# **From intergenerational transmission to intra-active ethical-generational becoming: Children, parents, crabs and the activity of rockpooling**

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Author: Lydia Martens, Keele University

## Abstract

Global climate change poses challenging questions for how human beings should be living their lives in a more-than-human world. These questions are complex and multifaceted, and thus demand actions across a broad range of social and political fronts. This paper engages with a sub-question of this broader concern, namely, how more-than-human ethics of care are learned in family life, and the insights this provides for the performance of the generational familial categories of child and parent. It draws on ethnographic research, funded by the British Academy, in which I researched the embodied and moral engagements of children and their families in activities on the seaside in North Scotland. Drawing on Barad’s agential realism (2003, 2007), I focus on the activity of rockpooling and analyse a particular rockpooling event with the Crab Fisher family, in order to comprehend this family’s intra-actions with the tide, with crabs, and with animal death. In the conclusion, I draw out the saliences of the analysis for what it means to care in a more-than-human world, for the question of ethical-generational becoming, and for the multifaceted quality of learning.

## Keywords

Intra-activity, ethical-generational becoming; rockpooling; embodied care; crabs

## Introduction

The global climate change agenda has, in recent years, inspired growing debate on the question of how children acquire a pro-environmental habitus. Alongside debate on the location of ‘the environment’ and ‘sustainability’ in formal education, the focus has turned to family life, to examine the salience of intergenerational transmission and education for the development of such dispositions (e.g. Hards 2011; Payne 2005). This paper examines learning in family outdoor activities, and specifically, the activity of rockpooling, as a multifaceted set of performances of ‘environmental exploration’ and ‘care’. In doing so, I replace the notion of intergenerational transmission and education with Barad’s agential realist philosophy of intra-active agency and becoming (2003, 2007). Barad’s onto-epistemology helps to open up what it means to become the generational familial entities of ‘child’ and ‘parent’ in a more-than-human world, and simultaneously questions established meanings associated with ethical engagement in this world (Davies 2012).

The paper draws on ethnographic research, funded by the British Academy, in which I was especially interested in the embodied and moral engagements of children and their families in seaside activities in North Scotland. The research consisted of ethnographic work on site, and included the recruitment of families who were willing to take me on an outing. Running through my research was an interest in intergenerational relationships, and the learning that takes place informally, in and through intergenerational family interaction. After a discussion of the literature on families, intergenerational learning, the development of pro-environmental values, and new materialist feminist approaches to performativity, I offer a brief elaboration on the research site and my research approach. I then join the Crab Fisher family on a rockpooling outing. Rockpooling is a common seaside activity, engaged in by children and families, and it involves the investigation of the contents of rocky pools filled with seawater left exposed by the outgoing tide. Rockpooling opens up important questions about enactments of care, carefulness, carelessness and ruthlessness in the more-than-human world of the intertidal zone.

## From intergenerational transmission to intra-active becoming as a process of learning through doing in a more-than-human world

Research on families, sustainability and ‘environmentalism’ has been formulated especially around the notions of intergenerational *transmission* and intergenerational *education/learning*. These notions have a historical grounding in sociology, where there has been an interest in cultures of inheritance (Finch 1989), the passing on of privilege and wealth, and disadvantage, and in patterns of social mobility (e.g. Erikson and Goldthorpe 2002). Drawing on Bourdieu, habitus, and cultural capital, these questions have been examined further recently, for instance, by how parents reproduce class inequalities through the organisation and purchase of educational resources for their young children (e.g. Irwin & Elley 2009; Vincent & Ball 2007). Gender and caring work have been included as of sociological interest in relation to intergenerational relations (e.g. Brannen 2006). In the context of sustainability, environmentalism and biophilia, research examining the transmission of environmental values in family life draws on these theoretical tools. For instance, environmental education scholars are examining the consequences of the growing risk society for children’s opportunities to spend time outdoors (Kyttä 2004; Malone 2007). Equally, research on environmental activists, and their life course pathways into activism, points to positive experiences of nature in childhood, adult role models, and familial pro-environmental habits as salient contributing factors (Chawla 1999; Cianchi 2013; Hards 2011). Another cohort of studies examines the interconnections between formal and informal educational contexts (e.g. Collins 2015; Grønhøj and Thøgersen, 2012; Larsson *et al.* 2010). Studies that focus on everyday family life at home frequently think through the habituation of common resource intensive everyday practices, or that are focused on the reduction of resource intensive practices and waste reduction (e.g. Gram-Hanssen 2007). Whilst confirming that intergenerational dynamics are important, this literature also opens up the complexities around learning. Thus, whilst children are frequently identified as ‘subjects of responsibilization’ (Larsson *et al.* 2010), studies also examine the potential influence of adolescents and children on environmental learning and norms development in the family, that positions adults as potential learners (e.g. Uzzell 1999).

