



Climate lessons from the Cold Edge: rethinking the University as an ethical ecology

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• Purpose

This largely conceptual study seeks to draw from the author's experience of conversations with Svalbard's educators, lessons for international Higher Education Institutions' engagement with climate change education and thinking for non-specialists. It explores the implications for pedagogy and educational philosophy of the ways in which Svalbard's education has been modified to reflect the imperatives of anthropogenic climate change in a region already sharply feeling its effect.

• Design/methodology/approach

In-situ discussions with Svalbard's educators informed the theoretical work of the author towards the development of conceptual conclusions. The method employed – 'Red Biocentrism' – draws on both radical left and green thought to posit an emplaced, materialist understanding of author's, participants and place's intra-related contributions.

• Findings

That, insofar as universities represent nodes in an ethical ecology, they have a capacity to realise that which is obvious in Svalbard – their role as embassies for their learning-places, generative of spokespeople or ambassadors. But this is possible only if the learning they foster is consciously emplaced.

• Originality

Svalbard bristles with researchers from across the world, its openness making it "an international research village". Whilst hosting the rich diversity of researchers that one would expect of the region, there is sparse published research into the work of some of its climate educators, as a pedagogical project undertaken under such extreme and rapidly changing environmental conditions. This article represents the first to reflect on what can be learnt from the educators of Svalbard by Universities elsewhere.

• Keywords:

Svalbard, climate change, educational philosophy, universities, sense of place, climate ambassadors

Introduction

Even in the most challenging of environmental conditions, where human communities settle, educational activities occur. Learning happens in-place, its processes form part of what we might call the 'inhabiting' of an environ. Learning to be, in an emplaced, embodied, manner orientates the community member to their nexus, not only of fellow humans, but their more-than-human community too – the "land community" (Leopold, 1949, p. 204). This is as true at 78 degrees north as anywhere else. Longyearbyen may be a "community in constant transition", but it remains a

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3 hometown (Grydehøj, Grydehøj, & Ackren, 2012, p.104); home too to the world's Northernmost
4 educational institutions¹. Longyearbyen's kindergartens, school, folkehøgskole and centre of higher
5 education are all beautifully modern, comfortable and homely despite their location at the 'cold
6 edge' of the world. However, unlike the enculturation that enabled indigenous populations of Polar
7 Inughuit to orientate themselves to their home in the Smith Sound Region (LeMoine & Darwent,
8 2016), or the Nganasan to theirs in the Taimyr Peninsula (Gracheva, 1983), the education of young
9 people in Svalbard has taken place continuously for a mere hundred years or so (Arlov, 1989).

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12 This article makes a focus of the lessons to be learnt from Svalbard for Institutions of Higher
13 Education at lower latitudes, across the world. It is argued that the University represents an *ethical*
14 *ecology* wherein learners grow through the relationships of learning that they establish with their
15 more than human and human communities. I emphasize the importance of the university as
16 *emplaced*. This will mean rethinking the role of universities as *embassies* for their place in the world.
17 In the spirit of emplacement, it is important, though, to begin by conjuring a sense of Svalbard and
18 its uniqueness. Whilst it is true that all sites of learning possess singularity and their own
19 peculiarities, Svalbard's global significance brings to the fore its unique '*place-ness*'.

20 21 22 *On the edge*

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24 The toponym, *Svalbarði* makes its earliest appearance in the medieval Icelandic manuscript,
25 *Konungsannáll*, written around 1300 – referring to a mysterious land found, we are told in an
26 account of the life of Bishop Guðmundr, in the year of King Sverrir's coronation, 1194. Happened
27 upon, and surely far too bleak and inhospitable to invite exploration, never mind settlement (Hofstra
28 & Samplonius, 1995, p. 238), this was at the "cold edge" of the Norse world (Chekin, 2020, p.20). A
29 version of the *Landnámabók*, the Book of the Settlement of Iceland, from the second half of the
30 Thirteenth Century provides the directions for the five-day sail to Svalbarði from Northeast Iceland.
31 However, the land described, marking the Northern rim of the Norsemen's known waters, is
32 characterised by such mythical elements as to render its existence beclouded, an Arctic shoreline
33 happed in freezing mists that give this place a symbolic significance at the grey waves' limit – a
34 fantastic 'edge' more than a topographic one. Perhaps this was the mythical land-bridge that joined
35 Grønland to Bjamaland (Russia), encircling the top of both the Norsemen's maritime cosmography
36 and their imagination. As one recent translation of the *Saga of Samson the Fair* has it, "From there
37 all the way to uninhabited Greenland lies the land called Svalbard, and various tribes live there.
38 There are those who live to be two hundred winters old, but seldom have many children..."
39 (Waggoner, 2018, p.272) Whilst it is now widely assumed that, if this elusive land had any basis in
40 historical fact, the Norsemen reached what we now know as Jan Mayen rather than present-day
41 Svalbard / Spitsbergen, the evocative nomenclature – *the frozen edge* – seemed apposite to Barentsz
42 when that archipelago's presence emerged from the mists of mythology and was recorded, in 1596.

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48 Svalbard: more than the intriguing landmass at the top of your map, this place is still one defined as
49 much by the popular imagination as the mundane reality (Saville, 2019). It is an edge-place, one that
50 signals the margins of our Anthropocene world. Why? Because, as the fastest warming part of our
51 planet, its very existence as the 'frozen shore' is in rapid retreat, back into the white mists of an
52 imaginary High North that can but sustain a few more summers. Most recent data shows an Arctic
53 Amplification (AA) of mean temperature increases to four times the Global average, reaching a peak
54 in the open sea to the East of North East Svalbard, where temperatures have risen at around seven
55 times the global average rate (Rantanen et al, 2022). That is to say, temperatures in Svalbard have
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59 ¹ Still more northerly Svalbard schools in Ny-Ålesund and Pyramiden closed in 1963 and 1998 respectively
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3 already risen something like 4.8 degrees above pre-industrial levels and are predicted to increase by
4 a staggering 10 degrees by the century's end.
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6 As a biome, the High Arctic is delineated by the July isotherm (with average temperatures in the
7 short summers not exceeding 4 degrees in its Eurasian sector) (Lee, 2020), so the very region is fast-
8 shrinking and its unique ecosystem retreating towards a terrifying vanishing point. As Saville claims,
9 Svalbard becomes the very "emblem of the Anthropocene" (Saville, 2019, p.574). No longer locked
10 in ice, the drip drip of its ancient glaciers' disappearance increases its multitudinous rhythm towards
11 a flood of white noise. The cold edge is melting. By 2030, if not before you even read this, the North
12 Pole – just five hundred miles beyond Svalbard's Northern tip – will be an expanse of churning, grey
13 open water in high summer (Wadhams, 2017): unimaginable to those of us brought up on tales of
14 Amundsen's flight across endless ice to sight it only a century earlier in 1926². Look again at the map
15 – Svalbard is red.
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19 *Research in the High Arctic*

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21 In 1994, when far fewer researchers were concerned with the part they played in contributing to
22 global climate change, the great Norwegian philosopher, Arne Naess, whose work contributes to
23 framing this article, posed the problem far more pointedly than I. Participating in a unique
24 ecosophical symposium in Longyearbyen – *Deep Ecology in the High Arctic. The Planetary Challenge:*
25 *How do we Change Attitudes?* – he said "To meet here at Svalbard can... only be justified as an
26 expression of resolve to contribute to the dissemination of views favourable to the preservation of a
27 largely intact Arctic." (Næss, 1994, p.14) Nearly thirty years later, and with underlying attitudes
28 barely shifted, the only justification for me to fly to Svalbard remained to contribute through
29 educational work to the dissemination of views favourable to the Arctic's survival. The pace of
30 attitudinal change may have been 'glacial', but the adjective itself seems increasingly misplaced, as
31 the meltwaters outpace public views, and the hope of holding on to an 'intact Arctic' becomes a
32 distant memory.
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36 For Longyearbyen's inhabitants, the everyday experience of global warming is at the centre of their
37 lives (Ylvisåker, 2022), even as attitudes towards issues such as mining, hunting and climate change
38 may not accord with those of a European environmentalist (Saville, 2020, p.102). As Saville
39 identifies, working in Svalbard requires humility, in respect of both place and people. Every aspect of
40 employment in Svalbard – whether tourism, coalmining, or the flourishing research and education
41 sector – is shaped by its relationship to the High Arctic's changing climate. Above Longyearbyen, the
42 snow in spring and early summer forms a wine-glass pattern on the mountainside. Every year, its
43 inhabitants watch to see when its stem 'snaps' as the snow melts. I was told that this usually
44 happened in July until a decade or so ago, then in June. Then, in 2022 the stem snapped in May for
45 the first time; a remarkable visual representation of the rapidly rising temperature, a climate change
46 hourglass. One resident said: "the Champagne glass it's earlier and earlier, and I just think that's very
47 in your face it's very visible. it's very *present*..."
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58 ² Whilst the first person to have verifiably traversed the ice to the Pole did so only months before my own
59 lifetime, in 1968.
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Author's personal photograph, June 2022

Whilst some of its immediate risks, such as landslides and permafrost-melt subsidence, may not be the same as those further south, the existential threat to ways of life, habits, attitudes, the *very reason to be in a place*, these all presage challenges that we must confront in the coming years. So where better to consider the place of climate and environmental education in the Anthropocene? Might any wider lessons for higher education below the transformation zone of the Arctic be drawn from the experience of educating among systems-retreat and potential collapse?

In addressing these questions, the article synthesises the findings of semi-structured interviews with Naess' insights into a Red Biocentric approach. That is, this study takes human productive activity – labour – in the new epoch, including the productive mental work of learning, to be inseparable from the whole-earth-systems into which that activity, as structured by capital, feeds³. The semi-structured interviews were conducted in an emplaced manner, conscious of the blanketing skies and wide expanses of grey-green High Arctic wilderness outside the window. The words spoken were enunciated – all in the language of English, for which I thank the speakers – not against the backdrop of the Adventdalen, but *within* it. The themes that emerged from our conversations in that place, along with some publicly available documents form the subject matter for consideration, and for an analysis framed by Naess' insights and informed by a red biocentric approach. That is to say that the filter through which my findings are disseminated here mean that they cannot be other than political, in the broad sense

³ Taking the High Arctic as an example, such systems include for instance, plant phenology, solifluction, and deglaciation at the interface of biology, geology and political economy.

Red Biocentrism

There are more and more voices saying this is not the sustainable to have, uh, people living – even red people – saying people shouldn't live here... It's not good. Shouldn't be people this far north.

My interviewee in no way intended to allude to the theoretical perspective that I bring to this and other work, but their comment merits a little reflection in framing what follows. I have elsewhere (Boxley, 2019, 2022a, 2022b) called this framing Red Biocentrism in part because it reflects a will to draw into an ecosophical approach, the understanding of human labour, so comprehensively and transformatively mapped within the Marxist tradition. The interviewee's 'red people' are those whose understandings emerge from the labour movement, from the perspective of the working class. In the context of Svalbard, as elsewhere, this perspective is exemplified in the life of its coalminers.

Red biocentrism is an attempt to theorise the activities of human productive labour as occurring within and among the activities of more than human agents, and the physicality and materiality of those undertaking activity as inseparable from wider material nexūs – the ecologies within which they act. All this has a bearing on the ebbs and flows of my interviewees' dialogues, discussed below, particularly in the sense that I take all aspects of human learning to be a form of work – productive labour – which could not take quite the same shape, extend along the same trajectory, or result in identical forms of knowledge – were it to occur as part of a different ecology. There is something about our usual understandings of the phrase 'learning in place' that keeps the verb and the noun discrete. If place is also a process, always and inexorably adapting in all its features, and if the capacity of 'learning' is not imagined as merely a quirk of humanity alone, but also as an aspect of all living things and of life itself, then we can almost dispense with the 'in'⁴. So, let us proceed with this in mind, and in due course, work with a notion of 'emplacement'.

Learning from Longyearbyen

Learning at seventy eight degrees North

With its astonishing rate of temperature gain, many students undertake their programmes of study with an awareness that, as one educator put it, Svalbard is "the place where you can see what will happen to the rest of the world". Whilst not strictly true (a ten degree average temperature increase globally would be unimaginably catastrophic!), the unprecedented local mean temperate increase of 1.25C per decade for the last four decades (Rantanen et al, 2022) offers a forward glimpse at a world of crossed tipping points, in bio-climatic freefall. Some students expect this "canary in the mine" experience, and they are not disappointed.

In that case, *why contribute so significantly to carbon emissions by travelling to Svalbard to study?* My contributors hint that the reason may lie in the benefits of what I'm here referring to as emplacement. An illustration was offered by one educator in discussing a technique used by a

⁴ I say 'almost' as the reader would not forgive the grammatical shuddering resulting from attempting to so reinvent the language for the purpose of a little study such as this

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3 colleague. At the beginning of their programme of study, before going out in the field, students are
4 shown a photograph of the landscape of Spitsbergen:
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6 It shows a picture about data and gets the course [students] to say what they can see, yeah?
7 And then and they say, well, there's a mountain there, over there, and fields over there...at
8 the end of the course, you've chosen the same picture and said "now tell me what you can
9 see?". Well, now you can see the places that we can see the run-off there and we can see
10 how those nutrients are going over there... Now interpret the landscape. You've been there.
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13 The phenomenon is familiar. As a prospective visitor to the islands, I poured like an over-eager
14 holidaymaker over photographs of Longyearbyen and imagined that I had an eidetic picture of the
15 place, whilst attempting to squirm my way out of that sense of twisted identities –
16 researcher/tourist – that Saville identifies (2019). But, as the reader will recognise, there is a great
17 deal of difference between seeing a photograph of a location before you have been there, and
18 viewing one of the same place once you have become familiar with it. The grainy, grey dust of the
19 polar desert caked onto the vehicles' screens and panels, the casually strewn detritus of the old pit
20 gear, these take on a different significance when one notices them in the picture again after
21 experiencing them. For Svalbard's educators, this effect will have been heightened by learners'
22 experience of an emplaced study of landscape, for example noting those features where changes in
23 weather patterns associated with climate change are already having an observable effect. The
24 experience of emplaced learning enables students to draw on such rich gestalt encounter, wrapped
25 around with memory and highlighted in intense sensory flashes.
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29 For all this, the students of Longyearbyen, like others, recognise that there are benefits associated
30 with the digital lectures which it was necessary to introduce at the height of the COVID pandemic.
31 There may or may not be a pedagogical case for such innovation (and this falls well outside the
32 scope of this paper). In discussing student developments in contemporary pedagogy, one educator
33 observed,
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36 everyone says the learning outcome is not as good as, of course, from a lecture with physical
37 presence. But on the other hand, if the person is just going to teach two hours, four hours
38 and not do anything out in the field, we prefer having it digitally anyhow because it doesn't
39 justify the travel and the economic costs.
40

41 Expectations are shifting. In the post-COVID setting, students are envisaging new ways of learning
42 which may open possibilities for reducing climatic impacts. This, combined with the profound
43 internalised sense of uncertainty experienced by many regarding earth systems, has resulted in a
44 challenge to established ways of working, and this challenge been initiated and led by students.
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49 *The student-led challenge*

50 Like many institutions of Higher Education, in 2022, the University Centre on Svalbard launched a
51 Green Strategy for 2030, at least partly in response to student pressure. The new reality of this
52 'bottom-up' impetus for institutional change was something echoed by all those with whom I spoke.
53 This is perhaps unsurprising, and mirrors the trend consistently recognised in the UK, for example, in
54 research conducted by Students Organising for Sustainability (SOS, 2022).
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57 The official statement of the UNIS Student Council welcomed new commitments to education for
58 sustainability, the embedding of the UN Sustainable Development Goals (SDGs) in programmes and
59 a range of measures to reduce and compensate for greenhouse gas emissions. However, additional
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3 improvements have also been sought. From an international perspective, it is interesting to note
4 both the local specificity of these demands, and their more general applicability.
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6 Firstly, students demand a new course in sustainability, but make it clear that a full assessment
7 should be undertaken first to ensure that there are “substantial reasons to teach it in Svalbard,
8 where the environmental footprint is far higher than on the mainland”. (UNIS Student Council, 2022)

9 Secondly, a short course for all students is demanded, not only for those interested in sustainability,
10

11 where students can learn about the exceptional extent that Svalbard is already affected by
12 climate change and become aware that what they can already see here is just the beginning
13 of dramatic global changes – and that they have the special chance to be among the first to
14 witness and study it. They should then acquire tools and knowledge beyond their field of
15 study ([e.g] circular economy, doughnut economics, etc.) that they can use to improve
16 climate-friendliness back home where climate change is not yet visible. (UNIS Student
17 Council, 2022)
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21 A credit-bearing module, open to all, and scheduled to ensure maximum participation, may be a
22 gold-standard to which other institutions might aspire, but the wider significance may lie in a new
23 reality. As students become aware of the intensity and seriousness of climate-induced changes in
24 their place of study, some are unsurprisingly desirous of opportunities to learn further of their
25 options, shorter and longer term, of the implications for their futures, their employment and
26 wellbeing, and the prospects for places that they may have grown attached to.
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29 The upward pressure from students to initiate institutional changes in educational establishments
30 represents a direct challenge, too, to educators. In Svalbard, perhaps as elsewhere, even academics
31 with an acute knowledge of climate change may have grown used to practices and methods of
32 working rooted in ‘pre-Anthropocene times’. It can sometimes be difficult to recognise the
33 challenges presented by students as positive rather than merely inconvenient and complicating
34 disruptions to established practices. One may have good personal reasons for bringing a colleague
35 for a face-to-face lecture,
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38 But you know, it [climate change] has been a much higher focus so, that's why I think they
39 come here, and they are quite aware, and then they benefit and learn a lot from being here
40 and actually experiencing it, not just reading it in the book. But at the same time, or the
41 latest few years actually, there is some new twist coming and that's the twist where
42 students are challenging all this, saying, why do you bring a lecturer here to talk to us for
43 two hours? You could do it digitally.
44
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46 In calling for course climate calculators on their websites, the UNIS Student Council seeks to turn the
47 aspiration of reduced travel into a quantifiable reality, and then goes further to demand that their
48 institution compensates for course-related emissions, and include such costs in its fee structures.
49

