

When Nature Becomes a Risk: Solastalgia and Entanglement in Human-Tick Relations

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Abstract

This article discusses the relationship between humans and ticks from the perspectives of solastalgia and climate change adaptation. Many daily activities and spatial practices are nowadays affected by ticks or the fear of running into ticks, as ticks, and also the awareness of ticks, in general, seem to have increased with climate change. The fear and discomfort caused by ticks are, therefore, a common theme debated among the public. Details in these stories tell us about a controversial, troubled, and traumatic relationship with ticks that affects both people's perceptions of nature, outdoor activities, and daily life. This contradictory and multifaceted human-tick-nature relation is analyzed with the help of questionnaires, newspaper articles, and social media comments.

Keywords: ticks; solastalgia; climate change; nature

Introduction

Climate change with milder winters and longer periods of temperatures staying in warmer degrees have increased the living conditions of ticks in Finland. Ticks are therefore connected to the Anthropocene and the changes in the climate caused by human actions. The milder the climate, the more ticks and vectors—i.e., animals that transfer ticks from one place or host to another. These vectors or host species, such as deer, moose, rodents, and city rabbits, spread ticks around the country. Also, the high number of domesticated animals and their role in bringing more ticks near humans and human habitation has been acknowledged (Zöldi et al. 2017; Sormunen et al. 2021). Changes in the living conditions of ticks have led to a growth of the tick population and density of ticks in many parts of the country, challenging the perception of Finnish nature as a source of well-being and relaxation. Therefore, I intend to discuss how ticks affect people's perceptions of and relationships with nature. Ticks and their host species are adapting to climate change, but how are we humans adapting to ticks and responding to these changes?

A book for children titled "Children as Tick Researchers" (Penttinen & Lamppu 2021) is the starting point for my article. The book is written by Finnish tick scholars Ritva Penttinen and Maija Lamppu. According to Penttinen and Lamppu, many

people experience a deep fear of insects and ticks. On the other hand, people seem to know very little about ticks, which, according to the authors, also increases the common discomfort surrounding ticks and impacts the discourses about them. Thereby, the purpose of the book, intended for school children, is to reduce the fear associated with ticks and offer new information while breaking down prejudices surrounding ticks and spending time outdoors (Mediatiedote 2021).

The fear and discomfort caused by ticks is also a common theme debated in Finnish public discourse (Lillbroända-Annala & Winberg 2023). When the tick season begins in early spring, newspapers are gradually writing more and more about ticks. Also, discussions on social media intensify, and ticks are discussed in relation to humans, companion animals, and host species. In some articles and threads, but still on a rather small scale, the effects of climate change in relation to ticks are debated. Details in these stories tell us about a troubled relationship that has also changed peoples' outdoor activities and relation to nature. This contradictory and multifaceted relationship, as it is understood and defined by interlocutors, is in this article analyzed with the help of questionnaires, newspaper articles, and social media comments. When and why is the relationship with ticks described as problematic and dysfunctional, and what implications does it have for peoples' relation towards nature? Therefore, this article contributes to discussions on multispecies encounters and climate change adaptations, raising questions about ticks and ticks as part of nature in Finnish everyday life.

The book for children raises additional questions about why there is an educational need to tell children about ticks and ticks as part of nature. Something in the relationship between ticks and nature has changed or is currently changing. This relationship is analyzed through the concept of *solastalgia*—a term developed to give greater meaning and clarity to environmentally induced distress. As opposed to nostalgia, solastalgia is the distress produced by environmental changes impacting people and their home environment. Solastalgia is closely connected to climate change as environmental changes are often caused by changes in climate. Therefore, solastalgia is a kind of psychological pain or existential melancholy in people who experience unexpected and unwanted changes in their home region. As considered in this article to have been brought along by ticks, changes in nature have a negative effect that is exacerbated by a sense of powerlessness or lack of control. Solastalgia is also strongly connected to emotions and emotional responses when changes in nature overwhelm us and challenge our relationship with nature. Thus, solastalgia is an eco-emotion such as related concepts of biophilia and topophilia (Albrecht et al. 2007; Albrecht 2019).

Solastalgia and emotions intertwine in multispecies entanglements (van Dooren et al. 2016) between ticks, humans, host species, and companion animals, and materializations and practices of tick encounters, prevention, and protection. Together, these entanglements refer to situations where different actors, when encountering each other, influence one another so that something or some things change (Ingold 2008, 1807–1808; Damsholt & Simonsen 2009). The encounters and imagined encounters with ticks bring about protective measures and effective practices. Ticks evoke strong emotions and cause people to act defensively through practices adopted to avoid tick

bites and tick-borne diseases such as Lyme disease and tick-borne encephalitis TBE.

