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Contents

Editorial: Understanding Collective Learning and Human Agency in Diverse Social, Cultural and Material Settings

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Introduction to the Research Papers
Lausanne Olvitt

The significance of environment and sustainability education research and practice, and its potential contribution to a sustainable future for humanity, is conveyed by the International Social Science Council (n.d.), which explains:

> People everywhere will need to learn how to create new forms of human activity and new social systems that are more sustainable and socially just. However, we have limited knowledge about the type of learning that creates such change, how such learning emerges, or how it can be scaled-up to create transformations at many levels.

Here, the important shift is towards considering what social systems, forms of knowledge, learning processes and questions of justice are associated with perpetuating or halting the decline of Earth's bio-geo-chemical systems. This edition of the *Southern African Journal of Environmental Education* contributes three research papers and a themed Think Piece collection to these international deliberations about the role of education in enabling transformations to sustainability. Collectively, the articles highlight how relationality and the formation of human agency in socio-cultural and material settings in past–present–future configurations underpin all environment-oriented learning processes. The three research papers constituting the first part of this volume offer glimpses into how current unsustainable socio-cultural and material configurations might be transformed to address social inequalities and damaged people–nature relations. The Think Piece collection, introduced by Lotz-Sisitka, Læssøe and Jørgensen later in this editorial, focuses on how learning can foster and contribute to the development of change agents and collective agency for climate-resilient development.

In the first research paper, **Manuku Mukoni**, **Ronicka Mudaly** and **Relebohile Moletsane** give an account of rural Zimbabwean women's gendered experiences of participating in a community-based environmental education programme. Their case study highlights how, despite the apparent success of women officially or numerically participating in the programme, deeply entrenched gendered norms and power gradients leave the women silenced and devalued. The paper challenges practitioners involved in community environmental education

activities to seek forms of transformative dialogical praxis that might recast women as active and equal agents of change.

Jean Kayira's paper similarly explores the tacit yet profound ways that people's agency is conditioned by their dominant socio-cultural and economic realities. Drawing on Bhabha's (1994) idea of inhabiting 'hybrid third spaces', Kayira describes how the relationships that vulnerable children in a rural Malawian village have with 'their place' are a complex hybrid of local social, cultural and material interactions, and globalised identifications. Using a place-mapping research methodology, Kayira's case study shares a sample of the children's representations of their favourite places that are interpreted as gendered, globalised and aspirational.

The case study by **Jonathan Foley**, **Himansu Baijnath and Donal P. McCracken** reiterates Kayira's conclusion that environmental educators need to be responsive to learners' socio-cultural background and experiences when teaching about environmental concerns. Foley *et al.* describe the perspectives, attitudes and understandings of biodiversity loss of students at a South African university of technology. In this urban higher-education setting where student concern for biodiversity loss was expected to be low, the questionnaire and interview data indicated that students indeed valued biodiversity, most especially when strong cultural connections could be made between students' lives, their African identities and local natural places.

Introduction to the Think Piece Collection: 'Collective Learning and Change Agency Formation in Times of Climate Change'

Heila Lotz-Sisitka, Jeppe Læssøe, Nanna Jordt Jørgensen

There is no doubt that climate change presents one of the most significant challenges to humankind. Increasingly it is being understood that responding to climate change is not just a matter of individual response, but requires more collective, societal responses. Since much of how to respond best to climate change challenges remains unknown, this response should be learning-centred. Contemporary educational research shows that learning *can* lead human development and societal transformations, but as yet little is known about this in a climate change context (Lotz-Sisitka, Wals, Kronlid & McGarry, 2015; Macintyre, Lotz-Sisitka, Wals, Vogel & Tassone, 2018).

The need for more radical and more collective forms of learning-centred transformation is increasingly recognised in the social-ecological and global change sciences. For example, the Intergovernmental Panel on Climate Change (IPCC, 2014) reports that there is a strong need for learning-centred approaches to climate-resilient development. Yet these approaches to learning, especially from a change agent/collective agency point of view, remain underdeveloped and undertheorised in the context of wicked problems such as climate change. As outlined by the International Social Science Council's Transformations to Sustainability (T2S) project on 'Transgressive Learning in Times of Climate Change', limited research has been done on this type of learning.[1] In this collection of Think Pieces, the authors focus in particular on *how such learning emerges amongst change agents*, on *how they influence other people's learning*, as well as on

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1   See www.transgressivelearning.org.

how such social learning processes can be expanded and upscaled to strengthen collective agency for climate–resilient, sustainable development.

This collection of Think Pieces aims to contribute to addressing these issues and thereby, hopefully, promote further knowledge production and knowledge exchange at the intersection of research and practice. Through this, the authors of the Think Pieces help to qualify efforts for learning–led, peaceful and transformative ways of coping with climate change and related global sustainability issues.

The approach taken to developing the Think Pieces

The Think Pieces were produced as part of a bilateral collaboration between the Environmental Learning Research Centre at Rhodes University, South Africa, and the research unit 'Educating for Viable Futures' at Aarhus University, Denmark. A grant from the Danish Agency for Science, Technology and Innovation enabled this collaboration, consisting of three sessions with workshops and field visits that took place from June 2016 to February 2017. The main scientific focus was *education and social learning in response to climate change risk and vulnerability* and, within this, *how learning can foster and contribute to the development and emergence of change agents and collective agency for climate-resilient development.*

At the first workshop in Copenhagen from 6–9 June 2016, different issues as well as theoretical perspectives and concepts were conveyed through a diagram that emphasised the processual links between collective learning, change agency formation and educational responses to climate change (Figure 1). It was as part of this process that we decided to produce

Figure 1. Exploration of the joint issues at the first workshop

Collective learning and change agency formation in educational responses to climate change
- Touches on different disputes:
  - Participation
  - Education as reproduction
  - Climate change as contemporary concern

- Move away from education as reproduction
- Agency of individual/collective: histories of being and becoming
- In diverse contexts: school, NGOs, social movements, communities (be specific in descriptions)
- Bad practices, potential of absences, dissonances, contradictions, opportunities and emergence
- Tensions in dynamics
- Concrete utopias
- What kind of agency emerge?

Define concepts

Collective learning

and change agency formation

in educational responses to climate change

- Systems & complexity theory
- Democracy & governance
- Pragmatism
- Critical and new materialisms
- Socio-technical dynamics
- Social movement theory

Why focus on collective learning?
- Educational purpose and wider policies
- Values and matters of concern
- Wicked problems and principles
- Practice and activity
- Controversies around participatory approaches
- New versions of commonality
- Methodologies and approaches (to unlock paradox)
- Scaling approaches (from niches to wider …)
- Learning theories: cultural psychology, psychoanalytic, networks, theories of being and becoming, expansive/transformative social learning, pragmatism

Educations responses in relation to:
- Wicked nature of the problems
- Commons and common good (specific meanings)
- Climate science
- Climate–resilient development
- Adaptation
- Mitigation
- Reduction of human–nature divide
- Policy interests and trends

- *How does this shape a rethinking of education (UNESCO doc)?*

- Think pieces and reflections on field studies (for 2017 SAJEE publication?)
- Contribution to rethinking education
- Positive take on people learning to change together in response to the biggest issue
- Focus on the challenging aspect – and on the INTERESTING point/perspective!

a collection of Think Pieces in order to explore the many potential ways of approaching and conceptualising the joint issues. The Think Piece format allows for open exploration of a particular concept from diverse vantage points.

Since the object of our enquiry was complex and our initial scoping (see Figure 1) indicated that a number of complex dimensions would need to be related to each other in order to develop a coherent research framework for researching collective learning and change agency formation in times of climate change, and as there were diverse possible theoretical approaches to this, we decided to adopt an exploratory approach first to 'open up' vantage points on the object of collective study. To offer some synergy and coherence, we agreed to also focus our reflective work on case studies, and in the collaboration we explored some joint case studies. The purpose here was to relate theory to practice and to consider the research object in and out of contexts of practice.

As indicated in the box in the lower left corner of Figure 1, this collection of Think Pieces has the constructive aim of contributing to rethinking education and training. In this sense, we also sought to focus on some of the more challenging aspects or interesting points and perspectives, situating this reimagining of education and learning in ways that provide hope for, and a positive orientation towards, learning for change.

Cases as generative spaces for Think Piece construction

In order to give meaning to our interest in theory-and-practice-in-practice (Bhaskar, 2008), we focused on case studies as generative spaces for Think Piece construction. To do this, we undertook field trips at each session, which provided important inspiration, reflections and discussions. In Denmark, as part of the first session, the island Samsø was visited in order to meet and talk with change agents there. Samsø became world famous in 2008 when *Time* magazine selected their key change agent, Søren Hermansen, to be one of a hundred 'heroes of the environment' (Walsh, 2008). The title of the article was related to a radical transformation of the island's energy system to become totally based on renewable energy. In South Africa we visited a newly emerging energy transition system in the East London area of the Eastern Cape province, where we also focused on the development of green skills for the energy transition, linking this also to recent policy interest in collective learning and change agency formations emerging from the Paris Agreement. We also visited a rural community learning network context where farmers were being supported via multi-actor relations in the Imvotho Bubomi learning network to develop practices of rainwater harvesting and conservation. This initiative is named 'Amanzi [Water] for Food' and its purpose is to enhance food and water security. Researchers in our group were also engaged in other interesting case study contexts further afield and brought their deliberations and reflections to bear on these contexts.

Dialogue across contexts

A collection of Think Pieces may be compared to a colloquium – a common discussion around a shared issue in which the contributions provide a range of different perspectives, for example by relating to different settings or by drawing on different theories. The aim is not to bring these different perspectives together in one unifying theoretical construct but to explore the

overall issue in a multifaceted way, adding and reflecting on potential ways of approaching and conceptualising key sub-issues. In this sense, the collection offers contributions that, hopefully, are helpful for those who, in theory and/or practice, deal with collective learning and change agency formation related to climate change and sustainability transitions.

The first Think Piece is written by **Heila Lotz–Sisitka**, who deliberates on how relationality is framed in collective learning and change agency formation processes in South Africa's major renewable energy development and the Samsø Island renewable energy transition. In both cases, the public discourse appears to focus on 'pioneers' or 'champions', highlighting individual capabilities rather than collective, relational competences. Yet, on closer inspection, it is indeed the relational competences of the pioneer or champion, who is constituted as a 'relational subject' with a key role to play in producing shared relational goods, that appear to be significant to the collective learning and action process. Lotz–Sisitka also provides insight into how individual change agents are relationally constituted. This, she argues, requires a differentiation of relation*ism* and relational realism.

In her Think Piece, **Monica Carlsson** also draws on the Samsø Island case and reflects on the relationship between individual and collective in change agency formation. Inspired by notions of participation in everyday life and politics, the Think Piece furthermore explores two different forms of knowledge-sharing in the learning processes leading to change on Samsø: 'neighbourly visits' and open source web-based documentation – emphasising the role of knowledge exchange in change agency formation. Drawing on Jamison's (2010) notion of the making of green knowledge in the tension between environmental politics and cultural transformation, the Think Piece concludes by suggesting that the Samsø project adopts both an adaptive and a transformative approach.

While theories of transformative social learning, applied in environmental and sustainability education, tend to operate with relatively short-term learning horizons, the Think Piece of **Jeppe Læssøe** explores the potential to think of social or collective learning as longer-term processes. Like the two previous Think Pieces, this contribution relates to the Samsø case, but here the focus is on how the key change agent draws on storying collective experiences. Inspired by the works of German and Danish critical theorists, the emphasis is on linking people's everyday sensuous–emotional experiences to collective spaces, enabling collective reflection and thus exemplary learning about the socio-cultural context they belong to. Furthermore, this could create opportunities for concrete utopian projects and collective experience-making.

The Think Piece authored by **Injairu Kulundu** invites us to consider what collective learning and change agency could look like in a polarised world. By highlighting the diverse perspectives and trajectories of four change drivers across different social contexts of South Africa, Kulundu identifies contradictions existing between the issues that they are grappling with in practice. The Think Piece highlights the need for pedagogical experimentation around an idea of collective resonance, which refers to the catalysing of a deep resounding connection between individuals from completely different environmental, socio–economic and cultural and psychic worldviews. It is about the possibility of purposefully engaging the relationships, contradictions and possibilities that sit between the diverse work that change drivers are doing.

The Think Piece suggests that we can use these contradictions to help build a layered praxis for solidarity and social change in polarised societies.

Nanna Jordt Jørgensen's Think Piece also involves central change agents and processes of learning between actors. With her point of departure being a case story from the Amanzi for Food project in the Eastern Cape, and older case material on community gardens in Port Elizabeth, Jørgensen reflects upon ways of experiencing and coping with uncertain livelihood conditions. The discussion focuses on the intergenerational interactions and learning processes involved in gardening and their role in shaping responses to uncertainty which point towards 'creative solutions' rather than 'debilitation'. Each case features a central change agent whose agency is shaped by her/his ability to take up a generational position in a community of practice in creative ways. As such, the Think Piece stresses the relational aspects of change agency formations and encourages attention to the heterogeneous positions and social interactions involved in collective learning processes.

Using a critical realism perspective and schematic tools, **Rob O'Donoghue**'s Think Piece examines the deliberative framing of an Amanzi for Food teaching garden as an education process for mediating the learning of rainwater harvesting practices. Working with Bhaskar's (2008) Transformational Model of Social Activity and using expansions of his 'four-planar social being' schema and its resolution in his 'social cube' model, the study contemplates the framing of a curriculum for mediating co-engaged social learning in the contexts of practical work in an agricultural college curriculum setting. In this way, the research process is developed as an under-labouring review of the emerging curriculum in search of theory to inform pedagogy for mediating situated processes of transformative social learning.

Søren Witzel Clausen's Think Piece centres on the ongoing climate changes and points to the challenge of comparing efforts to address climate changes due to different impacts at different places with diverse economic, technical and social conditions. Based on case material from the Amanzi for Food project and the Energy Academy at Samsø in Denmark, the Think Piece proposes that the concepts of action competence and powerful knowledge help in shedding light on collective learning and change agency formation processes.

The final Think Piece, by **Sofiya Henrietta Angelina Olsen**, explores how education for sustainable development is perceived and practised at the Danish folk high school course Green Guerilla. The Think Piece argues that the Green Guerilla course constitutes a radical political imaginary; a space where the students learn to train their sociological imagination and reflect upon themselves and their own culture and society from an outside perspective in order to imagine how it may be structured differently. A special event during that course, a five-day study trip to a Swedish forest, is highlighted as particularly transformative for the students, as they learn to be in and engage in active, sensory ways with nature, and experience how creating a sustainable world, in more than one sense, means 'dealing with your own shit'. Through this sustainable formation, the students learn that it is up to them to 'find their own forest' – that is, to figure out how they can create the lives that they want to live in the future.

Although the nine Think Pieces offer a diversity of inputs, they all address the joint issue of collective learning and change agency formation related to climate change and sustainable transitions. As such, they all contribute to critical reflection on these key

concepts. For example, the Think Piece of Læssøe, indicates that collectivities take different forms in different settings, each with their specific potentials and challenges for change agents working to enable collective learning and change agent formation. The Think Pieces furthermore explore various aspects of collective learning. Læssøe, Kulundu, Olsen and Jørgensen point to the role of sensuous–emotional experiences in collective learning and change agency formation, while other contributions highlight situated co-engagement (O'Donoghue), collaborative and expansive learning (Lotz-Sisitka), mediation and dialogical processes (Jørgensen), and knowledge-sharing (Carlsson). In relation to the concepts of change, change agency and change agents, a key issue is the relationship between collective and individuals in change agency, most explicitly analysed by Lotz–Sisitka and Carlsson. Similar to the papers of Kulundu, Læssøe and Jørgensen, both of these Think Pieces also address the role of key persons in collective learning and change agency formation. The formation of change agency in planned educational activities is most explicitly, but also in quite a different manner, reflected in the Think Pieces of O'Donoghue, Olsen and Clausen, which emphasise educational concepts and curricular processes that can support collective learning and change agency formation. Finally, the collection of Think Pieces emphasises in several ways the importance of transgressing generic approaches by contextualising collective learning and change agency formation on climate change and sustainability in time as well as space.

Engaged scholarship
The Think Pieces all inscribe themselves in a tradition of engaged scholarship which has a strong history within environmental and sustainability education research. As such, they share an ambition to make a difference beyond academic knowledge production, endeavouring to engage more directly in the promotion of social change. In these Think Pieces, we also see evidence of this aspiration for engaged research being actualised in different ways. In the articles of Carlsson, Clausen, Lotz-Sisitka, Læssøe and Jørgensen, the aspiration for contributing to change is the underlying motivation for the analysis of empirical collective learning and change agency formation processes and for endeavours to attain a stronger theoretical clarity of these concepts. Methodologically and analytically, the authors – although not full participants as such in the processes of change under discussion – position themselves as allies of people in the settings being engaged with, and processes are analysed in attempts to 'think with' them, focusing on the potentiality inherent in the cases, rather than subjugating them to critical deconstruction.

Expanding the continuum of engaged research, in the articles of Kulundu, O'Donoghue and Olsen, the authors take a more active role in the generation of social change analysed in their articles. Hence, Kulundu and O'Donoghue are both involved in developing educational approaches to collective learning and change agency, while Olsen as a participating student undergoes the collective learning process discussed in her article. The different balance points between active participation and analytical distance offer different kinds of insights into how collective learning may lead to change. Common to all texts is the ambition to keep reflections open and experimental (hence the choice of the Think Piece format) in an attempt to adapt

research approaches to the uncertainty and insecurity of the climate crisis, which calls for new and creative ways of thinking rather than the reproduction of hitherto dominant knowledge construction approaches.

In Conclusion

In conclusion, we highlight a few insights from the Think Piece collection with emphasis on their implications for environment and sustainability education research and praxis. We think that the Think Piece collection, while modest and experimental in scope, provides inspirations for the idea of authentic 'real world' learning; that is, connecting learning to ongoing issues, involved actors, networks and efforts to promote sustainable change. Here, we support a view of participation as neither a detached exercise nor visioning without any relation to reality, but rather as connected to collective civil society processes of change which take place without being dominated by policy institutions. Such participatory processes search for ways forward in niches and in connection to new ruptures made by climate change and related socio-cultural change. In such contexts, there is a need to constantly recognise, review and reflexively respond to ongoing challenges and opportunities in practice and how key actors/change drivers may cope with them. As noted, researchers are integral partners in such a process, hence the need for the scope of engaged research approaches also alluded to above.

The Think Pieces also show that collective learning and change agency formation in relation to climate change involves processes of ongoing 'navigation' of: (i) power; (ii) structure; (iii) educational and ecological change and social dynamics, due to intersecting complexities and uncertainties. Thus they foreground the intertwining of material and social perspectives in environment and sustainability education. Recognising this can help to avoid being naïve in the way we approach environment and sustainability research and practice. Time needs to be given to come to understand the complexity of intersectional dynamics in any environment and sustainability education context. Such complexity should not produce paralysis, but rather be viewed as a creative and open process opportunity, as the Think Pieces all show.

The Think Pieces, and their contextual foci, show that collective learning and change agency formation occurs in the here and now, but that a long-term view or perspective is also needed for interpreting and reflecting on such processes more fully. This provides some insight for reflections on and planning of processes of collective learning in time–space where different time–space configurations need to be taken into account.

The Think Pieces also point to how both social and psychosocial-emotional relations may be part of change agency formation. Motive for change is also a key part of this, as is the need for reflecting on potentially erroneous individualising assumptions of 'change agents', and the need to consider their roles in social contexts. As shown in one or two of the Think Pieces, a focus on 'the change agent' as hero or champion can obscure details of other relational processes that allow for the change agent to act. The Think Pieces all point to the relationality of various forms, for example intergenerational relationality, interinstitutional relationality, interpersonal relationality and more. The Think Pieces also point to the need to carefully think

through the phenomenon of relationality in collective learning and change agency formation in environment and sustainability research and praxis, and to avoid superficial interpretations of this complex phenomenon.

Lastly, we encourage readers of the Think Piece collection to carry forward this project and join in the process of searching out inspiration in and from such practices in totally different socio-cultural and material contexts. The future of environment and sustainability education in the context of wicked problems is likely to become ever-more relationally constituted, and collective learning and change agency formation will no doubt expand in significance. We hope that this collection of Think Pieces will help researchers to participate in, and reflexively review, such processes.

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Gender, Power and Women's Participation in Community Environmental Education

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Abstract

The gendered experiences of women in community environment education (CEE) are often relegated to the margins of environmental education research discourse. This study disrupts the linearity of the relationship between women's physical presence in work settings and their participation in these spaces. Specifically, this work addresses the question: What constrains women's participation in the activities of one Zimbabwean community environmental education organisation (CEEO)? *This qualitative study was underpinned by a critical philosophical paradigm with ecofeminism as the overarching theoretical framework. Data were generated using document analysis of teaching materials, individual interviews, focus group discussions and participant observation. Twenty-six women aged between 38 and 62 years, who frequently attended the CEE programme, were recruited through purposive and snowball sampling techniques, to participate in this study. Findings suggest that there is widespread devaluing of women's contributions during meetings of the CEEO by other stakeholders and, ultimately, by women themselves. This results in the silencing of women and endorses their positioning as passive agents. Gendered teaching materials ameliorate women's mutism and their confinement to tasks which do not require technical expertise. The findings of this research have implications for enabling CEEOs to reflect deeply on their organisational structures, methods and materials, in order to address women's constraints in CEE activities. This could recast women as active agents in CEEOs.*

Keywords: Environmental education, community environmental education, participation, women.