A shift towards practice and performance based approaches sees practices and values as co-constitutive in the formation of environmental routines and habitus (Hards 2011). Working with and through ‘family practices’ offers a means for broadening out ‘environmental learning’ that embeds generational saliences into a wider framework of understanding that includes the more-than-human world. Such a framework sees learning as a process, as signalled in the concept ‘practicing’, rather than as an outcome (e.g. whether pro-environmental values are attained). It also shifts the enquiring gaze to the embodied, material, multi-sensory dimensions of learning and ethical becoming (Chianchi 2013; Payne 2010). This way of thinking about learning sits close to the phenomenological approach to enskillment that replaces the notion of intergenerational ‘transmission’ or ‘education’ with the idea that learning is a process of developing attentiveness. Practices can thus become the focus through which learning and comprehending is conceived as happening at the intersections between the emulation of others and of practicing in fully embodied ways (Ingold 1997).

To propose, as I do here, a shift from intergenerational transmission or education to intra-active ethical-generational becoming, drawing on Barad (2003, 2007) and other new materialist feminist approaches, benefits from these insights, and establishes an alternative framework for analysis. New materialism is an epistemology that is ontologically horizontal. This means that its starting point is a questioning of the very entities (material-discursive) that make up the social world. This includes the categorical and ethical orders that dominate human sociality and interaction, including persisting binary oppositions, such as human and non-human; nature and culture; being and becoming, which are relevant here. For instance, cultural researchers interested in childhood and ‘nature’ have attempted to ‘denaturalise’ the common and stubborn nature-culture dualism, which frames the way in which ‘child’ and ‘nature’ are known (e.g. Taylor 2013; Malone 2015). The shift from interaction to intra-action rejects the idea that entities exist prior to their interrelations, but instead come into being through these intra-actions. Such an approach denies what Barad (2003) calls ‘representationalism’ and rescues ‘matter’ by bringing matter and materialization into the analysis as performative agencies. In her work on care in family life, Doucet (2013) uses this to argue for a shift in focus towards the body and the embodied qualities of care. Barad’s agential realism thus prioritises how common, yet differential categories, which in this paper include the intergenerational categories of ‘child’ and ‘parent’, but also ‘crab’ and ‘care’, gain their meaning and stability in and through multiple materializing enactments. This is also a form of academic practice that is political, and which Iovino (2012: 64) describes as a ‘material ethics’:

A material ethics is an ethics that considers the levels of embodiment of the concept into material reality, and vice-versa: the way matter (as bodies, natures, forms of existence) is conceptualized in and modelled by discursive practices.

Working with intra-active becoming therefore allows the researcher to focus on process and practices, on the ‘ongoing ebb and flow of material agency’ (Barad 2003: 817), in and through which differential categories gain their meaning and stability. As argued recently (Cianchi 2013; Pyyhtinen 2015), this is a research approach that should appeal to sociologists interested in extending their focus on environment-related questions.

## Researching outdoor embodied activities

The research that I draw on here was funded by the British Academy and involved ethnographic work in a summer seaside holiday community in North Scotland. This location, with its beach environment, is quite different from the European / Mediterranean equivalent, because of the lack of a built-up tourism infrastructure and its weather. The weather in North Scotland is varied. Even in the summer, temperatures and the weather can vary substantially, alternating between wind, drizzle and consistent rain, to pleasant and warm summer days. More so than in more typical beach locations, children and families here are compelled to use the outdoor environment in their activities, and this is also clearly something that many visitors actively seek. On warm days, the beach becomes populated by local families and families who are spending their annual holidays in this locale. Amongst the latter are a substantial proportion who return on a yearly basis, and the children have the opportunity to ‘grow up’ on this site during their summer holidays, often spending time with other children who are also frequent returners, and whom they may know from past years. Over the years, these children develop a keen awareness of the social organisation of this type of holiday and of the particular opportunities the surrounding environmental has to offer for their own entertainment and engagements. On the basis that learning is a process that takes place over time, the fact that a substantial proportion of children return to the site was a significant reason for identifying it as a good location to investigate children’s environmental, social and moral enskillment.