For this reason, I ask how the perception of and spending time in nature is affected by ticks. With nature, the interlocutors mean nature in a broad sense, and it is various forms: urban nature surrounding their homes, parks, and the wild outdoors such as forests. With regards to nature, as my interlocutors perceive it, I ask: How have ticks changed nature over time? What kinds of protective practices are adopted and manifested during the tick season? How do materializations correlate with the increased awareness of ticks and tick-borne diseases? In encounters with ticks, practices, and materializations become control mechanisms in the ongoing work, where the practices shift as the environment changes and new actors appear. Even the knowledge about ticks develops and changes over time. With the increased knowledge of ticks, ticks have proven to be dangerous to some extent and are often linked to bacteria, viruses, and diseases.

This article can be considered a contribution to research fields of cultural animal studies and human-animal studies. It also contributes to multispecies studies and environmental humanities (e.g., Helmreich & Kirksey 2010; Ogden et al. 2013; Haraway 2008; van Dooren et al. 2016). All these research fields contextualize and problematize human relationships with other animals, species, and environments and their relationships with us (e.g., Räsänen et al. 2020; Ekström & Kaijser 2018; Marvin & McHugh 2014). Within these research fields, questions about how animals and environments are classified and valued, i.e., how we relate to, talk about, and create practices from encounters with animals and environments – often also from the viewpoints of tensions and conflicting emotions arising from these relationships. Postcolonial and intersectional influences, as well as anthropocentric perspectives, are also discussed in interspecies relations and with environmental concerns (Ekström & Kaijser 2018; Hagelstam & Lillbroända-Annala 2020; Räsänen et al. 2020). Studies within all these research fields highlight human and non-human entanglements and encounters and how they impact climate change and adaptations to climate change.

The question of ticks and nature also contributes to the civilization-critical and often dystopian themes that gain relevance in times of uncertainty (Vidergar 2013). By zooming in on the human-tick relationship, we can look closer at the “complex ideas about being human and being animal, and the relationships negotiated around these conditions” (Marvin & McHugh 2014, 2). Thereby, a focus on animals and their relationships with humans on a day-to-day level increases our knowledge of where the boundaries for these conditions are drawn—both socially and culturally. The questions about ticks bring about questions of animal agency regarding larger and smaller existential and societal questions. In the tension between animals and humans, or nature and culture, we can highlight important aspects of our ways of living, thinking, acting, and taking responsibility—also with regard to climate change (Hörnfeldt 2018,223; Ingridsdotter & Silow Kallenberg 2020,35).

Ticks and Nature

The book’s main characters, Eevi and Eino, explore their home outdoor surroundings

with their grandparents. These exciting explorations increase their knowledge about the variety of ticks living in Finland. They learn that there are more than 1,500 species, of which *Ixodes ricinus* is the most common. Ticks are blood-sucking arachnids that develop from egg to larva to nymph and on to an adult. Ticks live approximately 3–5 years (THL punkkiesite 2023).

Besides *Ixodes ricinus*, a new tick, categorized as an invasive species, is *Ixodes persulcatus*, originating from the east. Both of these species have adapted to the changes in climate and can nowadays be found in most parts of the country except for the northern parts of Lapland. The coastal areas and the archipelago are tick-dense. These two species also pose a health risk to humans and companion animals. Both ticks can also occur in the same areas and share the same hosts, from wild mammals to companion animals and humans. Ticks thrive wherever they have access to blood meals; therefore, their living environment includes nature in a wide perspective. However, above all, grass and bushes are usually highlighted as the tick's habitat, as ticks are considered to be 'lurking in the grass' waiting for a passing animal. When it is hot or too cold, ticks retreat into the soil to wait for more suitable conditions (Hytönen et al. 2021).

In this article and according to my interlocutors, the concept of *nature* includes the wild, the untamed, and uncontrolled nature, as in forests, and the cultivated, 'tamed,' and controlled nature in cities and around human habitation. Within different cultures and among different individuals, a variety of understandings of nature exist. Therefore, nature is complex and multifaceted, covering a wide range of perceptions and connotations (Nationalencyklopedin natur; Midholm & Saltzman 2014). Nature can be understood as a physical place, a concept that encompasses the entire universe, a principle or being (the laws of nature), or a source of inspiration and conceptual opposite of culture (Coates 1998, 1–10).

Nature as an antipole to culture is considered the most influential view in the Western history of views of nature. Until early modern times, 'wild' nature was perceived as a threat and an enemy humans had to fight against. Nature, at its worst, could destroy crops and make agriculture impossible. Also, different insects and predators could threaten the lives and living conditions of humans and domestic animals. The Western history of human-nature is portrayed as a struggle to maintain and defend the fragile culture against overpowering and intrusive nature (Oelschlaeger 1991; Väyrynen 2006).