Introduction

> We frequently attend these meetings and we do give our ideas but it just ends in the air. (Thiathu)

> They don't want to use ideas of a woman. Women's contributions are taken lightly. Men don't want to listen to women's ideas. (Sophie)

> But if we were men there could be a difference because men are working, they try, like men to plan, for example they may drill a borehole and buy an engine for watering. (Renaye)

The preceding views were articulated by women who were engaged in a Zimbabwean community environmental education organisation (CEEO) programme. The quotes by Thiathu

and Sophie reflect the devaluing of women's contributions during meetings of the CEEO. This results in a 'hazardous play of dominations' (Foucault, 1984:83) between the genders and the positioning of women by other stakeholders and, eventually, by women themselves, as subaltern (Spivak, 1988). Spivak refers to the silencing of women when she asserts: 'Between patriarchy and imperialism, subject-constitution and object-formation, the figure of the woman disappears […] [and is] caught between tradition and modernisation' (Spivak, 1998, cited in Shandilya, 2014:1). Spivak (1988) adds that women's silence emanates from both their subordination within ideological constructions of gender, which reinscribe men as being dominant, as well as their naturalised subalternity within the context of colonial production. According to Lindemann (2012:39), the social construction of gender has positioned man as the 'unstated point of reference for what is paradigmatic of human beings'. Within this gendered construction, women are viewed as not merely being different compared to men, but as deviating from the norm, and this deviance includes the perception of women's inferior intellectual and emotional capacity to engage in useful work (Lindemann, 2012). Lorber and Martin (2001) attribute the domination of men and subordination of women in the workforce to the construction of men as having the capacity to be objective, innovative and unafraid to take risks, and therefore as being better suited to higher ranks in the workforce. Decades of socialisation about hegemonic masculinity and subordinate femininity on gendered norms about what work women can and should do influences the quality of women's lives (Lorber & Martin, 2001).

Consequently, women such as Renaye show a preference for heteronormative masculine traits, which they view as being innovative, creative, persevering and possessing a capacity for problem-solving, each of which can advance the vision and mission of a CEEO. We seek to understand these complexities by reflecting on women's lived experiences in a CEEO. We draw on Agarwal's (2001) typology of participation and theoretical debates about access, agency and voice in order to respond to the following research question: *What constrains women's participation in the activities of a CEEO?*

Women's participation in productive work is often defined in terms of numerical descriptors which are related to their physical presence in these work settings (Agarwal, 2001; Benjamin, 2010; Fazlul, Fazlur, Muhammed, Iffat, Muhammad & Mehtab, 2016). For example, in community forestry groups in India, Agarwal's study (2001) reveals that women's enrolment in general bodies and executive committees is typically low. Efforts to increase the number of women as members are being made. This numerical increase could involve membership only, where the women may or may not attend meetings. However, the cultural exclusion of women from decision-making processes is mirrored in these settings because women are not told about the decisions which are made, and when they query these, they are questioned about the reasons for wanting to know about the discussions which occurred at meetings. When they do attend meetings, they report that they cannot voice their opinions, and when men have finished speaking, this signals the end of the meeting. Therefore, women's attendance at meetings (albeit low) does not imply that they participate in decision-making.

We seek to disrupt the linearity of the relationship between women's physical presence in these spaces, and their participation in work settings, by bringing women's lived experiences in a CEEO to the centre of the research discourse. We begin by considering women's roles

in community environmental education programmes within the global context generally and the Southern African context specifically. This is followed by arguing for greater conceptual understanding of 'participation', drawing on theoretical constructs of Agarwal's (2001) typology of participation. In addition, we engage with theoretical debates related to understanding access, agency and voice (Thuma, 2011). This is followed by an exploration of ecofeminism as an apposite theoretical framework, and the research design and methodology used in the study. Finally, the findings are presented and discussed, and conclusions drawn.

Role of Women in Environmental Education

Environmental education has been identified as an essential component of sustainable conservation worldwide (Sengwar, 2015). Environmental education aims to ensure that the world population is not only aware of and concerned about the total environment and its associated problems, but also has the knowledge and skills to address them. It does this by cultivating attitudes, knowledge, commitment and skills among community members to work individually and collectively towards solving current problems and preventing new ones (Shil, Sarker, Arkter & Bakali, 2013; Sola, 2014; UNESCO-UNEP, 1978).

Available literature has long suggested that environmental education initiatives and sustainable development strategies that do not promote the full participation and empowerment of women and girls are bound to fail (UNDP, 2012). Yet, in a 1970 publication, *Woman's Role in Economic Development*, Boserup argued that women as a group continued to be marginalised due to gender inequality in various socio-economic spaces. It is for these reasons that participation was one of the key objectives of the 1977 Tbilisi intergovernmental conference on environmental education (UNESCO-UNEP, 1978). Participation, and in particular the participation of women, became a central goal of environmental education (UNESCO-UNEP, 1978) and education for sustainable development (UNESCO, 2005). This was premised on the understanding that strengthening women's participation in all spheres of life, including community environmental education, is key to international development programmes.

More recently, the Millennium Development Goals (MDGs) acknowledged women as key to the development agenda. Their role in, for example, supporting their households and communities in achieving food and nutrition security, generating income, and improving rural livelihoods and overall well-being (FAO, 2011), means that any initiative that does not take cognisance of their full participation is unlikely to succeed. For example, the MDGs' focus on gender and gender equity was a central feature of the mandate for member states (Unterhalter & Dorward, 2013). For instance, MDG 3 (Promote Gender Equality and Empower Women) mandated member states to develop programming that aimed to close the gender gap in various spheres of life, including health and education. Others, such as MDG 2 (Achieve Universal Primary Education) and MDG 5 (Improve Maternal Health), focused on improving girls' and women's outcomes in education and health. Of particular significance to our argument in this article is MDG 7 (Ensure Environmental Sustainability), which mandated educational programmes aimed at developing knowledge, skills and attitudes that would enable all citizens to participate in efforts towards ensuring environmental sustainability.

With the Sustainable Development Goals (SDGs) replacing the MDGs in September 2015, the agenda for gender equity in education, including environmental education, has been reinforced. Significantly, SDG 4 seeks to 'ensure inclusive and equitable quality education and promote lifelong learning opportunities for all', including in community environmental education.

However, studies suggest that due to the influence of patriarchal systems that privilege men's voices over those of women (Chifamba, 2013; Roy, 2014), unlike their male counterparts, women do not participate fully in environmental education programmes. In many contexts, women continue to be relegated to the margins in community environmental education (e.g. Chifamba, 2013; Mai, Mwangi & Wani, 2011; Sultana, 2014). Moreover, available research suggests that participation in many of the studies tends to be measured by the numerical strength of women in CEE activities in organisations or institutions, with the women's lived experiences of such participation receiving significantly less attention. Thus, in this paper, we analyse women's lived experiences within a CEEO by focusing on the factors that constrain their participation therein.

Understanding Participation

To understand participation, several models have been developed over the years, including, among others, Arnstein's (1969) ladder of participation (Figure 1), Davidson's (1998) wheel of participation and Agarwal's (2001) typology of participation. For example, Arnstein (1969) developed what she called the ladder of participation in response to the notion of citizen participation in federal social programmes in the United States in the 1960s. The notion of a ladder is premised on the understanding that those with power are often reluctant or unwilling to relinquish it. Thus, she defined participation as a system in which there is a 'redistribution of power that enables the have–not citizens presently excluded from political and economic processes to be deliberately included in the future' (Arnstein, 1969:216). Informed by this understanding, she identified three stages/categories of participation. The first stage involves non–participation, where the power holders educate or care for those without power. The second stage involves those in power informing, consulting and placating those with less power. Participation at this level is largely tokenistic, where the participants are informed but still lack the power to inform decision–making. The third level of participation involves partnerships, where power is delegated downwards and citizens have control over decision–making.

A few decades later, there were several critiques of Arnstein's model and the alternative models that emanated from it. Building on the model, scholars were of the view that *participation* must be underpinned by notions of inclusivity through collective engagement, cooperation and working together to benefit all members of a community. However, research also suggested that social and systemic factors can collude to result in 'participatory exclusions' (Agarwal, 2001:1623). Of particular relevance to the study in this article is Agarwal's (2001) concern that while gender influences participation in significant ways, especially in community environmental programmes, research discourse had largely ignored its influence. To understand participation, Agarwal (2001) developed a typology with six levels to describe who is expected

Figure 1. Arnstein's ladder of participation
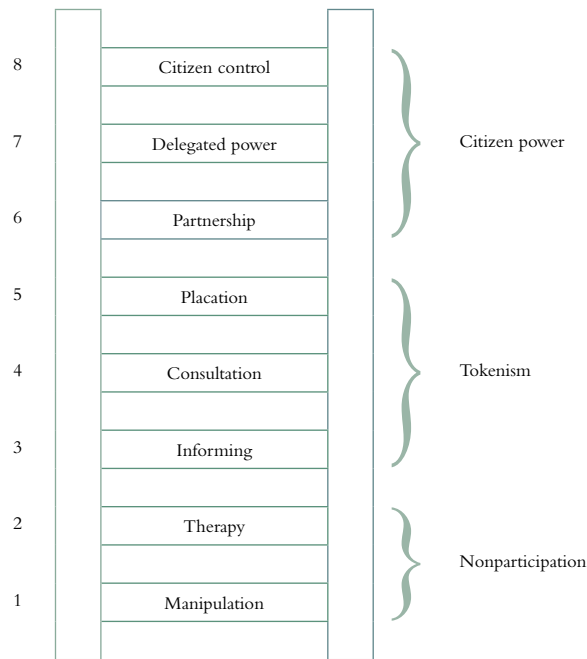
Source: Arnstein (1969:217)

to be involved, the goals of participating in an activity and the means to attain these goals (Table 1). According to the model, at the first level, there is nominal participation, often simply characterised by membership of a group (Chopra, Kadekodi & Murty, 1990). The second level, passive participation, involves attending meetings without engaging in decision-making, or being informed about decisions after they have been accepted. The third level is consultative participation, and involves soliciting opinions from the participants, but not really using them to inform decision-making. At the fourth level is activity-specific participation, where one is requested to complete predetermined tasks. The fifth level involves active participation, where one may offer unsolicited opinions and initiate certain activities. The highest level is interactive participation, which involves affording all participants an equal opportunity to make decisions which are crucial to the functioning of the group and the achievement of the organisation's goals (Agarwal, 2001).

Interactive participation or 'true participation' (Khaledi, Agahi & Eskandari, 2012:57) is based on confidently articulated concerns of participants and is therefore empowering and may lead to skills-building.

Informed by an understanding of 'true' participation as interactive and empowering, this article analyses the nature of constraints against women's participation in the activities of one CEEO in Zimbabwe. In particular, it asks: *How and why was the organisation unable to delegate power to the women so as to enable them to inform decision-making?* In essence, what prevented the interactive or true participation of the women?

Table 1. Agarwal's typology of participation

Form/level of participation	Characteristics/features
Normal	Membership in the group
Passive	Being informed of decisions *ex post facto*; or attending meetings and listening in on decision-making, without speaking up
Consultive	Being asked an opinion in specific matters without guarantee of influencing decisions
Activity-specific	Being asked to (or volunteering to) undertake specific tasks
Active	Expressing opinions, whether or not solicited, or taking initiative of other sorts
Interactive (empowering)	Having voice and influence in the group's decisions

Source: Agarwal (2001:1624)

An Ecofeminist Framing of the Study

The overarching theoretical framework which informs this study is ecofeminism, which examines and disrupts prevailing hierarchical power relations. It aims to create spaces for equitable participation by marginalised groups, and, in this study, is used to examine spaces in which women within a CEEO participate. This theory is underpinned by values of reciprocity and responsibility.

Warren's (1990) ecofeminist theory describes a logic of domination which is intimately linked to privilege and power. The more powerful, who enjoy greater privilege (referred to as the 'Ups'), are valued to a greater extent and have greater influence than the less powerful (referred to as the 'Downs'). Within patriarchal societies, men enjoy these privileges and women are less powerful players. This creates a fertile platform for conceptualising men and women as oppositional, disjunctive pairs, and forms the basis for the creation of value dualisms (Warren, 1990). Plumwood (1993) deepens the understanding of value dualisms within an ecofeminist context by alluding to its critical components. These are homogenising (denying differences which exist to devalue others), backgrounding or denial (excluding the oppressed by trivialising or ignoring their ideas), hyperseparation or radical exclusion (exaggerating differences between dualised pairs, for example, attributing markedly different roles to men and women in CEE spaces), relational definition (the oppressed or 'Downs' are viewed as deficient compared to the 'Ups') and instrumentation, where the oppressed are only deemed to be useful for ways in which they can serve the valued side (Ups) of the dualised pair (Plumwood, 1993).

Ecofeminism values agency, a theoretical construct which is inextricably linked to freedom of choice (Alsop, Bertelsen & Holland, 2006; Giddens, 1984), the capacity to transform one's experiences (McNay, 2016), the ability to resist repression (Molla & Cuthbert, 2014) and the ability to influence decisions (Patterson, 2009). In this study, women's agency was explored by examining women's ability to make choices, to resist oppressive processes, and to disrupt normalised forms of repression which permeated the CEEO. This was done by analysing conversations, discourses and activities which prevented them from participating fully, and, in Agarwal's (2001) terms, interactively.

Agency can be active or passive. In passive forms of agency, women have little choice and feel satisfied when informal, work-related, self-denigrating, low-skilled and repetitive roles are accomplished (Kabeer, 2005). The active form of agency enhances women's capacity to choose, and in doing this, casts women as creative and effective agents of transformation. Transformative agency, posited by Kabeer (2005), is in opposition to patriarchal values. In this study, we contend that women's agency can be enhanced if spaces for women to influence CEE decisions and activities emerge.

Thuma (2011) deepens the understanding of agency by examining its connectedness to visibility within the public domain. This visibility affirms the reality of women's existence and identity (Thuma, 2011). We examined women's visibility in public spaces, including printed materials available for public consumption, in order to study their participation in CEE activities.

Methodology

We worked as a group of three researchers (one principal researcher based in Zimbabwe, and two other researchers) to design this qualitative study. Informed by a critical philosophical paradigm, we adopted an inductive approach to obtain insight into individual meanings in order to understand what Creswell refers to as 'the complexity of a situation' (2013:32), in this case, women's participation in the activities of a CEEO. This research study was loosely structured, open-ended and iterative (Maxwell, 2012). An ethnographic design (Van Maanen, 2011), where the principal researcher was immersed in the social setting for 17 months to increase her understanding of participants' lived experiences, was adopted. This enabled her to obtain direct experience of how women participated within the CEEO. The research site was a CEEO in an agro-ecological region which has a dry climate and sparse natural resources. Environmental degradation and poverty interact in a vicious circle within this community. Degradation of forests and woodlands is rife and is due to unsustainable harvesting. Products from the forests are also used for food security in this community. Within this context, CEEOs have been established to teach villagers about socio-ecological challenges such as climate change, health and food security.

Data were generated using document analysis of teaching materials, individual interviews (II), focus group discussions (FGD) and participant observations (PO). There were 26 women participants in total, between the ages of 38 and 62 years, and they all engaged in focus group discussions. The sample was varied in terms of home language and marital status. The women

participated in different CEE activities, including vegetable gardening, trading in mopani worms, fattening cattle, cultivating citrus trees and biodiversity conservation. Eleven women who attended the CEE programme were purposively selected to participate in individual interviews and were recruited through snowball sampling. The teaching activities of the four male facilitators who controlled the CEE programme were observed. Each participant was recruited after the principal researcher obtained permission from the village leader, and informed consent from the participants themselves. We used pseudonyms in reports to protect the identity of the participants.

A pilot study was conducted to test the feasibility of methods and clarity of instruments, in order to enhance the credibility of the study. Multiple and varied sources of information from different datasets were used to search for convergence of information by triangulation. Thick descriptions and member checking were used to enhance research rigour.

The first author, the principal researcher, transcribed the audio-recorded interviews verbatim and then translated them from Venda, the first language of the majority of participants, into English. The three researchers then analysed the data, starting with seeking recurrent codes within and across datasets, and then sorting them into categories which were analysed thematically (Clarke & Braun, 2013). The themes inform the analysis below.

Findings and Analysis

In order to examine factors which constrained women's participation in CEE activities, a qualitative analysis of selected activities and practices, as well as materials used to teach, was done. The findings from this study suggest that, in response to the research question (*What constrains women's participation in the activities of a CEEO?*), women's participation in this CEEO remained below the interactive and empowering levels. In particular, four factors that constrained the women's participation in CEE activities emerged. These included silencing women, facilitating patriarchal hegemony, positioning women as passive agents and gendered teaching materials.

Silencing women

Within CEE activities women were often silenced, and in turn censored themselves. Their silencing was influenced by the prevailing unequal power relations between men and women, both in domestic as well as in broader community activities. In particular, gender inequality produced fear of acting against the community norms, which saw women as demure and passive, and men as more assertive and strong. Illustrating this fear, Sophie, one of the participants explained:

> No! At times the father will be in the meeting, we are together, when I stand up and try to answer sometimes what will be deliberated on might be aligned to our problems and he will signal me with the eye and I have to sit down. (Sophie, FGD 1)

The women in this study spoke about the psychological and physical violence which was used to control what they said, where they spoke and to whom they spoke. Symbolic and substantive

forms of violence meted out by male actors in their lives condemned them to silence during
CEEO meetings. Sophie again described the violence:

> In meetings we will not speak up because we might be beaten when we get home by our
> husbands and fail even to go and report to the police. (Sophie, FGD 1)

The women's silence could signal their effort at self-preservation within a violent context.
This points to the inextricable relationship between 'the private and public spheres of the
subordination of women' (Wolpe, 1998:90).

Barriers to women's access to public expression within the CEEO, as well as to
epistemological access within this space, was also reported. The women reported being silenced
both in their homes as well as in the CEEO. In particular, they reported men as domineering
and dismissive of women's contributions, as evidenced by men interrupting them and denying
them the space to be heard. For example, two women described this silencing:

> Men do not want us to speak out […] they want themselves to speak out so that they are
> the ones who will be heard. (Mboneni II)

> At times, when you answer, before you finish, already men's hands will be up so as to snub
> off the point you have said. What you said is not listened to. (Sophie, FGD 1)

These findings resonate with those of Holmes and Stubbe (2003) in their study about feminine
workplace stereotypes in New Zealand. The authors reported that men dominated public
speaking activities by using more time to talk and by interrupting others (mostly women) in an
aggressive manner.

The women in this study also reported that there was often an assault on their epistemic
credibility during CEE activities. This silenced them and left them feeling less confident.
Mboneni, in an individual interview, stated:

> It's that oppression […] by men, because sometimes a woman can stand up and speak out
> a point and it is said it [that point] is not correct. So how can we speak again when one
> of us has been cautioned?

Women's fear of making an input that was evaluated as a 'wrong' idea diminished their
confidence in making substantive contributions and led to their decision to maintain silence.
This has significant implications for women's participation in decision-making, with some
studies attributing their absence from formal decision-making in spaces such as associations
and committees to their subjugation by men and their powerlessness to make meaningful
contributions (Marcoes, 2015). Linked to this, the United Nations Development Fund
for Women sheds light on how the 'subordination of women and their lack of voice in
the community lead to a culture of silence' (UNIFEM, 2010:11). This underscores the
connectedness of culture, violence against women, shame, guilt, victim-blaming and consequent

silence. For example, women's inferior status and lack of social power often leads to them being abused, and they remain silent about this abuse because it is culturally sanctioned (Gender Equality Network, 2015).

Facilitating patriarchal hegemony
Findings from this study also suggest that the environmental education facilitators in this CEEO tended to privilege men over women in several ways. For example, notes from a participant observation field journal reveal the following:

> When a chart on ecological services was shown […] the facilitator has to show the chart first to the men. (PO 1, 20/09/2014)

> When the facilitator wanted the audience to taste the quality of the mopani worms, one cup of worms was given to the men first before it was passed to women. (PO 2, 17/10/2014)

> When a woman and a man raised their hands to respond, the facilitator said 'Let me take Mr Nare first'. (PO 8, 21/03/2015)

These excerpts suggest that the environmental education facilitators were themselves implicated in denying women the spaces for active participation and expression during CEE activities. By treating men as superior participants and privileging their voices over those of women, they reinforced the patriarchal values that inform relationships between men and women in the communities as well as in many CEE environments.