In addition to conducting extensive on-site ethnographic work in the summer seasons of 2012 and 2013, seven visiting families agreed to participate in the study by inviting me to join them in one of their activities. This was followed by an interview to discuss the outing further, and to learn more about contextual issues, such as family life ‘back home’ and the kind of things the family enjoyed doing whilst on holiday at this site. Of primary interest to me were the intergenerational practices, differences and relationships that characterised the on-site activities. Methodologically, the research was intended to move my sociological gaze away from human-to-human verbal interaction that has become the standard technique in sociological investigations (e.g. Martens 2012; Martens *et al.* 2014), and towards research engagements that facilitate attention on the embodied and material qualities and experiences of the outdoor activities that are undertaken in this environment. Therefore, drawing on the methodologies of Pink (2009) and Woodyer (2009), I engaged a sensory and embodied ethnographic approach in my research. The discussion presented below focuses on a rockpooling outing with the ‘Crab Fisher’ family[[1]](#endnote-1), with some cross-referencing between this event and the on-site ethnographic work.

## Going on a rockpooling outing with the Crab Fishers

The Crab Fishers are a human family of four, consisting of mum Nicky, dad David, and their two young children, son Aiden (aged 5) and daughter Coira (aged 2.5). The family is professional middle class, with Nicky’s family having a long-standing connection with this Scottish holiday location. Nicky had visited this site since her early childhood, and in recent years, with her own young and growing family, though often in combination with members of the extended family. The outing the family had planned for me was a visit to ‘Crab Bay’, where we would go rockpooling. Crab Bay was the name that this family had given to the small rocky inlet that we visited, and which featured a gravely and rocky ‘beach’ shore, which became substantially enlarged when the tide was out. The outing started with a journey, on foot, from the main campsite, along the coastline, to Crab Bay. This journey took us past some old ruins, and over uneven, rocky, grassy, and wet terrain, without the guidance of a clear path. Apart from the rockpooling, the afternoon’s activities included a period of rest amongst the rocks, when we ate a chocolate biscuit, and a game of hide and seek, along with the walk to and from the bay. The parents carried the rucksack with clothing for any eventualities of the weather, and each family member carried a fishing net, and the buckets for the rockpooling. The weather that day was good, with little wind, a good temperature, though with a layer of cloud obscuring the sun most of the time. Here is an extended fieldnote extract of our rockpooling activity to which I will return in my subsequent discussion.

**Extract 1 – Getting started with rockpooling:** The family party made its way down the rocks and onto the small gravel beach, and getting there first, mother Nicky and son Aiden wasted no time in starting their investigation of the rockpool that was there. This was a pool that was no deeper than perhaps three inches at most, its size about two square meters. It had coarse ‘sand’ of ground up shells lining the bottom, and there were boulder sized stones, some of them sticking out of the water. There was some seaweed. The pool was embedded in solid rock, and was bordered on one side by a solid rock face of about half a meter in height, rising up above the pool. Crouching around this pool, Nicky and Aiden on one side, and dad David and daughter Coira on the other, with myself perched on the rock looking out over the pool, we spotted some crabs and the ‘fishing’ started properly. All family members were using their nets ‘to hunt’ for the crabs and fishes in the pool. Crabs are clearly very good at hiding themselves, and we saw them burrowing themselves into the gravely sand, after which they could not be distinguished from the surrounding sand and pebbles. We also saw them hiding themselves underneath larger stones. Because the pool was shallow and the crabs were hiding in the sand, dad David used his hands in the water to guide crabs in the direction of the nets. The children did not put their hands into the water. Later, I asked Aiden whether there are animals in the pool, which he would hold in his hands, to which he shook his head saying ‘no’. Mother Nicky also responded to this, stating that the little crabs would probably not nip, but that their feet would be tickly on the palm of the hand. Whilst the main human interest in the pool were the animals that move about – the crabs, fishes and shrimp - there was at the same time a hesitance about initiating physical contact with these creatures. The adults were very complimentary when the children caught something in their nets. The two buckets - one red, one yellow - were divided; one for fishes and one for crabs. Nicky worried that the fishes were not keen to be so close to the crabs, and she was probably right, as we soon caught a large crab, which held a half-eaten fish in its claw.