50 Also notable in the student-led challenge is a recognition of the character of that damage, wrought
51 by the model of education in which those of us in the rich world participate. It is noted that, for the
52 most part ‘we’ are “people with no Arctic background”, and that courses would benefit from actively
53 including students from “indigenous communities around the Arctic circle” such as the
54 aforementioned Nganasan and Polar Inughuit,. The same is true for potential students from the
55 “less-developed countries” currently suffering the highest toll in death and displacement from
56 anthropogenic climatic effects.
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59 *Climate ambassadorship*
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3 This takes us to the question of environmental ambassadorship. Many of the students who take
4 courses in Svalbard's small, specialist educational institutions, whether at tertiary, higher or
5 postgraduate level, do not make climate change a central focus of their study, and as one
6 interviewee noted, only a small proportion of students go on to be scientists. However, it was
7 remarked, some go into policy making and governance of one kind or another, and all must make life
8 decisions informed by climate change, so the "biggest thing we can do is educate these people who
9 are actually going to make decisions now, and of course in the future... we have an important
10 contribution to make in educating the right decisions as a payoff, long term". The "payoff": this is
11 the key, the "justification", as Naess (1994) put it, for the travel to Svalbard. To invoke his entreaty
12 again, at this juncture, what ethical justification could stand the cost of our environmental impacts?
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16 In an argument on population reduction, which I otherwise reject, Naess nevertheless makes a
17 characteristically insightful observation about higher education that is apposite here, "with higher
18 education one may expect that a higher fraction of the population will feel an urge to stay for a
19 while in the Arctic... it is clear that the problem of protecting those regions increases with population
20 and also with increases in the level of education." (Naess, 1994, p.) Higher education itself has a
21 huge environmental cost, including on the Arctic. The paying down of our debt to the Arctic – the
22 "payoff" – can be achieved through those longer term, non-synchronous (Boxley, forthcoming),
23 aspects of the learning that result in sharing, exchange, decision-making. These add up to work as an
24 'ambassador' for the High Arctic – often quietly and unobtrusively, unnoticed; sometimes more
25 visibly or vocally in the ethical responses we make to everyday situations and challenges.
26 Ambassadorship involves not soapboxes, but a way of living that may, in turn influence others to
27 adopt views favourable to the preservation of the Arctic.
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31 It is, as one educator said, hard to influence others to take the right decisions if you don't have the
32 "basic concepts" in respect of climate change. If they are to act, informally, as ambassadors, the
33 credibility of former students necessarily depends to some extent on their ability to demonstrate an
34 appreciation of evidence of climate change impacts in their areas of study, so that data-informed
35 knowledge remains a bedrock of decision-making. Beyond the "basics" that a non-scientist (like the
36 author) can – and probably should – acquire during any visit to Svalbard, there is vast complexity in
37 understanding the factors involved in local Arctic Amplification effects, its causes and impacts on
38 local biology, glaciology, and so on. One participant observed that, for students
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41 I think it's probably very, very dependent on what and who they encounter and on
42 themselves, there's a lot of chance, I think. I hope at least all that go through us are to some
43 degree ... thoughtful...but I realize we do still have a way to go to put it [their study] in a
44 good context. We're working on it. Especially context that facilitates discussion and a
45 reflection on the complexity of the situation.
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48 At this time, relatively few laypeople share much knowledge of Arctic climate change biology and
49 geology, making the role of students of these subjects second only to the academic and industry
50 experts who hold the potential to impact on policy. Indeed, we might apply to the great resource of
51 invaluable knowledge that Svalbard's students acquire something of the analysis that Noel Castree
52 (2017) employs in relation to the geoscientific community in higher education.
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55 *Students as "Spokespersons for an unstable earth"*

56 The quotation in the subtitle paraphrases Castree – "Geoscientists as spokespeople for an unstable
57 earth" (Castree, 2017, p.54). The point he makes is hardly arguable, that the detection of ACC is
58 "perhaps the most important contribution that geoscience has ever made to human understanding"
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(Castree, 2017, p.54) , and he goes on to reiterate that at the turn of the Anthropocene, when human influence has extended well beyond what was formerly thought possible, into realms previously reserved for ocean currents and volcanos, geoscience has found itself inexorably drawn to cross the “is-ought” boundary into proclamations about the need for “planetary stewardship” (Steffen et al, 2011). It is the apparent willingness of geoscientists across the disciplines to call out the crisis that has led leftists like Naomi Klein (2014) to proclaim their importance – indeed their radicalism. Castree takes a further next step, considering whether the geoscience “might be deliberately conducted in the service of something more just, egalitarian and imaginative than the rapacious capitalist world whose perpetuation it is so deeply implicated in.” (Castree, 2017, p.54)

To draw back a little, if Svalbard is, as we considered earlier, the very emblem of the Anthropocene (Saville, 2019), and its students uniquely placed to understand their own imbrication within its future, then their role as ‘spokespersons’ for the High Arctic might also be highlighted as of significance. Whether those of us who have visited the region appreciate it or not, we, witnesses to the melting of the “cold edge”, carry an awareness second only to that of the scientists themselves of the immediacy of anthropogenic forcing. What, then, are the implications for ambassadorship?

When geoscientists seek to speak beyond their own, they may choose caution when engaging directly with policymakers, but, Anderson and Bows argue, they have a responsibility to speak “clearly, honestly and without fear” (Anderson and Bows, 2012, p. 640). The same might be said of the students of Svalbard’s gathering climate catastrophe. Whilst few may become scientists, or policymakers, the voice of the Arctic’s witnesses may indeed come to the service of those who seek radically to challenge the systems of business as usual that perpetuate its meltdown. Those who might charge that geoscience should remain ‘value-free’ cast adrift its mooring to the states that fund such projects as the giant Nansen Legacy that ranges the Barents Sea to the east of Svalbard. As Castree argues, “biophysical science always already contains contestable value-judgments about what in the world is worth knowing (and how). These judgments, once committed to, entrain resources and close off other potential lines of enquiry. In turn, science’s representations and inventions are political even before entering the realm of policy making, commerce or the public domain.” (Castree, 2014, p.66). Add to this the fraught scientific posturing that has marked states’ claims to hold stakes in the ‘Arctic landgrab’ that has followed as inevitably as the meltwaters the rapid retreat of the sea ice, and the opening up of economic opportunities (Pedersen, 2021). Svalbard’s students are thoroughly wrapped around with these politics. In truth such entanglement is an unavoidable feature of the collapse in a ‘fact – value’ dualism that the Anthropocene moment hails. As has now been widely rehearsed (e.g., Hamilton, et al, 2015) a Holocene ontology that placed barriers between the ‘social’ and the ‘natural’ is in as rapid a retreat as the Arctic ice. Simply restating the facts – observed, measured, quantified – and inserting them into a ‘social’ process with the aim of shifting opinion: this process looks archaic.

In this regard, Naess’ approach was prescient, in insisting on a radical, and highly value-driven retelling of the Svalbard experience. The Arctic ambassador may be dispassionate in their advocacy, but they are neither disinterested nor divested. For Red Biocentrism, their work of learning forms a part of the ecologies within which they operate, living always with uncertainty regarding the choices they make or the potential ripples that their learning sets in train throughout the web of which they are a part. For one of my interviewees, a university educator,

“people want certainty and they want, when it comes to the environment or the climate change, they want answers. But actually the answers are something you just have to keep looking for and looking for and looking for yourself and live with the uncertainty of never

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3 knowing for sure, what is the right course of action, what is the right thing to do? And that's
4 probably 100 or 1000 or 10,000 different right answers, yeah?"
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6 Students learning in place, may be instilled with a sense of the complexities and uncertainties of
7 climate change, along with the inevitability of ongoing biosystemic crisis, and the memories of their
8 emplaced higher education which will, hoped this Svalbard educator, last a lifetime. A lifetime of
9 ambassadorship is perhaps too much to expect, but for this educator as for others, institutions of
10 higher education must at least try to act as diplomatic schools for the education of climate
11 ambassadorship. This can only be achieved by developing and promoting the university as a site of
12 emplaced learning, of geographical, bioclimatic uniqueness: the opposite of the airport-lounge
13 corporate blandness of many placeless institutions. In this regard, as in others, Svalbard shows the
14 way. Its uniqueness, fragility, uncertainty at the cold edge revealing the unfelt or unnoticed
15 uniqueness of every other higher education institution, and so the universality of that emplaced
16 singularity so fertile, so necessary for the growth of ambassadorial capacity.
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22 Implications for practice in the university 23 24 25

26 *Your place of learning* 27

28 It is unlikely to be an easy task to assist students in understanding that their academic labour
29 represents a bio- and geo-constitutive process. Our work, as members of educational, scholarly or
30 academic communities contributes to the ongoing constituting of place as process. Rather than
31 social psychology in reverse, Red Biocentrism describes the 'two-way street' (Boxley, 2012) by which
32 ecosystems and social systems are co-created by the activity of interrelated and co-constitutive
33 elements: human and more than human activity. As has been suggested here, and illustrated by the
34 experience of Svalbardian education, learners and teachers can *unconsciously* contribute to the
35 constituting of their learning places through their patterns of travel and consumption, their general
36 habitus; or they can better understand the contribution that their learning produces, at practical and
37 philosophical levels, and make of this a *conscious* process. Svalbard forces the reality of emplaced
38 learning into consciousness. It is the sharp, cold edge of conscientization.
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41 Programmes of study such as those offered in Svalbard might illustrate efficiently to any student
42 wishing to participate (from any programme across their institution) how climate change has already
43 impacted the flora, fauna and wider systems in the immediate area within which students are
44 learning. The gold standard called for by Svalbard's students is credit-bearing modules –
45 'Longyearbyen-, Winchester- or Manchester-in-transition' – to include (i) a sense in which
46 biodiversity, air quality, watercourses, etc., have been impacted already by global heating, and (ii)
47 the contribution that students have made to heating through their activity. But how institutions
48 might go about beginning to consider how to apply the lessons of HE at the sharp edge will, needless
49 to say, vary enormously dependent on institutional contexts (Reeves et al, 2023).
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53 Conscious interpretation of place is old hat to critical geographers and geologists, but for those of us
54 involved in higher education more generally, we might wish to consider how the heightened sense
55 of place that shifts perspective from an inscrutable landscape to a de-coded one might benefit our
56 students' awareness of their own place in and impact on such landscapes and locations. Such an
57 awareness, it has been suggested, emerges only with emplaced learning "in the field" (Boxley,
58 forthcoming). As one Longyearbyen educator remarked, all this
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3 “is very good. Which is a start. But it's not enough. Because to understand, when so many
4 things we can look up at the moment, what we can't look up is training in understanding
5 complexity, yeah? And to think a bit more than this... Think connectivity. How are things
6 connected? I think this is one of the elemental things to teach and to be comfortable with,
7 the uncertainty this complexity gives.”
8
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10 Complexity is the challenge and the joy of thinking from within place. Embeddedness, of learning
11 and living, necessarily implies an appreciation of complexity and uncertainty. So, the questions
12 posed, but as yet unanswered for courses of higher education: how do we ensure that our learners
13 appreciate their places of higher learning? How do we ensure that their education is understood as a
14 constitutive part of those places? In respect of climate change, how do we encourage students to
15 understand the contribution of their programmes of study to climate impacts locally and globally? I
16 want to say, in Svalbard it is easy. It is obvious. And that is the beauty of thinking through Svalbard.
17 The crowded streets of Manchester, Winchester or Oslo mask the contributions of our higher
18 education in all respects by merging them into the intoxicating, swirling flow of masses, vehicles,
19 construction-sites. By seeing our places of learning not only for what they are, but also through the
20 lens of the High Arctic, we might become more aware not only of their fragility, but also of their
21 value.
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25 Longyearbyen, as has been noted, is small. Its students represent a transient but significant
26 proportion of its population. This makes it far easier for its institutions to sensitively integrate into
27 human and more-than-human communities. The scale, commented one educator, “helps them to
28 appreciate and understand the place rather than being isolated or insulated in a student
29 community”. Students are an integral and valued constitutive part of small but complex social and
30 natural ecologies. By way of example,
31
32

33 “Students have run a second hand store for the local community since 2004 – a free
34 exchange site for clothes, household items, games, books, and for repairing and passing on
35 bicycles, etc. But this is crucially a part of the community, not a place for students only or
36 mainly.”
37

38 Similarly, Svalbard’s students have set up and operated other organisations and clubs within the
39 wider community. The functioning of civil society is therefore enriched through the active
40 engagement and participation of the student community. In this way, students come to further
41 appreciate their contribution to the fragile complexity of a community hanging onto the cold edge.
42
43

44 For one of my interviewees,

45 “There’s also a synergetic effect by these small student group type bonds, and you meet
46 maybe a student from Germany that is very concerned about the climate and is the
47 promoter of the climate change march in town here. Yeah. And then maybe you go back to
48 your country or your Norwegian university and you are even more concerned ... The
49 smallness of all this also makes clear one’s own smallness and the close contact that you
50 have with the nature here.”
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54 The ‘tightness’ of a small community of students may generate a microcosmic mirror in learners’
55 minds of the complexity of the far larger land communities within which they are nested. This
56 educator’s choice of word, ‘synergetic’ suggests that parts of the community feed one another’s
57 ideas, resources, courage, motivation. How then, if not to replicate this scale, to generate the
58 possibility of complex communities of learners, perhaps from different disciplines, coming together
59 to discuss community, sustainability, and the action necessary for their maintenance and transition?
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3 And yet again, in Svalbard, it's not so much 'easy' as an almost inevitable consequence of the
4 context of a community of learners on the edge of catastrophic climate change. So, how do we at
5 lower latitudes apply the lessons?
6

7 The university exists as an ethical ecology, irrespective of its location. Its tendrils reach across the
8 landscapes that its learners inhabit. Every opportunity should be grasped to enmesh HE students
9 within their places of learning, through landscapes, through communities and in the employment
10 they seen whilst studying. But, this only goes part of the way. In order for learners to become
11 spokespeople for their unstable environments, the university itself must assume the identity of an
12 embassy for its place, its learners growing into ambassadors within the complex ecology of their
13 emplaced education.
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16 Whilst the scale of most Universities' wider communities beclouds their fragility, a consideration of
17 the place of water-, food- and energy-security in supporting ongoing emplaced provision quickly
18 reveals that some of the vulnerabilities of Longyearbyen can be felt more widely: for example, a
19 reliance on unsustainable transport systems and the unendurable greenhouse gas impacts of many
20 campus-based models (an analysis of which falls beyond the scope of this paper).
21
22

23 Some of the drivers for a sustained and searching engagement with climate change issues are shared
24 between Longyearbyen, my own UK University and, no doubt, many others. For example, 'student
25 satisfaction' – some students are *happier* when they feel their own contribution to climate change is
26 being minimised; reputation – institutions do not wish to be tarred with the brush of unsustainable
27 carbon impacts; academics' depth of knowledge of climate change impacts, locally to their
28 institution and internationally; the need for efficiencies associated with travel. In Svalbard we find a
29 mirror of our lives. As the emblem of the Anthropocene, its vulnerabilities are glaring, "in your face,"
30 as one participant said. Ours may be less so, but that makes them no less real. In essence, this is the
31 simple heart of the lessons of this study. When Svalbard's students choose to travel, to research in
32 the field, to learn in its seminar rooms, they can do little to avoid the reality of their own ecological
33 impacts, staring them in the face. This is evident, albeit indirectly, in the retreat of the sea-ice, in the
34 melting permafrost and increased avalanche risk, in the phenology of the lengthening growing
35 season, the milder summer days, the accelerating deglaciation, and on and on. Drip drip drip.
36
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38

39 As Svalbard's students and educators have made plain, these impacts of anthropogenic climate
40 change are rendered all the more tangible by the pedagogical shifts that have followed in train
41 (Boxley, forthcoming), by the use of technologies to minimise students' and researchers footprints in
42 the field; by the restrictions increasingly placed on environmentally damaging behaviours by
43 Svalbard's Governor (Sysselimesteren på Svalbard, 2019). If our students do not hear the dripping
44 (and of course they cannot and should not all go to Longyearbyen for a last-chance listen) then we
45 could do worse than take from Svalbard what we can of their pedagogical realignment.
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49 Here, I have mentioned a few of the things I took from the High Arctic, and offer them in the spirit of
50 ambassadorship to invite a consideration of this question. After Naess, "can I justify my practice in
51 support of an intact x" where x represents your bioregion? The possibility of an intact Arctic is
52 passed, and for many of us at lower latitudes, the implications of this bitter reality have yet to be
53 felt. So, as the last days of the High Arctic biome and the education it provides play out, I leave the
54 final word to Longyearbyen resident, Line Nagell Ylvisåker,
55

56 Svalbard is still the Arctic, at least for a little while longer...Hopefully the natural fluctuations
57 of the ocean currents will provide more cold, pastel winters in the years to come, before the
58 milder, darker autumns and winters catch up to us. But the Svalbard my great-grandchildren
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3 will live in or visit will certainly be different than the one we live in now. The Arctic may even
4 have disappeared completely. (Ylvisåker, 2022, p. 166)
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12 **References**

13
14
15
16 Anderson, K. and Bows, A, (2012) A New Paradigm for Climate Change. *Nature Climate Change* 2, pp.
17 639-40

18 Arlov, T.B. (1989) *A Short History of Svalbard*. Oslo: Norsk Polarinstitut

19
20 Boxley, S. (2012) *The Great Act of Learning: A red-green cosmopolitics of emergence*. PhD Thesis.
21 University of Winchester.