Positioning women as passive agents
The findings in this study suggest that, linked to their silencing because of unequal gender norms, the women were unable to influence decisions about activities and practices in the CEEO. The following excerpts illustrate this:

> We sit and listen, we are quiet while men finalise [activities] for us women. (Doublekick, II)

> Some women can do it [make decisions], have good ideas, but you will find that their ideas are not used. (Renaye, II)

Not only was the women's epistemic credibility denied, rendering them less knowledgeable, they were also seen as passive subjects within CEE spaces. This is evidenced by Sophie's remark during a focus group interview: '*They* [men] *do not want to use the ideas of a woman; women's contributions are taken lightly.*'

Thus, the unequal gender norms within this CEEO, which reinforced the patriarchal values and attitudes, particularly of male participants, silenced women, limited their ability to make choices and positioned them as passive agents within CEE. Such passive agency, which develops

when people's choices are constrained (Kabeer, 2005), generates low aspirations as well as feelings of accomplishment even when this involves fulfilling self-denigrating roles. This was evident in the following responses:

> I enjoy growing these vegetables [grown through CEEO activities […] if my child needs relish, he comes and collects. Given that had I not joined this project, I would not be in a position to assist him. (Smider, II)

> We were satisfied with growing vegetables and farming in the fields. We never thought of changing […] the duties were satisfactory. (Mboneni, II)

> Once [we were] involved in gardening, but we failed because we were promised that we would be given fencing material. (Siphiwe, FGD 4)

The women in this study valued the role of providing food security for their children. This underscores their unremunerated role in 'care work' (Ferrant, Pesando & Nowacka, 2014:1). People who work in the paid labour market (mostly men) are seen as *productive*, and their work is deemed valuable and worthy of recognition. People (women) who work in the unpaid labour market are regarded as *consumers*, and their work is deemed less valuable. This is in spite of the value of women's work, especially in food production, which, although it is largely unpaid, remains key to the well-being of the family (Asian Development Bank, 2013).

The women's lack of active agency in some instances prevented them from challenging the restrictive aspects of their roles in the CEEO (Kabeer, 2005). Their subaltern status (Spivak, 1988), based on, among other things, their perceived lack of the type of knowledge which was valued by the patriarchal order and their lack of voice, was rooted in their social, cultural and economic circumstances (Asian Development Bank, 2013). Because of their gendered marginalisation, and the fact that they had internalised their inferior status and lack of epistemic credibility in CEE, the women were unable to tap into their innovative and creative powers to address the challenges confronting the community. These factors coalesced to limit their vision for transformation and rendered them dependent on men for skills and resources (e.g. fencing).

Gendered teaching materials

An analysis of the teaching materials used by the CEE facilitators suggests that some of them reinforced the idea of women as passive agents. Two of the documents analysed illustrate the ways in which the materials were replete with evidence of women as passive agents. The first was a booklet titled 'Preventing Veld Fires'. The booklet shows women in the background as onlookers, while men are photographed in active roles, such as extinguishing fires using various methods (e.g. a drip torch). Some men were photographed teaching or demonstrating fire management activities. In the illustration showing villagers as attendees at the fire management course, men are seated in front while women are seated further back.

The second example is a booklet titled 'Growing Trees from Seeds and Seedlings', which depicts men as teachers in a garden (in the public domain). The men are demonstrating stages of

propagation of trees from cuttings and sowing of seeds. In contrast, a woman is pictured in one illustration holding a potted seedling, possibly displaying the final product from men's efforts.

These examples reinforce the notion that men are the masters and women the consumers of men's efforts. Men are portrayed as skilled, responsible for lifesaving activities and for conserving biodiversity. In comparison, women are shown as passive consumers or as only capable of performing low-skilled and menial tasks such as watering gardens or pushing wheelbarrows. While men are portrayed as engaged in productive work, which is deemed significant to the well-being of the community, women are shown performing work that is largely undervalued by the patriarchal, capitalist system. Without women participating equally and meaningfully in all CEE activities, the 'transformation of [the] social norms' (Asian Development Bank, 2013:35) that prevent their full and interactive participation will remain elusive.

Discussion and Conclusions

The findings from this study revealed that women attended CEEO meetings but operated at the nominal participation and passive participation levels. In Agarwal's (2001) typology, this reflects the narrowest spaces for participation, because the women were deemed to participate simply by attending meetings and passively listening to decisions, without being able to influence these decisions in any way. Their verbal contributions were thwarted in many ways, and, as a result, they were unable to propose or engage in new initiatives, or to meaningfully contribute to the CEEO activities. Therefore, no opportunity existed for them to engage in Agarwal's interactive participation, the broadest level of participation, where efficiency and equity could have been enhanced and possibilities for their empowerment could have been realised. The participants in this study could also be viewed as having participated according to Arnstein's (1969) first three levels of participation (manipulation, therapy, informing). For Khaledi *et al.* (2012), this signals non-participation.

Several factors constrained the women's meaningful participation in CEE activities: their fear of retribution, including violence, from men at home and in the CEEO; interruptions from men; being ignored by CEE facilitators and having their contributions dismissed as incorrect or inferior. In Plumwood's (1993) terms, this trivialising of women's contributions, or backgrounding, functions to render them as the 'Downs', while men are regarded as the 'Ups'. Women, as the 'Downs', were subaltern to men, the latter dominating CEEO activities. The female, as subaltern (Spivak, 1988), could neither speak nor be heard within this CEEO, and this led to the disabling of the women's agency. Specifically, gender inequality in and around the CEEO and its influence on the unequal status of men and women in these spaces, contributed to the notion that the domain of public participation, and in particular public speaking and decision-making, is solely reserved for men. These patriarchal values denied women's agency and epistemic privilege (Thuma, 2011). Their backgrounding (Plumwood, 1993) by the men and the CEEO facilitators perpetuated their silence and invisibility in environmental education activities.

Furthermore, the teaching materials used in the CEEO contributed to constraining women's participation in CEE activities. For example, the materials depict men as custodians

and producers of valuable knowledge and skills about environmental education, while women are either depicted as non-participants, passive agents or are radically excluded from these documents and illustrations. Further, women are portrayed as consumers of men's knowledge and skills. Through the activities suggested and resources used (e.g. technology), the materials reinforce gender stereotypes by depicting women in typical feminine roles that see them as less able and less knowledgeable than men. In contrast, men are homogenised in typical masculine roles that see them as more skilled and knowledgeable than women. This results in the hyperseparation of men and women (Plumwood, 1993), and the exclusion of women from meaningful participation in environmental activities. Lindemann (2012) explains this as gendered socialisation, where men are constructed as having the ability to adapt rapidly and successfully to changing environments, and their potential for making positive contributions to the advancement of humankind is a 'natural' expectation. Women, however, are viewed as being weaker, more vulnerable and without an authoritative status.

The findings from this study heighten the salience of gender within environmental education spaces. They provide insights into the 'myriad manifestations of patriarchy and gender oppression' (Mama, 2015:39) within the CEEO. By using an ecofeminist lens, the findings highlight the role of patriarchy and gender inequality in constraining women's participation in the CEEO. For example, the women's socialisation in their homes ensured that they conformed to patriarchal values and maintained the stance of passive agent or non-participant. In turn, by conforming to and reinforcing the same patriarchal values, the facilitators and male participants further contributed to the silencing of women within the CEEO. These values were further reinforced in the teaching materials used in CEE activities, which constructed women as the 'Downs' and men as the 'Ups' in dualised pairs. This resulted in women's voices being silenced and trivialised, and to their acquiescence to passive roles in and around the CEEO.

However, while the CEE participation of the women in this study was largely constrained by factors related to unequal gender norms, in some cases their perspectives revealed glimpses of consciousness about their subaltern status and suppressed agency within the CEEO spaces. For example, some viewed their contributions during CEE activities as useful and valuable, even when these ideas were rejected by male participants and facilitators. This has implications for CEE, which could focus on the value of dialogical praxis, where all participants have equal opportunities to speak, listen and be heard. Such an interactive pedagogical setting, which carefully considers the ideological, cultural and socio-political contexts of women's oppression, can provide the platform for women's meaningful participation in CEEOs.

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Exploring Hybrid Third Spaces in the Place Mappings of Malawian Youth

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Abstract

This article is based on a study of Malawian youths' understandings of place in relation to knowledge and practice and considers some implications for education. The study was conducted at Chinduzi Junior Farmer Field and Life Skills School in Machinga district in Malawi from September 2010 through January 2011. Data collection methods included place mapping and associated focus group discussions. The data were analysed following Collier and Collier's (1986) method for analysing photographs. Youth mappings of their favourite places suggested aspects of both hope and despair. From the youths' discussions, a sense of belonging was evident in the social relationships associated with the activities performed in their favourite places. The drawings also exhibited gendered features. Overall, the drawings and associated discussions revealed that the youth are largely rooted in their socio-cultural interactions within their community, but also influenced by globalisation − hence they operate within what Homi Bhabha (1994) calls 'hybrid third spaces'. In these spaces, they use their imagination to create optimistic futures. These findings have implications for environment-related education. People are part of and shaped by place; at the same time, they shape place through everyday social practices. Thus, studies on environment-related education in a particular local context need to take into account variations in experience based on learners' diverse backgrounds. Pedagogical engagements should consider the socio-cultural experiences of learners in particular contexts.

Keywords: Malawi, Junior Farmer Field and Life Skills School, youths, gendered places, hope and despair, hybridity, third space, sense of belonging, environmental education.

This paper reports findings from a study that explored how youth participants understand place in relation to knowledge and practice. 'Place', in this paper, is understood following Doreen Massey's (2009) articulation of an orientation to place that acknowledges the connections across local places and their influences on global circulations of knowledge and practice. Massey argues that while the local is often removed from any implication in wider processes, very few places are not in any way implicated in wider processes. Responding to a question on how to resolve the binary between place and space, Massey explains:

> Well one way is precisely by integrating them relationally. But if you do that then it means you *have* to accept the implication of the local in the construction of the global. The global doesn't just exist 'up there'. It is made in places and there is hardly a place on the planet that in some ways isn't party to that making. (2009:412, emphasis in original)

Massey (1994) observes that the infusion of global culture into local contexts is a common characteristic of 'modern' life and responsible for contributing to global place making, even

in the remotest parts of the world. Undeniably, local attachments to place are influenced by Western values and perspectives (Appadurai, 2000; Wasserman & Jacobs, 2003). Indeed, places move and change over time, through connections with other places and the global or through physical processes (Massey, 2005). Places shape who we are; in turn, we shape and reshape places through our everyday social practices (Cajete, 2000). This suggests that place provides relevant education to learners and that learners' understandings of place should inform any type of education. This study sought to explore youths' understandings of place in their local context of a Malawian school and village.

My interest in the topic of youths' understandings of place stemmed from observing an increase of studies on environment-related education in a particular local context that did not consider the diversity of youth experience and backgrounds (Gough, 2009; Kayira, 2013; McKenzie, Kayira & Wals, 2009). Although Malawi received independence from Britain in 1964, the formal education system is still Eurocentric (e.g. Phiri, 2008). Thus, Malawian youths' understandings of place could be shaped by Eurocentric ideas. With globalisation impacting almost all places in the world, Homi Bhabha's (1994) concept of a 'hybrid third space' provided an appropriate lens to frame the study. In this space, Bhabha argues, 'all forms of culture are continually in a process of hybridity' (cited in Rutherford, 1990:211). As a result, conventional thinking between and across cultures is disturbed, and Western perspectives are not allowed to be used as the standard for non-Western 'traditions' (Kapoor, 2008). Rather, the space enables other positions to emerge. The hybrid third space is thus a mode of articulation, a way of describing a productive, and not merely reflective, space that engenders new possibility. This space is a relevant framework for exploring Malawian youths' understandings of place.

Background on Research Site and Participants

The study was carried out at Chinduzi Junior Farmer Field and Life Skills School (JFFLS) in the Machinga district in Malawi (Figure 1) from September 2010 through January 2011.

Chinduzi JFFLS is located at the local primary school. Before describing the JFFLS, I begin with a brief overview of the community of Chinduzi, highlighting socio-economic activities, the leadership structure and culture.

Chinduzi is a village in Machinga district in the southeastern region of Malawi. It is named after a hill in the village. Chinduzi hill has an elevation of 1 270 metres (4 170 feet), latitude: 15°10'51.82", longitude: 35°13'8.01" (online: geoviewinfo). Most people living in Chinduzi village are subsistence farmers growing a variety of crops, including but not limited to maize, groundnuts, beans, pigeon pea and cow pea (JFFLS facilitators Sabwelera and Lapukeni).[1] Cotton is also grown as a cash crop though not on a large scale. According to the JFFLS facilitators at Chinduzi, most of these crops are hybrid varieties. Apart from crop husbandry, a number of people in Chinduzi also keep livestock, such as goats and chickens, for consumption as well as sale.

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1   A JFFLS is run by facilitators from the community. Chinduzi JFFLS has three facilitators: Mr Sabwelera, Mr Lapukeni and one other. All participant names have been changed to protect their identity.

Figure 1. Study site: Chinduzi JFFLS, Machinga
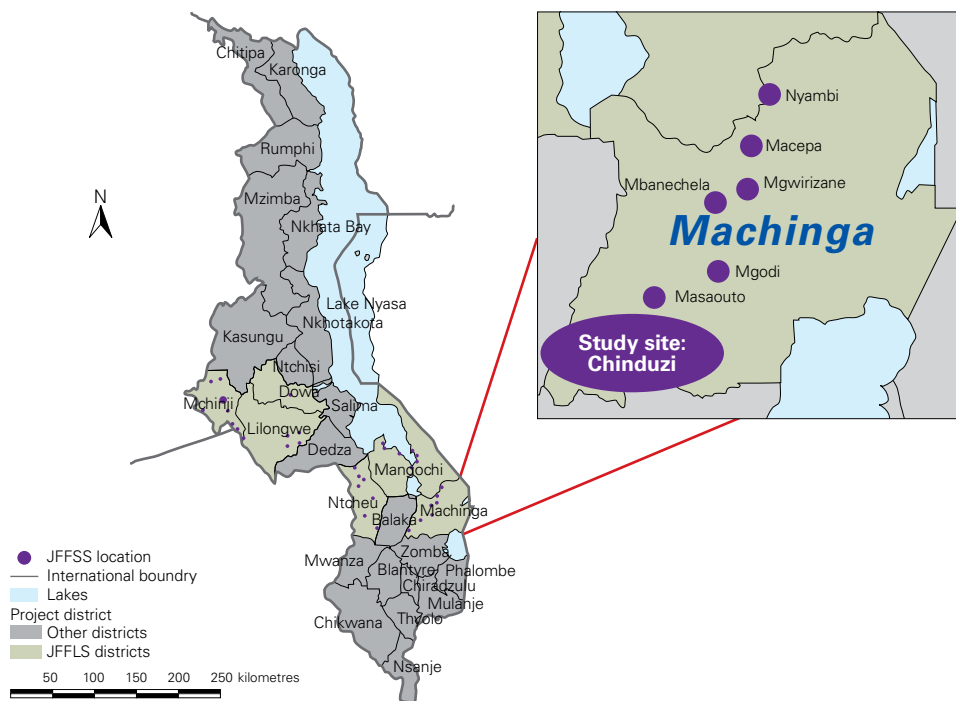
Source: Kachale (2009)

The Chinduzi community has a distinct culture that promotes the idea of togetherness (Mtauchila, 2010). Two main tribes (Yao and Lomwe) call Chinduzi home. The Yao is the predominant tribe (85%) and is believed to be native to the village (facilitator Sabwelera). The Lomwe, on the other hand, came from Mulanje and Phalombe districts. The two tribes share commonalities such as emphasising initiation ceremonies in the socialisation of the youth as well as following a matrilineal system of descent (facilitator Lapukeni).[2] The relationship between the two tribes is understood to be cordial (facilitator Sabwelera; Mtauchila, 2010). For example, while each tribe has its own cultural practices, including language, people are free to borrow practices from the other tribe as they see fit – such as food and dances. The Manganje dance is a case in point. Most people participate in the dance even though it is a Yao custom. It is a celebratory dance performed during happy times, for instance when the community receives visitors (Mtauchila, 2010).

Colonialism and globalisation influence all parts of Malawi, including Chinduzi. Traces of these systems are apparent in the knowledge and practices of agriculture (Kayira, 2013), the school curriculum (Glasson, Mhango, Phiri & Lanier, 2010; Phiri, 2008) and ways of dressing.

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2   In a matrilineal system, ancestry is drawn from the mother and her descendants.

Farming practices in Malawi combine both indigenous and non-indigenous knowledge. For example, a study exploring the forms of knowledge and practices in the JFFLS programme at Chinduzi revealed that both indigenous and Western knowledge and practices are evident (Kayira, 2013). Furthermore, instances of colonialism/globalisation are evident in the school curriculum in Malawi. For instance, Phiri (2008) explored the integration of indigenous science in the primary school science and technology curriculum. He found that the indigenous knowledge included in the curriculum focuses primarily on autochthonous technology (e.g. drums as technology for sending messages, bows and arrows as technological innovations), leaving out all other local knowledge relevant to science. According to Phiri, such representation of the knowledge of the forefathers 'might mean that Malawian educators do not fully accept the value of all other forms of Indigenous knowledge except technologies, or that curriculum developers are not well informed about the value for [of] bringing Indigenous knowledge in the science curriculum' (2008:138). Glasson *et al.*'s (2010) study on the same curriculum found that the Eurocentric scientific concepts taught in schools are often decontextualised from the local culture. They posit: 'Presently, Eurocentric science has the power and influence in the school science curriculum but is largely irrelevant to most Malawian villagers' (2010:138). This is an area where the curriculum could be enriched by relevant and appropriate indigenous knowledge found in the communities. These colonial legacies and globalising trends contribute to Chinduzi village youths' sense of place.

While the overview of Chinduzi village presents a positive picture of the intertribal relationships, it was difficult for me as a researcher to get a sense of the politics and power issues within and across the two tribes. Although I am Malawian, I do not come from that community; if I had grown up in Chinduzi, I would perhaps have had different insights into these issues. Having provided an overview of the community of Chinduzi, I now describe the Chinduzi JFFLS.

The JFFLS initiative was initially developed in 2003 by the Food and Agricultural Organisation of the United Nations and the World Food Programme to help address a growing number of orphan[3] and vulnerable[4] children (FAO, 2008). The approach was initially implemented in Africa and has since expanded to other parts of the world, such as the West Bank, the Gaza Strip and Nepal (Dalla Valle, 2009; FAO, 2010). Malawi piloted the JFFLS programme in 2006 at eight sites in two districts. The programme has since expanded to 41 sites in six districts (Kachale, 2009). Chinduzi JFFLS was established in 2008. The goal of a JFFLS is to empower orphaned and vulnerable children and youth[5] by offering them livelihood options and gender-sensitive skills needed for long-term food security, while minimising their vulnerability to destitution and instilling positive coping behaviours (FAO, 2008; FAO & WFP, 2007). The programme also ensures that an equal number of girls and boys participate.

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3   NSO and ICF Macro (2011) define an orphan as a child under the age of 18 who has lost one or both parents.

4   A vulnerable child is defined as a child under the age of 18 who has a chronically ill parent or who lives in a household where an adult is chronically ill (NSO & ICF Macro, 2011).

5   Youth are defined as those aged 15–24 years (Chigunta, Schnurr, James-Wilson & Torres, 2005). However, the term 'youth' is used in this paper to refer to the JFFLS students, aged between nine and 17.

Data Collection Methods

Data were collected through focus group discussions and place-mapping activities. All discussions were held in the local language of Chichewa.

Focus groups

Twenty-six youths (18 females and eight males; age range 9–17) participated in four focus group discussions. The first discussion was aimed at learning about their experiences in the JFFLS programme. During the second focus group, the youths discussed how they understood place in relation to knowledge and practice. At the end of the discussion, they were given a homework assignment to draw their favourite place(s) in their community (see place-mapping below). Their drawings were discussed during the third and fourth focus group discussions.

At the beginning of the first focus group discussion, we mutually agreed on guidelines so that everyone would be comfortable, could speak freely and would be respected. At the end of each discussion I prepared a summary of the main points, which were shared at the beginning of the next meeting. All group discussions took place at the school and were approximately two hours long.

Place mapping

The participants were asked to work individually to draw pictures of their favourite places in their community. To give additional context to the drawings, they were asked during focus group discussions to explain what they do in the place, when they go to the place and with whom, how they use the place and how they feel about it. This method gave them the opportunity to visually describe their sense of place, but also revealed their unspoken and unheard stories and reflected the socio-cultural realities that influence their understanding of place.

Visual methods of collecting data are regarded as helpful in probing youth understandings and representations of place (Aitken, 1994; Béneker, Sanders, Tani & Taylor, 2010; Christensen & O'Brien, 2003; McKenzie & Bieler, 2016). Specific to working with African youth, Van Blerk and Ansell (2006) posit that drawing methods are particularly effective as they allow youths time to deliberate on and compose narratives before recounting them.

Data Analysis

Research focused on youths' perceptions of place or space tends to be unconcerned with their competence with the visual methods used (e.g. their ability to draw or create maps according to scale), and more interested in learning about the formal and informal spaces that children respond to and reconstruct through the methods (Burke, 2005; Watts, 2010). Therefore, when analysing the place-mapping drawings, the images were not analysed for technical, conceptual or aesthetic competence. Instead, the analysis was based on Collier and Collier's (1986) method for analysing photographs. This approach starts with a holistic view of the photograph dataset in which general thoughts, questions and impressions are noted. It then proceeds to a detailed analysis of pertinent characteristics, image by image, and concludes with another holistic view.

