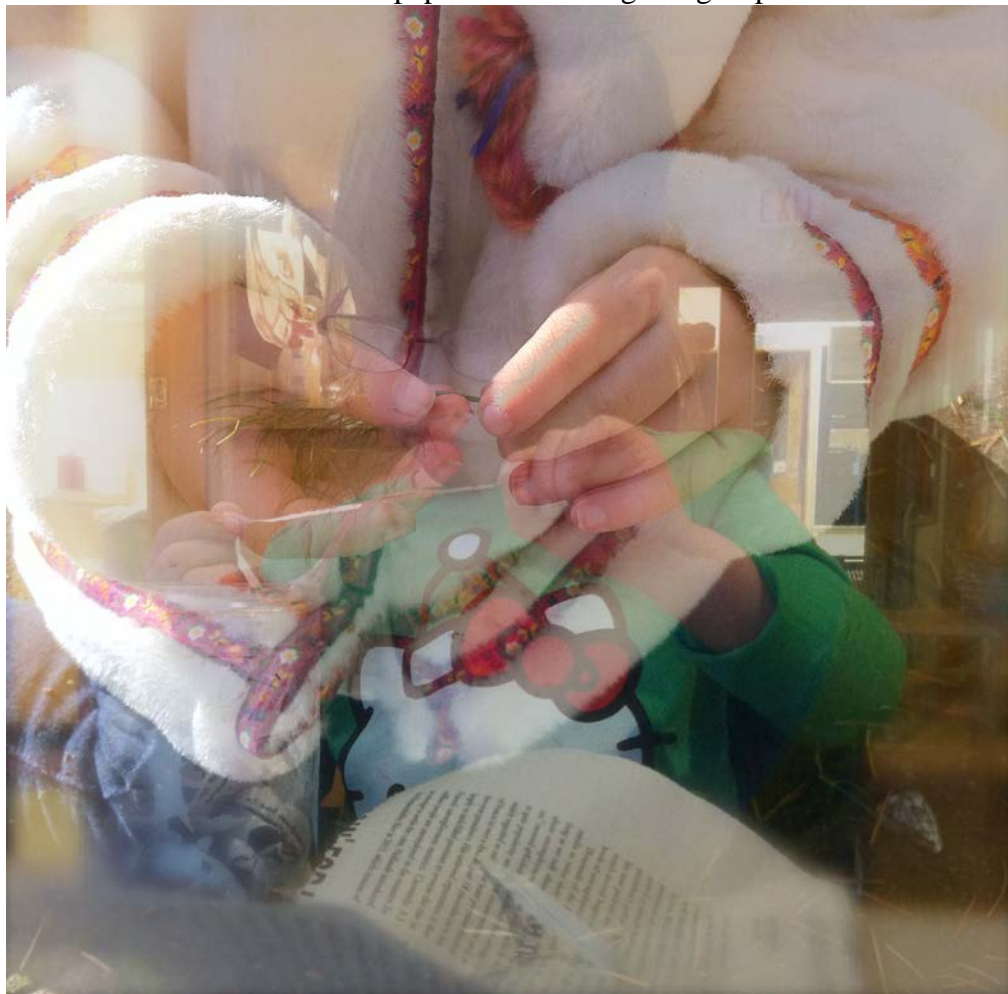


Figure 3. What happens when fingers meet paper day after day? (Photo by the author)

A “pedagogy of touch” is carried through to my art in the studio. It is through close engagements with a material that a *time of paper* becomes (Springgay, 2010). Working with my paper in various forms in the studio and in the classroom, I have become aware of the *time of paper*. Tearing, pasting, casting – paper quickly flutters through my fingers. Running my fingers along the inside of my plaster mold, I can feel where the paper is sparse. Day after day I encounter paper, I begin to notice the details in the weave and fibers within it.

A conflicting desire of making multiple castings of paper boots, yet the need to wait for the boots to properly dry, sends me into a feeling of anxious waiting. Propping many fans and heat sources around the mold, I attempt to quicken the time of drying. This time of waiting feels endless, almost like a tiny dot in the

distance that is unreachable. I feel my body tighten, my hands are knotted and my feet tap against the floor. Popping into the studio daily to check if it is time. Time in this case is not dependent on the clock or a scheduled day; rather, it is left to my fingers to know. Only through the touch of my fingers can I feel when it is time to shed the mold from the boots. I run my finger along the inner edges of the paper boot and slowly in to the base of the boot. I feel the pull of the paper and its radiating warmth. Finally, it's time.

Intra-active relations between the forces of the heat, the fan, the paper and my fingers came together in entanglement, cultivating new meaning. Gliding my fingers along the paper I was able to read the time of the paper and understand this “time of paper” through my body.

Entanglements

Barad (2007) speaks of entanglements as bodies not only being intertwined with another but also lacking existence alone, stating, “[e]xistence is not an individual affair: our relation to the world is a relationship as beings that are a part of the world” (p. ix). This emphasizes her theory of agential realism, where everything is in relation; everything is situated with an entanglement and intra-connected. Materials are entwined within place, history, time, and bodies; it is from these entanglements that curriculum emerges (Sellers, 2013). The learner and the world are entangled becomings, impossible to isolate. They are situated within entanglements of histories, place, discourse, space, and time (Lenz-Taguchi, 2010). This is not a private affair as our bodies are always entangled in interactions with other human and non-human bodies. Knowledge is not located within a single body; however, it is created within the encounters and intermingling of bodies (Barad, 2007). This space of intersection between forces becomes incredibly generative. Ideas, thought, stories are all relational, they are created *through* encounters. Collections of time pulsate between each other and I am brought back to moments of making paper boots in the studio, an idea that emerged from the materials and bodies that surround me in the classroom. Time cannot be separated from these entanglements, but is entwined between multiple elements; it is not something that can stand alone. When we see time as knotted with multiple elements of the day it becomes impossible to see it as something that can be reduced to sequential, homogenous segments.