Foraging in the shallow sea is a form of hunting and gathering. It involves a watchful wandering in the intertidal sea environment to find, catch and collect sea animals, vegetables and other useful materials, left exposed by the receding tide, and for a variety of ‘utilitarian’ purposes that include the need to procure food. Though ‘utilitarian’ foraging practices on the tide line are no longer very common in the UK, they do persist in other parts of the world (e.g. Bird and Bird 2000). Foraging is also a cross-species activity. At the research site, various sea birds and sea inhabiting animals can be seen foraging, with the clear intention to procure food. Rockpooling may be categorised as a playful form of human foraging, focussed especially on the rocky pools that are left ‘exposed’ by the outgoing tide. It involves children, and often also adults, as they join in searching, spotting, pursuing, catching, collecting, and inspecting small sea creatures in buckets. It is an activity in which children and adults try out and develop the skills of hunting and gathering, but without any of the serious qualities of procuring food from the sea, such as causing the death of living creatures and risking one’s own life (Caillois 1958). The ‘playful’ quality of rockpooling is confirmed by the sparse set of tools that are typically in use, with colourful nets and buckets marking the activity out as child-focused. During the ethnographic fieldwork, participating adults could frequently be observed to adopt ‘pedagogic’ and ‘caring’ dispositions, guiding young children over uneven and slippery rocks, showing them ‘what is of interest’ and how to manoeuvre the net through the water, and to share in the excitement and inspection of interesting finds. Older children engaged in this activity with little or without adult ‘supervision,’ and in the company of other children.

## Becoming ‘child’ and ‘parent’ as part of the on-going ebb and flow of multiple material agencies

The world is intra-activity in its differential mattering. It is through specific intra-actions that a differential sense of being is enacted in the ongoing ebb and flow of agency (Barad 2003: 817).

Multiple material intra-active agencies enable and constrain the activity of rockpooling, and set the conditions through which species can meet (Haraway 2008). Favourable weather conditions and the presence of rockpools that are relatively sheltered from rough seas and that can be accessed relatively easily, are environmental conditions that will encourage rockpooling by families with young children. Important, also, is the tide, as a terrain full of interesting rockpools at low tide becomes a deep sea at high tide. Whilst high tide makes rockpooling impossible, it simultaneously confirms the ‘normality’ of ‘human existence’ on dry land. Material agency is equally salient for the creatures that inhabit rockpools at low tide. Such pools are clearly relatively confined living environments in which small water dwelling animals spend time whilst the tide is out. This environment is substantially enlarged when the tide is in, when the incoming sea makes it possible to move in a much larger watery environment. Tidal action, the movement of the watery sea mass of the earth, is one of the material agencies that quite literally materializes and dematerializes these watery habitats at varied temporal intervals.

For some animals, like sea urchins and starfish, low tide is a time for rest (Little and Kitching 1996). For others, like anemones, the rockpool and the changing environmental conditions that are a consequence of the ongoing flow of the tide, may offer good access to food as it floats past in the moving currents. The fact that we saw crabs moving around for cover in this rockpool, when we towered over their habitat, suggested that, at least for crabs, time spend in the pool was not necessarily about rest. Indeed, as an omnivorous species (Crothers 1988), confinement to pools along with other sea dwelling species may be a rather good time for hunting. Yet, crabs are also clearly aware of their own status as potential prey. Witness their embodied ‘armour’ and their burrowing habits, which suggest that they expect hunters to come from the sea and from the world outside it. That they are at risk from predators from above was justified when, during the outing, the children spotted collections of empty and sun bleached crab harnesses on the grassy verges of the rocks above the inlet; probable remains of a seagull’s meal.

For humans, tidal knowledge is salient for keeping safe when active near or on the sea. Developing tidal awareness was a dimension of the generational becoming of ‘child’ and ‘adult’ in my research. My overall research suggests that the tide and tidal action is a challenging material phenomenon for human comprehension, something which was confirmed by the verbal interaction about the tide during my outing with the Crab Fishers (see Extract 2). Indeed, in the absence of time spent on the intertidal shore or beyond, at sea, there is no human need to know about the tide. When spending time on the sea, knowledge of what ‘the tide’ ‘is doing’ may be accrued whilst paying attention to the level of the water in relation to the rocky shore, and relating this to previous knowledge. The daily times of high and low tide may also be checked by referral to information that is often provided at seaside locations or on the Internet. Children found it hard to talk about ‘the tide’, and this included older children (aged 12-14), though this does not mean that children who spent time on the shore had no practical knowledge of the changing level of the seawater, and what this entailed for their activities. Both adults in this family group had a substantial resident stock of practical environmental knowledge of this specific locale, and of the seaside more generally (in the contextual interview, for instance, the adults discussed their wind surfing interests). Yet, on this occasion, they had had no notion of the tidal pattern, and we arrived at Crab Bay when the tide was still very much in. This meant that there was only one rockpool for us to investigate. Getting the tide ‘wrong’ in fact did not matter, certainly not for the children, as there was plenty to see and do around the one rockpool we investigated, and after that, there were other interests to pursue. It did, however, spark some discussion of the tide and what ‘it’ ‘was doing’ when we were there, between the adults, and also between the adults and the children, as reflected in Extract 2.