In the second phase of detailed analysis in this study, each drawing was looked at with its accompanying focus group transcript, in order to explore the relationship between the features depicted and what the participant said about them. This process resulted in the identification of three themes, which are presented in the next section.

Findings and Discussion

Following the analysis described above, three themes emerged: hope and despair; sense of belonging; and gendered places. Many of the drawings depicted positive features such as modern houses and people dressed in fashionable clothes. However, some drawings included features that could be interpreted as signs of despair, such as deforestation and vulnerable homes. This gave rise to the theme of 'hope and despair'. The second and third themes (sense of belonging and gendered places) arose from analysing features included in the drawings as well as the youths' comments on their time spent in their favourite places.

In presenting the findings, I quote directly from the focus group discussions. To maintain the authenticity and integrity of the data, I present the quotes verbatim as spoken by participants in the local language of Chichewa, followed by an English translation.

Hope and despair

Hope was evident in most drawings. Although the youths were asked to draw their favourite places *in* the community, many of the drawings did not resemble any specific place in the community. Instead, they were drawings of imagined places, what others have called mental maps (Futch & Fine, 2014; Gieseking, 2013). Mental maps are personal, subjective and intimate, and hold '*great promise for interrogating the terrain between individual experience and social reality*' (Futch & Fine, 2014:42, emphasis in original). It is argued that details on mental maps reflect a high level of meaning and personal connections that the mapmaker has with his or her depicted lifeworld. Children are imaginative and are 'intense and intuitive mappers' (Macfarlane, 2016:326). It appears that the mental maps or imagined places of the JFFLS youth not only convey their lived realities, but also signify possible desires and aspirations. Thus, they represent their hopes.

Youth drawings showed hope in the imaginaries of the journey to success, represented, for example, through depictions of baobab trees and modern houses. The baobab tree (*Adansonia digitata*) is a symbol of hope and success and was drawn by many of the youth. A prominent bank in Malawi, Standard Bank (previously Commercial Bank of Malawi), also used this tree as a symbol to represent the success of investment. Chimwemwe's drawing of her favourite place depicts a hut and a baobab tree (Figure 2). The baobab tree in this drawing is proportionally bigger than the hut. Although Chimwemwe currently lives in a small hut, perhaps she does not see her life continuing in those conditions. The drawing suggests she envisages a better future, represented by the baobab tree overshadowing her hut. In describing her place, she focused more on the tree than on the hut: '*malo anga akhale ndi mitengo […] chifukwa mitengo imatipatsa mthunzi ndi mpweya*' (my place should have trees […] because trees give us shade and air). In a way, what is important for her is not her current condition, but rather her hope for the future.

Studies have shown that in their drawings, children tend to include only details that highlight issues that they deem important (Watts, 2010). Thus, for Chimwemwe, the hut appears to be less important than the envisaged future represented by the baobab tree.

Figure 2. Chimwemwe's favourite place showing a hut and a baobab tree

Another symbol of hope depicted in the youths' drawings was a modern house along with the woman of the house wearing fashionable clothes and shoes. This is evident in Enelesi's map (Figure 3).

Enelesi aspires to have a place that will enable her to perform household chores easily but she also wants to wear fashionable clothes and shoes (see the woman in her drawing standing near the tap). Enelesi says: '[…] *a mayi a pakhomo adzioneka bwino […] adzibvala malaya okongola,*

nsapatoso zokongola […] akhale ndi madiledi' ([…] the woman of the house should look nice […] should dress in beautiful clothes, beautiful shoes also […] should have braids [hair braided]). These could all be viewed as hopeful aspirations.

Figure 3. Enelesi's favourite place showing a house, stream, tap, woman, chicken and trees
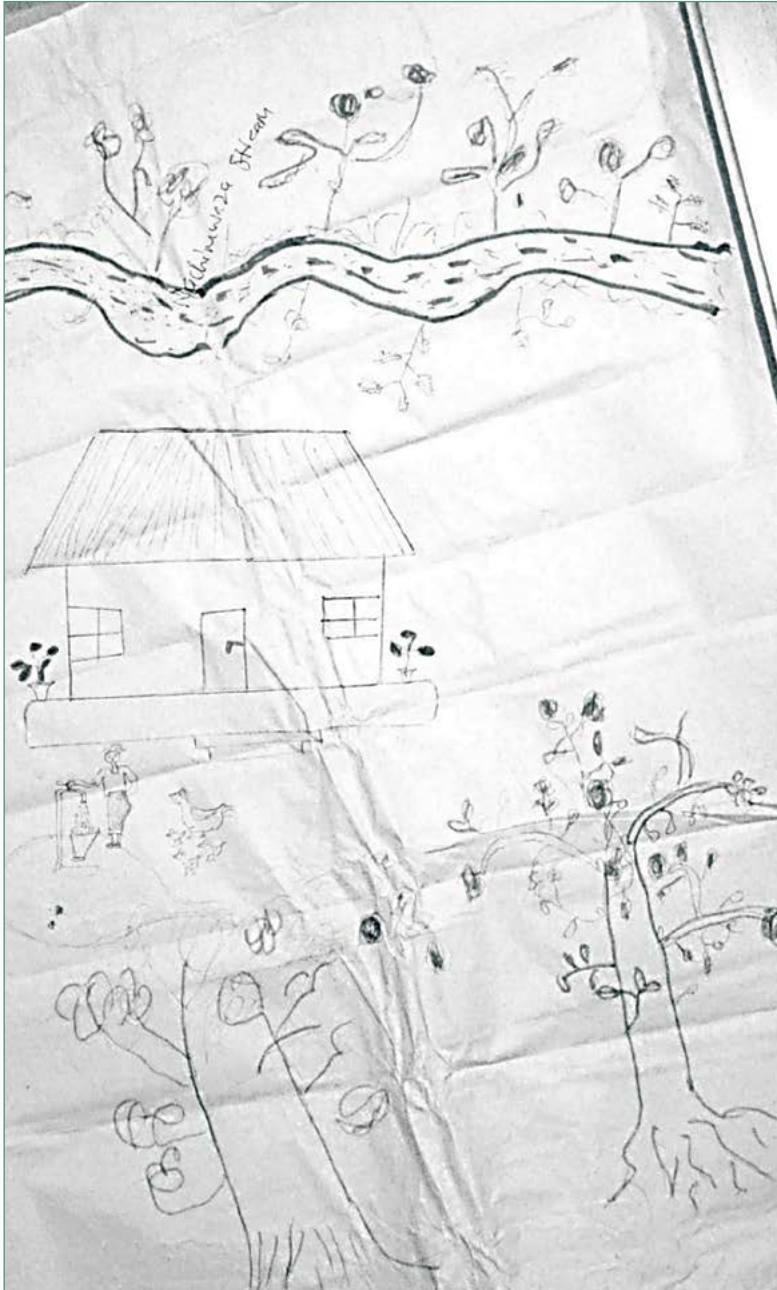
While hope was evident in the youths' drawings, despair was also a common feature. Signs of despair depicted in many of the drawings are exemplified by deforestation and small dwelling huts. These could signify roadblocks to moving forward to a better life. In many instances, the drawings represented both despair and hope, as seen in the imaginary place of Thandizo (Figure 4).

Figure 4. Thandizo's favourite place represents hope (e.g. house with iron roof, chimney; woman in fashionable clothes; truck; girl milking cow) and despair (deforestation)

The top portion of Thandizo's drawing represents what could be regarded as great hope in the form of a house, albeit a small one, with an iron roof and a chimney, even though none of the houses in Chinduzi has a chimney. The top portion of the drawing also includes flowers around the house, a well-dressed woman, a young girl driving a truck and another milking a cow, and maize to which fertiliser has been applied. Thandizo talks about her place in this way:

Thandizo: *Ndajambula nyumba, maluwa chifukwa amakongolesa pakhomo.* (I have drawn a house and flowers because flowers beautify a place.)

Jean: *Malowa ali ndi zinthu zambiri monga anthu, ng'ombe, galimoto. Ungalongosore kuti chikuchitika ndi chiyani?* (This place has a lot of items, such as people, cow and truck. There is a lot of story here. Can you take us through what is going on?)

Thandizo: *Ine malo amene ndimakonda ndi omwe pali nyumba yamakono, maluwa, komanso amayi atabvala zobvala zamakono zachizungu, handibagi yokongola. Komanso mtsuko wabwino wotungila madzi. Komanso pakhale ng'ombe za mkaka, galimoto monga iyi, munda wa chimanga wothila feteleza.* (My favourite place is one with a modern house, flowers, the lady of the house dresses in fashionable, Western-style clothes with a beautiful handbag. Also a good clay pot for drawing water [top right]. In addition, the place should have milk-producing cows [second row, middle], a car like this one [second row, right], a maize garden to which fertiliser has been applied [second row, left of cow].)

Jean: *Chifukwa chani ukufuna kugwiritsa ntchito mtsuko potunga madzi osati ndowa?* (Why do you want to use a clay pot for drawing water and not a pail?)

Thandizo: *Chifukwa mtsuko umadzidziritsa bwino madzi kusiyana ndi ndowa.* (Because the clay pot cools the water unlike a pail. [She is referring to drinking water. Refrigerators are not common in the community and storing drinking water in clay pots is a common indigenous practice for many rural communities in Malawi.])

Jean: *Wanena kuti pamalo pakhale ng'ombe zamkaka, galimoto ndi munda wa chimanga wothila feteleza. Ungalongosole zifukwa zake?* (You have said the place should have milk-producing cows, car and a maize garden to which fertiliser has been applied. Can you explain why your favourite place should have such things?)

Thandizo: *Ng'ombe zamkaka zimapeleka mkaka chomwe ndi chakudya chopatsa thanzi komanso tiyi wothira mkaka amakoma. Ndimasirira ndikaona anthu akuyendetsa galimoto […] feteleza amathandiza kukolola zochuluka.* (Milk-producing cows provide milk which is a nutritious food but also tea to which milk has been added tastes good. When I see people driving cars, I wish I would be the one […] fertiliser helps harvest more.)

Jean: *Kodi malo okhala ngati amenewa alipo ku Chinduzi?* (Does such a place exist in Chinduzi?)

Thandizo: *Ayi, koma ndi malo omwe ndimala-laka nditakhala nawo mmudzi muno.* (No, but I aspire to have such a place in this village.) (Third focus group discussion)

The bottom part of Thandizo's drawing, however, is not as hopeful as the top portion. It shows signs of despair, particularly deforestation and environmental degradation. This is how Thandizo describes this part of the drawing: '*Chilengedwe chikuonongeka kwathu kuno […] kudula mitengo kumaononga chilengedwe*' (There is environmental degradation in our community […] cutting down trees destroys the environment). The caption under the fallen tree at the bottom left in

Thandizo's drawing reads, 'Tree has fallen due to strong winds.' The caption at bottom right reads, 'Environmental degradation.' While the negative environmental impacts are all literal, one wonders whether Thandizo is using these statements as metaphors for her real life as well. Although both of her parents are alive, she is vulnerable and faces many challenges. She is a *tree* trying to stand firm but the challenges of life are pulling at her and trying to break her. Yet, Thandizo does not give up because she is hopeful for the future. It appears hope is more important to her; thus, she represents it with more features and at the top of the illustration where the eye is drawn to first.

As noted, all youth participants were orphans and/or vulnerable. Many, including the JFFLS facilitators, did not have high hopes for them. They thought the youths would not go beyond the village and that the emphasis should therefore be on teaching them knowledge and skills that would enable them to survive in the village. They argued: 'We focus on teaching them things that are found locally […] most of them [youth] will not leave Chinduzi' (facilitator Lapukeni). However, the place-mapping exercise could be described as an escape for the youth to reimagine a different future, one that is more positive.

Sense of belonging
Youths' depictions of a 'sense of belonging' were largely grounded in narratives of friendships. Many spoke passionately about their favourite places and described them as their own; places where they could hang out with friends and feel free to play, talk about anything and study. Dalitso describes his favourite place as follows:

Dalitso: *Malo amene amanditsangalatsa ndi phiri lathu la Chinduzi.* (My favourite place is our local hill of Chinduzi.)

Jean: *Chifukwa chani?* (Why?)

Dalitso: *Chifukwa pali malo ena mphirimu ndimakonda kupitako, ndipo ndikakhala malo amenewa, ndimakhala omasuka.* (Because there is a specific place in the hill where I like to go, and when I am at this place, I feel free.)

Jean: *Umapita ndi ndani? Chifukwa chani umakhala omasuka?* (Who do you go with and why do you feel free?)

Dalitso: *Ndimapita ndi anzizanga, timakhala omasuka chifukwa timatha kukamba nkhani zambiri-mbiri mopanda kuopa kuti wina atimvera.* (I go with my friends. We feel free because here we are able to discuss many issues without fear of being heard by anyone.)

Jean: *Nkhani zake zimakhala zotani, ungapeleke zitsanzo?* (What sort of issues do you discuss? Can you give examples?)

Dalitso: *zambiri, timakamba za sukulu, kuthandizana ku sova masamu. Komanso timakamba za atsikana ndi zibwenzi.* (We discuss many things, such as school stuff. We help each other

solve maths. Also, we talk about girls and relationships. [Everybody laughs]) (Third focus group discussion)

It was evident that friends were an important aspect of youths' favourite places. Whether it was under a mango or *Ngwemba* tree playing *bao*[6] or *phada*,[7] swimming and fishing in the nearby Shire River, standing on the Shire bridge watching boats or studying on the Chinduzi hill, youths did not visit these places alone, but rather with friends, as illustrated in the following excerpts:

Landileni: *Malo a ine ndipansi pa mtengo wa mango. Timasewera* bao *ndi anzizanga […] komanso timakamba nkhani zathu. Timakonda malo amenewa makamaka nthawi ya mango chifukwa tikamva njala timatha kuthyola mango ndikumadya […] timatha kuwerenga pansi pamtengowu chifukwa umapeleka mpweya woizira bwino.* (My place is under a mango tree. I play *bao* game with my friends […] also we discuss a lot of issues among ourselves. We like this place particularly when mangoes are in season so that when we get hungry, we reach for the mango fruit in the tree […] we also like to study under the tree because we get a good breeze of air.)

Fatsani: *Ndimasewera ndi anzanga pansi pa mtengo wa* Ngwemba *[…] timasewera masewero monga* phada*, mpira wa manja. Komanso timakambirani zinthu zambiri-mbiri monga zokhuzana ndi sukulu ndi zina Zotero […] ndimakonda mtengo wa* Ngwemba *chifukwa zipatso zake timatha kupanga juwisi.* (I play with my friends under the *Ngwemba* tree […] we play different games, including *phada* and netball. We also discuss a lot of issues, such as school work, etc. […] I like the *Ngwemba* tree because we use its fruits to make juice.)

Mayeso: *Ine malo amene amanditsangalatsa ndi mtsinje wa Shire. Ndimapita ndi anzizanga kukasangalala […] timasambira, kapena kuima pa bridge ndikungoona zochitika.* (My favourite place is the river Shire. I go there with my friends for recreational purposes […] we swim, or stand on the bridge hanging out watching what goes on.) (Third focus group discussion)

Many of the youths' favourite places are where they socialise, and friendships are thus regarded as an important aspect.

Gendered places
The data suggest that youths' understanding of place is also gendered. While both girls and boys visit their favourite places to socialise, most girls indicated they also go to these places (e.g. the local hill, local stream) to fulfil household chores, such as fetching firewood and

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6   A traditional board game for two players.
7   *Phada* is a common game played by children in Malawi, usually girls. It is similar to hopscotch. A matrix of boxes is drawn on the ground. The player throws a small stone into a box. The player loses their turn if the stone does not land on the targeted box or if they step on the outline of a box on their way to collect the stone.

drawing water. For example, the favourite place for Spiwe, a girl participant, is the local hill of Chinduzi. This is how she describes it: '*Malo anga ndi phiri la Chinduzi […] ndimapita ku phiri ndi anzanga kukafuna nkhuni*' (My favourite place is Chinduzi hill […] I go with my friends to fetch firewood) (Fourth focus group discussion). In contrast, while the favourite place for Landileni, a boy participant, is the same local hill, unlike Spiwe who goes there to fetch firewood, Landileni visits the hill mostly to hang out with friends and relax or study. This is how he describes it:

> *Malo onditsangalatsa ndi phiri la Chinduzi […] ndimapita ku phiri ndi anzanga kukawerenga, chifukwa cha mpweya wabwino, timatha kumva bwino zowerenga. Komanso timatha kukhala kungoyang'ana mitengo, chinthu chomwe chimanditsangalatsa zedi.* (My favourite place is Chinduzi hill […] I go with my friends to the hill to study, because of the refreshing air, we are able to understand what we are studying. But also we spend time just looking at the trees, something that makes me happy). (Fourth focus group discussion)

Another gendered point concerned the level of detail in the drawings, which reflected differing gender roles. Drawings made by girls tended to have more details (e.g. houses, rivers, taps, chickens). This is exemplified in the favourite places of Enelesi (Figure 3) and Thandizo (Figure 4). Conversely, drawings made by boys often included only a single feature, such as a tree (e.g. see Austin's favourite place in Figure 5). The differences may be due to the types of chores girls and boys do. As outlined under the 'hope and despair' theme above, Thandizo describes her favourite place as having milk-producing cows to provide good nutrition, a bumper harvest of maize, as well as a clay pot for cooling drinking water. Similarly, Enelesi speaks of the importance of having water nearby, hence a tap outside the house: '*pa nyumba pakhale mpope wa madzi*' ('my home should have a tap of water'; the tap is in front of the house, on the left, in Figure 3). However, realising that taps often run dry in this area, her favourite place needs to be close to a stream so she does not have to go a long distance to draw water when the tap runs dry: '*ndajambulanso mtsinje […] chifukwa nthawi zina madzi satuluka ku mpope […] nyumba ikakhala pafupi ndi mtsinje sindiyenda mtunda wautali kkukatunga madzi*' ('I have also drawn a stream […] because sometimes the tap runs dry; if a home is near a stream I won't have to walk a long distance to draw water'; see top row in Figure 3). In addition, she wants to have trees near the dwelling to provide firewood as she does not like travelling long distances to look for wood: '*pa malo anga pakhale mitengo […] kuti tipeze nkhuni mosabvuta […] kukafuna nkhuni ndi kutali*' ('my place should have trees […] so that we should get firewood easily […] the place where we look for firewood is far'; see front of house, bottom row. Most people in the community use firewood for cooking). Furthermore, her favourite place must have chickens to provide a nutritious diet: '*ndajambulanso nkhuku chifukwa pa khomo payenera kukhala nkhuku […] chifukwa ndi ndiwo zabwino zimapereka thanzi*' ('I've also drawn chickens because a home should have chickens […] because they are a good relish[8] and nutritious'; see front of house, right of water tap). Thus, girls appear

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8   Relish is any protein dish that is eaten with the staple dish of *nsima* (made from maize flour and water). The relish could be stew containing chicken, beef, beans or vegetables (green or dry) or fish.

to take into consideration many of the tasks a female child performs in a home. Consequently, their favourite places must enable them to do these tasks with ease.

Place in Malawi, like in other sub-Saharan Africa countries, is gendered. For example, in a study exploring rural children's use of wild food in the Eastern Cape, South Africa, McGarry and Shackleton (2009) found noticeable differences between how girls and boys access wild food, including the places where they collect it. Girls collect wild spinach, shellfish and firewood while boys hunt, tend cattle and work in the fields.

Figure 5. Austin's favourite place showing a mango tree. The caption says, 'This tree makes me happy because it provides good fruits, protects soil and provides fresh air.'

Methodological Reflections

Making meaning of the youths' drawings of their favourite places was based on their descriptions of the drawings during focus group discussions as well as on my own interpretation of the drawings. However, it was sometimes difficult to know for certain why they included particular features or experiences in their drawings. A one-on-one conversation with each participant, to discuss each component of their drawing, may have been more illuminating than a focus group discussion (particularly given that there were 26 youth of varying ages in the focus groups). Although the participants were not rushed when talking about their drawings (we discussed the drawings in two meetings), in hindsight it would have been more effective if we had one-on-one conversations or two separate focus groups meeting at different times: one for the younger participants and the other for the older ones.

Conclusion

While all the youths in the study were orphans and/or vulnerable, when given the chance to draw their favourite places, they refused to be defined by their realities, choosing instead to dream and reimagine their places. Through the exercise, the youths imagined different realities. The fact that the drawings included both positive and less positive aspects could be interpreted as revealing the ambivalence and complexity of the youths' lived realities, suggesting that they operate in a 'hybrid third space' (Bhabha, 1994). In this space, they can dream but are also forced to face reality, indicated by the inclusion of features in their drawings that could be interpreted as symbolising despair.

It was also evident that gender played an important role in the imaginations and realities of the youths' favourite places. Unlike their male counterparts, girls appeared to take into consideration many of the tasks a female child typically performs in a rural Malawian home. As a result, their favourite places were envisioned as enabling them to do these tasks with ease.