Today, the division of "nature" and "culture" is criticized, as nature and culture are considered tightly interwoven and inseparable from each other. The concept of *natureculture* is meant to question this divide and stands for a synthesis of nature and culture that recognizes their inseparability in ecological relationships that are biophysically and socially formed (Latour 1993; Haraway 2003; Fuentes 2010). Natureculture emerges from various fields of science questioning the position of humans as the only acting individuals, superior subjects, or primarily cultural beings given a universal nature. Terms like "almost human" (Strum 2001), "beyond humanity" (Ingold 2013), networks of "other-than-human" (Haraway 2016, 18), or "more-than-human" (Greenhough 2014) have been brought along to the discussion of a posthuman approach and

understanding of natureculture. These concepts also play an important part in discussions about climate change.

Although these positions differ in their basic assumptions, they can all be discussed as perspectives that question the anthropocentric and/or humanistic tradition (Engert and Schürkmann 2021). They decenter the human from various angles: humans as embedded in hybrid relations of subjectivity (Haraway 1991), human agency conceived as part of heterogeneous networks with material objects and artifacts (Latour 2007), or human experience appearing as limited in the face of unperceivable “Hyperobjects” (Morton 2013). “The Posthuman,” therefore, becomes identifiable as an ambition to surpass vital changes in human living and acting and to consider trajectories of what humans are becoming (Engert & Schürkmann 2021).

The anthropogenic climate change and its consequences, i.e., the increase of ticks (e.g., Gilbert 2021, Dub et al. 2020), serve as an example of “naturecultural phenomena” showing how humans and more-than-humans are interrelated and entangled. Still, nature and culture are often perceived as separate entities by my interlocutors, which they feel the urge to control.

In the Nordic and Finnish context, the wild and untouched nature has been a target for taming and control until the 20th century. This conquest of nature has in Finland been a very rapid and an intense process in comparison with the taming of nature in continental Europe, where the transformation took several hundreds of years and began much earlier than up in the north (Enbuske 2010; Ruuskanen et al. 2020).

The same conquering mentality has long affected the relationship with different species, resulting in a division between beneficial species and pests, endemic and invasive species, and charismatic and non-charismatic species. This classification has had and keeps having severe consequences for the biodiversity in Finland and elsewhere, resulting in war-like declarations against different species considered unwanted and hazardous (Ilvesviita 2005; Vuorisalo & Oksanen 2020; Mykrä et al. 2005; Russell 2000; Johnson & Nagy 2013).

In the 1900s, the distinction between nature and culture, the mentality of humans as superior to other species, and the exploitation of natural resources were challenged by a view of nature as a source of physical and mental well-being. This shift led to the founding of nature reserves and nature parks (Pekurinen 1997; Niemi 2018). These early conservation acts of nature were, especially from today’s point of view, anthropocentric. It was not until the late 1900s that the interest in nature conservation was directed towards ecology and wilderness, nature, which was not yet influenced and reshaped by humans. Also, the understanding and appreciation of wild animals grew along with less anthropocentric ways of looking at flora and fauna (Räsänen 2020, 284–85).

In the wake of nature as health-bringing and considered worthy on its own, a widely accepted notion of nature as a source of recreation is also being promoted. This awakening led in the 19th century to nature being seen as an unambiguously positive entity, while all threats and problems originated from human activity (Pihkala 2019).

With ticks and their health risk, the idea of nature as relaxing and healthy is challenged. Nature becomes a risk, yet again, reminding us of the traditional view of

nature as fearful and dangerous. Health concerns related to ticks are debated and shared in knowledge formation and circulation - both in scientific contexts and within a broader public discourse. *Ixodes ricinus* and *Ixodes persulcatus* are considered the most notorious species in Finnish nature, which carry a stigma associated with danger—even life-threatening for humans and companion animals (Penttinen et al. 2015; THL, Infektionssjukdomar och vaccinationer; Puutiaistutkimus; European Centre for Disease Prevention and Control).

Research Material and Theoretical Approaches

The inspiration for discussing how ticks impact our relation to nature and outdoor activities was received from the children’s book, by reading people’s answers to questionnaires about ticks and their comments on ticks on social media. In the book, ticks are presented as resilient. In contrast, in the public discourse, the general image of ticks is built around ticks being vicious predators who prey on humans and other animals. Changes in climate are discussed within the public discourse—not to the extent you might expect but sporadically, and most often as something occurring on its own, instead of pointing out the role of anthropogenic climate change—whereas the effects of climate change are not discussed in the book.