22
23 Boxley, S. (2019) "Red Biocentrism for the Anthropocene", *Australian Journal of Environmental*
24 *Education*, Vol 35 No 3, pp. 183-197. <https://doi.org/10.1017/ae.2019.18>

25
26 Boxley, S. (2022a) "ESC in the Anthropocene: Education for Sustainability and Communism", *Critical*
27 *Education*, Vol 13 No 1, pp. 51-69 <https://doi.org/10.14288/ce.v13i1>

28
29 Boxley, S. (2022b) "Striking in the City, Making Love in the Fields: Unsnarling the Wild Pedagogies of
30 Earth Activism", *Coreopsis: Journal of Myth and Theatre* Vol 10 No 1
31 [https://societyforritualarts.com/coreopsis/spring-2022-issue/striking-in-the-city-making-love-in-the-](https://societyforritualarts.com/coreopsis/spring-2022-issue/striking-in-the-city-making-love-in-the-fields/)
32 [fields/](https://societyforritualarts.com/coreopsis/spring-2022-issue/striking-in-the-city-making-love-in-the-fields/)
33

34
35 Boxley, S. (forthcoming) "The Importance of the University as Emplaced: Lessons from
36 Longyearbyen."

37
38 Castree, N. (2017) "Unfree radicals: Geoscientists, the Anthropocene and Left Politics", *Antipode* Vol
39 49 No 1, pp. 52–74.

40
41 Chekin, L.S. (2020) "Svalbarðs fundr. The place name Svalbard and its connotations in medieval and
42 modern literature and cartography" *Nordlit* vol. 45 p. 18-38

43
44 Fedesco, H. N., Cavin, D., and Henares, R. (2020) "Field-based Learning in Higher Education:
45 Exploring the Benefits and Possibilities", *Journal of the Scholarship of Teaching and Learning*, Vol 20
46 No 1. <https://doi.org/10.14434/josotl.v20i1.24877>
47

48
49 Gracheva, G.N. (1983). *Traditsionnoe mirovozzrenie okhotnikov Taimyra (na materialakh nganasan*
50 *XIX – nachala XX veka)*, Leningrad: Nauka. Available at: [http://www.kunstkamera.](http://www.kunstkamera.ru/lib/rubrikator/03/03_03/gracheva_1983/)
51 [ru/lib/rubrikator/03/03_03/gracheva_1983/](http://www.kunstkamera.ru/lib/rubrikator/03/03_03/gracheva_1983/)
52

53
54 Grydehøj, A., Grydehøj, A. and Ackrén, M. (2012) "The Globalization of the Arctic: Negotiating
55 Sovereignty and Building Communities in Svalbard, Norway", *Island Studies Journal*, Vol. 7 No. 1 pp.
56 99-118
57
58
59
60

- 1
2
3 Hamilton, C., Bonneuil, C. and Gemenne, F. (2015) Thinking the Anthropocene. In Hamilton, C.,
4 Bonneuil, C., and Gemenne, F. (editors) *The Anthropocene and the Global Environmental Crisis*.
5 London: Routledge, Pp 1-13
6
- 7 Hofstra, T., and Samplonius, K. (1995). "Viking Expansion Northwards: Mediaeval
8 Sources", *Arctic*, Vol 48 No 3 pp. 235-247
9
- 10 Johnson, J.T. (2012) "Place-based learning and knowing: critical pedagogies grounded in
11 Indigeneity", *GeoJournal* Vol 77, pp. 829–836 <https://doi.org/10.1007/s10708-010-9379-1>
12
- 13 Johnston, M., Viken, A., & Dawson, J. (2012) Firsts and lasts in Arctic tourism: Last chance tourism
14 and the dialectic of change. In H. Lemelin, J. Dawson, & E. J. Stewart (Eds.), *Last Chance Tourism* (pp.
15 10–24). Abingdon, Oxon: Routledge.
16
- 17 Lee, Y. (2020) *Arctic Plants of Svalbard: What we Learn from the Green in the Treeless White World*.
18 Cham: Springer
19
- 20 LeMoine, G.M., and Darwent, C.M. (2016) "Development of Polar Inughuit culture in the Smith
21 Sound region". In: Friesen, T.M., and Mason, O.K., eds. *The Oxford handbook of the prehistoric*
22 *Arctic*. Oxford: Oxford University Press. 873 – 896
23
- 24 Leopold, A. (1949) *A Sand County Almanac: Sketches Here and There*. New York, NY: Oxford
25 University Press
26
- 27 Naess, A. (1994) The Arctic Dimension Outside and Inside Us. In Stoltz, E. & Buzza, R.
28 (editors) *Proceedings of 'Deep Ecology in the High Arctic. The Planetary Challenge: How do we*
29 *Change Attitudes?' 1994 International Ecosophical Symposium. Svalbard, Norway, 19 August - 2*
30 *September*. Longyearbyen: The Norwegian Polar Institute, pp. 13-19.
31
- 32 Naess, A. (2008) *The Ecology of Wisdom*. Berkeley, CA: Counterpoint
33
- 34 Pedersen, T. (2021) "The politics of research presence in Svalbard", *The Polar Journal*, Vol 11 No 2,
35 pp.413-426, DOI: 10.1080/2154896X.2021.1883900
36
- 37 Raes, A., Detienne, L., Windey, I. and DePaepe, F. (2020). "A systematic literature review on
38 synchronous hybrid learning: gaps identified", *Learning Environ Res*, Vol 23, pp. 269–290.
39 <https://doi.org/10.1007/s10984-019-09303-z>
40
- 41 Rantanen, M., Karpechko, A.Y., Lipponen, A., Nordling, K., Hyvärinen, O., Ruosteenoja, K., Vihma, T.
42 and Laaksonen, A. (2022) "The Arctic has warmed nearly four times faster than the globe since
43 1979". *Commun Earth Environ* 3, Vol. 168. <https://doi.org/10.1038/s43247-022-00498-3>
44
- 45 Reeves, A, Gwilliam, J., Harrison, P., Price, L., Schantz, N., Ribchester, C., Hughes T., Gretton, S.,
46 Strachan, S., Logan, L., Boxley, S., Lengthorn, E., Barrett, H. and Peres, S. (2023) *Education for*
47 *Sustainable Development and Academic Quality: Principles and Processes for Higher Education*
48 *Providers*. QAA. Available at [https://www.qaa.ac.uk/docs/qaa/members/education-for-sustainable-
49 development-and-academic-quality-principles-and-processes-for-higher-education-
50 providers.pdf?sfvrsn=63e2ac81_8](https://www.qaa.ac.uk/docs/qaa/members/education-for-sustainable-development-and-academic-quality-principles-and-processes-for-higher-education-providers.pdf?sfvrsn=63e2ac81_8)
51
- 52 Saville, S.M. (2019) "Tourists and researcher identities: critical considerations of collisions,
53 collaborations and confluences in Svalbard", *Journal of Sustainable Tourism*, Vol 27 No 4, pp.573-
54 589, DOI: 10.1080/09669582.2018.1435670
55
56
57
58
59
60

1
2
3 Saville, S. M. (2020) Locating value(s) in political ecologies of knowledge: The East Svalbard
4 management plan. In S. M. Saville & G. Hoskins (Eds.), *Locating Value: Theory, Application and*
5 *Critique*, pp. 173–185. London: Routledge.

6
7 SOS (2022) *Sustainability Skills Survey 2021-22. Research into Students' Experience of Teaching and*
8 *Learning on Sustainable Development. Higher Education report*. Students Organising for
9 Sustainability – United Kingdom, available at [https://uploads-](https://uploads-ssl.webflow.com/6008334066c47be740656954/62de805cb0d9030a96c6e88a_20220125_SOS-UK%20Sustainability%20Skills%202021-22%20-%20HE%20only%20-%20FINAL.pdf)
10 [ssl.webflow.com/6008334066c47be740656954/62de805cb0d9030a96c6e88a_20220125_SOS-](https://uploads-ssl.webflow.com/6008334066c47be740656954/62de805cb0d9030a96c6e88a_20220125_SOS-UK%20Sustainability%20Skills%202021-22%20-%20HE%20only%20-%20FINAL.pdf)
11 [UK%20Sustainability%20Skills%202021-22%20-%20HE%20only%20-%20FINAL.pdf](https://uploads-ssl.webflow.com/6008334066c47be740656954/62de805cb0d9030a96c6e88a_20220125_SOS-UK%20Sustainability%20Skills%202021-22%20-%20HE%20only%20-%20FINAL.pdf)
12
13

14 Steffen, W., Persson, Å., Deutsch, L., Zalasiewicz, J., Williams, M., Richardson, K., Crumley, C.,
15 Crutzen, P.J., Folke, C., Gordon, L., Molina, M., Ramanathan, V., Rockström, J., Scheffer, M.,
16 Schellnhuber, H.J. and Svedi, U. (2021) “The Anthropocene: From Global Change to Planetary
17 Stewardship” In: Benner, S., Lax, G., Crutzen, P.J., Pöschl, U., Lelieveld, J. and Brauch, H.G. (eds) *Paul*
18 *J. Crutzen and the Anthropocene: A New Epoch in Earth's History. The Anthropocene: Politik—*
19 *Economics—Society—Science, vol 1*. Cham: Springer. https://doi.org/10.1007/978-3-030-82202-6_13
20
21

22 Sysselmasteren på Svalbard (2019) Environmental protection. Available at
23 <https://www.sysselmasteren.no/en/the-governor-of-svalbard/environmental-protection/>
24

25 UNIS Student Council (2022) *Statement on Green Strategy*. Unpublished flyer.

26
27 Wadhams, P. (2017) *A Farewell to Ice: A Report from the Arctic*. New York, NY: Oxford University
28 Press

29
30 Waggoner, B. (2018) *Sagas of Imagination: A Medieval Icelandic Reader*. Philadelphia, PA: The Troth

31
32 Ylvisåker, L.N. (2022) *My World is Melting: Living with Climate Change in Svalbard*. Oslo: Samlaget
33
34
35
36
37
38
39
40
41
42
43
44
45
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Climate lessons from the Cold Edge: rethinking the University as an ethical ecology

• Purpose

This largely conceptual study ~~seeks to draw~~s from the author's experience of conversations with Svalbard's educators, lessons for international Higher Education Institutions' engagement with climate change education and thinking for non-specialists. ~~It explores the implications for pedagogy and educational philosophy of the ways in which Svalbard's education has been modified to reflect the imperatives of anthropogenic climate change in a region already sharply feeling its effect.~~

• Design/methodology/approach

In-situ discussions with Svalbard's educators informed the theoretical work of the author towards the development of conceptual conclusions. The ~~method theoretical frame~~ employed – 'Red Biocentrism' – draws on both radical left and green thought to posit an emplaced, materialist understanding of author's, participants and place's intra-related contributions.

• Findings

That, insofar as universities represent nodes in an ethical ecology, they have a capacity to realise that which is obvious in Svalbard – their role as embassies for their learning-places, generative of spokespeople or ambassadors. ~~But this is possible only if the learning they foster is consciously emplaced.~~

• Originality

~~Svalbard bristles with researchers from across the world, its openness making it "an international research village". Whilst hosting the rich diversity of researchers that one would expect of the region, there is sparse published research into the work of some of its Svalbard's climate educators, as a pedagogical project undertaken under such extreme and rapidly changing environmental conditions. This article represents the first to reflect on what can be learnt from the educators of Svalbard by Universities elsewhere.~~

• Keywords:

Svalbard, climate change, educational philosophy, universities, sense of place, climate ambassadors

Introduction

Even in the most challenging of environmental conditions, where human communities settle, educational activities occur. Learning happens in-place, its processes form part of what we might call the 'inhabiting' of an environ. Learning to be, in an emplaced, embodied, manner orientates the community member to their nexus, not only of fellow humans, but their more-than-human community. ~~too – the "land community" (Leopold, 1949, p. 204).~~ This is as true at 78 degrees north

as anywhere else. Longyearbyen may be a “community in constant transition”, but it remains a hometown (Grydehøj, Grydehøj, & Ackren, 2012, p.104); home too to the world’s Northernmost educational institutions¹. Longyearbyen’s kindergartens, school, folkehøgskole and centre of higher education are all beautifully modern, comfortable and homely despite their location at the ‘cold edge’ of the world. However, unlike the enculturation that enabled indigenous populations of Polar Inughuit to orientate themselves to their home in the Smith Sound Region (LeMoine & Darwent, 2016), or the Nganasan to theirs in the Taimyr Peninsula (Gracheva, 1983), the education of young people in Svalbard has taken place continuously for a mere hundred years or so (Arlov, 1989).

This article makes a focus of the lessons to be learnt from Svalbard for Institutions of Higher Education at lower latitudes, across the world. **There are three aspects to this. (1)** It is argued that the University represents an *ethical ecology* wherein learners grow through the relationships of learning that they establish with their more than human and human communities. **(2)** I emphasize the importance of the university as *emplaced*. **And (3)** This will mean rethinking the role of universities as *embassies* for their place in the world. **This is primarily a conceptual piece. Its argument draws on the words spoken by Svalbard educators, but, fundamentally operates with a conceit of the relation between edge and the centre, at a conceptual level. The claim is simply that the unique view from the edge has the potential to inform practice across the globe: the edge not only borders but shapes the whole.**

In the spirit of emplacement, it is important, though, to begin by conjuring a sense of Svalbard and its uniqueness. Whilst it is true that all sites of learning possess singularity and their own peculiarities, Svalbard’s global significance brings to the fore its unique ‘*place-ness*’.

On the edge

The toponym, *Svalbarði* makes its earliest appearance in the medieval Icelandic manuscript, *Konungsannáll*, written around 1300 – referring to a mysterious land found, we are told in an account of the life of Bishop Guðmundr, in the year of King Sverrir’s coronation, 1194. Happened upon, and surely far too bleak and inhospitable to invite exploration, never mind settlement (Hofstra & Samplonius, 1995, p. 238), this was at the “cold edge” of the Norse world (Chekin, 2020, p.20). A version of the *Landnámabók*, the Book of the Settlement of Iceland, from the second half of the Thirteenth Century provides the directions for the five-day sail to Svalbarði from Northeast Iceland. However, the land described, marking the Northern rim of the Norsemen’s known waters, is characterised by such mythical elements as to render its existence beclouded, an Arctic shoreline hopped in freezing mists that give this place a symbolic significance at the grey waves’ limit – a fantastic ‘edge’ more than a topographic one. Perhaps this was the mythical land-bridge that joined Grønland to Bjarmaland (Russia), encircling the top of both the Norsemen’s maritime cosmography and their imagination. As one recent translation of the *Saga of Samson the Fair* has it, “From there all the way to uninhabited Greenland lies the land called Svalbard, and various tribes live there. There are those who live to be two hundred winters old, but seldom have many children...” (Waggoner, 2018, p.272) Whilst it is now widely assumed that, if this elusive land had any basis in historical fact, the Norsemen reached what we now know as Jan Mayen rather than present-day Svalbard / Spitsbergen, the evocative nomenclature – *the frozen edge* – seemed apposite to Barentsz when that archipelago’s presence emerged from the mists of mythology and was recorded, in 1596.

¹ Still more northerly Svalbard schools in Ny-Ålesund and Pyramiden closed in 1963 and 1998 respectively.

Commented [SB1]: Deputy editor’s comment: The introduction could be more precise in outlining the paper’s objectives, methodology, and the key arguments it seeks to present.

Clarifications added

Commented [SB2]: Deputy editor’s comment: the lack of a unifying thread might confuse readers. Streamlining the focus to a few central arguments or themes would strengthen the paper’s coherence.

Clarification of motif added, with connecting gestures and signposts inserted throughout, enabling readers more opportunity to infer from the paper some of the metaphorical connections

Svalbard: more than the intriguing landmass at the top of your map, this place is still one defined as much by the popular imagination as the mundane reality (Saville, 2019). It is an edge-place, one that signals the margins of our Anthropocene world. Why? Because, as the fastest warming part of our planet, its very existence as the 'frozen shore' is in rapid retreat, back into the white mists of an imaginary High North that can but sustain a few more summers. Most recent data shows an Arctic Amplification (AA) of mean temperature increases to four times the Global average, reaching a peak in the open sea to the East of North East Svalbard, where temperatures have risen at around seven times the global average rate (Rantanen *et al.*, 2022). That is to say, temperatures in Svalbard have already risen something like 4.8 degrees above pre-industrial levels and are predicted to increase by a staggering 10 degrees by the century's end.

As a biome, the High Arctic is delineated by the July isotherm (with average temperatures in the short summers not exceeding 4 degrees in its Eurasian sector) (Lee, 2020), so the very region is fast-shrinking and its unique ecosystem retreating towards a terrifying vanishing point. As Saville claims, Svalbard becomes the very "emblem of the Anthropocene" (Saville, 2019, p.574). No longer locked in ice, the drip drip of its ancient glaciers' disappearance increases its multitudinous rhythm towards a flood of white noise. The cold edge is melting. By 2030, if not before you even read this, the North Pole – just five hundred miles beyond Svalbard's Northern tip – will be an expanse of churning, grey open water in high summer (Wadhams, 2017): unimaginable to those of us brought up on tales of Amundsen's flight across endless ice to sight it only a century earlier in 1926². Look again at the map – Svalbard is red.

Research in the High Arctic

In 1994, when far fewer researchers were concerned with the part they played in contributing to global climate change, the great Norwegian philosopher, Arne Naess, ~~whose work contributes to framing this article~~, posed the problem far more pointedly than I. Participating in a unique ecological symposium in Longyearbyen – *Deep Ecology in the High Arctic. The Planetary Challenge: How do we Change Attitudes?* – he said "To meet here at Svalbard can... only be justified as an expression of resolve to contribute to the dissemination of views favourable to the preservation of a largely intact Arctic." (Naess, 1996⁴, p.14) Nearly thirty years later, and with underlying attitudes barely shifted, the only justification for me to fly to Svalbard remained to contribute through educational work to the dissemination of views favourable to the Arctic's survival. The pace of attitudinal change may have been 'glacial', but the adjective itself seems increasingly misplaced, as the meltwaters outpace public views, and the hope of holding on to an 'intact Arctic' becomes a distant memory.