**Extract 2 – Verbal communication about the tide during the rockpooling:** Discussion about the tide returned on various occasions. Nicky and David were talking at various points about whether the sea would be sufficiently low for them to show me the pool they had in mind, and they were looking for and pointing to the rock, which they remembered from last year as offering a vantage point. Once I speculated with David, standing in the ‘main’ sea, that the tide comes and goes at various rates, with a fast return ‘in the middle’. Nicky offered that it was the moon that created the tide following a discussion with Aiden and David on what caused the tide. David explained that the tide was caused by gravity, and that large objects, like the moon, pull things towards them. I offered an observation on how the tide differs in its temporality across the UK. I think we all agreed that there were complexities about the tide, which we did not understand.

Human talk about ‘the tide’ during this event is an example of the ways in which material agency (e.g. the water and the rocks in the bay) and meaning (e.g. interpretations of the causes of tidal water movement) are co-created in practice (Iovini 2012). Several observations may therefore be made in relation to the tide-related talk during this event. One is that this verbal interaction served the purpose of reflecting on unexpected happenings, with a view towards making decisions for future actions. Here, it is interesting how ‘the adults’ initiated and joined in the conversation, thus taking the lead in decision taking. Possibly because the tide was ‘an issue’ during the outing, there were further brief conversations between David, Nicky, Aidan and me about ‘the tide,’ when ‘the adults’ accounted facets of a scientific theory of tidal causality as a form of conceptually knowing tidal patterns. This served as an explicit scientific pedagogy in the communicative interaction between parent-adult and child. In this, and in other examples of happenings during the day, the adults positioned the children as ‘subjects of responsibilization’ (Larssen *et al.* 2011), offering insight into their performance of the ‘differential senses of being’ of ‘child’ and ‘adult’. However, the adults were also interested in everything around them, and puzzled over things they did not know. They conveyed a strong ‘need to know,’ that may be interpreted as reflecting their professional middle class habitus, but that may equally be comprehended as associated with the need to make the right decisions for action, and a felt responsibility towards safeguarding the family. The encounters with ‘the tide’ are further illustrative of the limitations of sociological concepts, like ‘intergenerational education’, when knowledge is conceptualised as simply moving from adult to child. It pays witness to the ways in which humans (adults and children), animals and other matter are ‘becoming’ through continuous iterative intra-activity.

## Multidimensionalities of care and ethical becoming

The water moves no more than I.

Only the tottering reed-tips show

Where what I love, absurd with fear

And anguish, runs away from me.

I stand still as a post. Within me

There’s anguish too, there’s something trembling ...

What’s watching me? What tries to follow

Where have I gone, with love and pity?

(Empty Pools, Norman MacCaig, 2011)

Thinking about rockpooling as a playful form of foraging, and an ethical activity in which the need to procure food is absent, it is important to think through death and its causations. Rockpooling may be regarded as a practice that carries a dominant adult ‘morality of care’ towards the small sea-inhabiting creatures that are sought out. Whether participating in rockpooling with the local rangers or with ‘conscientious’ and ‘careful’ parents, this morality is shared and enacted in different ways, through searching for creatures in the rockpool habitat, and ‘hunting’ for sea creatures with nets, to modes of conduct around the collection of sea creatures in buckets, and their return to the sea afterwards. Rockpooling may equally be seen as ruthless in and through the desire for proximity to creatures that have no need for human handling, that may be lifted from the water and thus from their ‘normal’ habitat for the purposes of playful human activity. From whence does the human interest in this activity stem? Is it a ‘simple’ curiosity in an alien underwater world? Is there a residual memory that connects it with the human history of hunting and gathering? At what level does the practice create moral inflections and contradictions, where some humans prioritise ‘taking care of the creatures encountered,’ whilst others pursue the ‘cruelty of the hunt,’ with yet others becoming clumsy as a consequence of an inflated sense of danger?