While it is clear that the JFFLS youth in Chinduzi are largely rooted in their socio-cultural interactions with friends, knowledge and practices within their community, they are also influenced by global culture. This hybridity is evident not only in their drawings depicting the characteristics of places – both real and imagined – that they see as meaningful and significant, but also in the type of clothing they wear, their views and their perspectives on the indigenous knowledge of the area (Anderson, Datta, Dyck, Kayira & McVittie, 2016; Kayira, 2013). This type of exposure and acceptance of global culture is consistent with Massey's (1994) observation that the infusion of global culture into local contexts is a common characteristic of 'modern' life and responsible for contributing to global place making, even in the remotest parts of the world. Indeed, local attachments to place are influenced by Western values and perspectives (Appadurai, 2000; Wasserman & Jacobs, 2003). Thus, Chinduzi youth operate in a 'hybrid third space', whether it is in their imaginations or in real situations. In this space, they use their creativity to reimagine their places and their future.

The finding that youths operate within hybrid spaces of local and global culture is not unique to this study. In a study examining the use of place-based activities to enhance

youth engagement with local environments, Farrington (2008) found that while youths are influenced by global media and ideologies, they are also grounded by their social and embodied interactions within their communities, families and peer groups. She argues that youth in South Africa are 'not the passive victims of the structural forces of globalisation, but are actively engaged in the world and with the circumstances and conditions that surround them' (2008:203). Indeed, children's worlds of meaning are 'at one and the same time global and local, made through "local" cultures which are in part shaped by their interconnections with the wider world' (Holloway & Valentine, 2000:769). Likewise, Chinduzi youth are situated in the community with its knowledge and practices, but at the same time are influenced by global Western knowledge and practices.

The study reaffirms that people are part of and shaped by place; at the same time, they shape place through everyday social practices. It is therefore important that studies on environment-related education in a particular local context consider variations in experience based on learners' diverse backgrounds. Pedagogical engagements need to take into account the socio-cultural experiences of learners in particular contexts as each learner has a story which is embedded in their experience, culture and place. The place maps the youths drew revealed both their imagined positive futures and signs of the despair currently being experienced. Fashionable clothes, houses with modern features such as chimneys and iron roofs, and cars are indications of the influence of a global culture and were regarded as positive by the youth. The study also showed that youths' chosen places are not neutral; they are nuanced and gendered. Additionally, the stories shared about the use of the places suggest a strong sense of belonging enabled in and by these places. Such information about learners is key to informing the content of environment-related education as well as the pedagogical tools used. Hence, to make learning relevant and meaningful, it is important for educators to consider how learners are affected by the communities of which they are or are not a part, both locally and globally.

Acknowledgements

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Understanding Durban University of Technology Students' Perceptions of Biodiversity Loss

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Abstract

Biodiversity loss has been recognised as a global and local problem of increasing magnitude. As future leaders, university students may play an influential role in alleviating this serious and multifaceted problem. This particular research focuses on a relatively new area of study not yet covered in the literature, that of South African university students' perceptions and understandings of biodiversity. This paper seeks to describe the knowledge, attitudes and perceptions of students at Durban University of Technology towards biodiversity and to consider some of the socio-cultural causal factors. Student opinions were sampled using an appropriate survey modelled after European biodiversity surveys and adapted to meet the unique challenges of South African conditions and rich biodiversity found in Durban's urban green spaces. The quantitative data were then merged with qualitative data drawn from four focus groups sampled across selected faculties at the institution. The focus groups involved guided discussion on the relevance of biodiversity, viewing of video clips and local field visits to Pigeon Valley Nature Reserve and the Durban Botanic Gardens. The results indicated high levels of concern for biodiversity loss and strong cultural connections with traditional African medicinal plants.

Keywords: Biodiversity loss, traditional African medicinal plants, culture, tertiary student perceptions.

Introduction

Purpose and aims

This study deals with the intersection of two global influences that are rapidly changing our world: firstly, an environmental crisis accelerated by widescale loss of biodiversity; and secondly, the growing influence of a new generation of university students who possess the ability and power to reshape the socio–political, economic and cultural landscape (CBD, 2014; Stein, 2013). Mindful of these global themes and context, this particular research focuses on South African university students' knowledge, attitudes and perceptions of biodiversity and nature. Since literature on the topic is sparse, this study has significance in informing science communicators, including teachers and environmental educators within the higher-education ambit, and adding value to curators and outreach staff from botanic gardens and other conservation organisations seeking to communicate biodiversity issues to South African youth. The research presented here forms part of a larger doctoral study that examined student connections with local biodiversity in urban green spaces and different modes of communication with students (Foley, 2016).

This paper proposes that while university students may be unfamiliar with the exact scientific meaning and significance of the term 'biodiversity', they respond positively when the word is explained and expanded in less specialist language that they can understand. Furthermore, the data presented demonstrate that students' constructs of nature are directly shaped by culture, background and African tradition.

Biodiversity and the significance of its loss: Scientific definitions

The word 'biodiversity', or 'biological diversity', is defined by the Convention on Biological Diversity (CBD) as '[…] the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems' (CBD, 2010:15). Biodiversity champion Edward Wilson explains the term more simply as 'the variety of all living organisms, the nature of their inherent genes or traits and the habitats in which they are found' (Wilson, 2013:1).

Biodiversity is crucial to human survival in the areas of agriculture, science and medicine, industrial materials, ecological services, in leisure, and in cultural, aesthetic and intellectual value (CBD, 2014). Biodiversity as a life support system is failing and writers concur that the scale of destruction taking place in the 21st century is unprecedented (Butchart *et al.*, 2010; CBD, 2014). Recent global extinction figures reported in *Nature* journal are that since the year 1500 approximately 765 extinctions have occurred (Monastersky, 2014:160). Reports indicate that a total of 5 522 mammals, birds, amphibians and insects are currently under threat (Monastersky, 2014:160).

Biodiversity loss in South Africa has serious implications, particularly since the country is considered to be one of the most biologically diverse in the world due to its species richness and endemism as well as its diversity of ecosystems (DEA, 2014). South Africa has over 95 000 known species of plants and animals with a further 50 000, conservatively estimated, yet to be discovered and described (Driver *et al.*, 2012). The country occupies only 2% of the world's land surface area yet is home to 10% of the world's plant species and 7% of the reptile, bird and mammal species (DEA, 2014). Sixty-five percent of its 23 000 plant species are endemic to South Africa (DEA, 2014).

Taken in its entirety, this vast community of plants and animals silently provides a range of indispensable ecosystem services that form the base of the South African agriculture, horticulture and tourism industries. The South African National Biodiversity Institute (SANBI) highlights national examples such as wild pollinators in the Western Cape which service the deciduous fruit industry to the value of R2500 million each year (SANBI, 2013:9). The natural veld itself supplies grazing for livestock and was valued at over R8 000 for every square kilometre annually (SANBI, 2013:9). The Durban region in which this study was conducted contains 11% of the total number (682) of rare and threatened plant species in KwaZulu-Natal yet the eThekwini Municipal Area covers only 1.4% of the province (eThekwini Municipality, 2007). These figures illustrate, in part, the scope of the economic and scientific richness that biodiversity provides as an irreplaceable national and local asset.

Biodiversity loss and the challenge of public engagement

Given the value of this asset, it makes sense to communicate the value of biodiversity to all citizens so they too can play a role in its protection and use. The term 'biodiversity', however, is not easily accessed by the general public, who may feel excluded by the scientific literacy and ecological language required to understand the term. Student respondents expressed the following:

> It's too scientific and sounds too serious like a difficult module or subject.

> I think I prefer the term nature because when you hear the term biodiversity it makes you think long and hard. Like what is this now? What has it got to do with me? (FG1; Foley, 2016:175)

Novacek (2008) stated that the word requires repeated and vigilant explanations in order to be heard in today's modern media. Interpretations of biodiversity remain elusive, a dilemma aptly described by Reed Noss in the following way: '[…] a definition of biodiversity that is altogether simple, comprehensible and fully operational […] is unlikely to be found' (cited in Jeffreys & Willison, 2009:3). Swiss surveys of the public by Lindemann-Matthies and Bose (2008) indicate that the majority of respondents have never heard of biodiversity or ecosystem services and do not know what either term means. Subsequent public surveys such as the World Wide Views on Biodiversity revealed a more positive response, with seven out of ten respondents indicating some level of biodiversity awareness and environmental concern (WWViews on Biodiversity, 2012:14).

Millennial students: A new force to be reckoned with

Having briefly identified the significance of biodiversity loss both globally and locally, I now establish the link between the topic of biodiversity loss and the influential power and potential of students in the higher-education ambit. These students are a new generation of young people called Millennials or Generation Y: those individuals born between 1981 and 1999 (Tapscott, 2009). Worldwide, Millennials have demonstrated their ability to mobilise mass movements and to generate political, economic and environmental opinions (Goneos-Malka, 2012; Stein, 2013).

Youth in South Africa comprise 36% of the country's population of nearly 56 million (Stats SA, 2016). Of those able to access tertiary education, many young South Africans currently studying at the 25 public universities nationwide are becoming increasingly politically active, often violently disrupting campuses as they express their frustration with dysfunctional funding systems, educational inequalities and perceived and actual socio-economic class distinctions (Chetty & Knauss, 2016; DHET, 2015; Soudien, 2010). Within this broad context it is unclear exactly how biodiversity issues are perceived by South African students as they appear to be eclipsed by other competing interests, and it may be easy to dismiss notions of biodiversity loss as a minor issue of secondary importance. This paper posits that attending to the significance of South Africa's natural heritage and rich biodiversity is more relevant than ever. To this end, the paper describes Durban University of Technology (DUT) students' perceptions of

biodiversity loss, elicited through honest campus dialogues with a view to informing teachers and communicators on how to contextualise this vital topic in an interesting and relevant way to their audience. The end goal is for the significance of the biodiversity and conservation message to be communicated in a clear and easily understood manner across the barriers of race, age, gender and culture.

Better scientific communication through awareness of cultural cognitions

Scientists and ecologists acknowledge a serious communication disconnect between themselves and the public (Kahan, 2010). Writing in the journal *Nature*, Dan Kahan states that science needs 'better marketing' but points out that, unlike commercial advertising, the goal of these strategies is not to induce public acceptance of any particular conclusion but rather 'to create an environment for the public's unbiased consideration of the best available scientific information' (Kahan, 2010:297). He explains that 'cultural cognitions' cause people to interpret new evidence in a biased way that reinforces their predispositions. To overcome these inherent halo effects, Kahan (2010: 297) suggests presenting information in a manner that affirms rather than threatens people's values. This approach has been confirmed by European communication specialists such as Futerra (2010), and in South Africa with SANBI's *Making the Case for Biodiversity* (DEA & SANBI, 2011).

Futerra (2010) maintain people are tired of hearing about gloom and doom extinction scenarios, and want to understand how biodiversity and conservation are relevant to their own lives. Messages about 'love not loss' are therefore key (Attenborough, 2010).

Communication specialists Weber and Schell (2001) agree that the lay public may guide its interpretation of scientific information *through the social context rather than the underlying science itself*. They note that our reasoning about science is influenced by personal and social beliefs and is often guided by community norms and the social context in which the information is offered. Differing and often conflicting frames of reference can be problematic but must nevertheless be included in the dialogue (Weber & Schell, 2001).

Data Presentation

Description of the three study sites

The research was conducted with students at DUT, the primary study site. Arising from the merger of the former Technikon Natal and the ML Sultan Technikon in 2002, DUT presents a range of career-focused diplomas and degrees in various faculties including Engineering, Health Sciences, Applied Science and Arts and Design. Students comprise a diverse range of backgrounds, coming from rural, peri-urban and urban environments throughout KwaZulu-Natal (DUT HEQC Audit, 2011). The institution is centrally located at the base of the Berea ridge in Durban and is within five minutes' walking distance of the second study site, the Durban Botanic Gardens, and approximately 2.5 kilometres from the third study site, Pigeon Valley. DUT is home to 26 417 students with a racial composition of black Africans (21 325), Asians (3 941), whites (765) and coloureds (386) (DHET, 2015:21). The genders are split fairly evenly with slightly more males (13 726) than females (12 746) (DHET, 2015).

Study sites two and three are readily accessible urban green spaces which offer potential for students to connect with local biodiversity. Pigeon Valley Nature Reserve is a ten-hectare remnant of coastal forest on Durban's Berea (Hemson, 2015). Surrounded by a sea of suburbia, this urban green space is now a refuge for birdlife and endemic forest plants, bounded by busy motorways on each side. Not only is this urban reserve of high conservation value, its forest is also a natural haven of peace and refreshment. All students involved in the field visits to Pigeon Valley remarked on rediscovering themselves in this intimate urban forest space, confirming what Crispin Hemson (2015) articulated as a strong identification with the sights, sounds and smells of this suburban forest refuge.

The Durban Botanic Gardens, established in 1849, is Africa's oldest surviving botanic garden and has collections of indigenous cycads and an arboretum of exotic trees and palms (McCracken, 1996). Botanic gardens provide important arenas for plant conservation, biodiversity learning and community outreach (Tidball & Krasny, 2010; Williams, Jones, Gibbons & Clubbe, 2015).

Research Methodology

The selection of appropriate methodology was informed by the main research objective, namely to discover the knowledge, attitudes and perceptions of biodiversity amongst students currently studying at DUT. This umbrella objective was unpacked into three research questions which guided the study: *1. What are the students' current levels of knowledge regarding the term 'biodiversity' and how is it important and significant to their lives? 2. What are the students' levels of concern regarding biodiversity loss? 3. What role does race and culture play in student perceptions of biodiversity?*

To interrogate these questions further, a mixed-methods research methodology was adopted consisting of a survey questionnaire issued to a sample population of 428 students, followed by in-depth discussions with four focus groups. Conceptually, a mixed-methods approach has been defined as 'the collection or analysis of both quantitative and qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process of research' (Hanson, Creswell, Clark, Petska & Creswell, 2005:212). A mixed-methods approach allows for the complementary use of both qualitative and quantitative data where each could uncover some unique variance that might have been neglected (Jick, 1979).

Phase one: Survey
A cross-section of 428 students were surveyed across six faculties to establish the extent of interest in and knowledge of the term 'biodiversity'. A non-probability or convenience sampling method was employed. The target sample size was considered adequate to produce reliable datasets for correlation and analysis of the factors, since statistically a larger sample size would not influence the results in terms of confidence level or margin of error (Mouton, 2001). The survey instrument was developed in relation to the issues raised in the literature review and was designed to satisfy the three research questions.

The questionnaire included closed- and open-ended questions, multiple choice items and five-point Likert scale ratings. The Eurobarometer survey of 2010 was adapted to the South African context. Statistical data were then analysed using the social sciences software package SPSS V 24.00. Phase one then established indicators for the primary research questions, namely the nature and extent of student interest in and awareness of biodiversity and its associated loss.

Phase two: Focus groups

This phase deepened the discussion with the use of selected focus groups to interrogate the issues raised in phase one and to elicit honest and critical feedback in a relaxed setting. Focus groups are used in exploratory and descriptive research when investigating highly phenomenological constructs – in this case attitudes towards nature (Kress & Shoffner, 2007; Roller, 2011). The focus groups involved guided discussion on the relevance of biodiversity, viewing of video clips and local field visits to either Pigeon Valley Nature Reserve or the Durban Botanic Gardens. Four focus groups were convened at DUT, sampled from three different faculties representing the departments of Video Technology (n=10), Horticulture (n=12), Child and Youth Development (n=15) and Maritime Studies (n=20). Such a selection ensured that the results were not skewed or biased in terms of favouring a conservation ethic.

Results and Findings

Findings from phase one survey

The first section of the survey examined student demographics, which were congruent with the overall student population of DUT (DHET, 2015). The greatest number of respondents (57%) were in the 17–21-year age group followed by a slightly older population of 22–25 year olds (37%). Gender responses in this survey were split at 56% male and 44% female. In terms of racial distribution, the highest percentage of students were black Africans (78%) with a much smaller cohort of Indians (17%) and a minority of whites (3%) and coloureds (2%). Regarding home language, most respondents were isiZulu speakers (63.8%) followed by English (22.9%) and Afrikaans (0.7%), Xhosa (7%) and other African languages (5.6%). Nearly a third of respondents came from suburbs and city centres (33%); another third came from township homes (33%) and the final third cited small towns and rural villages as their home town. Differing viewpoints informed by these heterogeneous backgrounds were reflected strongly in the focus groups – rural dwellers claimed an inherited cultural conservation code while city dwellers admitted they had a lot to learn about conservation.

The survey's opening question focused on biodiversity knowledge: *Have you ever heard of the term 'biodiversity' before receiving this survey?* This required some prior explanation of the term in order for respondents to proceed, as they would have found the rest of the survey confusing if they did not know what the term meant. Four options were presented (Table 1).

Table 1. Biodiversity definitions

1	Biodiversity and climate change are essentially the same thing.
2	Biodiversity is the richness of plant and animal life on planet Earth.
3	Biodiversity is the richness of plant and animal life and includes diversity between species at physical, genetic and ecosystems levels.
4	Biodiversity is only concerned with genetic engineering and stem cell research.

The majority (91%) of students circled item 3 as the correct answer. Whilst encouraging, this result in itself does not indicate that students are familiar with the real significance of the term 'biodiversity'; neither is their ability to pinpoint the precise answer the main objective. Buijs and colleagues (2008) argue that using the dominant scientific discourse of educating the public and so raising biodiversity awareness is in itself a flawed premise. This 'information deficit' model of public understanding and action does not take cognisance of an individual's personal experiences, knowledge and emotions concerning biodiversity that do not fit into the scientific definitions of the term as provided by the CBD.

Students' understanding of the term was then probed in more depth with the next question: *How would you best describe what biodiversity loss means to you?* Respondents could circle more than one statement. This led to a ranking order of statements, which was instructive. Results are depicted in Table 2.

Table 2. Ranked student perceptions of biodiversity loss

Rank	Criteria/Statements	%
1	Decline in natural habitats/less variety in general	61
2	Certain animals and plants are/will become endangered	55
3	Loss of natural heritage like nature parks/endemic species/natural areas	52
4	Problems with the clean air, water/CO_2 emissions	38
5	Forests will disappear/decline	37
6	Change of the climate	34
7	Loss of potential for producing medicines, food and fuel	27
8	Less opportunities for tourism	23
9	Problems for the economy/loss of material wealth	18
10	Problems in my garden	4
11	Other factors	1
12	Don't care about this issue	0.5

As the European Union biodiversity survey (Eurobarometer, 2010) points out, the terms 'biodiversity' and 'biodiversity loss' are both multidimensional concepts and are generally understood to mean either habitat or species loss. DUT students responded in a similar fashion, with these two criteria scoring 61% and 55% respectively. DUT students also expressed concern for air and water quality (38%), disappearance of forests (37%) and climate change (34%).

Biodiversity loss through climate change was fairly low on the student agenda, with just over one-third responding positively to the linkage between the two topics. Underexposure to environmental media may account for this, as well as conflicting opinions voiced by prominent scientists that give the sceptics more power. Students ranked ecosystem goods and services lower, since they might not be aware of these: loss of medicines, food and fuel (27%), lost opportunities for tourism (23%) and decline in the economy (18%).

Half of the respondents stated that biodiversity loss was a very serious problem on a national, continental and global level, yet when questioned on what effect the decline and possible extinction of plant and animal species would have on them personally, students felt this loss would not impact them immediately (49%). Biodiversity loss would affect their children to a greater degree (10%). One-third of respondents (33%) stated biodiversity loss would not impact them personally at all.

The survey then sought to probe cultural connections with the natural world. Students demonstrated strong cultural linkages with nature through the traditional use of African medicinal plants. In terms of plant knowledge, 65% of respondents claimed to use traditional herbal medicine and had some idea of the ingredients used. Many respondents (60%) were unaware that these plants faced possible extinction. The use of traditional African plants was a source of student pride, with one respondent remarking: 'The role traditional medicine plays is one of the undiluted things that is held dear by the Africans' (FG4 respondent; Foley, 2016:344).

Findings from phase two: Focus groups

Most respondents believed that 'biodiversity' had value but only once the term had been explained fully. They felt the term was inaccessible to the average uninformed person and that the word 'nature' was a more understandable substitute. One student commented: 'No, the name itself is scientific, one needs to Google it first before trying to answer any question related to it.'

On discussing the importance of biodiversity to the students' daily lives, conservation had limited appeal for some respondents, while others expressed strong support:

Realistically for black people it's not that important, it comes last, people need to be fed.

It's not that we don't care, it's just it's the least of our worries.

Every group has financial cares and needs; we need to have a balance so we need to give attention to conservation. (FG1 respondents; Foley, 2016:170)

When asked how they would prefer to connect to local biodiversity, the beach, Drakensberg Mountains and farm destinations dominated, with many rural dwellers expressing their delight in simple pleasures such as swimming, fishing, hunting and fruit gathering. Respondents evidenced a clear sense of identity centred on upbringing, cultural norms and place, in both urban and rural settings. For example, a student explained: 'Engaging with nature physically is always the best way. Going to rural areas is always best. There the biodiversity is untainted and pure' (FG4 respondent; Foley, 2016:345).