For Longyearbyen's inhabitants, the everyday experience of global warming is at the centre of their lives (Ylvisåker, 2022), even as attitudes towards issues such as mining, hunting and climate change may not accord with those of a European environmentalist (Saville, 2020, p.102). As Saville identifies, working in Svalbard requires humility, in respect of both place and people. Every aspect of employment in Svalbard – whether tourism, coalmining, or the flourishing research and education sector – is shaped by its relationship to the High Arctic's changing climate. Above Longyearbyen, the snow in spring and early summer forms a wine-glass pattern on the mountainside. Every year, its inhabitants watch to see when its stem 'snaps' as the snow melts. I was told that this usually happened in July until a decade or so ago, then in June. Then, in 2022 the stem snapped in May for

² Whilst the first person to have verifiably traversed the ice to the Pole did so only months before my own lifetime, in 1968.

the first time; a remarkable visual representation of the rapidly rising temperature, a climate change hourglass. One resident said: “the Champagne glass it's earlier and earlier, and I just think that's very in your face it's very visible. It's very *present*...”



Author's personal photograph, June 2022

Whilst some of its immediate risks, such as landslides and permafrost-melt subsidence, may not be the same as those further south, the existential threat to ways of life, habits, attitudes, the *very reason to be in a place*, these all presage challenges that we must confront in the coming years. *So where better to consider the place of climate and environmental education in the Anthropocene? The experience of the edge, here, suggests readings of education's role at the centre, pointing towards the place of climate and environmental higher education in the Anthropocene, hinting at - Might any wider lessons for higher education below the transformation zone of the Arctic, to be drawn from the experience of educating among systems-retreat and potential collapse.?*

Methodology

In addressing these questions, the article synthesises the findings of semi-structured interviews with Naess' insights into a Red Biocentric approach. *However, to restate, the spirit of this article is primarily conceptual. It is inspired and informed by both the spoken words of Svalbard's educators and by the formative qualities of the place itself on the experience of learning. Ontologically, That is,* this study takes human productive activity – labour – in the new epoch, including the productive mental work of learning, to be inseparable from the whole-earth-systems into which that activity, as

Commented [SB3]: Reviewer's comment:

They have demonstrated well their grasp of conducting in-depth semi-structured interviews. However, I suggest them to give the heading 'Methodology' and in addition to what they have written, insert a small paragraph on the process of analysing the qualitative data and the steps involved in reaching the key themes.

structured by capital, feeds³. This differs from some other recent examples of related, theoretically-informed climate change HE research (e.g., Rousell, 2016; Kinol et al, 2023; McGeown and Barry, 2023) in its politico-onto-epistemologically orientated stance (to adapt a phrase from Barad, 2007) The semi-structured interviews were conducted in an emplaced manner, conscious of the blanketing skies and wide expanses of grey-green High Arctic wilderness outside the window. The words spoken were enunciated – all in the language of English, for which I thank the speakers – not against the backdrop of the Adventdalen, but *within* it. Anonymity is difficult. In truth there are relatively few post-compulsory educators resident in Svalbard. Thus I interviewed just a handful, but in full compliance with ethical standards and permissions, and I have kept intimations of their roles to a minimum. The themes that emerged from our conversations in that place, along with some publicly available documents form the subject matter for consideration, and for an analysis framed by Naess' insights and informed by a red biocentric approach. That is to say that the filter through which my findings are disseminated here mean that they cannot be other than political, in the broad sense.

Though I asked each the same questions about there was no sense in which expectations or themes were predetermined. I wanted to know how climate change is positioned with curricula and course philosophy in the High Arctic, what is its priority and what if any variation in approach to climate change pedagogy is adopted on account of locality. Behind the content of courses, I asked each whether providers envisage social or political learning outcomes to follow for students? Whilst scientists and teachers remain generally widely trusted in climate change debates, Svalbard's students could come from societies which may be less receptive to climate-related sciences' message, so I asked whether Svalbard's teachers feel any sense of the politics of climate-related sciences content when providing materials, or had they any sense of a political responsibility?

The observations offered by participants served as a jumping off point rather than the basis of a systematic analysis of their views and attitudes. There were few enough transcripts that the list of themes 'compiled itself'. As important was my presence within the place under discussion, and its presence within the matters under discussion, and in the themes that emerged. Given the small number of participants, their proximity and the emplaced-embodied nature of their responses, the commonality of these themes is not surprising. They were, in a sense, also present in the landscape. This understanding is one that reflects the materialist and ecological axioms undergirding this work.

Red Biocentrism

Red Biocentrism

There are more and more voices saying this is not the sustainable to have, uh, people living – even red people – saying people shouldn't live here... It's not good. Shouldn't be people this far north.

My interviewee in no way intended to allude to the theoretical perspective that I bring to this and other work, but their comment merits a little reflection-consideration in framing what follows. I have elsewhere (Boxley, 2019, 2022a, 2022b) called this framing employed the theoretical frame of Red Biocentrism (Boxley, 2019, 2022a, 2022b) - in part because it reflects a-that will to draw into an

³ Taking the High Arctic as an example, such systems include for instance, plant phenology, solifluction, and deglaciation at the interface of biology, geology and political economy.

Commented [SB4]: Deputy editor's comment: While the paper references various scholars and ideas, it lacks a clear theoretical framework guiding the discussion.

Hereafter, I wish to emphasise that the theoretical orientation of the piece is materialist, and ecological - red biocentrist.

Commented [SB5]: Deputy editor's comment - A more extensive engagement with contemporary literature and theories related to place-based education, environmental ethics, and climate change education could enrich the discussion and provide more depth.

Although a lit review was prepared, it has not been possible to include for reasons of space. I have included some reference to recent relevant climate change education articles here.

Commented [SB6]: Deputy editor's comment: The paper references interviews and insights but lacks specific details or methodologies regarding these interviews. Including a section on research methodology, sample size, interview questions, and analysis methods would enhance the paper's academic rigor.

The interviews are secondary to the reflections of the piece. These are, in one sense, phenomenological, though I decided not to emphasise their gestalt quality, for fear of introducing a further level of conceptual complexity.

ecosophical approach to discursive analysis, the understanding of human labour, so comprehensively and transformatively mapped within the Marxist tradition. The interviewee's 'red people' are those whose understandings emerge from the labour movement, from the perspective of the working class. In the context of Svalbard, as elsewhere, this perspective is exemplified in the life of its coalminers. For Red Biocentrism, as for Eco-Marxism (Foster, 1999), work (including the activity of verbal articulation) and place are materially co-constitutive.

Red biocentrism is an attempt to theorise the activities of human productive labour as occurring within and among the activities of more than human agents, and the physicality and materiality of those undertaking activity as inseparable from wider material nexūs – the ecologies within which they act. All this has a bearing on the ebbs and flows of my interviewees' dialogues, discussed below, particularly in the sense that, methodologically, I take all aspects of human learning to be a form of work – productive labour – which could not take quite the same shape, extend along the same trajectory, or result in identical forms of knowledge – were it to occur as part of a different ecology. That is to say, for Red Biocentrism (Boxley, 2019), utterances, such as those of my participants, reflects thoughts which are as material as the mountains, and which grow, flourish, wither and die with and in their environments.

There is something about our usual understandings of the phrase 'learning in place' that keeps the verb and the noun discrete. If place is also a process, always and inexorably adapting in all its features, and if the capacity of 'learning' is not imagined as merely a quirk of humanity alone, but also as an aspect of all living things and of life itself, then we can almost dispense with the 'in'⁴. So, let us proceed with this in mind, and in due course, work with a notion of 'emplacement'.

Learning from Longyearbyen

Learning at seventy eight degrees North

With its astonishing rate of temperature gain, many students undertake their programmes of study with an awareness that, as one educator put it, Svalbard is "the place where you can see what will happen to the rest of the world". Whilst not strictly true (a ten degree average temperature increase globally would be unimaginably catastrophic!), the unprecedented local mean temperate increase of 1.25C per decade for the last four decades (Rantanen et al, 2022) offers a forward glimpse at a world of crossed tipping points, in bio-climatic freefall. Some students expect this "canary in the mine" experience, and they are not disappointed.

In that case, why contribute so significantly to carbon emissions by travelling to Svalbard to study? My contributors hint that the reason may lie in the benefits of what I'm here referring to as emplacement. An illustration was offered by one educator in discussing a technique used by a colleague. At the beginning of their programme of study, before going out in the field, students are shown a photograph of the landscape of Spitsbergen⁴:

It shows a picture about data and gets the course [students] to say what they can see, yeah? And then and they say, well, there's a mountain there, over there, and fields over there...at the end of the course, you've chosen the same picture and said "now tell me what you can see?". Well, now

⁴ I say 'almost' as the reader would not forgive the grammatical shuddering resulting from attempting to so reinvent the language for the purpose of a little study such as this.

Commented [SB7]: Reviewer's comment:

While the paper references various scholars and ideas, it lacks a clear theoretical framework guiding the discussion. Integrating established theories or frameworks related to education, place-based learning, or climate education could strengthen the paper's academic foundation.

I have tried in this iteration to uprate the significance of the theory and to enhance the tenor of this discussion, but without burdening the reader unnecessarily with some of the onto-politico-epistemology of the materialism

Commented [SB8]: Reviewer's comment -

They have demonstrated well their grasp of conducting in-depth semi-structured interviews. However, I suggest them to give the heading 'Methodology' and in addition to what they have written, insert a small paragraph on the process of analysing the qualitative data and the steps involved in reaching the key themes.

you can see the places that we can... see the run-off there and we can see how those nutrients are going over there... Now interpret the landscape. You've been there."

The phenomenon is familiar. As a prospective visitor to the islands, I poured like an over-eager holidaymaker over photographs of Longyearbyen and imagined that I had an eidetic picture of the place, whilst attempting to squirm my way out of that sense of twisted identities – researcher/tourist – that Saville identifies (2019). But, as the reader will recognise, there is a great deal of difference between seeing a photograph of a location before you have been there, and viewing one of the same place once you have become familiar with it. The grainy, grey dust of the polar desert caked onto the vehicles' screens and panels, the casually strewn detritus of the old pit gear, these take on a different significance when one notices them in the picture again after experiencing them. For Svalbard's educators, this effect will have been heightened by learners' experience of an emplaced study of landscape, for example noting those features where changes in weather patterns associated with climate change are already having an observable effect. The experience of emplaced learning enables students to draw on such rich gestalt encounter, wrapped around with memory and highlighted in intense sensory flashes. To this it will be important to return in deriving from Svalbard the lessons for HE more widely.

For all this, the students of Longyearbyen, like others, recognise that there are benefits associated with the digital 'remote' lectures which it was necessary to introduce at the height of the COVID pandemic. There may or may not be a pedagogical case for such innovation (and this falls well outside the scope of this paper). In discussing student developments in contemporary pedagogy, one educator observed,

everyone says the learning outcome is not as good as, of course, from a lecture with physical presence. But on the other hand, if the person is just going to teach two hours, four hours and not do anything out in the field, we prefer having it digitally anyhow because it doesn't justify the travel and the economic costs.

Expectations are shifting. In the post-COVID setting, students are envisaging new ways of learning which may open possibilities for reducing climatic impacts. This, combined with the profound internalised sense of uncertainty experienced by many regarding earth systems, has resulted in a challenge to established ways of working, and this challenge been initiated and led by students.

The student-led challenge

Like many institutions of Higher Education, in 2022, the University Centre on Svalbard launched a Green Strategy for 2030, at least partly in response to student pressure. The new reality of this 'bottom-up' impetus for institutional change was something echoed by all those with whom I spoke. This is perhaps unsurprising, and mirrors the trend consistently recognised in the UK, for example, in research conducted by Students Organising for Sustainability (SOS, 2022).

The official statement of the UNIS Student Council welcomed new commitments to education for sustainability, the embedding of the UN Sustainable Development Goals (SDGs) in programmes and a range of measures to reduce and compensate for greenhouse gas emissions. However, additional improvements have also been sought. From an international perspective, it is interesting to note both the local specificity of these demands, and their more general applicability.

Firstly, students demand a new course in sustainability, but make it clear that a full assessment should be undertaken first to ensure that there are "substantial reasons to teach it in Svalbard,

Commented [SB9]: Deputy editor's comment: Some parts, especially the lengthy quotes, might benefit from concise paraphrasing or summarization, maintaining their essence while economizing on space.

This and some of the other participant quotes have been edited

Commented [SB10]: Deputy editor's comment: The paper occasionally meanders in its arguments, making it challenging to follow a clear line of reasoning. Each section could benefit from clearer, more structured arguments that lead logically to the next point.

Logical connections to following point

where the environmental footprint is far higher than on the mainland". (UNIS Student Council, 2022)
Secondly, a short course for all students is demanded, not only for those interested in sustainability,

where students can learn about the exceptional extent that Svalbard is already affected by climate change and become aware that what they can already see here is just the beginning of dramatic global changes – and that they have the special chance to be among the first to witness and study it. They should then acquire tools and knowledge beyond their field of study (e.g. circular economy, doughnut economics, etc.)... that they can use to improve climate-friendliness back home where climate change is not yet visible. (UNIS Student Council, 2022)

A credit-bearing module, open to all, and scheduled to ensure maximum participation, may be a gold-standard to which other institutions might aspire, but the wider significance may lie in a new reality. As students become aware of the intensity and seriousness of climate-induced changes in their place of study, some are unsurprisingly desirous of opportunities to learn further of their options, the prospects before them, shorter and longer term, of the implications for their futures, their employment and wellbeing, and the prospects too for places that they may have grown attached to. This points towards an application of the place-based learning models (e.g., Narda, Pacini-Ketchabaw & Nxumalo, 2018; Nxumalo & Cedillo, 2018) so commonplace at earlier phases to the parts of HE that have seemed untouched by this learning. Although this falls beyond the scope of this paper, I gesture later towards such an application.

The upward pressure from students to initiate institutional changes in educational establishments represents a direct challenge, too, to educators. In Svalbard, perhaps as elsewhere, even academics with an acute knowledge of climate change may have grown used to practices and methods of working rooted in 'pre-Anthropocene times'. It can sometimes be difficult to recognise the challenges presented by students as positive rather than merely inconvenient and complicating disruptions to established practices. One may have good personal reasons for bringing a colleague for a face-to-face lecture, but as one Svalbard educator observed, climate change has had

But you know, it [climate change] has been a much higher focus so, that's why I think they [students] come here, and they are quite aware, and then they benefit and learn a lot from being here and actually experiencing it, not just reading it in the book. But at the same time, of... the latest few years actually, there is some new twist coming and that's the twist where... students are challenging all this, saying, why do you bring a lecturer here to talk to us for two hours? You could do it digitally.

In calling for course climate calculators on their websites, the UNIS Student Council seeks to turn the aspiration of reduced travel into a quantifiable reality, and then goes further to demand that their institution compensates for course-related emissions, and includes such costs in its fee structures. The challenges that such demands place before HE may be deeply uncomfortable, but necessary consequences of the global centre learning the lessons from the sharp edge.

Also notable in the student-led challenge is a recognition of the character of that damage, wrought by the model of education in which those of us in the rich world participate. It is noted that, for the most part 'we' are "people with no Arctic background", and that courses would benefit from actively including students from "indigenous communities around the Arctic circle" such as the aforementioned Nganasan and Polar Inughuit,. The same is true for potential students from the "less-developed countries" currently suffering the highest toll in death and displacement from anthropogenic climatic effects.

Commented [SB11]: A more extensive engagement with contemporary literature and theories related to place-based education, environmental ethics, and climate change education could enrich the discussion and provide more depth.

A lengthy lit review was prepared, but for reasons of space, it has not been possible to include here. I have included a few references to place based education here.

Climate ambassadorship

This takes us to the question of environmental ambassadorship. Many of the students who take courses in Svalbard's small, specialist educational institutions, whether at tertiary, higher or postgraduate level, do not make climate change a central focus of their study, and as one interviewee noted, only a small proportion of students go on to be scientists. However, it was remarked, some go into policy making and governance of one kind or another, and, *like all students of HE, they all* must make life decisions informed by climate change, so the "biggest thing we can do is educate these people who are actually going to make decisions now, and of course in the future... we have an important contribution to make in educating the right decisions as a payoff, long term". The "payoff": this is the key, the "justification", as Naess (1996) put it, for the travel to Svalbard. To invoke his entreaty again, at this juncture, what ethical justification could stand the cost of our environmental impacts?

In an argument on population reduction, which I otherwise reject, Naess nevertheless makes a characteristically insightful observation about higher education that is apposite here, "with higher education one may expect that a higher fraction of the population will feel an urge to stay for a while in the Arctic... it is clear that the problem of protecting those regions increases with population and also with increases in the level of education." (Naess, 1996, p.15) *Educated populations travel more, they seek experiences at the margins, and they are desirous to learn further. I concur with Naess then that Higher-education itself globally* has a huge environmental cost, including on the Arctic. The paying down of our debt to the Arctic – the "payoff" – can be achieved through those longer term, 'non-synchronous' (Boxley, forthcoming), aspects of the *higher* learning that result in sharing, exchange, decision-making. *These types of material, embedded and emplaced learnings form the heart of this study, for they cannot take place with-out environment. They* add up to work as an 'ambassador' *of place, in this case* -for the High Arctic – often quietly and unobtrusively, unnoticed, sometimes more visibly or vocally in the ethical responses we make to everyday situations and challenges. Ambassadorship involves not soapboxes, but a way of living that may, in turn influence others to adopt views favourable to the preservation of the Arctic.