The primary material used in this article consists of questionnaire answers to questionnaires “Tick” (Fästingen 2019) and “The ticks are coming!” (Punkit tulevat! 2019).¹ These questionnaires were sent out and made available online by the Swedish Literature Society (SLS) and the Finnish Literature Society (SKS) in the summer of 2019. The questionnaire by SLS was answered by a total of 42 people, and the questionnaire by SKS was answered by 103 people—both from almost the entire country except areas north of Oulu.

The questionnaires were prepared by our research team in collaboration with the archives. Our project, *Humans and Ticks in the Anthropocene*, is funded by the Academy of Finland 2020–2024. The research team consists of historians, ethnologists, and social scientists from the University of Turku, Åbo Akademi University, and the University of Eastern Finland. The project aims to examine the multi-faceted relationship between humans and ticks from the perspective of environmental history and environmental humanities and, secondly, provide a comprehensive analysis of discussions about ticks in Finnish society from the late nineteenth century to the present. Our third aim is to increase the knowledge about human relations, not only to ticks but also to insects (<https://sites.utu.fi/huti/>).

In the online questionnaires sent out, we wanted to know how ticks have been treated in the past and how they are treated today. We also wanted to know what kinds of experiences people have about ticks and what names they use for ticks. Questions about the relationship between ticks and climate change and how changes in the climate and environment may impact ticks were also asked, as well as whether the respondents have seen ticks on other animals and how these have been removed. We were also keen to know more about tick-related diseases and how respondents feel about vaccines. The questionnaire also points out an interest in knowing how ticks are

portrayed in media of various kinds and how the respondents react to media discussions. We also asked how the respondents see the relationship between ticks, humans, and other animals in the future.

From a source-critical perspective, it is important to remember that questionnaires as material should be considered as a result of the questions asked. In both questionnaires, the intention was to get the respondents to tell as widely as possible about their memories, ideas, and attitudes toward ticks. Looking at the questions now, a few years later, the questions seem leading and too focused on the problems and challenges that ticks might cause. Therefore, the questionnaires should be considered in a critical light where one is aware of the material's shortcomings as well as the advantages of a rich, qualitative material (e.g., Hagström & Marander-Eklund 2005).

The public discourse material consists of online chats on the social media platform *vauva.fi*. Additionally, a few newspaper articles are used as examples of the public discourse. The online materials are accessible without restrictions, and all comments are anonymous, enabling them to be used. The material from the discussion forum consists of more than 80 discussion posts with comments published in the "the subject is free," category.

The discussion forum, consisting of several sub-forums with themes, is one of Finland's major social networking websites. The website is maintained by Sanoma Media Finland Oy, which is the leading Finnish cross-media company. Sanoma Media Finland publishes Helsingin Sanomat, the primary daily newspaper in Scandinavia. Ilta-Sanomat, the market leader in digital and mobile news, is also used as material in this article (Sanoma Media 2021).

In analyzing the material, *solastalgia* and *multispecies entanglement* as concepts are useful. Environmental philosopher Glenn Albrecht introduced solastalgia, referring to an experience of loss, pain, and sadness due to changes in one's home environment (Albrecht 2005; Albrecht et al. 2007). The term was initially linked to climate change but has later been used to describe changes and distress caused by changes in different environments (e.g., Warsini, Mills & Usher 2014; Leandroer 2021). Solastalgia originates from the concept of *solacium*, meaning solace, and the word *algos*, meaning pain, suffering, and grief (Albrecht 2005, 3, 41-55; Albrecht et al. 2007, 95-98; Albrecht 2011).

Solastalgia is connected to the concepts of somaterratic and psychoterratic illnesses introduced at a psychiatry congress in 2006. Somaterratic illnesses (*soma* meaning body, *terratic* meaning earth-related) threaten physical well-being and are caused mainly by living in ecosystems that have been contaminated by pollutants and toxins. Psychoterratic illness is defined as earth-related mental illness where people's mental well-being is threatened by the severing of 'healthy' links between themselves and their home/territory. An old form of psychoterratic illness is nostalgia, whereas solastalgia is the new form. It is driven by a sense that a well-known landscape might give solace, strength, or support, and when interrupted, discomfort and distress (Albrecht et al. 2007, 95-96).

The multispecies relations, as well as the materializations and practices to deal with solastalgia can be analyzed as *human-tick entanglements* (e.g., Helmreich and Kirksey 2010; Ogden et al. 2013; Haraway 2008; van Dooren et al. 2016). Humans,

non-humans, and things are relationally produced, but the focus on dependence rather than relationality merely draws attention to how humans and ticks get entrapped in their relations with things. Archeologist Ian Hodder distinguishes two forms of dependence. The first and more general focus on dependence recognizes enabling, where the human use of things allows humans to be, live, socialize, think, etc. Hodder uses the term dependence in the sense of “reliance on.” Dependency often leads to a second focus as it involves some form of constraint. When humans and non-humans become involved in various dependencies, these might limit their ability to develop as societies or individuals. Therefore, dependence and dependency create a dialectical struggle within entanglement.