My outing to Crab Bay to go rockpooling with this family of four is illustrative of the multidimensionalities of care, carefulness, carelessness and ruthlessness. Staying close to a posthuman epistemology, the scholarly gaze could focus on the ethics of engagement entailed in the agentive forces intra-acting in the broader material world, and also that exhibited between animals? With the scholarly focus on humans and their volitional more-than-human engagements, human formulated categorical hierarchies of animal worth and, associated with it, forms of anthropomorphising, clearly inform the multidimensionality of care and caring (Driscoll 1995). Thus, the relative ethical ‘consequence’ people attribute to species varies culturally and across time - between human and non-human animals on the one hand, and between different types of animals on the other hand (e.g. Blok 2007). The literature on animal-human relationships points to such categorisations, and their associated hierarchies (Hills 1993), with certain animals becoming revered (Blok 2007; Lorimer 2007), others regarded as excellent companion species, with yet others again approached with a sense of anxiety or disgust (Davies 2012; Ginn *et al.* 2014). Amongst the nature loving visiting population on the research site, sightings of large sea and land mammals (whales, dolphins, seals and deer and otters) were worthy of being verbally shared and turned into narratives of what makes visiting this ‘natural’ environment so satisfying. Visiting sea-bird colonies, and sightings of the charismatic puffin (Lorimer 2007), were equally noteworthy. Yet, many of the small intertidal sea creatures that live on the rocks and in the pools, and that would be encountered during rockpooling, could not claim this level of illustriousness.

In this context, let me address what it means ‘to care’ in the intra-active world of the rockpool and the activity of rockpooling. Thinking about care, or better, ‘ethical responsibility’ (Davies 2012), means to acknowledge, and importantly, to know about diverging and converging cross-species purposes and priorities. Sentient entities share the need to survive and to ensure species continuity. How species pursue these fundamental needs is indicative of some profound variations in their reasons for seeking intra-species contact, or, importantly, to avoid this, and is indicative of the narrow distinction between hunting, being hunted, seeking a mutually beneficial connection (Haraway 2008), ‘simple’ curiosity (Ginn *et al.* 2014), or, as reflected in Norman MacCaig’s poem cited above, love. With these considerations in mind, I now return to the Crab Fishers to discuss the ways in which dimensions of care, carefulness, carelessness and ruthlessness were enacted in embodied and material ways in the intra-actions around the rockpool, and what they convey about the simultaneously enacted ‘differential senses of being’ ‘child,’ ‘parent’ and ‘animal’ (Barad 2003: 817).

### Enacting care in and through the body

The Crab Fishers enacted multidimensionalities of care, in which they both operationalized the priority to keep themselves safe, but also appeared to ignore common cultural hierarchies of worth between animals. There were clear intergenerational dimensions of care, responsibility and continuity, with both parents ‘harbouring’ their young through their close embodied proximity and interaction, similar to interembodiment between infant and parent (Lupton 2013) that is suggestive of familial love and care. On the journey to Crab Bay, dad David had carried his young daughter Coira on his shoulders all the way, whilst Nicky and Aiden had held hands at various tricky points on the journey. Similarly, during our engagement around the rockpool, the children sat close to their parents, touching bodies, whilst working together in their investigation of the pool. During the rockpooling, the family members shared in an embodied quietude.

All family members moved with ‘carefulness in their bodies’ in this environment; something that showed concern for their own safety, but also that of other living creatures that were nearby. Mother Nicky was vocal about whether our actions were good for the animals that live in this environment, but this caring attitude was also evident in her embodied movement. Stepping around carefully in the water of the sea, and staying to the side of the rockpool we investigated, expressed awareness that this was the home of small animals, and the big human body could quite easily crush them. Embodied carefulness is also suggested in Extract 1, when dad David uses his hands to scare crabs out of their hiding place, so that they can be caught more easily with the net. In fact, nets are rather bulky and awkward tools for the purpose of catching small crabs and other small pool dwellers. With the pool so shallow, with stones dotted around and protruding the surface, and with the crabs hiding in hard to reach crevices and corners, the nets could be seen as hindrances to the delicate manoeuvrings necessary for careful inter-species contact.