It is, as one educator said, hard to influence others to take the right decisions if you don't have the "basic concepts" in respect of climate change. If they are to act, informally, as ambassadors, the credibility of former students necessarily depends to some extent on their ability to demonstrate an appreciation of evidence of climate change impacts in their areas of study, so that data-informed knowledge remains a bedrock of decision-making. Beyond the "basics" that a non-scientist (like the author) can – and probably should – acquire during any visit to Svalbard, there is vast complexity in understanding the factors involved in local Arctic Amplification effects, its causes and impacts on local biology, glaciology, and so on. One participant observed that, for students

I think it's probably very, very dependent on what and who they encounter and on themselves, there's a lot of chance, I think. I hope at least all that go through us are to some degree ... thoughtful...but I realize we do still have a way to go to put it [their study] in a good context. We're working on it. Especially context that facilitates discussion and a reflection on the complexity of the situation.

At this time, relatively few laypeople share much knowledge of Arctic climate change biology and geology, making the role of students of these subjects second only to the academic and industry experts who hold the potential to impact on policy. Indeed, *we might apply to the great resource of*

invaluable knowledge that Svalbard's students acquire something of the analysis that Noel Castree (2017) employs in relation to the geoscientific community in higher education.

Students as "Spokespersons for an unstable earth"

The quotation in the subtitle paraphrases Castree – "Geoscientists as spokespeople for an unstable earth" (Castree, 2017, p.54). The point he makes is hardly arguable, that the detection of ACC is "perhaps the most important contribution that geoscience has ever made to human understanding" (Castree, 2017, p.54), and he goes on to reiterate that at the turn of the Anthropocene, when human influence has extended well beyond what was formerly thought possible, into realms previously reserved for ocean currents and volcanos, geoscience has found itself inexorably drawn to cross the "is-ought" boundary into proclamations about the need for "planetary stewardship" (Steffen *et al.*, 2011). It is the apparent willingness of geoscientists across the disciplines to call out the crisis that has led leftists like Naomi Klein (2014) to proclaim their importance, – indeed their radicalism. Castree takes a further next step, considering whether the geoscience "might be deliberately conducted in the service of something more just, egalitarian and imaginative than the rapacious capitalist world whose perpetuation it is so deeply implicated in" (Castree, 2017, p.54).

To draw back a little, if Svalbard is, as we considered earlier, the very emblem of the Anthropocene (Saville, 2019), and its students uniquely placed to understand their own imbrication within its future, then their role as 'spokespersons' for the High Arctic might also-similarly be highlighted as of significance. Whether those of us who have visited the region appreciate it or not, we, witnesses to the melting of the "cold edge", carry an awareness second only to that of the scientists themselves of the immediacy of anthropogenic forcing. What, then, are the implications for ambassadorship?

When geoscientists seek to speak beyond their own, they may choose caution when engaging directly with policymakers, but, Anderson and Bows argue, they have a responsibility to speak "clearly, honestly and without fear" (Anderson and Bows, 2012, p. 640). The same might be said of the students of Svalbard's gathering climate catastrophe. Whilst few may become scientists, or policymakers, the voice of the Arctic's witnesses may indeed come to the service of those who seek radically to challenge the systems of business as usual that perpetuate its meltdown. Those who might charge that geoscience should remain 'value-free' cast adrift its mooring to the states that fund such projects as the giant Nansen Legacy that ranges the Barents Sea to the east of Svalbard. As Castree argues, "biophysical science always already contains contestable value-judgments about what in the world is worth knowing (and how). These judgments, once committed to, entrain resources and close off other potential lines of enquiry. In turn, science's representations and inventions are political even before entering the realm of policy making, commerce or the public domain." (Castree, 2014, p.66). Add to this the fraught scientific posturing that has marked states' claims to hold stakes in the 'Arctic landgrab' that has followed as inevitably as the meltwaters the rapid retreat of the sea ice, and the opening up of economic opportunities (Pedersen, 2021). Svalbard's students are just as thoroughly wrapped around with these politics. In truth such entanglement-embroilment is an unavoidable feature of the collapse in a 'fact – value' dualism that the Anthropocene moment hails. As has now been widely rehearsed (e.g., Hamilton, *et al.*, 2015) a Holocene ontology that placed barriers between the 'social' and the 'natural' is in as rapid a retreat as the Arctic ice. Simply restating the facts – observed, measured, quantified – and inserting them into a 'social' process with the aim of shifting opinion: this process looks archaic. To return all this to HE, we learn from Svalbard that if students are to don the mantle of spokespersons of place, then imparting the facts of global heating as if impartially will not do. Their emplaced utterances materially impact differentially in different places of learning. Where those places and the facts exist in a continuum of congruent experience, the ground is laid for ambassadorship to grow.

Commented [SB12]: Deputy editor's comment
The paper occasionally meanders in its arguments, making it challenging to follow a clear line of reasoning. Each section could benefit from clearer, more structured arguments that lead logically to the next point.

Logical connections to following point

Commented [SB13]: Deputy editor's comment -
Strengthening the connections between observations and the paper's overarching argument would bolster its academic depth.

Connections strengthened here and elsewhere

In this regard, Naess' approach was prescient, in insisting on a radical, and highly value-driven retelling of the Svalbard experience. The Arctic ambassador may be dispassionate in their advocacy, but they are neither disinterested nor divested. For Red Biocentrism, their work of learning forms a part of the ecologies within which they operate, living always with uncertainty regarding the choices they make or the potential ripples that their learning sets in train throughout the web of which they are a part. For one of my interviewees, a university educator,

“people want certainty and they want, when it comes to the environment or the climate change, they want answers. But actually the answers are something you just have to keep looking for and looking for and looking for yourself and live with the uncertainty of never knowing for sure, what is the right course of action, what is the right thing to do. ~~And that's probably 100 or 1000 or 10,000 different right answers, yeah?~~”

Students learning in place, may be instilled with a sense of the complexities and uncertainties of climate change, along with the inevitability of ongoing biosystemic crisis, and the memories of their emplaced higher education which will, hoped this Svalbard educator, last a lifetime. A lifetime of ambassadorship is perhaps too much to expect, but for this educator as for others, institutions of higher education must at least try to act as diplomatic schools for the education of climate ~~ambassadorshipspokespersons~~. This can only be achieved by developing and promoting the university as a site of emplaced learning, of geographical, bioclimatic uniqueness: the opposite of the airport-lounge corporate blandness of many placeless institutions. In this regard, as in others, Svalbard shows the way. Its uniqueness, fragility, uncertainty at the cold edge revealing the unfelt or unnoticed *uniqueness of every other higher education institution*, and so the universality of that emplaced singularity so fertile, so necessary for the growth of ambassadorial capacity.

Implications for practice in the university

Your place of learning

It is unlikely to be an easy task to assist students in understanding that their academic labour represents a bio- and geo-constitutive process. Our work, as members of educational, scholarly or academic communities contributes to the ongoing constituting of place as process. Rather than social psychology in reverse, Red Biocentrism describes the 'two-way street' (Boxley, 2012) by which ecosystems and social systems are co-created by the activity of interrelated and co-constitutive elements: human and more than human activity. As has been suggested here, and illustrated by the experience of Svalbardian education, learners and teachers can *unconsciously* contribute to the constituting of their learning places through their patterns of travel and consumption, their general habitus; or they can better understand the contribution that their learning produces, at practical and philosophical levels, and make of this a *conscious* process. Svalbard forces the reality of emplaced learning into consciousness. It is the sharp, cold edge of conscientization.

Programmes of study such as those offered in Svalbard might illustrate efficiently to any student wishing to participate (~~from any programme across their institution~~) how climate change has already impacted the flora, fauna and wider systems in the immediate area within which students are learning. The gold standard called for by Svalbard's students is credit-bearing modules ~~—~~ 'Longyearbyen, Winchester or Manchester in transition'—to include (i) a sense in which biodiversity, air quality, watercourses, etc., have been impacted already by global heating, and (ii)

the contribution that students have made to heating through their activity. But how institutions might go about **beginning to considering how to applying** the lessons of HE at the sharp edge will, needless to say, vary enormously, dependent on institutional contexts (Reeves *et al.*, 2023).

Conscious interpretation of place is old hat to critical geographers and geologists, but for those of us involved in higher education more generally, we might wish to consider how the heightened sense of place that shifts perspective from an inscrutable landscape to a de-coded one might benefit our students' awareness of their own place in and impact on such landscapes and locations. Such an awareness, it has been suggested, emerges only with emplaced learning "in the field" (Boxley, forthcoming). As one Longyearbyen educator remarked, all this

"is very good. **Which is a start...** But it's not enough. Because to understand, when so many things we can look up at the moment, what we can't look up is training in understanding complexity, yeah? **And to think a bit more than this... Think connectivity. How are things connected...**? I think this is one of the elemental things to teach and to be comfortable with, the uncertainty this complexity gives."

Complexity is the challenge and the joy of thinking from within place. Embeddedness, of learning and living, necessarily implies an appreciation of complexity and uncertainty. So, the questions posed, but as yet unanswered for courses of higher education: how do we ensure that our learners appreciate their places of higher learning? How do we ensure that their education is understood as a constitutive part of those places? In respect of climate change, how do we encourage students to understand the contribution of their programmes of study to climate impacts locally and globally? I want to say, in Svalbard it is easy. It is obvious. And that is the beauty of thinking through Svalbard. The crowded streets of Manchester, Winchester or Oslo mask the contributions of our higher education in all respects by merging them into the intoxicating, swirling flow of masses, vehicles, construction-sites. By seeing our places of learning not only for what they are **in their uniqueness**, but also through the lens of the High Arctic, we might become more aware not only of their fragility, but also of their value.

Longyearbyen, as has been noted, is small. Its students represent a transient but significant proportion of its population. This makes it far easier for its institutions to sensitively integrate into human and more-than-human communities. The scale, commented one educator, "helps them to appreciate and understand the place rather than being isolated or insulated in a student community". Students are an integral and valued constitutive part of small but complex social and natural ecologies. By way of example,

"Students have run a second hand store for the local community since 2004 – a free exchange site for clothes, household items, games, books, and for repairing and passing on bicycles, etc. But this is crucially a part of the community, not a place for students only or mainly."

Similarly, Svalbard's students have set up and operated other organisations and clubs within the wider community. The functioning of civil society is therefore enriched through the active engagement and participation of the student community. In this way, students come to further appreciate their contribution to the fragile complexity of **a communityan ecology** hanging onto the cold edge.

For one of my interviewees,

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~~“There’s also a synergetic effect by these small student group type bonds,” and you meet maybe a student from Germany that is very concerned about the climate and is the promoter of the climate change march in town here. Yeah. And then maybe you go back to your country or your Norwegian university and you are even more concerned The smallness of all this also makes clear one’s own smallness and the close contact that you have with the nature here.”~~

The ‘tightness’ of a small community of students may generate a microcosmic mirror in learners’ minds of the complexity of the far larger land communities within which they are nested. This educator’s choice of word, ‘synergetic’ suggests that parts of the community feed one another’s ideas, resources, courage, motivation. How then, if not to replicate this scale, to generate the possibility of complex **communities-ecologies** of learners, perhaps from different disciplines, coming together to discuss community, sustainability, and the action necessary for their maintenance and transition? And yet again, in Svalbard, it’s not so much ‘easy’ as an almost inevitable consequence of the context of a community of learners on the edge of catastrophic climate change. So, how do we at lower latitudes apply the lessons?

The university exists as an ethical ecology, irrespective of its location. Its tendrils reach across the landscapes that its learners inhabit. Every opportunity should be grasped to enmesh HE students within their places of learning, through landscapes, through communities and in the employment they seek whilst studying. But, this only goes part of the way. In order for learners to become spokespeople for their unstable environments, the university itself must assume the identity of an embassy for its place, its learners growing into ambassadors within the complex ecology of their emplaced education.

Whilst the scale of most Universities’ wider communities beclouds their fragility, a consideration of the place of water-, food- and energy-security in supporting ongoing emplaced provision quickly reveals that some of the vulnerabilities of Longyearbyen can be felt more widely: for example, a reliance on unsustainable transport systems and the unendurable greenhouse gas impacts of many campus-based models (an analysis of which falls beyond the scope of this paper).

Some of the drivers for a sustained and searching engagement with climate change issues are shared between Longyearbyen, my own UK University and, no doubt, many others. For example, (i) ‘student satisfaction’ – some students are *happier* when they feel their own contribution to climate change is being minimised; (ii) reputation – institutions do not wish to be tarred with the brush of unsustainable carbon impacts; (iii) academics’ depth of knowledge of climate change impacts, locally to their institution and internationally; (iv) the need for efficiencies associated with travel. In Svalbard we find a mirror of our lives. As the emblem of the Anthropocene, its vulnerabilities are glaring, “in your face,” as one participant said. Ours may be less so, but that makes them no less real. In essence, this is the simple heart of the lessons of this study. When Svalbard’s students choose to travel, to research in the field, to learn in its seminar rooms, they can do little to avoid the reality of their own ecological impacts, **staring them in the face**. This is evident, albeit indirectly, in the retreat of the sea-ice, in the melting permafrost and increased avalanche risk, in the phenology of the lengthening growing season, the milder summer days, the accelerating deglaciation, and on and on. Drip drip drip.

As Svalbard’s students and educators have made plain, these impacts of anthropogenic climate change are rendered all the more tangible by the pedagogical shifts that have followed in train (Boxley, forthcoming), by the use of technologies to minimise students’ and researchers footprints in the field; by the restrictions increasingly placed on environmentally damaging behaviours by Svalbard’s Governor (Sysseimesteren på Svalbard, 2019). If our students do not hear the dripping

(and of course they cannot and should not all go to Longyearbyen for a last-chance listen) then we could do worse than take from Svalbard what we can of their pedagogical realignment.

Here, I have mentioned a few of the things I took from the High Arctic, and offer them in the spirit of ambassadorship to invite a consideration of this question. After Naess, “can I justify my practice in support of an intact x” where x represents your bioregion? The possibility of an intact Arctic is passed, and for many of us at lower latitudes, the implications of this bitter reality have yet to be felt. So, as the last days of the High Arctic biome and the education it provides play out, I leave the final word to Longyearbyen resident, Line Nagell Ylvisåker,

Svalbard is still the Arctic, at least for a little while longer...Hopefully the natural fluctuations of the ocean currents will provide more cold, pastel winters in the years to come, before the milder, darker autumns and winters catch up to us. But the Svalbard my great-grandchildren will live in or visit will certainly be different than the one we live in now. The Arctic may even have disappeared completely. (Ylvisåker, 2022, p. 166)

References

- Anderson, K. and Bows, A, (2012) A New Paradigm for Climate Change. *Nature Climate Change* 2, pp. 639-40
- Arlov, T.B. (1989) *A Short History of Svalbard*. Oslo: Norsk Polarinstitut
- [Barad, K. \(2007\) *Meeting the Universe Halfway. Quantum Physics and the Entanglement of Matter and Meaning*. Durham – London: Duke University Press](#)
- [Boxley, S. \(2012\) *The Great Act of Learning: A red-green cosmopolitics of emergence*. PhD Thesis. University of Winchester.](#)
- Boxley, S. (2019) “Red Biocentrism for the Anthropocene”, *Australian Journal of Environmental Education*, Vol 35 No 3, pp. 183-197. <https://doi.org/10.1017/ae.2019.18>
- Boxley, S. (2022a) “ESC in the Anthropocene: Education for Sustainability and Communism”, *Critical Education*, Vol 13 No 1, pp. 51-69 <https://doi.org/10.14288/ce.v13i1>
- Boxley, S. (2022b) “Striking in the City, Making Love in the Fields: Unsnarling the Wild Pedagogies of Earth Activism”, *Coreopsis: Journal of Myth and Theatre* Vol 10 No 1 <https://societyforritualarts.com/coreopsis/spring-2022-issue/striking-in-the-city-making-love-in-the-fields/>
- Boxley, S. (forthcoming) “The Importance of the University as Emplaced: Lessons from Longyearbyen.”
- Castree, N. (2017) “Unfree radicals: Geoscientists, the Anthropocene and Left Politics”, *Antipode* Vol 49 No 1, pp. 52–74.

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2
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5
6
7
8
9
10 Chekin, L.S. (2020) "Svalbarðs fundr. The place name Svalbard and its connotations in medieval and
11 modern literature and cartography" *Nordlit* vol. 45 p. 18-38

12 Fedesco, H. N., Cavin, D., and Henares, R. (2020) "Field-based Learning in Higher Education:
13 Exploring the Benefits and Possibilities", *Journal of the Scholarship of Teaching and Learning*, Vol 20
14 No 1. <https://doi.org/10.14434/josotl.v20i1.24877>

15
16 [Foster, J. B. \(1999\). Marx's Theory of Metabolic Rift: Classical Foundations for Environmental
17 Sociology. *American Journal of Sociology*, 105\(2\), 366–405. <https://doi.org/10.1086/210315>](#)

18
19 Gracheva, G.N. (1983). *Traditsionnoe mirovozzrenie okhotnikov Taimyra (na materialakh nganasan*
20 *XIX – nachala XX veka)*, Leningrad: Nauka. Available at: [http://www.kunstkamera.](http://www.kunstkamera.ru/lib/rubrikator/03/03_03/gracheva_1983/)
21 [ru/lib/rubrikator/03/03_03/gracheva_1983/](http://www.kunstkamera.ru/lib/rubrikator/03/03_03/gracheva_1983/)

22 Grydehøj, A., Grydehøj, A. and Ackrén, M. (2012) "The Globalization of the Arctic: Negotiating
23 Sovereignty and Building Communities in Svalbard, Norway", *Island Studies Journal*, Vol. 7 No. 1 pp.
24 99-118

25 Hamilton, C., Bonneuil, C. and Gemenne, F. (2015) Thinking the Anthropocene. In Hamilton, C.,
26 Bonneuil, C., and Gemenne, F. (editors) *The Anthropocene and the Global Environmental Crisis*.
27 London: Routledge, Pp 1-13

28 Hofstra, T., and Samplonius, K. (1995). "Viking Expansion Northwards: Mediaeval
29 Sources", *Arctic*, Vol 48 No 3 pp. 235-247

30 Johnson, J.T. (2012) "Place-based learning and knowing: critical pedagogies grounded in
31 Indigeneity", *GeoJournal* Vol 77, pp. 829–836 <https://doi.org/10.1007/s10708-010-9379-1>

32 Johnston, M., Viken, A., & Dawson, J. (2012) Firsts and lasts in Arctic tourism: Last chance tourism
33 and the dialectic of change. In H. Lemelin, J. Dawson, & E. J. Stewart (Eds.), *Last Chance Tourism* (pp.
34 10–24). Abingdon, Oxon: Routledge.