On the one hand, humans and non-humans depend on or rely on things to achieve and enable something. On the other hand, dependency and codependency occur when humans and things cannot manage without each other, and in this dependency, they constrain and limit what each can do (Hodder 2014, 20).

Solastalgia also fuels emotions and the effectiveness of ticks in relation to nature. British-Australian scholar Sara Ahmed writes in *The Cultural Politics of Emotion* that emotions are created in contact with someone or something and are influenced by our cultural beliefs about this someone or that something (Ahmed 2004, 79). Thus, emotions are produced not only in the interaction between people but also in interspecies encounters and rooted in different environments, matters, etc. (Riis & Woodhead 2010,7). I agree with Ahmed and understand that affects, and emotions are influenced by and connected to each other. Therefore, I see the bodily, affective response as part of the feeling that the bodily response gives rise to or vice versa.

We need to understand emotions by focusing on what they *do* rather than what they are. This focus is also inevitable when it comes to ticks. Ahmed believes emotions are more than psychological states and should be understood as performative social and cultural practices. She argues that emotions should be understood as both moving and sticky, where the subject is formed in encounters with others and where the emotions create surfaces and boundaries between subject and object. The mobility of emotions can have different effects: for some, an emotion can be fleeting and temporary; for others, it can mean a fixation—it sticks firmly, as in many cases of ticks (Ahmed 2004, 7–13).

Ticks and Rubber Boots

The front cover of the children’s book shows siblings Eevi and Eino exploring the grass, wearing rubber boots and long-sleeved shirts. In their hands, they have magnifying glasses through which they inspect the grass. A cat is lying in the grass as it is summer, and the flowers bloom. The image emanates peacefulness and joy of exploring nature. The practice and materiality of exploring ticks in their natural surroundings are obvious. However, much more can be written into the cover’s symbolism and the book’s overall message.

Ticks in childhood memories are often described in terms of ordinary. I believe this is also one of the author’s core messages in their book. Ticks live among us in

various surroundings; nothing strange about that. The same message emerges from the childhood memories shared in the material. For many, ticks were everyday companions in their childhood from the 1950s until the 1990s. The carefree yet controlled co-existence with ticks is present in many memories—just as in the book.

When I was little, I didn't know ticks could be dangerous. We played outside and played in the grass without any worries. No one did tick checks, neither on people nor on pets, who ran in the bushes. With the curiosity of a child, we were amazed and we admired all insects with great interest. I think I knew already in elementary school what a tick looks like and that it bites animals. (SKS questionnaire answer number 79)

Many childhood memories are linked to beliefs about where the ticks lived. The living environments of different tick species are also under scrutiny in the book. Ticks live above the surface and in the ground, trees, and undergrowth. Ticks even occupy our homes and the most intimate places in homes, such as beds, for short visits while sucking blood from us or our companion animals.

In many memories, children were supposed to avoid tick-infested natural surroundings, especially alders. They were considered tick magnets as it was in the alders and in their immediate vicinity that ticks were believed to reside. By avoiding alders, one could avoid running into ticks. This protective practice of keeping children away from alders was one way of dealing with the fear of ticks in nature. It was later proven wrong, as the increasing knowledge of where ticks live shifted the tick-infested area around the alders to grass and damp lands. Ticks can even reside in our backyards, very close to where humans live.

I remember well Dad always reminding us not to run near the alders, because that is where the ticks can bite. Therefore, we children avoided running near alders. Sometimes it happened that a tick would bite. After all, we could run barefoot along meadows and on grass. We were not forbidden to do this, because it was not known that it was actually in the grass where the ticks lurked on us. (SKS questionnaire answer number 92b)

The relationship described today is more dysfunctional, bringing us closer to solastalgia and the dramatic change in our relationship with nature. The same reality of wearing rubber boots as in the book is evident in the quote below, but the relationship between ticks and nature is much more problematic than portrayed. The only refuge from ticks is considered a concrete suburb, where ticks cannot get to her but where, at the same time, all things considered worth living are diminished, and the beauty of nature has gone wrong.