As suggested in Extract 1, the young children were wary of direct embodied contact with the pool and its contents. Their hands never entered the pool, and Aidan said clearly he would not want to touch the animals in the pool. In this context, the nets became extensions of the body, as tools that can be used to touch all the matter around, and to catch the animals, without running the risk of embodied injury. On this rockpooling adventure, the adults quietly encouraged their children, for instance, by complimenting them when they added a new crab or fish to the buckets. In this way, the adults encouraged the children to overcome their anxiety, but they did so in a way that also took account of the safety of the animals in question. The children’s hesitancy and the adults’ courage again says something about the way in which the intergenerational familial categories of ‘child’ and ‘adult’ were performed in this setting, but this was a performance that was equally informed by the agency of crabs. With their armoured backs, their claws out front, their spiky legs sticking out of their sides, and their peculiar sideways embodied manoeuvring, crabs are without doubt the scariest creatures in the pool. In my overall research, crabs elicited the human imagination, making any crab and any creature in the pool potentially dangerous and larger than life. The fact that they hide brings an added sense of anxiety, adventure and suspense to the activity of rockpooling, as hidden crabs cannot be clearly assessed for their potential danger. The disinclination to seek embodied contact appeared to be mutual across the human-animal ‘divide’, at least, between crabs and children.

### Encountering, causing and comprehending animal death

**Extract 3 – Making sense of the dead crab:** At one stage, we were all crouched around the rock pool, and Nicky and Aiden had seen a large crab make its way under cover of the main rock area bordering one side of the pool. They pointed and said that you could see one of its feet sticking out, which was indeed the case. Nicky tried to get her net closer to the crab, but was unsure how to get it out. All the while, Aiden was watching closely, they were ‘in it together’. It took her some time to think about how to do this, and eventually wiggled the net into the surrounding sand and underneath the crab. I got the impression that she was partly being careful not to damage the crab. Never was there a suggestion of moving the fingers closer to ‘scare’ the crab out of its hiding place. Eventually, they had success and what was possibly the largest crab seen in the pool so far was in the net. There was mirth to start with. As with the other crabs and creatures caught, the net was carefully tipped upside down, and the crab lowered into the bucket. It then would not move. Was it dead?? For a while we were surprised – was it playing dead, or was it dead? Nicky and Aiden were surprised because they had definitely seen a crab move quite a distance across the pool for this area of cover. We took the dead crab out of the bucket, and placed it in a shallow part of the pool. But it would not move. We were then wondering whether the crab they had seen was another one, which had hidden in the same spot.

Extract 3 follows the event of Nicky and Aidan catching the largest crab in the pool, which they had seen move towards the rocky side of the pool, where it had burrowed into the gravely sand. This was followed by surprise and confusion when the crab turned out to be dead. In the succession of episodes that made up the event, the alternative causes of death were briefly worked through. For a moment, the possibility of their own human carelessness was contemplated; a realisation that, given their general carefulness, was upsetting. But this was quickly rejected – the live crab, which we had seen, was probably still hiding in more or less the same place, and we had instead caught a crab that was already dead. For the species for whom this environment is home, especially those that live in the shallow waters of the sea, human activities form only one facet of a broader set of environmental hazards encountered on a regular basis, making their lives precarious (Little and Kitching 1996). This should, however, be appreciated against a background of evolving ways of coping and long-term protection. In relation to crabs, rockpools give the appearance of being cemeteries. When looking into pools, it is more common to see dead crabs than live ones. Dead crabs may be seen floating, sometimes upside down, in the deep crevices of the pools. This attests to the skills of live crabs to keep themselves hidden from view, whilst the crab’s embodied armour explains why dead specimens may remain visible for some time. For children and their families, it means that rockpooling is an education into the harshness of life in the sea environment. From a new materialist feminist perspective, it points to the mattering of material agencies, other than human bodies and actions, in the survival of sea inhabiting creatures.

In contrast to the embodied quietude of the Crab Fishers as they went about their exploration of the small rockpool, I was witness to human engagements with rockpools and its creatures, which enacted in embodied ways a ‘ruthlessness of the hunt.’ This happened, for instance, when I observed a young uncle showing his small nephew how to catch a rockfish and crab in a rockpool that was located below the rock I happened to sit upon near the beach. Instead of performing embodied carefulness, the apparently dauntless young man moved his fishing net and spade with a quick succession of embodied manoeuvrings, to limit the freedom of these two creatures in the pool, no doubt putting their lives at peril. In my overall research, rockpooling encounters did not infrequently end in the demise of some sea inhabiting creatures, whose deaths might be regarded as the consequence of human carelessness, as accidental deaths, or as unintended consequences of human activities, not only when seeking cross-species contact, but also when the ‘colossal’ human body got ‘too close’ to the ‘miniscule other’ (Iovino 2012: 64). Returning to the embodied quietude of the Crab Fisher family, several finishing observations may be made. On the one hand, embodied quietude may be seen as testimony of the ‘civilisation’ of a human existence that is unencumbered by major predators, but that may also be associated with the care, skill and cunning necessary to catch animals, or to avoid being spotted by hunters. On the other hand, the contrasting embodied performances of this family and those observed during other rockpooling events, is suggestive of the enactment of ‘differential senses of being’ family, demarcated by class and gender. Simultaneously, these contrasting performances demonstrated the mobilisation of different human models of the worth of animals and the care they deserved.