Cultural identifications linked to upbringing and childhood education experiences were acknowledged by students as significant factors likely to influence their attitudes toward nature. Unafraid to shy away from race and class issues, the student focus groups added some helpful perspectives to the uniquely South African biodiversity narrative. These included African insights on traditional medicinal plant use, the removal of established trees in transforming suburbs, and attitudes towards animals: 'Black people cut down trees for two reasons; they believe some trees attract lightning and in rural areas trees are cleared traditionally for visibility to spot the enemy' (FG2 respondent). 'White people treat their animals [dogs] better, treating them like humans while blacks generally mistreat them' (FG3 respondent; Foley, 2016:343). Black students were unanimous in their perception that whites were more concerned about and conscious of biodiversity and conservation issues. Others were against stereotyping, stating: 'I think we need to be united because nature involves all of us and leave behind this mentality that says Zulus destroy nature and it belongs to the Whites only' (FG4 respondent; Foley, 2016:347). Given the opportunity and exposure to these issues, most students expressed a desire to make a difference as individuals and to counter biodiversity loss.

Analysis and Discussion

The results from the survey phase (largely statistical) were analysed separately from those of the focus groups (largely qualitative) then merged using common thematic denominators correlated with the literature. The survey confirmed the nature of the student audience in terms of the university's overall demographics. Results are now discussed in relation to the research questions posed earlier.

Research Question 1: What are the students' current levels of knowledge concerning the term 'biodiversity' and how is it important and significant to their lives?
Analysis of data related to this question indicated that students were reasonably knowledgeable about the term 'biodiversity' and the majority felt it was significant to their lives on a personal level. Buijs *et al.* (2008), however, remind conservationists it is the public's perception and interpretation of the biodiversity concept that is important, not just the exactitude of scientific definitions. The general student understanding was that rural black South Africans are aware of their dependence on nature and biodiversity but they do not articulate it in a Western manner (these thoughts are expanded in Research Question 3). scientific information is interpreted through the social context rather than the underlying science itself. This research validated

the notion that cultural lenses play a powerful role in filtering and analysing and ultimately accepting or rejecting information that is presented.

Research Question 2: What are the students' levels of concern regarding biodiversity loss?
The survey data indicated high levels of student concern for biodiversity loss, with them recognising consequences at individual and national levels. However, the majority felt that biodiversity loss was more of a long-term problem that would not immediately affect their well-being. The limitations of a single survey, no matter how well considered and executed, make it difficult to respond to Research Question 2 because the method can at best only provide fragments of the entire puzzle. It is also likely that the survey was prone to a 'halo effect', that is, students wanted to present themselves as environmentally friendly and so provided what they perceived to be the desired answer.

Research Question 3: What role does race and culture play in student perceptions of biodiversity?
Students referred to cultural differences in upbringing and childhood education experiences as significant factors likely to influence their attitudes toward nature. Black students were almost unanimous in their perception that whites were more concerned about and conscious of biodiversity and conservation issues. Some students, however, felt that issues of race and culture were divisive and that together all young people should advance in their knowledge of conservation regardless of pigmentation or backgrounds.

Amid the current cries for a 'decolonised education' it may well be wise for environmental educators to consider differing ways of knowing and seeing that do not follow the Western scientific paradigm. Overson Shumba (1999) critically investigated the role of Western science and technology in the Southern African Development Community region. He argues that for effective science education and communication to take place, cognisance must be taken of locally acquired indigenous thought and belief systems, positing that these cannot be easily supplanted by Western scientific rationality. Similarly, according to Saljao (1991:184), 'Human experiences are inescapably cultural by nature, learning and growth take place within cultural boundaries.' Findings from both qualitative and quantitative research conducted for this study have proved the validity of these sentiments.

Conclusions

The initial position of the researcher was that university students cared little about biodiversity since they were preoccupied with other pressing concerns. Analysis of empirical data from the surveys and honest dialogue during the focus groups indicated that students are indeed concerned about biodiversity loss and that their traditional African upbringing and involvement with plants provides an immediate and familiar connection with nature. This prior knowledge provides a strong link and basis for future learning on biodiversity. These findings suggest that South African science communicators and environmental educators need good understandings of their students' cultural backgrounds and current concerns. Since young people are tomorrow's conservation champions, biodiversity conservation messages should be culturally nuanced and relevant to young people's lives.

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Think Piece: Pioneers as Relational Subjects? Probing Relationality as Phenomenon Shaping Collective Learning and Change Agency Formation

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Introduction

This paper deliberates on how relationality is framed in collective learning and change agency formation processes, with an emphasis on green economy and renewable energy learning contexts. The paper is not focused on empirical analysis of relationality in collective learning, but rather probes the phenomenon in order to provide more carefully constituted theoretical and analytical tools for further empirical research. The paper uses references to South African and Danish cases (albeit in slightly different ways), and, through this, it sets out to provide tools for generative insights and research into a recent international policy and strategy process which is bringing national-level Green Economy Learning Assessments (GELA) into being, including one in South Africa. Central to these GELAs is the notion of participatory or relational competence, which appears to be a central feature of collective learning, although this is not empirically analysed in this paper. In case study work undertaken for the GELA in South Africa that focused on South Africa's major renewable energy development, and in the Samsø Island renewable energy transition case in Denmark, this competence appeared to come into focus in praxis. Interestingly, however, it appeared to come into focus colloquially as a discourse on 'pioneers' or 'champions', a phenomenon noticed in both the South African and Danish contexts. This paper probes this phenomenon further, especially since it initially appears to be contradictory to the emphasis on participatory and relational competence in the GELA study framework. This is because the concept of 'pioneer/champion' appears to highlight individual capabilities rather than collective, relational competences. Yet, on closer inspection, it is indeed the relational competences of the pioneer/champion, who is constituted as a 'relational subject' with a key role to play in producing shared relational goods, that appears to be significant to the collective learning and action process. This, as argued in the paper, requires a differentiation of relationism and relational realism. This Think Piece, which thinks with both theory and praxis, therefore offers a possible framework for more detailed empirical studies on relationality in collective learning and change agency formation.

Relational and Participatory Competence in Focus for Green Economy Transitions

The Paris Agreement of December 2015 committed to enhancing climate change education, training, public awareness, public participation and public access to information through cooperative approaches. In taking this further, the Partnership for Action on Green Economy (PAGE), involving the United Nations Institute for Training and Research, the

UN Environment Programme, the UN Framework Convention on Climate Change, the International Labour Organisation and the UN Development Programme, working with selected governments, launched a cooperative initiative to develop international guidelines and national frameworks to scale up inclusive green economy learning (PAGE, 2016) using a strategy of national governments to undertake GELAs (PAGE, 2016). One such GELA was developed for South Africa (Rosenberg, Rosenberg, Lotz-Sisitka & Ramsarup, 2016). This policy development, which was unfolded at the same time as we visited Samsø Island in Denmark to probe dynamics of collective learning and change agency formation in times of climate change, provided the impetus for this paper, especially because the GELA emphasises 'participatory competences' which involve 'participatory or relational skills' for coalition building around a 'new development agenda' (PAGE, 2016:11; see Appendix A of this paper).

Similar competences were noted as being central to the energy transition observed on Samsø Island, as captured in these field notes citing various people who commented on this phenomenon during our site visit to the island:

> We ask people to participate.

> We will make a workshop that will give you a feeling that you can make something that will make a difference.

> We are a small society, we have familial and social relations, we help each other to learn and do things.

> We need to handle trust building, how to hold this space.

The South African GELA study (Rosenberg *et al.*, 2016:19) dimensions participatory, relational competences as follows:

- Coalition building – bringing together stakeholders from government and business sector, able to establish credibility and win the trust of both groups achieved through professionally run bid conferences and fair bidding practices
- Championing – relentlessly making the case to government and other stakeholders […] providing and acting on visionary leadership
- Problem solving and reflexivity […] learning from earlier bid rounds […] made improvements to following rounds
- Product design and implementation in cross disciplinary teams […]
- Sourcing and effectively using others' expertise […]
- Exceptional agile management […] being adaptive and responsive […]

Rosenberg *et al.* also comment on the 'dispositions' of green economy champions, which are qualified as involving an 'openness to learning outside one's current field of expertise' (2016:31).

Case Studies Bringing the Pioneer or Champion into Focus

The international GELA guidelines, the South African GELA (Rosenberg *et al.*, 2016) and the Samsø Island case all mention a 'special kind of leadership' for green transitioning, which is further elaborated using the concept of 'pioneer' or 'champion' as shown in this extract from the Renewable Energy Independent Power Producers Procurement Programme (REIPPPP) (Eberhard, Kolker & Leigland, 2014) in South Africa, which was used as a case study in the South African GELA:

> It is almost a cliché now to talk about the importance of *program champions in driving successful programs of this kind*. Someone with credibility needs to be able to interact convincingly with senior government officials, effectively explain and defend the program in meetings with stakeholders, deal with donors, select and manage consultants, communicate with the private sector […] This is a clear lesson of the REIPPPP program success, but represents a success factor that is profoundly difficult to replicate. (Eberhard *et al.*, 2014:69, emphasis added)

This discourse, while relatively undifferentiated, begins to point to additional dimensions of the relational 'competence' referred to in the GELA frameworks, such as 'credibility', 'ability to interact convincingly', 'effectively explain', 'defend', 'deal with', 'select and manage', which points to a combination of political and personal capabilities that are said to be 'difficult to replicate'. Rosenberg *et al.* (2016) elaborate further, noting that central to the role of the champion in the South African context is also the 'ability to overcome mistrust and establish credibility', which differs in tone from the 'ability to build trust' that is more generically used in the international PAGE discourse (PAGE, 2016:13). While dimensions of the relational competences required for transitioning to sustainability emerge via more situated research (i.e. via case study analysis), as shown above, the policy discourses tend not to provide adequate insight into *how* this relationality comes into being, or how it comes to be constituted. This probably requires more in-depth ethnographic-type research and observations of the processes of relationality than was possible in the studies noted above, but it is also a feature of competence-based discourse, which tends to name a competence but often fails to describe *how such competences come into being* (i.e. competence descriptions can suffer from ontological collapse – see Lotz-Sisitka, 2012; Sfard & Prusak, 2005).

To get closer to the manner in which relational and participatory competences come into being, I centre the next part of the discussion on one feature, namely the champion/pioneer, which in both case studies appeared to be significant to enabling the relational processes to emerge. At first glance, this appears to be contradictory, as the discourse of champion/pioneer (i.e. the descriptor of the prominent change agents) seems to be an individualised discourse, highlighting features and competences of a particular individual, rather than the relationality embodied in the participatory competences discourse noted above.

The Samsø Island story, which is far more mature than the South African case from a renewable energy transition perspective, draws on a Danish cooperative tradition that stretches back 150 years (Biello, 2010), leading to one in ten 'Samsinge' (islanders) owning at least a share in their

renewable energy system's wind turbines. This has brought them to the point where the 4 000 islanders produce more energy from renewable resources than they consume (Biello, 2010). I therefore draw more detail from this case for illuminating and thinking through the core points in this paper. Despite this cooperative history, the discourse associated with the energy transition reflects a similar sentiment and view of champions/pioneers playing significant leadership and relational engagement roles in driving the energy transition, as described on their website.

During our field visit we met Søren Hermansen, clearly identified by the Samsinge as the pioneer/champion of the Samsø energy transition, for which he is much respected on the island, nationally and internationally. This pioneer/champion role is also depicted in visual and written material produced by and about the programme. For example, according to a typical news article on the island's renewable energy transition, 'Soren Hermansen has led the island's climb to new heights of clean energy sustainability' (CBS News, 2016). Interestingly, however, Hermansen reflects that the 'leadership' referred to in the article can be attributed to the wider practice of the islanders themselves. He comments, 'In Japan, they call it Viking leadership,' boasting of his tiny island's reputation in some of the world's most advanced societies. The article also comments on the combination of leadership and cooperation as being the reason behind the success of the Samsø Island energy transition, stating, 'On Samsø, it's not just what they've done, it's how they've done it that has caught the world's attention' (CBS News, 2016).

While the pioneer figure remains a key motif of the Samsø Island case, there appears also to be an awareness of the limitations of overemphasising one champion above others, and a firm intention to spread the role of pioneer to a more collective or distributed concept of pioneers. This idea is also reflected in a book co-authored by Hermansen called *Commonities = commons + communities* (Hermansen & Nørretranders, 2013).

There is also an awareness of some of the paradoxes inherent in the role of the champion/pioneer. A recent guideline toolkit, entitled 'HERE – A Guide for Local Pioneer Communities', offered by the programme for expanding the learning from the island states that:

[Guideline] 01: Leadership: About Pioneer Communities and Personal Leadership

Power without love is coarse and ruthless. Love without power is sentimental. […]

Reflection: Strong leadership is a vital component in any successful pioneer project. The paradox is that change is the work of love, but the driving force in the realisation of love is walking hand in hand with power.[1]

The guideline above is taken from a set of recent learning resources developed to expand the energy transition to other contexts and to provide participatory tools for 'local pioneer communities' which are intended to 'ease the work for other like-minded pioneers out there'.[2] In this regard, the website also states its commitment to collective leadership and pioneering:

1   Energy Academy, https://energiakademiet.dk/en/om-energiakademiet/, visited 12 September 2016, emphasis in the original.
2   Ibid.

> The Samsinge (the name for the local islanders) know how to make things happen. Together they have placed Samsø on the world map. In our new Velux project we will investigate and further develop the key techniques employed to motivate pioneers and grassroots on the island; groups of people who have been crucial to Samsø's sustainable transformation into Denmark's Renewable Energy Island.[3]

The visual discourse on the website reflects both the role of an individual pioneer in the form of Hermansen, who steered the island's renewable energy transition and a greater understanding of the need for a collective system of pioneers.

In the next section, I probe further possible connections between the pioneer/champion discourse mentioned in the renewable energy project reports, and the participatory, relational competences discourse mentioned in the GELA studies.

The Role of the Champion/Pioneer in Social Movement Formation

Both case studies in question can be described as being part of wider social movements in transitioning to sustainability. We could potentially learn more about the relational competences of the leaders/pioneers/champions from the sociology of social movements. Here I draw particularly on the critical realist Frédéric Vandenberghe (2014), who in his work on social movements draws attention to the role of the spokesperson in social networks. He states that:

> Representation is largely metonymic, condensing the network into the person who embodies it. It also has a strong performative effect that adds its own symbolic power to the group. The very act of representation is also an act of transubstantiation – by invoking the group, the spokesperson seeks to evoke it and bring it into existence. (Vandenberghe, 2014:181)

He goes on to discuss the significance of the 'spokesperson' or the 'representative' of groups and suggests that groups often manifest and realise themselves in what seems to be a 'supra-individual'. This person personifies the energy of the entity (captured in the two case studies in the discourse of the champion/pioneer) and transforms it from being only a 'collective fiction' existing in the heads of individuals. The champion/pioneer figure therefore functions to 'objectivate' the group (Vandenberghe, 2014), and through this the group begins to be transformed into an organisation or collective activity.

Vandenberghe (2014:182) explains that it is essentially through such a sociological process of objectification that the organisation or activity 'becomes an authorised social agent that can act as a supra-individual person' and which can also be recognised as a moral agent by law. Significant in this relational mandating process by the organised collective is the fact that the spokesperson who normally acts at the micro level is then able to impact on a macro level, becoming a mediator between micro and macro levels on behalf of the collective. As such, the

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3   Energy Academy, https://energiakademiet.dk/en/om-energiakademiet/, visited 12 September 2016.

spokesperson/champion/pioneer becomes a 'mega-actor', that is, a corporate individual with power to mobilise organisational resources, hence the statement in the Samsø Island learning materials that, 'Love without power is sentimental […] the driving force in the realisation is love walking hand in hand with power.'[4]

This sociological explanation of how corporate actors are formed helps to explain the seemingly significant role of the pioneer/champion in the collective learning process and in the associated production of relational goods. It perhaps offers a better explanation than that offered by the competences discourse alone, and helps to clear up the problem of why it is difficult to replicate the competences or qualities of the pioneer/champion (Eberhard *et al.*, 2014).

The champion, when seen through a critical realist sociological lens, is not only an individual actor with unique affordances or competences but a mandated 'corporate actor' who intervenes as a 'living hyphen', who renders the group visible by mobilising it. Vandenberghe (2014:182) notes that to avoid collectives being rendered hypothetical actors, there is a need to consider them as 'hypostatised actors'. He suggests that constructivist analyses of social action must be reframed from a realist perspective. In such a reframing, '*one should always analyse the conditions of their possibility and investigate the mediations of their actuality*' (2014:183, emphasis added). We should ask what makes it possible for champions or pioneers to be named as such, and what conditions mediate their actions. This helps to explain why in South Africa there is need to 'overcome mistrust'. The history of segregation and mistrust amongst different sectors of society shapes the possibilities for collective action, hence it being noted as a significant relational competence in the GELA study for South Africa (Rosenberg *et al.*, 2016).

Vandenberghe (2014) proposes further that such an analysis of the spokesperson is necessary to show *how* the spokesperson consults members, and how they come to a 'consensus' that articulates the collective will, as this is needed to establish the legitimacy of the spokesperson as mandated 'corporate actor' from a democratic perspective. This calls for detailed processual sociological–ethnographic or learning interactional analyses (e.g. in the post-Vygotskian tradition) of interactions surrounding the champion or pioneer, as well as analysis of the underlying conditions that shape possibilities for the 'corporate agent' to exercise agency on behalf of the group. Some insights can be found in the detailed description of the participatory approaches used in the Samsø Island social learning processes:

- Early on '[…] the promoters of the renewable energy island made a conference for the islanders in the form of a "cafe seminar", called "Cafe Good Energy" (with a process similar to "*open space" seminars*).'
- Ten years later a second phase of renewable energy development was initiated: 'The new vision is promoted in a process called "Samsøe 2.0", where the inhabitants are *invited to take part in the development of the island* […].'
- 'An important event for the development of Samsø 2.0 was a day with conferences to *develop consensus* among active inhabitants and cooperation partners for the development of the fossil fuel free island [...].'

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4   Energy Academy, https://energiakademiet.dk/en/om-energiakademiet/, visited 12 September 2016.

- 'During the morning was organised *an "open space"* with *invited stakeholders* from the island, such as the mayor, representatives of different business, leading employees at the Energy Academy, and important cooperation partners for the island, such as designers and planners, a renewable energy association representative, etc. The *open space was moderated* by a professional moderator.'
- 'First was a presentation of all participants, and each indicated why they participated [*i.e. clarification of motive for participating*].'
- '[…] Some of the topics were *proposed by organisers* interested in the fossil fuel free transition, *others were proposed by participants* that simply were keenly interested in the future of the island [*mediation of new knowledge in relation to existing knowledge of people in the group*].'
- '[…] The *dialogues* in the groups were quite *informal*. […]'
- 'For the afternoon all inhabitants of the island were invited for an open seminar together with the stakeholders from the morning seminar. Also this seminar was moderated by a professional moderator, that used a "*Shared space" methodology*.'
- 'The *organisers collected all the texts and started to develop a "mind-map", linking the different issues, all centered on the question* "What are the most important areas of development to realise Samsøe 2.0".'[5]

It is evident that there is a commitment to providing mediating leadership in the Samsø Island context, and to doing this via open and shared-space approaches that allow for consultation and dialogical processes of engagement with multiple stakeholders. Engeström (1987), an expansive learning theorist, would describe this wider, collaborative social learning and change process as respecting the principle of multi-voiced engagement, and as a mediated process of interventionist research and praxis. The educational researcher would need to consider more carefully how such interactive processes would allow for the emergence of transformative agency amongst those engaged in them over time (Engeström & Sannino, 2010, 2016), clarifying, amongst other things, the dynamic of the power relations that circulate in such a process.

Additionally, the socio-material conditions influencing the collective learning and action also need to be taken into account. In the case of Samsø Island, a government grant first allowed the islanders to pursue their energy-independent pathway, and in the South African case, a significant private–public partnership allowed for the potential of the REIPPPP to be realised. Socio-material/socio-technical analysis after Bruno Latour (1999) suggests that there is more to the formation of collectives than social interactions only. In both the Samsø and South African contexts, it seems that significant financial and technological investment is important. The Samsø Island community recognise this, asserting that 'Since 1997 and up until today there has been ongoing movement, over time 440 million [Danish] Kroner has been invested', while the REIPPPP has attracted 192.6 billion South African rands in investment (DoE, 2016). Other dimensions of the socio-material in the case studies relate to the technologies and the energy that is produced via the new forms of technology. In regards to this, Vandenberghe (2014:185)

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5   'Samso 2.0', https://energiakademiet.dk/en/2-0-2/, visited 26 April 2018 (emphasis added).

notes that Latour's work draws attention to the need to include a performative analysis of the socio-technical construction of society in 'a realist dialectical analysis of the structuration of collectives in organised groups'. Vandenberghe warns, however, that one can get lost in a 'vitalist post-humanist analysis', and, in so doing, forget that it is the relationship 'between social positions and ideas' that is determinant in the last instance in human action, 'not the relations between actants' (2014:186). It is from this vantage point that he proposes the need to analyse how collective subjectivities are actually constituted. He suggests that attention needs to be given to the emergence of collectives as a triple morphogenic process that comprises three moments which produce 'avatars of the collective':

- Symbolic identification […] which produces the symbolic community
- Socio-technical mediation […] which produces the mobilisable quasi group
- Political representation […] which produces the organised group. (2014:186)

Thus, the movement to identification and mandating of the champion/pioneer would appear to signal a shift from a mobilisable quasi-group to a more organised group, with potentially higher levels of capacity to produce relational goods. In this regard Vandenberghe provides some insight into what this complex social process involves in social movements and collectives:

> Spokespeople that represent, formulate and translate the positions of their respective networks often have to articulate and negotiate, reframe and rephrase their position before they come to agree on a common platform of action […] Spokespersonship [the pioneer/ champion] is inescapable, but it can be democratised so as to allow for more flexible forms of consensus building […] Communication is not just a procedure for arriving at consensus, it is also an art and a technique [which explains the emphasis placed on communication and participatory methodology used at the Samsø Energy Academy, and the emphasis on participatory, communicative competences in the GELA studies] […] Although spokespersons are now multiplied [e.g. into local pioneer communities as in the Samsø case; also seen in the desire to 'replicate' the champion in the REIPPPP study] and can speak with many voices, they still have to aim for the moral high ground [e.g. via combining love with power] and aspire to a form of consensus that is more than of particular interest. (2014:178–179)

This analytical frame helps to explain the role of the pioneer on Samsø Island, and potentially also the emphasis on champions/pioneers to drive green economy learning processes and developments, as highlighted in the case studies. Although the focus of this paper is GELA and competence descriptions, spokespersonship and the need for realist analysis of this relational process and its formation (looser or tighter, more contemporary or historical) appears to be a significant feature of how relationality is constituted as core to how collective learning and change agency plays out in practice. Further empirical research will be needed to define this further.