My relationship with nature, with the archipelago and the forest, with berry picking and gardening has been fundamentally shaken. My children are hardly allowed to go out into our garden without rubber boots on. We have abandoned the tradition of birthday picnics a long time ago due to the tick misery. The children must be

“body checked” in the evenings, and the same rituals are repeated at different summer camps. The flower beds are left untended because every attempt at gardening brings along ticks. You don’t dare to get a dog because it would bring ticks indoors... I’m not a hysterical neurotic, but rather a bohemian, but because of the cursed creature, all my desire to walk in the woods and fields is GONE. I dream of a home in a concrete suburb.” (SLS questionnaire answer number 32)

The solastalgia in the memories of many interlocutors is strongly marked by “the time before and after the ticks,” i.e., that the awareness of ticks, the number of tick encounters, and the knowledge of tick-borne diseases have increased, especially since the 1990s. This awareness and the concrete experiences of ticks have shaped the everyday life of humans, their companion animals, and peoples’ approach to nature. In some answers, the connection to climate change is brought forth as an obvious reason for the changes in tick density in Finnish nature.

In my childhood, I wasn’t warned about the dangers of ticks. I was just told to watch out for alders, because ticks jump from them. In particular, gray alders were considered as trees where ticks live. Now that is no longer true, either – and ticks have gone from being annoying to being really dangerous. That is why the checks continue, I have no dog but the grandchildren are always checked for ticks. They are also aware of this risk themselves, they move around dressed and they do not walk barefoot. It is a little annoying that they cannot fully enjoy the summer. Fortunately, ticks do not threaten when you are swimming! (SKS questionnaire answer number 78b)

Emerging Tick Habits

When Eevi and Eino explore the outdoors and enter the wild and untamed nature, they wear protective clothing and are encouraged to perform tick checks. With the growing awareness that ticks have increased in number and can be considered a health risk, the approach to ticks and nature has brought about both avoidance and adaptation practices. These practices include, for example, tick-preventing clothing, regularly performed tick checks, tick removals, and using tick repellents on companion animals.

From being perceived as ordinary and relatively harmless, as in many childhood memories, ticks seem to have become more threatening with the reproduction and circulation of tick knowledge and experiences, as well as through the practices we perform to keep our bodies tick-free. These entangled practices combining knowledge sharing, habits of everyday life, and spending time in or avoiding nature are often visible in the material.

Since the ticks have started to spread serious diseases, the attitude towards them has of course changed. From being harmless (in my childhood in the 70s) they have become a terrifying and menacing insect species, comparable with malaria mosquitoes or venomous spiders. (SLS questionnaire answer number 32)

The research about ticks within the field of natural science and within our current tick project increases our knowledge about ticks. The results from the research projects conducted at Finnish universities (e.g., Zöldi et al. 2017; Sormunen et al. 2020; Uusitalo et al. 2022) but also worldwide (e.g., Boulanger et al. 2019; Hansford et al. 2022) affects our understanding of ticks in both positive and negative ways. Interestingly, even though the research does not aim for nature to be considered dangerous and repulsive, it can have such an effect, especially if the information is used in media to portray ticks as part of nature in a certain way.

I no longer move on the beaches or in the grass. Ticks have ruined this country. (vauva.fi 2018)

I am hysterically afraid of ticks, to an extent that it isn't normal anymore (?). I don't dare to go out in the nature properly, or if I do, I keep looking at my legs. I also have a dog and I am hysterical about her catching ticks. I check her every 15 minutes for ticks when we are outside. (vauva.fi 2016)

Health-related concerns are not just news items for the media but a reality our health authorities believe we live in and many people have experienced (see, e.g. Sane 2017). The fear of falling ill is a real concern for many people, highlighted in the material. The fear has even evoked prohibitions, where, for example, children are prohibited from moving in tick-infested natural areas.

We check the children every day and forbid them from running in tall grass, reeds and near alders on the beach – a shame but true. It feels like you cannot do much to avoid being bitten by a tick if you live normally and move around in nature, a bit like it is a matter of luck and bad luck, which is not a pleasant feeling at all, especially considering the children. (SKS questionnaire answer number 48)

In addition to our health authorities confirming that the number of ticks and tick-borne diseases has increased, nature's health-promoting effects are emphasized. Therefore, the risks related to ticks and the benefits of outdoor activities become contradictory when Finland is divided into risk areas based on the occurrence of TBE and Lyme disease. A map indicating the level of risk for TBE, along with statistics on reported TBE cases, is updated annually in the infection register by the Finnish Institute for Health and Welfare (THL 2021; Mäkelä 2021).

Many Finns are concerned about the diseases spread by ticks, and assess the risk of, for example, TBE infection to be much higher than it really is. The risk should not be underestimated, but it should not be exaggerated either, and there is no need to limit spending time in nature in fear of ticks. With the help of the right kind of protection and performing a tick check, you can enjoy nature in peace. (Mäkelä 2021)

The connection between materiality and practices is strengthened, becoming an important component in the handling of ticks. The perception of risk with ticks and nature becomes visible each time someone is surprised to find ticks in areas or places where they have not met ticks before, or where you are not expecting to run into them. Therefore, the division into risk areas can also have an opposite effect: the awareness of and practices around ticks are disabled in areas not categorized or perceived as risk areas. At the same time, we can count on ticks in almost the entire country except for the northern parts.