35
36 [Kinol, A., Miller, E., Axtell, H. et al. \(2023\) Climate justice in higher education: a proposed paradigm
37 shift towards a transformative role for colleges and universities. *Climatic Change* 176, 15
38 \(<https://doi.org/10.1007/s10584-023-03486-4>](#)

39
40 Lee, Y. (2020) *Arctic Plants of Svalbard: What we Learn from the Green in the Treeless White World*.
41 Cham: Springer

42 LeMoine, G.M., and Darwent, C.M. (2016) "Development of Polar Inughuit culture in the Smith
43 Sound region". In: Friesen, T.M., and Mason, O.K., eds. *The Oxford handbook of the prehistoric*
44 *Arctic*. Oxford: Oxford University Press. 873 – 896

45
46 [Leopold, A. \(1949\) *A Sand County Almanac: Sketches Here and There*. New York, NY: Oxford
47 University Press](#)

48 [McGeown, C., and Barry, J. \(2023\). Agents of \(un\)sustainability: democratising universities for the
49 planetary crisis. *Front. Sustain.* 4:1166642. doi: 10.3389/frsus.2023.1166642](#)

50 Naess, A. (1996) The Arctic Dimension Outside and Inside Us. In Stoltz, E. & Buzza, R.
51 (editors) *Proceedings of 'Deep Ecology in the High Arctic. The Planetary Challenge: How do we*
52 *Change Attitudes?' 1994 International Ecosophical Symposium. Svalbard, Norway, 19 August - 2*
53 *September*. Longyearbyen: The Norwegian Polar Institute, pp. 13-19.

- Naess, A. (2008) *The Ecology of Wisdom*. Berkeley, CA: Counterpoint
- [Narda, N., Pacini-Ketchabaw, V., & Nxumalo, F. \(2018\) Rethinking Nature-based approaches in Early Childhood Education: Common Worlding Approaches. *Journal of Childhood Studies*, 43 \(1\), 4-14](#)
- [Nxumalo, F., & Cedillo, S. \(2018\) Decolonizing place in early childhood studies: Thinking with Indigenous onto-epistemologies and Black feminist geographies. *Global Studies of Childhood*, 7\(2\) 99-112. <https://doi.org/10.1177/2043610617703831>](#)
- Pedersen, T. (2021) "The politics of research presence in Svalbard", *The Polar Journal*, Vol 11 No 2, pp.413-426, DOI: 10.1080/2154896X.2021.1883900
- Raes, A., Detienne, L., Windey, I. and DePaepe, F. (2020). "A systematic literature review on synchronous hybrid learning: gaps identified", *Learning Environ Res*, Vol 23, pp. 269–290. <https://doi.org/10.1007/s10984-019-09303-z>
- Rantanen, M., Karpechko, A.Y., Lipponen, A., Nordling, K., Hyvärinen, O., Ruosteenoja, K., Vihma, T. and Laaksonen, A. (2022) "The Arctic has warmed nearly four times faster than the globe since 1979". *Commun Earth Environ* 3, Vol. 168. <https://doi.org/10.1038/s43247-022-00498-3>
- Reeves, A, Gwilliam, J., Harrison, P., Price, L., Schantz, N., Ribchester, C., Hughes T., Gretton, S., Strachan, S., Logan, L., Boxley, S., Lengthorn, E., Barrett, H. and Peres, S. (2023) *Education for Sustainable Development and Academic Quality: Principles and Processes for Higher Education Providers*. QAA. Available at https://www.qaa.ac.uk/docs/qaa/members/education-for-sustainable-development-and-academic-quality-principles-and-processes-for-higher-education-providers.pdf?sfvrsn=63e2ac81_8
- [Rousell, D. \(2016\). Dwelling in the Anthropocene: Reimagining University Learning Environments in Response to Social and Ecological Change. *Australian Journal of Environmental Education*, 32\(2\), 137–153. <https://www.jstor.org/stable/26422925>](#)
- Saville, S.M. (2019) "Tourists and researcher identities: critical considerations of collisions, collaborations and confluences in Svalbard", *Journal of Sustainable Tourism*, Vol 27 No 4, pp.573-589, DOI: 10.1080/09669582.2018.1435670
- Saville, S. M. (2020) Locating value(s) in political ecologies of knowledge: The East Svalbard management plan. In S. M. Saville & G. Hoskins (Eds.), *Locating Value: Theory, Application and Critique*, pp. 173–185. London: Routledge.
- SOS (2022) *Sustainability Skills Survey 2021-22. Research into Students' Experience of Teaching and Learning on Sustainable Development. Higher Education report*. Students Organising for Sustainability – United Kingdom, available at https://uploads-ssl.webflow.com/6008334066c47be740656954/62de805cb0d9030a96c6e88a_20220125_SOS-UK%20Sustainability%20Skills%202021-22%20-%20HE%20only%20-%20FINAL.pdf
- Steffen, W., Persson, Å., Deutsch, L., Zalasiewicz, J., Williams, M., Richardson, K., Crumley, C., Crutzen, P.J., Folke, C., Gordon, L., Molina, M., Ramanathan, V., Rockström, J., Scheffer, M., Schellnhuber, H.J. and Svedi, U. (2021) "The Anthropocene: From Global Change to Planetary Stewardship" In: Benner, S., Lax, G., Crutzen, P.J., Pöschl, U., Lelieveld, J. and Brauch, H.G. (eds) *Paul J. Crutzen and the Anthropocene: A New Epoch in Earth's History. The Anthropocene: Politik—Economics—Society—Science*, vol 1. Cham: Springer. https://doi.org/10.1007/978-3-030-82202-6_13

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45
46
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55
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57
58
59
60
- Syssemesteren på Svalbard (2019) Environmental protection. Available at <https://www.syssemesteren.no/en/the-governor-of-svalbard/environmental-protection/>
- UNIS Student Council (2022) *Statement on Green Strategy*. Unpublished flyer.
- Wadhams, P. (2017) *A Farewell to Ice: A Report from the Arctic*. New York, NY: Oxford University Press
- Waggoner, B. (2018) *Sagas of Imagination: A Medieval Icelandic Reader*. Philadelphia, PA: The Troth
- Ylvisåker, L.N. (2022) *My World is Melting: Living with Climate Change in Svalbard*. Oslo: Samlaget

Climate lessons from the Cold Edge: rethinking the University as an ethical ecology

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• Purpose

This largely conceptual study draws from the author's experience of conversations with Svalbard's educators, lessons for international Higher Education Institutions' engagement with climate change education and thinking for non-specialists.

• Design/methodology/approach

In-situ discussions with Svalbard's educators informed the theoretical work of the author towards the development of conceptual conclusions. The theoretical frame employed – 'Red Biocentrism' – draws on both radical left and green thought to posit an emplaced, materialist understanding of author's, participants and place's intra-related contributions.

• Findings

That, insofar as universities represent nodes in an ethical ecology, they have a capacity to realise that which is obvious in Svalbard – their role as embassies for their learning-places, generative of spokespeople or ambassadors.

• Originality

There is sparse published research into the work of Svalbard's climate educators, as a pedagogical project undertaken under such extreme and rapidly changing environmental conditions. This article represents the first to reflect on what can be learnt from the educators of Svalbard by Universities elsewhere.

• Keywords:

Svalbard, climate change, educational philosophy, universities, sense of place, climate ambassadors

Introduction

Even in the most challenging of environmental conditions, where human communities settle, educational activities occur. Learning happens in-place, its processes form part of what we might call the 'inhabiting' of an environ. Learning to be, in an emplaced, embodied, manner orientates the community member to their nexus, not only of fellow humans, but their more-than-human community. This is as true at 78 degrees north as anywhere else. Longyearbyen may be a "community in constant transition", but it remains a hometown (Grydehøj, Grydehøj, & Ackren,

2012, p.104); home too to the world's Northernmost educational institutions¹. Longyearbyen's kindergartens, school, folkehøgskole and centre of higher education are all beautifully modern, comfortable and homely despite their location at the 'cold edge' of the world. However, unlike the enculturation that enabled indigenous populations of Polar Inughuit to orientate themselves to their home in the Smith Sound Region (LeMoine & Darwent, 2016), or the Nganasan to theirs in the Taimyr Peninsula (Gracheva, 1983), the education of young people in Svalbard has taken place continuously for a mere hundred years or so (Arlov, 1989).

This article makes a focus of the lessons to be learnt from Svalbard for Institutions of Higher Education at lower latitudes, across the world. There are three aspects to this. (1) It is argued that the University represents an *ethical ecology* wherein learners grow through the relationships of learning that they establish with their more-than-human and human communities. (2) I emphasize the importance of the university as *emplaced*. And (3) this will mean rethinking the role of universities as *embassies* for their place in the world. This is primarily a conceptual piece. Its argument draws on the words spoken by Svalbard educators, but, fundamentally operates with a conceit of the relation between edge and the centre, at a conceptual level. The claim is simply that the unique view from the edge has the potential to inform practice across the globe: the edge not only borders but shapes the whole.

In the spirit of emplacement, it is important, though, to begin by conjuring a sense of Svalbard and its uniqueness. Whilst it is true that all sites of learning possess singularity and their own peculiarities, Svalbard's global significance brings to the fore its unique '*place-ness*'.

On the edge

The toponym, *Svalbarði* makes its earliest appearance in the medieval Icelandic manuscript, *Konungsannáll*, written around 1300 – referring to a mysterious land found, we are told in an account of the life of Bishop Guðmundr, in the year of King Sverrir's coronation, 1194. Happened upon, and surely far too bleak and inhospitable to invite exploration, never mind settlement (Hofstra & Samplonius, 1995, p. 238), this was at the "cold edge" of the Norse world (Chekin, 2020, p.20). A version of the *Landnámabók*, the Book of the Settlement of Iceland, from the second half of the Thirteenth Century provides the directions for the five-day sail to Svalbarði from Northeast Iceland. However, the land described, marking the Northern rim of the Norsemen's known waters, is characterised by such mythical elements as to render its existence beclouded, an Arctic shoreline hopped in freezing mists that give this place a symbolic significance at the grey waves' limit – a fantastic 'edge' more than a topographic one. Perhaps this was the mythical land-bridge that joined Grønland to Bjarmaland (Russia), encircling the top of both the Norsemen's maritime cosmography and their imagination. As one recent translation of the *Saga of Samson the Fair* has it, "From there all the way to uninhabited Greenland lies the land called Svalbard, and various tribes live there. There are those who live to be two hundred winters old, but seldom have many children..." (Waggoner, 2018, p.272) Whilst it is now widely assumed that, if this elusive land had any basis in historical fact, the Norsemen reached what we now know as Jan Mayen rather than present-day Svalbard/Spitsbergen, the evocative nomenclature – *the frozen edge* – seemed apposite to Barentsz when that archipelago's presence emerged from the mists of mythology and was recorded, in 1596.

Svalbard: more than the intriguing landmass at the top of your map, this place is still one defined as much by the popular imagination as the mundane reality (Saville, 2019). It is an edge-place, one that

¹ Still more northerly Svalbard schools in Ny-Ålesund and Pyramiden closed in 1963 and 1998 respectively.

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3 signals the margins of our Anthropocene world. Why? Because, as the fastest warming part of our
4 planet, its very existence as the 'frozen shore' is in rapid retreat, back into the white mists of an
5 imaginary High North that can but sustain a few more summers. Most recent data shows an Arctic
6 Amplification of mean temperature increases to four times the Global average, reaching a peak in
7 the open sea to the East of North East Svalbard, where temperatures have risen at around seven
8 times the global average rate (Rantanen *et al.*, 2022). That is to say, temperatures in Svalbard have
9 already risen something like 4.8 degrees above pre-industrial levels and are predicted to increase by
10 a staggering 10 degrees by the century's end.
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14 As a biome, the High Arctic is delineated by the July isotherm (with average temperatures in the
15 short summers not exceeding 4 degrees in its Eurasian sector) (Lee, 2020), so the very region is fast-
16 shrinking and its unique ecosystem retreating towards a terrifying vanishing point. As Saville claims,
17 Svalbard becomes the very "emblem of the Anthropocene" (Saville, 2019, p.574). No longer locked
18 in ice, the drip drip of its ancient glaciers' disappearance increases its multitudinous rhythm towards
19 a flood of white noise. The cold edge is melting. By 2030, if not before you even read this, the North
20 Pole – just five hundred miles beyond Svalbard's Northern tip – will be an expanse of churning, grey
21 open water in high summer (Wadhams, 2017): unimaginable to those of us brought up on tales of
22 Amundsen's flight across endless ice to sight it only a century earlier in 1926². Look again at the map
23 – Svalbard is red.
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26 *Research in the High Arctic*

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29 In 1994, when far fewer researchers were concerned with the part they played in contributing to
30 global anthropogenic climate change (ACC), the great Norwegian philosopher, Arne Naess posed the
31 problem far more pointedly than I. Participating in a unique ecosophical symposium in Longyearbyen
32 – *Deep Ecology in the High Arctic. The Planetary Challenge: How do we Change Attitudes?* – he said
33 "To meet here at Svalbard can... only be justified as an expression of resolve to contribute to the
34 dissemination of views favourable to the preservation of a largely intact Arctic." (Næss, 1996, p.14)
35 Nearly thirty years later, and with underlying attitudes barely shifted, the only justification for me to
36 fly to Svalbard remained to contribute through educational work to the dissemination of views
37 favourable to the Arctic's survival. The pace of attitudinal change may have been 'glacial', but the
38 adjective itself seems increasingly misplaced, as the meltwaters outpace public views, and the hope
39 of holding on to an 'intact Arctic' becomes a distant memory.
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43 For Longyearbyen's inhabitants, the everyday experience of global warming is at the centre of their
44 lives (Ylvisåker, 2022), even as attitudes towards issues such as mining, hunting and ACC may not
45 accord with those of a European environmentalist (Saville, 2020, p.102). As Saville identifies, working
46 in Svalbard requires humility, in respect of both place and people. Every aspect of employment in
47 Svalbard – whether tourism, coalmining, or the flourishing research and education sector – is shaped
48 by its relationship to the High Arctic's changing climate. Above Longyearbyen, the snow in spring and
49 early summer forms a wine-glass pattern on the mountainside. Every year, its inhabitants watch to
50 see when its stem 'snaps' as the snow melts. I was told that this usually happened in July until a
51 decade or so ago, then in June. Then, in 2022 the stem snapped in May for the first time; a
52 remarkable visual representation of the rapidly rising temperature, a climate change hourglass. One
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58 ² Whilst the first person to have verifiably traversed the ice to the Pole did so only months before my own
59 lifetime, in 1968.
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3 resident said: “the Champagne glass it's earlier and earlier, and I just think that's very in your face it's
4 very visible. It's very *present*...”
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Author's personal photograph, June 2022

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35 Whilst some of its immediate risks, such as landslides and permafrost-melt subsidence, may not be
36 the same as those further south, the existential threat to ways of life, habits, attitudes, the *very*
37 *reason to be in a place*, these all presage challenges that we must confront in the coming years. The
38 experience of the edge suggests readings of education's role at the centre, pointing towards the
39 place of climate and environmental higher education in the Anthropocene, hinting at wider lessons
40 for HE below the transformation zone of the Arctic, to be drawn from the experience of educating
41 among systems-retreat and potential collapse.
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44 Methodology

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46 In addressing these questions, the article synthesises the findings of semi-structured interviews with
47 Naess' insights into a Red Biocentric approach. However, to restate, the spirit of this article is
48 primarily conceptual. It is inspired and informed by both the spoken words of Svalbard's educators
49 and by the formative qualities of the place itself on the experience of learning. Ontologically, this
50 study takes human productive activity – labour – in the new epoch, including the productive mental
51 work of learning, to be inseparable from the whole-earth-systems into which that activity, as
52 structured by capital, feeds³. This differs from some other recent examples of related, theoretically-
53 informed climate change HE research (e.g., Rousell, 2016; Kinol et al, 2023; McGeown and Barry,
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58 ³ Taking the High Arctic as an example, such systems include for instance, plant phenology, solifluction, and
59 deglaciation at the interface of biology, geology and political economy.
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2023) in its politico-onto-epistemologically orientated stance (to adapt a phrase from Barad, 2007) The semi-structured interviews were conducted in an emplaced manner, conscious of the blanketing skies and wide expanses of grey-green High Arctic wilderness outside the window. The words spoken were enunciated – all in the language of English, for which I thank the speakers – not against the backdrop of the Adventdalen, but *within* it. Anonymity is difficult. In truth there are relatively few post-compulsory educators resident in Svalbard. Thus I interviewed just a handful, but in full compliance with ethical standards and permissions, and I have kept intimations of their roles to a minimum.

Though I asked each the same questions there was no sense in which expectations or themes were predetermined. I wanted to know how ACC is positioned with curricula and course philosophy in the High Arctic, what is its priority and what if any variation in approach to climate change pedagogy is adopted on account of locality. Behind the content of courses, I asked each whether providers envisage social or political learning outcomes to follow for students. Whilst scientists and teachers remain generally widely trusted in ACC debates, Svalbard's students could come from societies which may be less receptive to climate-related sciences' message, so I asked whether Svalbard's teachers feel any sense of the politics of climate-related sciences' content when providing materials, or had they any sense of a political responsibility?