It seems, therefore, that there is more to the significance of the champion/pioneer figure than initially meets the eye. We may ask whether the issue at hand in green economy learning

processes is to cultivate individual pioneers with the charisma and competences outlined in the preceding discussion, or whether there is a need to consider the concept of pioneers and relationality in a more complex way – that is, to conceive of pioneers as relational subjects, rather than as charismatic leaders with particular individual competences only.

Pioneers as Relational Subjects Producing Relational Goods

Further insight into the pioneer as relational subject is provided by the work of Donati and Archer (2015), who suggest that due to individualisation in modernity, relationality remains poorly understood. They differentiate between relational*ism* and *relational realism*. The discourses captured above in the competences frameworks appear to be more reflective of relational*ism*, that is, they point to the processes of forming relations between individuals. The discussion on the way in which the role of the spokesperson comes into being presents a more situated realist relational perspective, especially if the conditions of their possibility and the mediations of their actuality are investigated and made visible, as recommended by Vandenberghe (2014).

Donati and Archer's (2015) concept of *relational realism* can further assist us in understanding collective learning and change agency in times of climate change, where the impetus is to shape wider societal transitions and transformations to sustainability, as in the cases outlined in this paper. The authors differentiate between the individual's competence to contribute to relational goods (as outlined in the GELA study framework), and the 'we relation' or the relational good that comes into being via the interactions that exist between those who are engaged with each other via trust relations, or via the competence to 'engage others' (as outlined in the Samsø Island case) in the production of a common good or a new practice or activity. They suggest that relational goods that are produced via interactions and relations between individuals are *emergent* and are realised in and via more than that which is offered by individuals in interaction with each other. They also suggest that a wide variety of quite different individual intentions may be compatible with joint actions (e.g. establishing renewable energy technology solutions in a given context). This was observed in the Eastern Cape context where multidisciplinary competences were required by government to launch the renewable energy programme, and where cooperative relations between these multidisciplinary teams in and outside of government were what enabled the actualisation of the programme. This is a 'we relation' rather than an 'I relation' and can therefore not be reduced to a description of individual competences, although these are clearly important for the emergence of the relational goods (see Figure 1).

As noted by Donati and Archer (2015), such a process requires the co-production of relational goods which are not reducible to the relationality of or amongst individuals, but such relationality is a prerequisite for the production of relational goods. Relational goods are more than the sum of their parts. They are a new reality, co-created amongst individuals and with socio-material engagements. This requires analysis of the co-engaged processes of emergence of relational goods, which arise from combinations of diverse knowledges, competences and ethical commitments and practices in green economy learning processes.

This collective production of relational goods is described in articulations of Samsø Island 1.0 results: 'Then followed a period of ten years with investments in a number of renewable

energy plants and increased energy efficiency, until the islanders could declare that they had higher renewable energy production than energy consumption on the island'. These outcomes were expanded via Samsø Island 2.0, where the aim is 'development of the island, including the transition to a fossil fuel free island by 2030'. There is also articulation of Samsø Island 3.0, which is described as 'a long and stable social development that has resulted from the Samso 1.0 and 2.0 successes so far'.[6]

Figure 1. Diagram showing a realist view of relationality
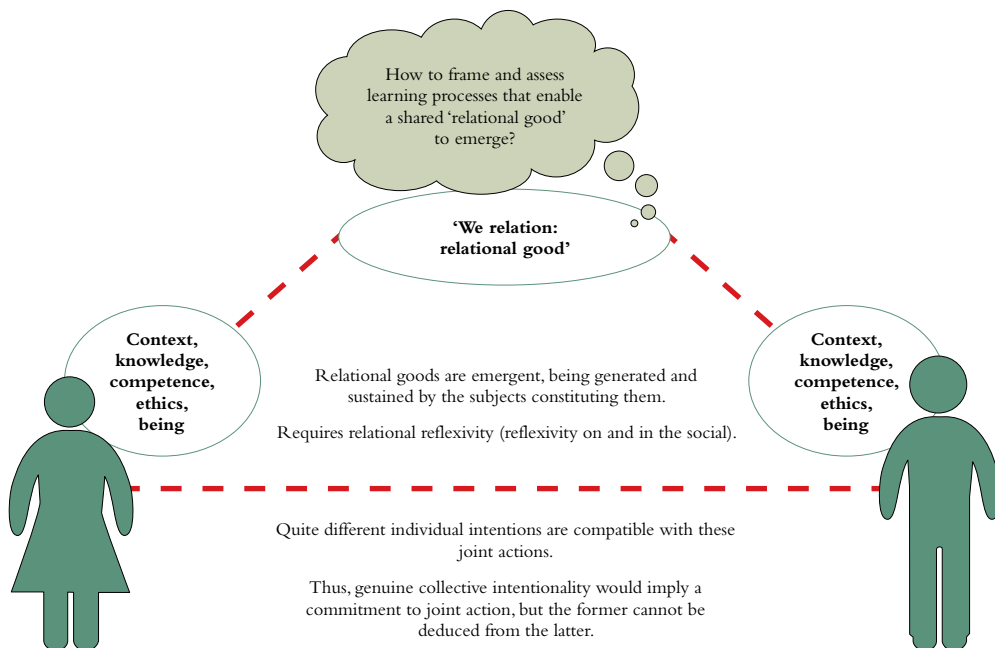
Source: Adapted from Donati & Archer (2005:41–42)

Concluding Points

Relational goods are 'goods generated from the relations between subjects, ones that remain continuously activity dependent and concept-dependent upon those involved, but cannot be reduced to individual terms' (Donati & Archer, 2015:65). This paper deliberated on the case studies of pioneers in two different processes of renewable energy transitions, and reflected on processes associated with the establishment of GELA frameworks emerging from the Paris Agreement, which brings collective learning and change agency formation into focus. The paper proposes that collective learning and change agency is not solely driven by the individual competences of pioneers/champions, but must necessarily be situated in emergent and shared

6   'Samso 3.0', https://energiakademiet.dk/en/2-0/, visited 25 September 2017.

activity. However, detailed empirical data from Samsø Island and the REIPPPP case study in the Eastern Cape show that renewable energy transitions do appear to require pioneers/champions. This might be because such transitions need new forms of collectives and collective agency to be mobilised around a new type of activity, and thus require a form of 'spokespersonship' for the activity to emerge successfully in complex and difficult structural conditions (where big power and oil interests still largely dominate national and international energy discourse).

This paper argues that understanding the relational dynamics that underpin the collective learning and change agency formation necessary for the transition to a green economy from a realist sociological relational point of view could be helpful for broadening the competence analyses and framings that currently guide GELA processes. This would potentially allow for a more situated, complex understanding of green economy learning, and would have significant implications for *how* one conducts GELAs, and for how green economy 'training' is conceptualised and offered. It also has implications for how one would go about researching collective learning and change agency formation when champions and pioneers are in focus, thus offering starting points for designing empirical studies into such a situation.

Given that this is a major policy impetus and response out of the Paris Agreement, and given that it is a direction-setting process of major international organisations, it might be opportune to ask sooner rather than later: How do we frame GELAs in a way that measures and reviews the production of relational goods, rather than relational competences? Importantly for the international process of conducting GELAs based on the competence framework above, we could ask whether an in-depth engagement with the concept of production of relational goods could redefine the concept of participatory/relational competence in the GELA. We could also ask how this framing can help us understand collective learning and change agency formation beyond empirical studies thereof where such competence comes to the fore. This paper suggests that further work is needed in considering what this means for the green economy/climate change learning assessments that are beginning to roll out.

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Appendix A

Competence framework for green economy policy and action

	Transformational competencies	Management competencies	Participatory competencies	Technical competencies
Agenda-setting level	For example, ability of a policymaker or business leader to identify new development priorities based on an understanding of complex social, environmental and economic dynamics	For example, ability of a policy advisor to effectively organise consultations on a new development plan and meet deadlines for submission to relevant government bodies	For example, ability of a policymaker to create coalitions around new development priorities or ability of a civil society leader to effectively feed public concerns into policymaking processes	For example, ability of a researcher to run a green economy model and test new development targets
Organisational level	For example, ability of a senior government official to conceptualise a new regulatory framework based on new development priorities and real-world experiences	For example, ability of a head of department to put in place a management structure that responds to institutional mandate	For example, ability of a senior government official to build trust among public- and private-sector stakeholders in a sectoral policy or regulatory framework	For example, ability of an officer to draft a coherent sectoral policy or regulation based on substantive expertise or ability of a business representative to provide technical inputs to draft policies/regulations
Operational level	For example, ability of all stakeholders to reflect on whether green economy measure is achieving and will achieve intended economic, social and environmental results	For example, ability of a mid-level manager to regularly monitor the implementation of a green economy measure and provide space for adjustments based on lessons learned and stakeholder input	For example, ability of a mid-level manager to effectively consult with relevant stakeholders during the preparation and implementation of an inclusive green economy measure	For example, ability of a project officer to run the technical aspects of a green economy incentive scheme such as defining and controlling the application of green building codes

Source: PAGE (2016:11)

Think Piece: Reflections on the Individual–Collective Relation in Change Agency Formation in the Samsø Renewable Energy Island Project

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Abstract

This paper offers reflections on change agency formation in the Renewable Energy Island (REI) project on Samsø, following a field visit to the island in June 2016. Both individual and collective agency are set out as central for the processes leading to the change in the REI project, spurring reflections on individual–collective agency dimensions in change agency formation related to climate change issues, inspired by notions of participation in everyday life (Marres, 2011; Micheletti 2002, 2006). The paper furthermore focuses on an exploration of two different formats of knowledge-sharing in the learning processes leading to change on Samsø – 'neighbourly visits' and web-based documentation – emphasising the role of knowledge in change agency formation. Drawing on Jamison's (2001, 2010) notion of the making of green knowledge in the tension between environmental politics and cultural transformation, the paper suggests that the REI project can be characterised by both an adaptive approach and by social resilience development.

Keywords: Samsø Renewable Energy Island project, change agency formation, individual–collective agency, social resilience.

A Project Underpinned by a 'Green Business' and 'Energy Democracy' Logic

Marres (2011) notes the different logics according to which action and participation are co-articulated with economy in everyday material activities. This paper starts with a brief outline of the logics at play in descriptions of the Renewable Energy Island (REI) project. The project was initiated in 1998 with a plan to make Samsø a 100% renewable energy (RE) island in ten years. There is currently a follow-up plan for making the island fossil fuel free by 2030. Samsø is Denmark's third smallest municipality with around 3 700 inhabitants, and farming, tourism and RE are main sources of income.[1] An article in *The Guardian* about the REI project (Kingsley, 2012) provides insight into the double meaning of emotional and financial investment in one of the key narratives of the project – community ownership. The article describes the REI project as truly remarkable, one of the world's largest carbon-neutral settlements. The reason for this achievement is found in the co-ownership of the wind turbines, and in the bottom-up processes leading to their establishment, which meant that 'the turbines haven't been sprung on the locals. Instead, the latter are invested in the former, both emotionally and financially' (Kingsley, 2012).

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1 See http://arkiv.energiinstituttet.dk/.

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Reflections on the Individual–Collective Relation in Change Agency Formation in the Samsø Renewable Energy Island Project

Materials on the webpage presenting and documenting the REI project point at its underpinning in a green business logic.[2] A presentation on the website refers to local responsibility-taking through the slogan 'think local – act local' and argues for continued investments in RE technologies as part of the fossil fuel free island plan, which would lead to 'survival of the island, more jobs, local economy, independence, CO2-neutral, energy democracy, local activity!' (Kristensen, 2015:11). The project can be described as a 'child' of late 1990s' ecological modernisation, a market-oriented approach seeking to combine environmental concern with economic growth, and a part of a neoliberal knowledge regime, entrepreneurial and following a utilitarian logic (Jamison, 2010). The key narratives of the project link participatory technologies such as shared knowledge- and decision-making (energy democracy) with socio-technical innovation and economic development (green business). The island transition approach to RE can thus be read as an adaptive approach, in line with the normative agendas of the green governmentality knowledge regimes at the end of the 1990s, fixated on keeping a balance of the quantifiable environmental and economic costs, and benefits of individual and community actions. However, the REI project narratives of 'energy democracy' and community ownership described below speak for a co-articulation of the transition approach as social resilience development – as being about both local green knowledge development and about strengthening faith in Samsø as a viable community. A key indicator of social resilience is the capacity to learn from past experiences and to adapt and, if necessary, transform social, social-ecological or economic relations and institutions (Obrist, Pfeiffer & Henley, 2010). The focus is on the capacity to transform and access the knowledge and skill-sets to do so, emphasising the role of knowledge in educational responses to climate change.

Both individual and collective agency are set out as vital for change processes in descriptions of the REI project, and I discuss this first, before addressing two examples of knowledge-sharing technologies in the learning processes leading to change on Samsø.

Individual–Collective Dimensions in Change Agency Formation

The main storytellers of the REI project are the director Søren Hermansen (SH) and the daily project manager Malene Lundén (ML) at the Energy Academy, an institution functioning as the fulcrum of the accounts on the REI project.[3] SH describes the project as being about 'citizens responsible for the solution of their own problems', stressing the island community's ability to come together and act (conversation with SH and ML, 7.6.2016). Groups of farmers and local businesspeople, such as the smith, are described as key actors 'won over' to the RE project idea. When asked how this was handled in the public meetings about the project, SH and ML emphasised strategies such as figuring out beforehand who was 'for' and who was 'against' the project, as well as persuading key people. A sense of joint ownership of both the problems and the solutions, and shared decision-making, were crucial for the development of the REI project. SH thus characterises the REI project as an energy democracy project rather than a climate

2   See http://energiakademiet.dk/en/vedvarende-energi-o/
3   Ibid.

change project: 'We made energy democracy. We didn't really talk about climate change, that's abstract. But we created jobs' (in Papazu, 2016:78).

Marres (2011) points out that an important trope in liberal theory is that participation in public affairs must somehow be made 'doable' for ordinary people. Rather than emphasising knowledge about climate change issues as a driver for change, SH focuses on action – making energy democracy and creating jobs on the island. His view on what has been going on seems to resonate with notions of direct democracy and related forms of participation, including Micheletti's (2002) notion of individualised collective action. She defines this as 'the practice of responsibility-taking through the creation of everyday settings on the part of citizens alone or together with others to deal with problems which they believe are affecting what they identify as a good life' (2002:7). The problems in focus on the island when the REI project was initiated were related to a loss of jobs and a decrease in socio-economic development. Farming and tourism were too vulnerable to provide the sole sources of living, and the business of RE was a promising contribution to the island economy. A change in a range of practices on both individual and collective levels was the prerequisite for establishing the district heating centres that today provide 60% of the energy on Samsø and thus form the backbone of the island's RE economy. These changes include the majority of citizens in the district agreeing to buy their energy from the centres, and most famers agreeing to deliver the straw that fuels the centres.

ML describes SH as a great storyteller, a protagonist with a high level of credibility on the island, and as both a dreamer and the one who secured support by including all the main groups on the island through a lot of hard (leg)work, gathering 'the right people at the right time around the right project idea' (conversation with ML, 8 June 2016). This description of SH sets out individual agency as an important part of change agency formation. Although SH's 'island credibility' seems to have worked well to secure trust in the REI project, there were dissonant voices. For example, his role as the main driver of change at Samsø was questioned by some of the islanders in a meeting debating how best to secure the future of the island (through investments in farming, tourism or RE technologies). Thus, in spite of the tributes paid to SH as the innovator in stories about the REI project, 'the law of Jante'[4] – a pattern of group behaviour within Scandinavian communities that criticises individual success and portrays achievement as unworthy and inappropriate – also seems to have been at play.

The cultural values embedded in the law of Jante, a preference for community rather than individual achievement, provide a clue as to why the overall story of the project is one of community mobilisation characterised by 'energy democracy', joint ownership and knowledge-sharing. This seems to be a fair articulation, despite many of the stories that are told about the REI project underplaying the role of SH as the innovator and pioneer, the storyteller and protagonist in the change agency formation on Samsø. ML touches on a possible dilemma when discussing SH's central role in the project as a possible weak link by asking what happens when he is not there. The interplay between the individual and collective dimensions of the change agency formation in the REI project is thus central, both in the main storytellers' accounts of the project's past and in their speculations about the future.

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4   https://en.wikipedia.org/wiki/Law_of_Jante

'Neighbourly Visits' and Web-Based Documentation

The distinction between participation in 'big' and 'small' (or everyday life) politics is central in the field of socio-technical science addressing climate change issues. Marres (2011) draws on the notion of the materialisation of participation, involving the use of specific technologies as the means through which participation in everyday life is accomplished. Inspired by this perspective, I discuss two main technologies of knowledge-sharing in the REI project – neighbourly visits and web-based documentation – as essential in the change agency formation at Samsø.

SH was born on the island and brought up on a farm. His ability to visit farmers and talk about the project over coffee is construed as a main driver for bringing them aboard. Establishing wind-generated energy on a scale that would make a difference meant that farmers needed to provide space on their fields for the turbines. Moreover, to run the district heating stations, they had to agree to sell their straw instead of letting it rot on the fields to fertilise the soil, as was customary. Conversations about these essential prerequisites for the REI project formed part of the neighbourly visits by SH. Jamison (2010) points out that cultural practices and the mobilisation (or reinvention) of tradition often play an important role in attracting participation and involvement. The neighbourly visits drew on a tradition among the island farmers of using the ritual invitation for a cup of coffee as an informal learning space for sharing knowledge and thoughts on how to solve local problems.

An important factor here is that SH belongs to this community; he is one of them and can talk about the new practices so they seem doable in relation to the farmers' everyday lives and values. An example of neighbourly visits as a technology of knowledge-sharing is also provided by Mikael Kristensen, an energy advisor and project manager at the Energy Academy. He describes 'free of charge home visits' by the local council energy consultants as one of the activities in the Samsø Fossil Free 2030 plan (conversation with Kristensen, 8.6.2016). This could be seen as regular energy consultancy, but Kristensen points out that it is more based on 'neighbourly relations and visits' than expert consultancy – that is, it is the same approach that SH took in his visits to the farmers, with the aim of bringing them on board the REI project.

The 'us and them' narratives throughout SH's storying are central, for example emphasising the importance of getting locals such as farmers and the smith on board, as well as the potentials of local knowledge – there seems to be a limited need for expert knowledge, at least in relation to the establishment and running of the district heating centres. Papazu (2016) notes that it was the islanders', and especially the workers', previous experiences with the district heating centre technology, and not expert knowledge, that paved the way for the district heating stations in the REI project. The big wind turbine technology is more complicated and brought with it a need for external experts. However, SH emphasises that this arrangement is only for a short period, to provide local training and make it possible for the islanders to take over the job.

ML describes her task at the Energy Academy as 'writing the story about the REI project and the Academy', to document their processes and tell new stories. She points out that the Energy Academy could be described as an energy learning centre, but that the original notion of an academy – 'to meet by the well and share knowledge, the place for community and the

common' (conversation with ML, 8 June 2016) – seems to be more fitting, considering that knowledge-sharing is one of the main goals of the Academy. The notions of 'community', 'commonity' and 'commons' play a central role in the storytellers' understanding of knowledge-sharing: Samsø Island is described as a community; 'commonity' as 'a sense of community', and 'the commons' as 'something people connect to […] a place where you feel you can contribute – it's about giving and receiving'.[5] ML furthermore suggests that there is no such thing as a stable commons, and so '[w]e have to keep on creating small joint connections that will work with us on securing the commons of the future'.[6] The 'giving and receiving' and importance of 'joint connections' in knowledge-sharing are here construed as key aspects in community mobilisation to secure the commons of the future.