We live in South Lapland. There are ticks in the Kemi area, but here where we live, I have never seen a tick. I cannot take it anymore when my husband is so hysterical about the ticks. He becomes suspicious of our dog during the summer and is afraid of every little piece of garbage on the dog. The dog is trimmed for the summer with a very short coat, it is easy to go through the fur every day. I have also put a repellent on the dog. (vauva.fi 2019)

From the viewpoint of solastalgia, our relationship with ticks and nature as threatening and risky is not solely based on medical and biological facts but, even more, is culturally constructed. We are socialized into a *tick culture* with tick-related practices for prevention and protection. These practices are preceded by traditions that have been adapted and practiced within the family, for example, when removing ticks, which have been further developed or replaced with new ways.

The best way to protect yourself and your dog is to do a tick check in the evening and in the morning, because if you don't notice the tick in the evening, it has time to attach to the skin during the night and then you have to remove it. (Ilta-Sanomat 2019).

Examine yourself and your dogs. Don't allow dogs in the bed during the night. Better have them sleep on the floor. (Ilta-Sanomat 2018).

The practices are linked to the tick season, which lasts from spring until autumn, and to tick-dense areas of the country. Ticks actively look for blood meals when the temperature is above +5 degrees. The practices are also anchored in a range of products intended to keep ticks at a distance and to remove them. These products are sold in grocery stores and pharmacies. The product range includes many products intended for companion animals, and by protecting them from ticks, we also indirectly protect ourselves. Therefore, the materiality and practices associated with the products are important elements of the multispecies and multi-item entanglements, also bringing about questions of anthropocentrism (see, e.g., Boddice 2011).

In the last ten years or so, the number of ticks in our summer place on the island has been increasing constantly. First, I had to start checking myself in the morning and in the evening, and about five years ago it seemed wise to get vaccinated. Last year I began to check my skin for ticks throughout the day, there are so many of them. In

the family, the attitude has remained the same, that is, we think there will be no Lyme disease if ticks are removed daily, and the series of vaccinations protects with a high probability against TBE. (SKS questionnaire answer number 82)

Our dog and our cat, especially our Norwegian forest cat, has about 10 ticks attached every spring and sometimes they fall off on their own becoming really ugly blood-filled balls on the floor, if you have not noticed them before that. As soon as ticks start to come inside the house with the cat, we buy collars for both the dog and the cat from the pharmacy. They are very expensive but help a little anyway. (SKS questionnaire answer number 48)

Although products used to keep ticks at a distance and to remove them are displayed in visible places in pharmacies and shops every year, we quickly forget that ticks can also occur outside the actual tick season. Therefore, seasonality can also bring about conflicting signals and risks about when to do tick checks, use repellents and dress accordingly.

In addition to the practices adopted to keep ticks away from humans and companion animals, solastalgia also brings forth tick practices linked to different ways of cultivating nature. We are not only avoiding tick-infested areas or using protective clothing; ticks are kept away by keeping lawns as tick-free as possible by cutting and keeping the grass short. These protective measures reinforce the feeling of security and the feeling of control. The cultivated, controlled nature is less risky than the wild, uncontrolled nature.

In the late 1980s and 1990s, it [the cabin] became a place we visited more and more often. The forest groves had to be cut away and the paths were trimmed regularly. The mosquitoes were expelled by removing undergrowth and lower branches of trees. Construction timber was also taken. Grass and thickets no longer provide significant protection, ticks still occasionally appear. (SKS questionnaire answer number 70)

Ticks and Climate Change

When reading the children's book and following the stories Eevi and Eino are told about the ticks by their grandparents, who by profession are natural scientists, I notice something. The book does not cover climate change and the meaning of global warming—the obvious effects of the Anthropocene. Compared with newspaper articles, social media, and questionnaire answers, questions about climate change and ticks are highlighted but not overemphasized. Instead, the focus is drawn towards other species, who are mentioned as hosts for ticks, and with them, ticks are spreading within the country and abroad.