The observations offered by participants served as a jumping off point rather than the basis of a systematic analysis of their views and attitudes. There were few enough transcripts that the list of themes 'compiled itself'. As important was my presence within the place under discussion, and *its* presence within the matters under discussion, and in the themes that emerged. Given the small number of participants, their proximity and the emplaced-embodied nature of their responses, the commonality of these themes is not surprising. They were, in a sense, also present in the landscape. This understanding is one that reflects the materialist and ecological axioms undergirding this work.

Red Biocentrism

There are more and more voices saying this is not the sustainable to have, uh, people living – even red people – saying people shouldn't live here... It's not good. Shouldn't be people this far north.

My interviewee in no way intended to allude to the theoretical perspective that I bring to this and other work, but their comment merits a little consideration in framing what follows. I have employed the theoretical frame of Red Biocentrism (Boxley, 2019, 2022) in part because it reflects that will to draw into an ecosophical approach to discursive analysis, the understanding of human labour, so comprehensively and transformatively mapped within the Marxist tradition. The interviewee's 'red people' are those whose understandings emerge from the labour movement, from the perspective of the working class. In the context of Svalbard, as elsewhere, this perspective is exemplified in the life of its coalminers. For Red Biocentrism, as for Eco-Marxism (Foster, 1999), work (including the activity of verbal articulation) and place are materially co-constitutive.

Red biocentrism is an attempt to theorise the activities of human productive labour as occurring within and among the activities of more-than-human agents, and the physicality and materiality of those undertaking activity as inseparable from wider material nexūs – the ecologies within which they act. All this has a bearing on the ebbs and flows of my interviewees' dialogues, discussed below, particularly in the sense that, methodologically, I take all aspects of human learning to be a form of work – productive labour – which could not take quite the same shape, extend along the same trajectory, or result in identical forms of knowledge, were it to occur as part of a different ecology.

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3 That is to say, for Red Biocentrism, utterances, such as those of my participants, reflect thoughts
4 which are as material as the mountains, and which grow, flourish, wither and die with and in their
5 environments.
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7 There is something about our usual understandings of the phrase 'learning in place' that keeps the
8 verb and the noun discrete. If place is also a process, always and inexorably adapting in all its
9 features, and if the capacity of 'learning' is not imagined as merely a quirk of humanity alone, but
10 also as an aspect of all living things and of life itself, then we can almost dispense with the 'in'⁴. So,
11 let us proceed with this in mind, and in due course, work with a notion of 'emplacement'.
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16 Learning from Longyearbyen

17 *Learning at seventy eight degrees North*

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19 With its astonishing rate of temperature gain, many students undertake their programmes of study
20 with an awareness that, as one educator put it, Svalbard is "the place where you can see what will
21 happen to the rest of the world". Whilst not strictly true (a ten degree average temperature increase
22 globally would be unimaginably catastrophic!), the unprecedented local mean temperate increase of
23 1.25C per decade for the last four decades (Rantanen et al, 2022) offers a forward glimpse at a world
24 of crossed tipping points, in bio-climatic freefall. Some students expect this "canary in the mine"
25 experience, and they are not disappointed.
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29 In that case, *why contribute so significantly to carbon emissions by travelling to Svalbard to study?*
30 My contributors hint that the reason may lie in the benefits of what I'm here referring to as
31 emplacement. An illustration was offered by one educator in discussing a technique used by a
32 colleague. At the beginning of their programme of study, before going out in the field, students are
33 shown a photograph of the landscape of Spitsbergen "and they say, well, there's a mountain there,
34 over there, and fields over there...at the end of the course, you've chosen the same picture and said
35 'now tell me what you can see'. Well, now you can ... see the run-off there and we can see how
36 those nutrients are going over there... Now interpret the landscape. You've been there."
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39 The phenomenon is familiar. As a prospective visitor to the islands, I poured like an over-eager
40 holidaymaker over photographs of Longyearbyen and imagined that I had an eidetic picture of the
41 place, whilst attempting to squirm my way out of that sense of twisted identities –
42 researcher/tourist – that Saville identifies (2019). But, as the reader will recognise, there is a great
43 deal of difference between seeing a photograph of a location before you have been there, and
44 viewing one of the same place once you have become familiar with it. The grainy, grey dust of the
45 polar desert caked onto the vehicles' screens and panels, the casually strewn detritus of the old pit
46 gear, these take on a different significance when one notices them in the picture again after
47 experiencing them. For Svalbard's educators, this effect will have been heightened by learners'
48 experience of an emplaced study of landscape, for example noting those features where changes in
49 weather patterns associated with ACC are already having an observable effect. The experience of
50 emplaced learning enables students to draw on such rich gestalt encounter, wrapped around with
51 memory and highlighted in intense sensory flashes. To this it will be important to return in deriving
52 from Svalbard the lessons for HE more widely.
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58 ⁴ I say 'almost' as the reader would not forgive the grammatical shuddering resulting from attempting to so
59 reinvent the language for the purpose of a little study such as this.
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3 For all this, the students of Longyearbyen, like others, recognise that there are benefits associated
4 with the 'remote' lectures which it was necessary to introduce at the height of the COVID pandemic.
5 There may or may not be a pedagogical case for such innovation (and this falls well outside the
6 scope of this paper). In discussing student developments in contemporary pedagogy, one educator
7 observed,
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10 everyone says the learning outcome is not as good as, of course, from a lecture with physical
11 presence. But on the other hand, if the person is just going to teach two hours, four hours
12 and not do anything out in the field, we prefer having it digitally anyhow because it doesn't
13 justify the travel and the economic costs.
14

15 Expectations are shifting. In the post-COVID setting, students are envisaging new ways of learning
16 which may open possibilities for reducing climatic impacts. This, combined with the profound
17 internalised sense of uncertainty experienced by many regarding earth systems, has resulted in a
18 challenge to established ways of working, and this challenge been initiated and led by students.
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23 *The student-led challenge*

24 Like many institutions of Higher Education, in 2022, the University Centre on Svalbard launched a
25 Green Strategy for 2030, at least partly in response to student pressure. The new reality of this
26 'bottom-up' impetus for institutional change was something echoed by all those with whom I spoke.
27 This is perhaps unsurprising, and mirrors the trend consistently recognised in the UK, for example, in
28 research conducted by Students Organising for Sustainability (SOS, 2022).
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31 The official statement of the UNIS Student Council welcomed new commitments to education for
32 sustainability, the embedding of the UN Sustainable Development Goals in programmes and a range
33 of measures to reduce and compensate for greenhouse gas emissions. However, additional
34 improvements have also been sought. From an international perspective, it is interesting to note
35 both the local specificity of these demands, and their more general applicability.
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38 Firstly, students demand a new course in sustainability, but make it clear that a full assessment
39 should be undertaken first to ensure that there are "substantial reasons to teach it in Svalbard,
40 where the environmental footprint is far higher than on the mainland". (UNIS Student Council, 2022)
41 Secondly, a short course for all students is demanded, not only for those interested in sustainability,
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44 where students can learn about the exceptional extent that Svalbard is already affected by
45 climate change and become aware that what they can already see here is just the beginning
46 of dramatic global changes – and that they have the special chance to be among the first to
47 witness and study it. They should then acquire tools and knowledge beyond their field of
48 study ... that they can use to improve climate-friendliness back home where climate change
49 is not yet visible. (UNIS Student Council, 2022)
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51 A credit-bearing module, open to all, and scheduled to ensure maximum participation, may be a
52 gold-standard to which other institutions might aspire, but the wider significance may lie in a new
53 reality. As students become aware of the intensity and seriousness of climate-induced changes in
54 their place of study, some are unsurprisingly desirous of opportunities to learn further of the
55 prospects before them, shorter- and longer-term, of the implications for their futures, their
56 employment and wellbeing, and the prospects too for places that they may have grown attached to.
57 This points towards an application of the place-based learning models (e.g., Narda, Pacini-Ketchabaw
58 & Nxumalo, 2018; Nxumalo & Cedillo, 2018) so commonplace at earlier phases to the parts of HE
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3 that have seemed untouched by this learning. Although this falls beyond the scope of this paper, I
4 gesture later towards such an application.
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6 The upward pressure from students to initiate institutional changes in educational establishments
7 represents a direct challenge, too, to educators. In Svalbard, perhaps as elsewhere, even academics
8 with an acute knowledge of ACC may have grown used to practices and methods of working rooted
9 in 'pre-Anthropocene times'. It can sometimes be difficult to recognise the challenges presented by
10 students as positive rather than merely inconvenient and complicating disruptions to established
11 practices. One may have good personal reasons for bringing a colleague for a face-to-face lecture,
12 but as one Svalbard educator observed, ACC has had
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15 a much higher focus so, that's why I think they [students] come here, and they are quite
16 aware, and then they benefit and learn a lot from being here and actually experiencing it,
17 not just reading it in the book. But ... the latest few years actually, there is some new twist
18 coming ... students are challenging all this, saying, why do you bring a lecturer here to talk to
19 us for two hours? You could do it digitally.
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22 In calling for course climate calculators on their websites, the UNIS Student Council seeks to turn the
23 aspiration of reduced travel into a quantifiable reality, and then goes further to demand that their
24 institution compensates for course-related emissions, and includes such costs in its fee structures.
25 The challenges that such demands place before HE may be deeply uncomfortable, but necessary
26 consequences of the global centre learning the lessons from the sharp edge.
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33 *Climate ambassadorship*

34 This takes us to the question of environmental ambassadorship. Many of the students who take
35 courses in Svalbard's small, specialist educational institutions, whether at tertiary, higher or
36 postgraduate level, do not make climate change a central focus of their study, and as one
37 interviewee noted, only a small proportion of students go on to be scientists. However, it was
38 remarked, some go into policy making and governance of one kind or another, and, like all students
39 of HE, they must make life decisions informed by ACC, so the "biggest thing we can do is educate
40 these people who are actually going to make decisions now, and of course in the future... we have an
41 important contribution to make in educating the right decisions as a payoff, long term". The
42 "payoff": this is the key, the "justification", as Naess (1996) put it, for the travel to Svalbard. To
43 invoke his entreaty again, at this juncture, what ethical justification could stand the cost of our
44 environmental impacts?
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48 In an argument on population reduction, which I otherwise reject, Naess nevertheless makes a
49 characteristically insightful observation about HE that is apposite here, "with higher education one
50 may expect that a higher fraction of the population will feel an urge to stay for a while in the Arctic...
51 it is clear that the problem of protecting those regions increases with population and also with
52 increases in the level of education." (Naess, 1996, p.15) Educated populations travel more, they
53 seek experiences at the margins, and they are desirous to learn further. I concur with Naess then
54 that HE globally has a huge environmental cost, including on the Arctic. The paying down of our debt
55 to the Arctic – the "payoff" – can be achieved through those longer term, 'non-synchronous' (Boxley,
56 forthcoming), aspects of the higher learning that result in sharing, exchange, decision-making. These
57 types of material, embedded and emplaced learnings form the heart of this study, for they cannot
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3 take place with-out environment. They add up to work as an ‘ambassador’ of place, in this case for
4 the High Arctic – often quietly and unobtrusively, unnoticed, sometimes more visibly or vocally in
5 the ethical responses we make to everyday situations and challenges. Ambassadorship involves not
6 soapboxes, but a way of living that may, in turn influence others to adopt views favourable to the
7 preservation of the Arctic.
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10 It is, as one educator said, hard to influence others to take the right decisions if you don’t have the
11 “basic concepts” in respect of ACC. If they are to act, informally, as ambassadors, the credibility of
12 former students necessarily depends to some extent on their ability to demonstrate an appreciation
13 of evidence of climate change impacts in their areas of study, so that data-informed knowledge
14 remains a bedrock of decision-making. Beyond the “basics” that a non-scientist (like the author) can
15 – and probably should – acquire during any visit to Svalbard, there is vast complexity in
16 understanding the factors involved in local Arctic Amplification effects, its causes and impacts on
17 local biology, glaciology, and so on. One participant observed that, for students
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21 I think it's probably very, very dependent on what and who they encounter and on
22 themselves, there's a lot of chance, I think. I hope at least all that go through us are to some
23 degree ... thoughtful...but I realize we do still have a way to go to put it [their study] in a
24 good context. We're working on it. Especially context that facilitates discussion and a
25 reflection on the complexity of the situation.
26

27 At this time, relatively few laypeople share much knowledge of Arctic climate change biology and
28 geology, making the role of students of these subjects second only to the academic and industry
29 experts who hold the potential to impact on policy. Indeed, we might apply to the great resource of
30 invaluable knowledge that Svalbard’s students acquire something of the analysis that Noel Castree
31 (2017) employs in relation to the geoscientific community in HE.
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34 *Students as “Spokespersons for an unstable earth”*

35 The quotation in the subtitle paraphrases Castree – “Geoscientists as spokespeople for an unstable
36 earth” (Castree, 2017, p.54). The point he makes is hardly arguable, that the detection of ACC is
37 “perhaps the most important contribution that geoscience has ever made to human understanding”
38 (Castree, 2017, p.54) , and he goes on to reiterate that at the turn of the Anthropocene, when
39 human influence has extended well beyond what was formerly thought possible, into realms
40 previously reserved for ocean currents and volcanos, geoscience has found itself inexorably drawn to
41 cross the “is-ought” boundary into proclamations about the need for “planetary stewardship”
42 (Steffen *et al.*, 2011). It is the apparent willingness of geoscientists across the disciplines to call out
43 the crisis that has led leftists like Naomi Klein (2014) to proclaim their importance, indeed their
44 radicalism. Castree takes a further next step, considering whether the geoscience “might be
45 deliberately conducted in the service of something more just, egalitarian and imaginative than the
46 rapacious capitalist world whose perpetuation it is so deeply implicated in” (Castree, 2017, p.54).
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50 To draw back a little, if Svalbard is, as we considered earlier, the very emblem of the Anthropocene
51 (Saville, 2019), and its students uniquely placed to understand their own imbrication within its
52 future, then their role as ‘spokespersons’ for the High Arctic might similarly be highlighted as of
53 significance. Whether those of us who have visited the region appreciate it or not, we, witnesses to
54 the melting of the “cold edge”, carry an awareness second only to that of the scientists themselves
55 of the immediacy of anthropogenic forcing. What, then, are the implications for ambassadorship?
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58 When geoscientists seek to speak beyond their own, they may choose caution when engaging
59 directly with policymakers, but, Anderson and Bows argue, they have a responsibility to speak
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3 “clearly, honestly and without fear” (Anderson and Bows, 2012, p. 640). The same might be said of
4 the students of Svalbard’s gathering climate catastrophe. Whilst few may become scientists, or
5 policymakers, the voice of the Arctic’s witnesses may indeed come to the service of those who seek
6 radically to challenge the systems of business as usual that perpetuate its meltdown. Those who
7 might charge that geoscience should remain ‘value-free’ cast adrift its mooring to the states that
8 fund such projects as the giant Nansen Legacy that ranges the Barents Sea to the east of Svalbard. As
9 Castree argues, “biophysical science always already contains contestable value-judgments about
10 what in the world is worth knowing (and how). These judgments, once committed to, entrain
11 resources and close off other potential lines of enquiry. In turn, science’s representations and
12 inventions are political even before entering the realm of policy making, commerce or the public
13 domain.” (Castree, 2014, p.66). Add to this the fraught scientific posturing that has marked states’
14 claims to hold stakes in the ‘Arctic landgrab’ that has followed as inevitably as the meltwaters the
15 rapid retreat of the sea ice, and the opening up of economic opportunities (Pedersen, 2021).
16 Svalbard’s students are just as thoroughly wrapped around with these politics. In truth such
17 embroilment is an unavoidable feature of the collapse in a ‘fact-value’ dualism that the
18 Anthropocene moment hails. As has now been widely rehearsed (e.g., Hamilton, *et al.*, 2015) a
19 Holocene ontology that placed barriers between the ‘social’ and the ‘natural’ is in as rapid a retreat
20 as the Arctic ice. Simply restating the facts – observed, measured, quantified – and inserting them
21 into a ‘social’ process with the aim of shifting opinion: this process looks archaic. To return all this to
22 HE, we learn from Svalbard that if students are to don the mantle of spokespersons of place, then
23 imparting the facts of global heating as if impartially will not do. Their emplaced utterances
24 materially impact differentially in different places of learning. Where those places and the facts exist
25 in a continuum of congruent experience, the ground is laid for ambassadorship to grow.

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27 In this regard, Naess’ approach was prescient, in insisting on a radical, and highly value-driven
28 retelling of the Svalbard experience. The Arctic ambassador may be dispassionate in their advocacy,
29 but they are neither disinterested nor divested. For Red Biocentrism, their work of learning forms a
30 part of the ecologies within which they operate, living always with uncertainty regarding the choices
31 they make or the potential ripples that their learning excites throughout the web of which they are a
32 part. For one of my interviewees, a university educator,

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“people want certainty and they want, when it comes to the environment or the climate
change, they want answers. But actually the answers are something you just have to keep
looking for and looking for and looking for yourself and live with the uncertainty of never
knowing for sure, what is the right course of action, what is the right thing to do.”

Students learning in place, may be instilled with a sense of the complexities and uncertainties of
ACC, along with the inevitability of ongoing biosystemic crisis, and the memories of their emplaced
HE which will, hoped this Svalbard educator, last a lifetime. A lifetime of ambassadorship is perhaps
too much to expect, but for this educator as for others, institutions of HE must at least try to act as
diplomatic schools for the education of climate spokespersons. This can only be achieved by
developing and promoting the university as a site of emplaced learning, of geographical, bioclimatic
uniqueness: the opposite of the airport-lounge corporate blandness of many placeless institutions.
In this regard, as in others, Svalbard shows the way. Its uniqueness, fragility, uncertainty at the cold
edge revealing the unfelt or unnoticed *uniqueness of every other higher education institution*, and so
the universality of that emplaced singularity so fertile, so necessary for the growth of ambassadorial
capacity.