## Conclusion

In this paper, learning has been conceptualised as a form of ethical-generational becoming, of what it means to ‘be’ a child and a parent, in a family group, with the focus firmly on the emotional-ethical-material qualities of human and more-than-human togetherness (Ginn *et al.* 2014). The activity of rockpooling highlights distinctions between sentient and non-sentient agencies, such as the tide. It highlights similarities and differences across sentient species; for instance, how species ‘care’ for offspring, and how food is secured. In these dynamics, widely differing ethical considerations come to the fore, including the consequence and meanings of death. The human ‘sense of being’ that differentiates ‘being human’ and ‘other beings’ is enacted in discursive ways, for instance, by talking about the behaviour of crabs as distinctly ‘crab-like’, but also in embodied ways, for instance, by keeping the body out of the water and away from the crab’s imaginatively large claws. Seen in this way, new materialism is useful for broadening the sociological gaze, to open it up to a post-human attention and ethics that is especially useful for reflecting upon the kinds of questions, such as ethical responsibility and responsibilisation, pertinent for thinking through the challenges of climate change.

The sociological categories that have been prioritised in this analysis are the intergenerational family-located classifications of ‘child’ and ‘parent-adult,’ which operates as a binary opposition that, in its own right, has been argued to hide the category of ‘adult’ (Johannson 2011). Rather than treating ‘child’ and ‘parent’ as established facts, I have examined how these categories and their associated sets of meanings, are stabilized in and through the multiple discursive-material enactments that are present in and around the human activity of rockpooling. Recent sociological research on children and care in the family has also used Barad’s agential realism to think through the dynamics of materialising agencies, which has offered alternative ways of speaking about care in family life, thus highlighting different priorities. For instance, by focusing on embodiment and interembodiment, the emotional qualities of care in the family, and more specifically, between people labelled by distinct generational categories, such as ‘child’ and ‘parent’ (Brownlie and Leith 2011; Doucet 2013, Lupton 2013), has been highlighted. In this analysis of rockpooling, the parents signalled their caring dispositions through repeated embodied carefulness, where their enactment showed inclusivity of the non-human, though arguably, in accordance with an anthropomorphising philosophy of the value of life. ‘Care’ and ‘caring’ may also be recognised as expressions of disparate power relationships; pointing to a guardianship that creates categories of being that protect and that need protecting. Using Iovino’s (2012) notion of material ethics, this analysis of rockpooling has shown how the discursive-material qualities of ‘child preciousness’ (Zelizer 1985), ‘child’ and ‘crab’ ‘vulnerability’ (Little and Kitching 1996; Lupton 2013), and ‘the child as subject of responsibilization’ (Larssen *et al.* 2011), are enacted in and through the embodied care taken around the rockpool. In this paper, the emotional qualities of care are suggestive of the mutuality and intensity of familial affection, perhaps heightened by the age of the children and the context of the outing as a leisure event, and expressed in general good-naturedness, light-heartedness and embodied attachment.

This analysis has demonstrated the multidimensionality of learning that may be witnessed in and around the rockpool. Moving beyond the social scientific conceptualisation of learning in family life through the concepts of intergenerational *transmission* or intergenerational *education*, and using theoretical insights from new materialist feminism, has served to demonstrate this multidimensionality. Rockpooling is indicative of action, reaction and inaction as sentient species learn, and draw on learned experience, about diverse agencies and their consequence (Hayward 2010; Ingold 1997). The embodied dexterities and learning that takes place may easily be overlooked, treated by the observing sociologist as insignificant in the same way that much of everyday life lacks noteworthiness. Yet, the human agents often demonstrated a lack of comprehension, expressed verbally, and that confirmed the strangeness of this habitat. Drawing on cognitive scientific knowledge; something that may be interpreted as evidence of the professional middle class disposition of the parents, was interesting in part for offering little help with the practical embodied decisions that needed to be made, there and then.

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1. The families who participated in this study were each given a name that reflected the main activity they invited me to. In addition, family members were given ‘personalised’ pseudonyms. [↑](#endnote-ref-1)