In the 2010s, ticks seem to have become more common. I think climate change is the reason. Certainly, due to climate change and mild winters, there are more of them now, and, on the other hand, I would also believe city animals, which used to roam in

forests but have now moved closer to cities, carry ticks closer to humans than before. For example, deers occasionally visit our yard, and ticks are surely falling from their coats. I also remember reading that a new tick species has spread from Russia to Finland with birds. (SKS questionnaire answer number 6)

The interlocutor refers to *Ixodes persulcatus*, the so called *taiga tick*, as the new tick spreading from the east. According to the European Centre for Disease Prevention and Control, and their latest statistics concerning ticks from March 2022, *ixodes persulcatus* has spread almost all of Finland except for the southwestern parts of the country. (European Centre for Disease Prevention and Control) With climate change, species find new living conditions and spread beyond nation borders. In the spreading, wild host species play a central role. Also, domestic animals, especially dogs, are one of these important hosts. Domesticated animals like dogs challenge the notion of the wild and the uncontrolled. Therefore, not only wild animals carry ticks from the untamed nature to the tamed nature, but instead, dogs and other companion animals with access to the outdoors, as well as humans themselves.

I haven't actually heard much about what people thought about ticks back in the days. But their habitat has definitely changed, because they were first more common on the Åland Islands due to all the deer, which then moved to the mainland and spread out more and more. I don't think we will ever get rid of ticks without reducing the deer population significantly. Ticks are probably here to stay, so you can just forget about walking in blueberry rice and tall grass. At the same time, I don't think they will disappear, even if we reduce the population of deers, because they may have found new "hosts" such as, for example, our companion animals (horse, dog and cat) and other wild animals. (SLS questionnaire answer number 36)

The large dog population is the main reason for ticks to have become more common. No other animal has grown in number as much as dogs and spending time around humans like dogs. (Helsingin Sanomat 2018)

When learning about ticks, Eevi and Eino learned that people used to think ticks lived in trees—as in quoted childhood memories. The knowledge formation about ticks has played an important role in human-tick relations. It has also been one of the inspirations behind the book and its purpose: to provide new information and to break prejudices surrounding ticks, especially among children (Mediatiedote 2021). The lack of information is one of the things brought up in the material, affecting our relationship with ticks.

When I was a child, we thought ticks lived in the alders and that they fall down on us. Now we know that they stay in the grass. But still, we have too little information about how they live, during the day, at night, in moisture, in dry... What is their favorite type of grass etc... More research is needed. I got a tick bite in Turku this year, don't know if it came in my clothes from the cottage and I got bitten when in town, but ticks are said to be already in the city. If they increase, they destroy all the fun of gardening. I don't

think the climate has an effect, but instead, the deers and all the dogs people nowadays have. They are spreading ticks effectively. (SLS questionnaire answer number 39)

This quote leads me to some concluding thoughts. Ticks are experienced and debated in the questionnaires and the public discourse as disgusting and dangerous for the well-being of humans and companion animals. The increasing number of ticks and host species is clearly connected to climate change. The more favorable the climate—also for their host species—the longer ticks stay active looking for blood meals and with the movement of their hosts spread across waist areas of the country. The tick season brings about tick-related practices of avoidance, adaptation, protection, and control.

Solastalgia and the discourse of ticks as risky are projected against nature and ticks as part of nature—not against humans and their ways of exploiting nature. The presence of ticks and the increased knowledge of the health risks ticks bring about have had a profound effect on people's relationship with nature. When ticks are active, human activities outdoors become more dysfunctional. Feelings of solastalgia are channeled into fear and concern for ticks. For many, nature looks different than in their childhood, when the ticks were mostly harmless and interesting components to explore outdoors, until recent decades when they started to be perceived as hazardous and an obvious liability.

Ticks challenge our connectedness to nature. Many activities one could previously enjoy are now excluded due to the solastalgia ticks bring about. The general attitude towards ticks is colored by bitterness and resentment. The fear of ticks has also affected the respondents' relationships with their companion animals, which also undergo regular tick checks and are subjected to various tick-preventing and killing repellents.

As we know, during the last, health-promoting nature has taken on a different dimension in many answers when nature becomes dangerous, risky, and unattractive because of the ticks. The cultivated and controlled nature is perceived as more tick-proof, while the uncultivated and uncontrolled nature poses a significantly greater risk for ticks. Nature and ticks should be controlled by keeping lawns short, avoiding tick-dense areas, wearing tick-proof clothing, and doing regular tick checks on your bodies and the bodies of others.

In the relationship with humans and ticks in nature, materializations and practices become important components to fight solastalgia, maintaining control and increasing the feeling of security. Thus, the practices and materiality associated with preventing and removing ticks constitute a management strategy adapted, incorporated, and developed during the tick season. We become dependent upon these protective practices, which can also restrain us from doing everything we desire. In that sense, a very important question remains: Is it the ticks and the tick-infested nature we fear, or is it the changes in our habits and ways of perceiving the nature we are afraid of?

Notes

- 1 The questionnaire answers used have been anonymized but can be read with the license provided by the archives. The anonymisation has been done in accordance with the National Board on Research Integrity, <https://tenk.fi/en/research-misconduct/responsible-conduct-research-rcr>.

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