Implications for practice in the university

Your place of learning

It is unlikely to be an easy task to assist students in understanding that their academic labour represents a bio- and geo-constitutive process. Our work, as members of educational, scholarly or academic communities contributes to the ongoing constituting of place as process. Rather than social psychology in reverse, Red Biocentrism describes the 'two-way street' by which ecosystems and social systems are co-created by the activity of interrelated and co-constitutive elements: human and more-than-human activity. As has been suggested here, and illustrated by the experience of Svalbardian education, learners and teachers can *unconsciously* contribute to the constituting of their learning places through their patterns of travel and consumption, their general habitus; or they can better understand the contribution that their learning produces, at practical and philosophical levels, and make of this a *conscious* process. Svalbard forces the reality of emplaced learning into consciousness. It is the sharp, cold edge of conscientization.

Programmes of study such as those offered in Svalbard might illustrate efficiently to any student wishing to participate how ACC has already impacted the flora, fauna and wider systems in the immediate area within which students are learning. The gold standard called for by Svalbard's students is credit-bearing modules, to include (i) a sense in which biodiversity, air quality, watercourses, etc., have been impacted already by global heating, and (ii) the contribution that students have made to heating through their activity. But how institutions might go about considering applying the lessons of HE at the sharp edge will, needless to say, vary enormously, dependent on institutional contexts (Reeves *et al.*, 2023).

Conscious interpretation of place is old hat to critical geographers and geologists, but for those of us involved in higher education more generally, we might wish to consider how the heightened sense of place that shifts perspective from an inscrutable landscape to a de-coded one might benefit our students' awareness of their own place in and impact on such landscapes and locations. Such an awareness, it has been suggested, emerges only with emplaced learning "in the field" (Boxley, forthcoming). As one Longyearbyen educator remarked, all this

"is very good ... But it's not enough. Because to understand, when so many things we can look up at the moment, what we can't look up is training in understanding complexity, yeah? ... I think this is one of the elemental things to teach and to be comfortable with, the uncertainty this complexity gives."

Complexity is the challenge and the joy of thinking from within place. Embeddedness, of learning and living, necessarily implies an appreciation of complexity and uncertainty. So, the questions posed, but as yet unanswered for courses of HE: how do we ensure that our learners appreciate their places of higher learning? How do we ensure that their education is understood as a constitutive part of those places? In respect of ACC, how do we encourage students to understand the contribution of their programmes of study to climate impacts locally and globally? I want to say, in Svalbard it is easy. It is obvious. And that is the beauty of thinking through Svalbard. The crowded streets of Manchester, Winchester or Oslo mask the contributions of our higher education in all respects by merging them into the intoxicating, swirling flow of masses, vehicles, construction-sites. By seeing our places of learning not only for what they are in their uniqueness, but also through the lens of the High Arctic, we might become more aware not only of their fragility, but also of their value.

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3 Longyearbyen, as has been noted, is small. Its students represent a transient but significant
4 proportion of its population. This makes it far easier for its institutions to sensitively integrate into
5 human and more-than-human communities. The scale, commented one educator, “helps them to
6 appreciate and understand the place rather than being isolated or insulated in a student
7 community”. Students are an integral and valued constitutive part of small but complex social and
8 natural ecologies. By way of example,
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11 “Students have run a second hand store for the local community since 2004 – a free
12 exchange site for clothes, household items, games, books, and for repairing and passing on
13 bicycles, etc. But this is crucially a part of the community, not a place for students only or
14 mainly.”
15

16 Similarly, Svalbard’s students have set up and operated other organisations and clubs within the
17 wider community. The functioning of civil society is therefore enriched through the active
18 engagement and participation of the student community. In this way, students come to further
19 appreciate their contribution to the fragile complexity of an ecology hanging onto the cold edge.
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22 For one of my interviewees, there’s also a “synergetic effect by these small student group type
23 bonds.”. The ‘tightness’ of a small community of students may generate a microcosmic mirror in
24 learners’ minds of the complexity of the far larger land communities within which they are nested.
25 This educator’s choice of word, ‘synergetic’ suggests that parts of the community feed one another’s
26 ideas, resources, courage, motivation. How then, if not to replicate this scale, to generate the
27 possibility of complex ecologies of learners, perhaps from different disciplines, coming together to
28 discuss community, sustainability, and the action necessary for their maintenance and transition?
29 And yet again, in Svalbard, it’s not so much ‘easy’ as an almost inevitable consequence of the
30 context of a community of learners on the edge of catastrophic climate change. So, how do we at
31 lower latitudes apply the lessons?
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35 The university exists as an ethical ecology, irrespective of its location. Its tendrils reach across the
36 landscapes that its learners inhabit. Every opportunity should be grasped to enmesh HE students
37 within their places of learning, through landscapes, through communities and in the employment
38 they seek whilst studying. But, this only goes part of the way. In order for learners to become
39 spokespeople for their unstable environments, the university itself must assume the identity of an
40 embassy for its place, its learners growing into ambassadors within the complex ecology of their
41 emplaced education.
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44 Whilst the scale of most Universities’ wider communities beclouds their fragility, a consideration of
45 the place of water-, food- and energy-security in supporting ongoing emplaced provision quickly
46 reveals that some of the vulnerabilities of Longyearbyen can be felt more widely: for example, a
47 reliance on unsustainable transport systems and the unendurable greenhouse gas impacts of many
48 campus-based models.
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51 Some of the drivers for a sustained and searching engagement with ACC issues are shared between
52 Longyearbyen, my own UK University and, no doubt, many others. For example, (i) ‘student
53 satisfaction’ – some students are *happier* when they feel their own contribution to climate change is
54 being minimised; (ii) reputation – institutions do not wish to be tarred with the brush of
55 unsustainable carbon impacts; (iii) academics’ depth of knowledge of ACC-impacts, locally to their
56 institution and internationally; (iv) the need for efficiencies associated with travel. In Svalbard we
57 find a mirror of our lives. As the emblem of the Anthropocene, its vulnerabilities are glaring, “in your
58 face,” as one participant said. Ours may be less so, but that makes them no less real. In essence, this
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is the simple heart of the lessons of this study. When Svalbard's students choose to travel, to research in the field, to learn in its seminar rooms, they can do little to avoid the reality of their own ecological impacts. This is evident, albeit indirectly, in the retreat of the sea-ice, in the melting permafrost and increased avalanche risk, in the phenology of the lengthening growing season, the milder summer days, the accelerating deglaciation, and on and on. Drip drip drip.

As Svalbard's students and educators have made plain, these impacts of ACC are rendered all the more tangible by the pedagogical shifts that have followed in train (Boxley, forthcoming), by the use of technologies to minimise students' and researchers footprints in the field; by the restrictions increasingly placed on environmentally damaging behaviours by Svalbard's Governor (Sysseimesteren på Svalbard, 2019). If our students do not hear the dripping (and of course they cannot and should not all go to Longyearbyen for a last-chance listen) then we could do worse than take from Svalbard what we can of their pedagogical realignment.

Here, I have mentioned a few of the things I took from the High Arctic, and offer them in the spirit of ambassadorship to invite a consideration of this question. After Naess, "can I justify my practice in support of an intact x" where x represents your bioregion? The possibility of an intact Arctic is passed, and for many of us at lower latitudes, the implications of this bitter reality have yet to be felt. So, as the last days of the High Arctic biome and the education it provides play out, I leave the final word to Longyearbyen resident, Line Nagell Ylvisåker,

Svalbard is still the Arctic, at least for a little while longer...Hopefully the natural fluctuations of the ocean currents will provide more cold, pastel winters in the years to come, before the milder, darker autumns and winters catch up to us. But the Svalbard my great-grandchildren will live in or visit will certainly be different than the one we live in now. The Arctic may even have disappeared completely. (Ylvisåker, 2022, p. 166)

References

- Anderson, K. and Bows, A, (2012) A New Paradigm for Climate Change. *Nature Climate Change* 2, pp. 639-40
- Arlov, T.B. (1989) *A Short History of Svalbard*. Oslo: Norsk Polarinstitut
- Barad, K. (2007) *Meeting the Universe Halfway. Quantum Physics and the Entanglement of Matter and Meaning*. Durham – London: Duke University Press
- Boxley, S. (2019) "Red Biocentrism for the Anthropocene", *Australian Journal of Environmental Education*, Vol 35 No 3, pp. 183-197. <https://doi.org/10.1017/ae.2019.18>
- Boxley, S. (2022b) "Striking in the City, Making Love in the Fields: Unsnarling the Wild Pedagogies of Earth Activism", *Coreopsis: Journal of Myth and Theatre* Vol 10 No 1
- Boxley, S. (forthcoming) "The Importance of the University as Emplaced: Lessons from Longyearbyen."

- 1
2
3 Castree, N. (2017) "Unfree radicals: Geoscientists, the Anthropocene and Left Politics", *Antipode* Vol
4 49 No 1, pp. 52–74.
5
6 Chekin, L.S. (2020) "Svalbarðs fundr. The place name Svalbard and its connotations in medieval and
7 modern literature and cartography" *Nordlit* vol. 45 p. 18-38
8
9 Fedesco, H. N., Cavin, D., and Henares, R. (2020) "Field-based Learning in Higher Education:
10 Exploring the Benefits and Possibilities", *Journal of the Scholarship of Teaching and Learning*, Vol 20
11 No 1. <https://doi.org/10.14434/josotl.v20i1.24877>
12
13 Foster, J. B. (1999). Marx's Theory of Metabolic Rift: Classical Foundations for Environmental
14 Sociology. *American Journal of Sociology*, 105(2), 366–405. <https://doi.org/10.1086/210315>
15
16
17
18 Gracheva, G.N. (1983). *Traditsionnoe mirovozzrenie okhotnikov Taimyra (na materialakh nganasan*
19 *XIX – nachala XX veka)*, Leningrad: Nauka. Available at: [http://www.kunstkamera.](http://www.kunstkamera.ru/lib/rubrikator/03/03_03/gracheva_1983/)
20 [ru/lib/rubrikator/03/03_03/gracheva_1983/](http://www.kunstkamera.ru/lib/rubrikator/03/03_03/gracheva_1983/)
21
22 Grydehøj, A., Grydehøj, A. and Ackrén, M. (2012) "The Globalization of the Arctic: Negotiating
23 Sovereignty and Building Communities in Svalbard, Norway", *Island Studies Journal*, Vol. 7 No. 1 pp.
24 99-118
25
26 Hamilton, C., Bonneuil, C. and Gemenne, F. (2015) Thinking the Anthropocene. In Hamilton, C.,
27 Bonneuil, C., and Gemenne, F. (editors) *The Anthropocene and the Global Environmental Crisis*.
28 London: Routledge, Pp 1-13
29
30 Hofstra, T., and Samplonius, K. (1995). "Viking Expansion Northwards: Mediaeval
31 Sources", *Arctic*, Vol 48 No 3 pp. 235-247
32
33
34 Johnson, J.T. (2012) "Place-based learning and knowing: critical pedagogies grounded in
35 Indigeneity", *GeoJournal* Vol 77, pp. 829–836 <https://doi.org/10.1007/s10708-010-9379-1>
36
37 Johnston, M., Viken, A., & Dawson, J. (2012) Firsts and lasts in Arctic tourism: Last chance tourism
38 and the dialectic of change. In H. Lemelin, J. Dawson, & E. J. Stewart (Eds.), *Last Chance Tourism* (pp.
39 10–24). Abingdon, Oxon: Routledge.
40
41 Kinol, A., Miller, E., Axtell, H. *et al.* (2023) Climate justice in higher education: a proposed paradigm
42 shift towards a transformative role for colleges and universities. *Climatic Change* **176**, 15
43 (<https://doi.org/10.1007/s10584-023-03486-4>)
44
45 Lee, Y. (2020) *Arctic Plants of Svalbard: What we Learn from the Green in the Treeless White World*.
46 Cham: Springer
47
48 LeMoine, G.M., and Darwent, C.M. (2016) "Development of Polar Inughuit culture in the Smith
49 Sound region". In: Friesen, T.M., and Mason, O.K., eds. *The Oxford handbook of the prehistoric*
50 *Arctic*. Oxford: Oxford University Press. 873 – 896
51
52 McGeown, C., and Barry, J. (2023). Agents of (un)sustainability: democratising universities for the
53 planetary crisis. *Front. Sustain.* 4:1166642. doi: 10.3389/frsus.2023.1166642
54
55 Naess, A. (1996) The Arctic Dimension Outside and Inside Us. In Stoltz, E. & Buzza, R.
56 (editors) *Proceedings of 'Deep Ecology in the High Arctic. The Planetary Challenge: How do we*
57 *Change Attitudes?' 1994 International Ecosophical Symposium. Svalbard, Norway, 19 August - 2*
58 *September*. Longyearbyen: The Norwegian Polar Institute, pp. 13-19.
59
60

1
2
3 Naess, A. (2008) *The Ecology of Wisdom*. Berkeley, CA: Counterpoint

4
5 Narda, N., Pacini-Ketchabaw, V., & Nxumalo, F. (2018) Rethinking Nature-based approaches in
6 Early Childhood Education: Common Worlding Approaches. *Journal of Childhood Studies*, 43 (1), 4-
7 14

8
9
10 Nxumalo, F., & Cedillo, S. (2018) Decolonizing place in early childhood studies: Thinking with
11 Indigenous onto-epistemologies and Black feminist geographies. *Global Studies of Childhood*, 7(2)
12 99-112. <https://doi.org/10.1177/2043610617703831>

13
14
15 Pedersen, T. (2021) "The politics of research presence in Svalbard", *The Polar Journal*, Vol 11 No 2,
16 pp.413-426, DOI: 10.1080/2154896X.2021.1883900

17
18 Raes, A., Detienne, L., Windey, I. and DePaepe, F. (2020). "A systematic literature review on
19 synchronous hybrid learning: gaps identified", *Learning Environ Res*, Vol 23, pp. 269–290.
20 <https://doi.org/10.1007/s10984-019-09303-z>

21
22 Rantanen, M., Karpechko, A.Y., Lipponen, A., Nordling, K., Hyvärinen, O., Ruosteenoja, K., Vihma, T.
23 and Laaksonen, A. (2022) "The Arctic has warmed nearly four times faster than the globe since
24 1979". *Commun Earth Environ* 3, Vol. 168. <https://doi.org/10.1038/s43247-022-00498-3>

25
26 Reeves, A, Gwilliam, J., Harrison, P., Price, L., Schantz, N., Ribchester, C., Hughes T., Gretton, S.,
27 Strachan, S., Logan, L., Boxley, S., Lengthorn, E., Barrett, H. and Peres, S. (2023) *Education for*
28 *Sustainable Development and Academic Quality: Principles and Processes for Higher Education*
29 *Providers*. QAA. Available at [https://www.qaa.ac.uk/docs/qaa/members/education-for-sustainable-
30 development-and-academic-quality-principles-and-processes-for-higher-education-
31 providers.pdf?sfvrsn=63e2ac81_8](https://www.qaa.ac.uk/docs/qaa/members/education-for-sustainable-development-and-academic-quality-principles-and-processes-for-higher-education-providers.pdf?sfvrsn=63e2ac81_8)

32
33 Rousell, D. (2016). Dwelling in the Anthropocene: Reimagining University Learning Environments in
34 Response to Social and Ecological Change. *Australian Journal of Environmental Education*, 32(2),
35 137–153. <https://www.jstor.org/stable/26422925>

36
37 Saville, S.M. (2019) "Tourists and researcher identities: critical considerations of collisions,
38 collaborations and confluences in Svalbard", *Journal of Sustainable Tourism*, Vol 27 No 4, pp.573-
39 589, DOI: 10.1080/09669582.2018.1435670

40
41 Saville, S. M. (2020) Locating value(s) in political ecologies of knowledge: The East Svalbard
42 management plan. In S. M. Saville & G. Hoskins (Eds.), *Locating Value: Theory, Application and*
43 *Critique*, pp. 173–185. London: Routledge.

44
45 SOS (2022) *Sustainability Skills Survey 2021-22. Research into Students' Experience of Teaching and*
46 *Learning on Sustainable Development. Higher Education report*. Students Organising for
47 Sustainability – United Kingdom, available at [https://uploads-
48 ssl.webflow.com/6008334066c47be740656954/62de805cb0d9030a96c6e88a_20220125_SOS-
49 UK%20Sustainability%20Skills%202021-22%20-%20HE%20only%20-%20FINAL.pdf](https://uploads-ssl.webflow.com/6008334066c47be740656954/62de805cb0d9030a96c6e88a_20220125_SOS-UK%20Sustainability%20Skills%202021-22%20-%20HE%20only%20-%20FINAL.pdf)

50
51 Steffen, W., Persson, Å., Deutsch, L., Zalasiewicz, J., Williams, M., Richardson, K., Crumley, C.,
52 Crutzen, P.J., Folke, C., Gordon, L., Molina, M., Ramanathan, V., Rockström, J., Scheffer, M.,
53 Schellnhuber, H.J. and Svedi, U. (2021) "The Anthropocene: From Global Change to Planetary
54 Stewardship" In: Benner, S., Lax, G., Crutzen, P.J., Pöschl, U., Lelieveld, J. and Brauch, H.G. (eds) *Paul*
55 *J. Crutzen and the Anthropocene: A New Epoch in Earth's History. The Anthropocene: Politik—*
56 *Economics—Society—Science*, vol 1. Cham: Springer. https://doi.org/10.1007/978-3-030-82202-6_13

- 1
2
3 Sysselmesteren på Svalbard (2019) Environmental protection. Available at
4 <https://www.sysselmesteren.no/en/the-governor-of-svalbard/environmental-protection/>
5
6 UNIS Student Council (2022) *Statement on Green Strategy*. Unpublished flyer.
7
8 Wadhams, P. (2017) *A Farewell to Ice: A Report from the Arctic*. New York, NY: Oxford University
9 Press
10
11 Waggoner, B. (2018) *Sagas of Imagination: A Medieval Icelandic Reader*. Philadelphia, PA: The Troth
12
13 Ylvisåker, L.N. (2022) *My World is Melting: Living with Climate Change in Svalbard*. Oslo: Samlaget
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
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