Conclusion: Attending to the Rhythm of Relations

Entanglements are continuously becoming; opening new lines of thought and different possibilities. Relations of space, time, matter, and bodies are constantly shifting, drawing attention to the complexity and fluidity of the intra-activity of moments. Karen Barad's (2007) theory of agential realism provokes me to pay attention to the human and non-human bodies that are at play with children's ideas. Or, as Lenz Taguchi (2010) describes, “complicating what we know about practices, to put ourselves in motion to be in a process of change and invention” (p. 91). Being with time in this way brings forth something new to the way we think and work with materials and children.

Multiple expressions of time became evident in my inquiry. I became attentive to the rhythms and layers of time in my work as an artist and as an educator. I dwelled with these expressions of time, wondering about the various tempos of time that are produced by spaces and materials. I wanted to make visible the layers that exist within time and to complicate how time is often perceived in early education. Shifting away from the notion of time as linear: Ideas, moments, and feelings of time that were produced in the centre were carried with me and continued to be in my work at the studio. Narratives that unfolded from stories moved with me from the children's centre to our small studio, to the studio arts sculpture studio. In these encounters between identities and ideas, time is present as an active force. A force that breaks through notions of time as a uniformed, linear segment and evokes the multitude of temporalities. These entanglements leave me thinking about the multiple stories, meanings, and histories that materialize from the bodies that surround us. It leaves me questioning. How do we live with the rhythm of these moments of intensity throughout the day? If moments are not linear and do not end, might they flow *with* our bodies?

References

- Barad, K. (2007) *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*. Durham, NC: Duke University Press.
- Bennett, J. (2010) *Vibrant matter: A political ecology of things*. Durham, NC: Duke University Press. <http://dx.doi.org/10.1215/9780822391623>
- Bergson, H. (2001). *Time and free will: An essay on the immediate data of consciousness*. Mineola, NY: Dover Publications.
- Clark, V. (2012). Becoming-nomadic through experimental art making with children. *Contemporary Issues in Early Childhood*, 13(2), 132–140. <http://dx.doi.org/10.2304/ciec.2012.13.2.132>
- Coleman, R. (2008). “Things that stay”: Feminist theory, duration and the future. *Time & Society*, 17(1), 85–102. <http://dx.doi.org/10.1177/0961463x07086303>
- Goldsworthy, A. (2000). *Time*. New York: Harry N. Abrams.
- Grosz, E. (1999). *Becomings: Explorations in time, memory, and futures*. Ithaca, NY: Cornell University Press.
- Grosz, E. (2005). *The nick of time: Politics, evolution and the untimely*. Durham, NC: Duke University Press. <http://dx.doi.org/10.1215/9780822386032>
- Guerlac, S. (2006). *Thinking in time: An introduction to Henri Bergson*. Ithaca, NY: Cornell University Press.
- Jardine, D. W. (2008). On the while of things. *Journal of the American Association for the Advancement of Curriculum Studies*, 4, 1–16.
- Hultman, K., & Lenz-Taguchi, H. (2010). Challenging anthropocentric analysis of visual data: A relational materialist methodological approach to educated research. *International Journal of Qualitative Studies in Education*, 23(5), 525–542. <http://dx.doi.org/10.1080/09518398.2010.500628>
- Lenz-Taguchi, H. (2010). *Going beyond the theory/practice divide in early childhood education: Introducing an intra-active pedagogy*. London: Routledge.
- Lenz-Taguchi, H. (2011). Investigating learning, participation and becoming in early childhood practices with a relational-materialist approach. *Global Studies of Childhood*, 1(1), 36–50. <http://dx.doi.org/10.2304/gsch.2011.1.1.36>
- Material Encounters. (2014). *Exhibition catalogue*, March 1 to March 19, 2014, Capilano University Studio Art Gallery. Retrieved from www.commonworlds.net/.../MaterialEncounterscatalogue.pdf

- Oates, L. (n.d.). Artist's statement for the "transitory space" series. Retrieved February 24, 2014 from <http://leahoates.com>
- Pacini-Ketchabaw, V. (2013). Politicizing transitions in early childhood. *Global Studies of Childhood*, 3(3), 221–229. <http://dx.doi.org/10.2304/gsch.2013.3.3.221>
- Posman, S. (2012). Time as a simple/multiple melody in Henri Bergson's duration and simultaneity and Gertrude Stein's landscape writing. *Mosaic*, 45(1), 105–120.
- Richardson, J. (2013). Time Unhinged. *Visual Arts Research*, 39(1), 90–107. <http://dx.doi.org/10.5406/visuartsrese.39.1.0090>
- Richardson, J., & Walker, S. (2011). Processing process: The event of making art. *Studies in Art Education*, 53(1), 6–9.
- Sellers, M. (2013). *Young children becoming curriculum: Deleuze, Te Whariki and curricular understandings*. New York: Routledge.
- Springgay, S. (2010). Knitting as an aesthetic of civic engagement: Reconceptualizing feminist pedagogy through touch. *Feminis*