With reference to Beck's (1999) concept of 'sub-politics', Jamison (2010) notes that participation in small politics presupposes some kind of organisation or coordination that links actions to each other, and provides a set of shared values or beliefs, and thus a space for integrating different ways of knowing and doing. Open source documentation work based on collecting, reporting, analysing and disseminating news and information offers a space for participation other than the public meetings that have also been part of the REI project technologies. Also, and perhaps just as crucial to the REI project's change agency formation process, it provides a space for articulating the values and beliefs about the commons and sense of community described above. Given widespread frustration about the limited political action on state and market levels in relation to climate change issues, it might be tempting to turn to the potentials for political action in civil society. Examples of this line of thinking are offered in *The Wealth of the Commons* (Bollier & Helfrich, 2012) by a group that is presented as a future collaboration partner of the Energy Academy. Here, 'the commons' is described as a model for ecological governance outside the realm of the state and market.

Synthesis and New Beginnings

In this paper I have attempted to put forward some reflections on individual–collective agency dimensions in change agency formation in the REI project, and on two formats of knowledge-sharing – neighbourly visits and web-based documentation – in processes leading to change on Samsø Island.

Although they capture just a fragment of the many diverging practices related to change agency formation in the REI project, I hope they have proved useful to illustrate the analytical potential of exploring individual–collective agency dimensions in change agency formation in the project. I am aware that my chosen tools are not neutral, as my choice of empirical and theoretical constructs is partly based on what I recognise and am familiar with. I grew up in a farming community, and thus some of the practices and ways of thinking on Samsø seem familiar to me. I am also familiar with the notions of participation in everyday politics, applied in previous studies of youth engagement in educational responses to climate

5   See 'Reinventing the Commons', http://arkiv.energiinstituttet.dk/2/28/BestNxt2014-LRreinventing.pdf, visited 27 April 2018.

6   Ibid.

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change (e.g. in Carlsson & Hoffmann, 2004). Notions of participation in everyday life and politics can open up possibilities for identifying and exploring change agency formation related to climate change issues within a place-based context such as Samsø, focusing on the liminal spaces along the borders of individual and collective agency. The theoretical construct that challenged me the most (and thus made me think the most) is the notion of material participation, which seems to attempt to break up the distinction between participation in everyday politics and big politics by pointing out how they are linked in co-articulations of multivalent action (Marres, 2011). Smith and Stirling (2010) and Bollig (2014) warn against downplaying the role of wider democratic politics in the public sphere and of structural change related to sustainable transitions, pointing to the need to unpack normative questions concerning power, such as whose sustainability gets prioritised. These questions have not been in focus in this paper, although they could have been addressed in relation to the islanders' debate on whether it was best to secure the future of the island through investments in farming, tourism or RE technologies.

Participation in small politics in everyday settings, such as installing an RE source in your home or business and a heating centre in your community, can be read as an attempt to turn everyday material actions into public participation. The REI project thus seems to provide a learning space that can offer possibilities for developing abilities relevant for participation in both small and big politics. In the case of the REI project, it became visible as big politics when the island 'got off the grid' and gained energy independence from the mainland, and thereafter made RE a main source of income by exporting surplus energy to the mainland. The REI project on Samsø is construed as an example of how it is possible and desirable to link green business with democratic participation (Kingsley, 2012), and is used in lobbying for community-driven RE investments in the UK and the US. Thus, it can be seen as a project transcending the local context. The question is where it leaves the local development processes on Samsø. The need to look back on who they are is mentioned as an important part of the Energy Academy's future engagement, and the open source web-based documentation could prove to be an invaluable technology as a stepping stone to future local development processes on Samsø.

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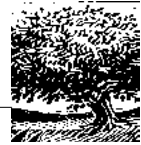
Think Piece: Change Agents and Collective Experience–Making as Part of Sustainable Transitions in the Face of Climate Change

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Abstract

While theories of transformative social learning, applied in environmental and sustainability education, tend to operate with relatively short-term learning horizons, this paper aims at exploring the potential of longer-term social learning. It begins by interpreting the 17-year-long process of transforming the island of Samsø to be solely dependent on renewable energy. The focus is on the key change agent and his way of drawing on, storying and creating collective experiences. This leads to reflection on the concepts of collectivity, experience and collective experience-making. Inspired by the works of German and Danish critical theorists, who may be unfamiliar to an international audience, emphasis is placed on linking people's everyday sensuous–emotional experiences to collective spaces, enabling collective reflection, exemplary learning about the socio-cultural context they are part of, as well as social fantasy, concrete utopian projects and collective experience-making. Based on this perspective and the Danish context, it is briefly outlined how change agents can enable and facilitate collective learning about climate change, as well as the challenges they face.

Keywords: Long-term learning and social change processes, collective experience-making, Samsø Island.

Climate Change, Sustainability and Collective Learning

In a speech on 22 November 2016, the former chair of the United Nations Plenary, Mogens Lykketoft, emphasised that, among the 17 Sustainable Development Goals, 'climate action' is by far the most important as the effects of escalating climate changes risk dramatically undermining any efforts to address the other goals. At the same time, efforts to address the other goals run the risk of accelerating existing climate changes. Thus, we are faced with interconnected global problems, meaning that efforts to reduce and adapt to climate changes should be approached as elements of a system–oriented transition to sustainability. The high degree of complexity and uncertainty involved in such a transition, combined with the social tensions arising from climate change and proposals for sustainable solutions (Hulme, 2009), highlight the importance of learning how to identify peaceful and reasonable ways forward. As suggested by Scott and Gough (2003), the overall slogan could be 'sustainable development *as* learning'. However, at the same time, this process of learning our way forward should not be considered in terms of isolated educational initiatives, but as comprehensive processes arising from issues of public concern, including a multitude of concrete visions, projects, struggles and experiences, as expressed succinctly by Van Poeck (2013: 97) in her suggestion to replace 'Learning *for* Sustainable Development' with 'Learning *from* Sustainable Development'.

It is remarkable that such an ongoing, long-term perspective on learning in relation to climate change and sustainability is more or less invisible, not only in conventional public campaigns encouraging small individual behavioural changes, but also in theories of transformative social learning. The concept of social learning is used in several ways but, in relation to environmental and sustainability issues, one key strand can be traced back to the work of Kurt Lewin and his followers on change agent strategies and organisational learning. This work has influenced public planning theory (cf. Friedmann, 1987; Renn, Webler & Wiedemann, 1995), environmental management (Pahl-Wostl, Craps, Dewulf, Mostert, Tabara & Taillieu, 2007; Reed *et al.*, 2010) and, explicitly in relation to sustainable transitions in organisations, Theory U and presence (Scharmer, 2009; Senge, Scharmer, Jaworski & Flowers, 2005). Another key strand of social learning theory can be traced back to Habermas' (1995-97) work on communicative action, which has inspired the so-called deliberative democracy turn in political science, and which can also be seen in some of the key contributions on pluralistic education for sustainable development (e.g. Öhman, 2008) and social learning towards a sustainable future (Wals, 2007). Without ignoring the value of these research strands on social learning, they tend to limit social learning processes to short-term, creative, multi-stakeholder arrangements, such as workshops or other types of facilitated participatory sessions. As a result, there is a need to supplement and transcend such approaches through the development of longer-term social learning theories. I explicitly write 'theories' in plural as I am more interested in developing theories sensitive to history and to different settings than in constructing a single universal-abstract theory. This paper represents a first attempt to develop one such theory.

Compared to the orientation towards short-term social learning processes, five of the six field visits we undertook as part of the collaboration between Rhodes University and Aarhus University, described in the editorial, were organised as long-term learning and social change processes. Among these, I draw on the Samsø case and emphasise three points about the collective experience-making process which has taken place at that island. This is followed by an attempt to clarify the concept of collective experiences, including distinguishing between different types of collectivity. The concept of experience is important as well, not least in combination with collectivity. To further explore the concept of collective experiences, I relate the Samsø case to a lesser-known strand of critical theory. Finally, the scope is widened in an attempt to interpret the current situation in Denmark and the potential for collective experience-making regarding climate change and sustainable transitions.

Samsø as an Example of the Role of a Key Change Agent in Collective Experience-Making

Samsø is a special case for several reasons. It is an island, which makes it a unit clearly distinguished from the surrounding world. It is a municipality and as such has a formal political–democratic and public administrative organisation. In recent years, it has been challenged by depopulation and the risk of losing workplaces, shops, schools, etc. These are important for the community identity among the approximately 4 000 inhabitants. However, the community is also empowered by historical events, not least successfully overcoming the consequences of

the closure of the local slaughterhouse. This is not only a concrete collective experience; it is an experience that, as Papazu (2016) puts it, has been 'storied' by the key change agent of the island's renewable energy project. His way of working with the community is remarkable as it represents a radical departure from what has been done by other renewable energy change agents in Denmark. Firstly, he has drawn on, and expressed, the community's collective experiences. Secondly, he did not apply an instrumental renewable energy 'salesman' approach, but a socio-cultural and economic approach. During our visit to Samsø, he stated that the aim was the survival of the island as a community and not to convince people with arguments about the risks of climate change. He is a resident of the island and thus part of the local community. This, combined with his emphasis on collective experiences and existing socio-economic challenges, could lead one to expect him to act as a conservative and defensive agent. Although he has, in part, built upon his embeddedness in the culture of Samsø, and his storying of the community identity by contrasting the island's values and culture with the attitudes among decision-makers and bureaucrats in Copenhagen, he has combined this with a role as a spokesman for sustainable innovation. He describes himself as a pragmatist in contrast to the 'green radicals', but it is precisely this pragmatism that has made it possible for him, as a change agent, to network with agents at all levels and get support for expensive, innovative renewable solutions that have moved the island far beyond what any so-called green radicals have managed to achieve.

The time span of 17 years for the transformation of Samsø to 100% renewable energy provides fascinating insight into how collective experiences and community identity have developed since the first successful steps. The key change agent's storytelling also seems to have been an important part of the later phase. In this phase, primarily as part of his role as a kind of ambassador, he recounted the success story of Samsø to visitors from all over the world, and travelled around the world himself to exchange experiences with kings, ministers, high-level officials as well as other communities and change agents working to promote renewable energy and sustainable communities. This interaction with the external world made the island famous and thus empowered their identity and, by doing so, also enabled ambitious new projects, such as progressing from a renewable island to a fossil fuel free island.

This interpretation of the case is obviously simplified as there are other important change agents on Samsø, as well as complex tensions among agents. Furthermore, the status of being successful pioneers has also opened doors for funding, thereby enabling changes that would be difficult to copy elsewhere without the same conditions. However, this does not prevent the case from being an interesting example of enabling change agency by:

- drawing on bad as well as good concrete, sensuous experiences in the shared lifeworld of the community members;
- organising and, not least, storying the long-term collective experience-making; and
- coping with internal dynamics in a pragmatic, inclusive way in order to achieve concrete success experiences, strengthening the collective identity both through the experience of joint efforts and through communication to, and positive feedback from, the world outside the community.

Collective Learning as Collective Experience-Making

Inspired by the Samsø case, I now dig deeper into the concept of collective experiences. I do not regard this concept as clearly distinct from the concept of social learning. Although I was initially hesitant in using the concept of social learning, as it is often used to describe short-term processes, it is also used in other ways and can easily be regarded as an open and comprehensive concept which also covers collective learning, including collective experience-making. By collective experience-making, I mean that people joining forces in some kind of collective process of action gain experiences from this process that are sensuous–emotional and, at the same time, always social and as such enable processes of collective intellectual reflections. Experience-*making* then refers to efforts to organise and facilitate collective actions as well as deliberations related to these actions and the sensuous–emotional experiences to which they give rise. However, this definition should not be regarded as fixed but rather as a preliminary draft, because the purpose of this paper is to explore whether it makes sense to approach collective learning and change agency formation as a matter of collective experience-making. A first step in this exploration would be to take a closer look at the concepts of collective and experience, as well as the idea of combining them.

The concept of collective

What is a collective? In my mind, it is an umbrella term covering a range of quite different types of collectivity. We can make a distinction from what Sartre (1991) described as a *série*, which is a social form where people are gathered at a certain place with no shared, organised project or specific relations between them. Sartre contrasted 'the *série*' with 'the group', where everyone has a certain role in relation to a shared aim. This is reminiscent of a classical concept of collective, but in a networked, mediatised society, where consumers are agents in relation to environmental and other issues, new forms of sociality have emerged between the *série* and group categories. As mentioned by Carlsson in her paper in this volume, Micheletti has described political consumption as 'individualized collective actions' (2002: 1). Related to Anderson's (1983) term 'imagined communities', implying separated individuals with some kind of joint identity, such collectives are more than a *série*, but less than a group. As such, political consumerism can be seen as one kind of 'light' collective that is relevant to climate change. However, learning in relation to climate change issues can also take place in several types of collectives:

- Political protest groups challenging the existing social order through resistance. Learning is here strongly related to this opposition or resistance, and thus to a critical relation to the external world.
- Communities of practices in different settings: workplaces, residential areas, associations. Focus is here primarily on the collective learning and/or socialisation within the community.
- Alternative communities: Although they also are communities of practice, their collective identity resembles the political protest group in its opposition to established norms.

However, their political–analytical orientation is more or less replaced by an aesthetic–utopian searching and practical–technical orientation.

- Governance: Focus here is on the collective as a space for stakeholder interaction, problem-solving and conviviality (co-creation). Governance is often consensus-oriented, but can also be framed in agonistic ways, allowing conflicts to be explored or played out in dialogues between agents.

In my mind, these are all types of collectives, and all highly relevant for change agency formation and climate change, but at the same time, their social dynamics and the forms of learning they entail are quite different. I therefore suggest that we are explicit as to what kind of collective we are talking about when we discuss collective learning. Social dynamics is a huge topic in organisational and management theory, but remarkable in its absence from educational theory on sustainability education, despite the strong focus on participatory approaches to learning. Without an awareness of social dynamics, such approaches easily become idealised theoretical constructs.

In the case of Samsø, the type of collective does not fit well into one single category. It is certainly neither a political protest group nor an alternative community. Furthermore, it would be an oversimplification to describe it as a conventional governance type of collective as it is not just a mix of stakeholders meeting in some kind of workshop. Rather, it can be seen as a long-term governance process strongly embedded in the island's community of practice, but also with an opening towards becoming an alternative community in its search for new ways forward.

The concept of collective experience

In educational theory, the concept of experience is, for good reason, strongly related to the works of John Dewey (1963 & 2007). However, in relation to collective experiences, I draw attention to a strand of critical theory developed by some of the prominent students of Theodor Adorno (Rudolf zur Lippe, Alexander Kluge and Regina Becker-Schmidt), as well as the philosopher and sociologist Oskar Negt. According to Zur Lippe (1979), experiences are generated through processes starting with observations, activating similar previous experiences to motivate and guide actions from which the perceived effects will confirm, add to or revise the existing experiences. He stresses that not only as children, but also as adults, we learn through such sensuous–bodily experiences which, as emotional meaning-making and knowledge creation, often contradict what we are taught intellectually. Although this point is well known in psychodynamic theories, Zur Lippe deviates from these by relating our social welfare and environmental sustainability problems to the 'separation logic' of Western civilisation, causing a divide between sensuous–emotional and scientific–intellectual knowledge. This critical point leads him to propose educational measures to reintegrate these two sources of knowledge and meaning-making in order to fuel sociological imagination and what he terms an 'economy of life' (Zur Lippe, 1979).

Although Zur Lippe emphasises that experiences are always social, in the sense that they are created with or against other humans, the sensuous–bodily basis of experience makes it

difficult to apply the concept directly to a collective. One way to relate such experiences to a collective can be found in *Public Sphere and Experience*, a book in which Negt and Kluge (1993: chapter 1) explore the potential of creating a 'proletarian public sphere' to enable collective experience-making. The collective should, in their approach, enable learning spaces for the 'acquisition of mediated experiences in the learning rhythm of the immediate experiences' (ibid), or, to put it another way, to share and collectively reflect on the relation between personal everyday life experiences and societal conditions. This collective reflection does not only transform individual experiences to collective experiences. In *Sociological Imagination and Exemplary Learning*, Negt (1968) draws on Wright Mills' concept of sociological imagination and combines it with the didactical concept of 'exemplary learning', originally proposed by Martin Wagenschein in relation to mathematics education. Exemplary learning becomes a matter of collective reflection exploring the connections and dynamic patterns between the many concrete and often contradictory individual experiences in order to identify general socio-cultural patterns in their concrete forms. Becker-Schmidt and Knapp (1987) later elaborated on this idea with a theory of social learning targeting both collective life issues and personal formation, opening both for a broader horizon of possibilities and individual ways of coping with conflicts and ambivalences. While this seems primarily related to the political protest group and its critical, emancipatory learning, two Danish scholars (Nielsen & Nielsen, 2007), drawing on this strand of critical theory, have developed an approach to collective experience-making as local 'democracy from below' processes, taking their point of departure in the participants' concrete joint life issues and targeting what Bloch (1995) has described as concrete-utopian drafts; that is, drafts for the possible but not yet done. According to them, hope depends on knowledge, not least about dynamic relations, but to prevent powerlessness it has to be combined with concrete experiences in processes where these often-disconnected experiences are connected and elaborated into 'social fantasies'; concrete imaginations of how life could be. Like Zur Lippe's concept of experiences, the aesthetic sensuous–emotional experiences are seen as a crucial medium for the creation of hope, not only as mental fantasies, but also in the concrete practical, and thus aesthetical, experience-making process of realising visions (Nielsen & Nielsen, 2007; Olsén, Nielsen & Nielsen, 2003).

Comparing the case of Samsø with the above approach to collective experience makes sense, although it also in an interesting way supplements it.

On the one hand, in his way of approaching the transformative work by emphasising both social and environmental perspectives, the key change agent did not apply a narrow focus on technical innovations but related to and thus activated previous collective experiences among the islanders, good as well as bad. A lot of meetings have been held, both in people's homes and in public spaces, connecting individual and joint orientations and interests as well as critical reflections and visions. These efforts have had results, concrete success experiences, which have not only provided feedback regarding the value of the projects, but also an experience of collectivity, creating collective trust, identity and hope for further progress.

On the other hand, what it adds to the emphasis on linking concrete sensuous–emotional experiences with collective spaces for reflection on joint life circumstances and utopian, hope-

creating work, is the importance of narrating collective experiences. As described by Papazu (2016), the importance of the narrative work of the key manager/change agent cannot be underestimated. It is a selective perspective, both describing and influencing a series of events. It is interactive in the sense that it is based on knowledge of how people on Samsø experience and think about their lives, returning this knowledge to them in a form where local knowledge and values are respected but also placed within a future-oriented story, pushing them forward. In contrast to the scientific language, the narrative is presented in a language that builds 'bridges between people' (Brønsted, 1955) by exposing and combining experiences in ways that create meaning, identity and hope. When Negt and Kluge write about mediated collective experiences, it can easily be interpreted as an intellectual analytical process related to people's immediate experiences. Zur Lippe, as well as Nielsen and Nielsen, also emphasise the importance of scientific knowledge and intellectual reflection as part of the collective experience-making process. However, academic–scientific detached analytical language interferes with the 'living words' of the narrative and its potential to build meaningful bridges between people. At best, this interference can be coped with in mutually enriching ways; at worst, it risks impeding the collective experience-making process.

Climate Change, the Current Danish Context and Collective Learning

I conclude this paper by broadening the scope from the case of Samsø in an attempt to grasp the state of affairs in Denmark regarding the potential and challenges for collective experience-making in relation to climate change and how change agents might cope with them.

The escalating and increasingly visible climate changes are not just a technical challenge to be dealt with by collective problem-solving. They are also a strongly emotional issue. Climate changes activate an ontological insecurity (cf. Giddens, 1991) because they threaten our basic living conditions and, as a consequence, risk causing social conflicts and wars. This basic fear is accentuated by signs that post-war social structures, political–ideological patterns and cultural norms are beginning to dissolve. People therefore do not have solid and trustworthy collectives to which they can turn in their search for solutions to climate changes.

Disagreements about climate change do not only reflect political–ideological differences, but also different strategies to cope with the cognitive and emotional dissonance stemming from ontological insecurity. One powerful trend, which is extensively utilised by populist politicians, is to defend the old order and simply deny the risk of climate change (Norgaard, 2011). As an opposite strategy, alarmism is often described as the reaction of emotional panic, as exemplified *in extremis* by 'doomsday preppers', who very concretely organise their lives in ways which would enable them to survive environmental and societal disasters. It is hard to find examples of such extreme alarmism in the Danish context. Rather, a third coping approach seems to be more widespread, characterised by an ambivalent mix of the two other positions – that is, both going about one's business as usual *and* searching for alternative ways of living and for new political–societal visions. It is my contention that this ambivalent position needs further consideration within a change agency and collective learning perspective.

Among the forms of collectivity mentioned earlier, the 'alternative community' comes closest to this search for alternatives. Although alternative communities were described as not only manifest but also imagined communities, even this is perhaps too strong a concept for characterising the current state of affairs in Denmark. The ambivalent but searching orientation is neither practically nor symbolically represented by a distinct imagined community, but consists of a loose network of multiple small groups and individual initiatives somewhere between 'individualised collective actions' and attempts to establish manifest or imagined alternative communities. It is precisely this open, searching side of the ambivalent attitude and the fluid, pre-collective state of this search for alternatives that presents opportunities for change agents to create concrete and virtual public spaces for collective experience-making. There are already several, albeit still very small-scale, attempts to organise and facilitate such spaces and collective learning processes. What is remarkable is that criticism of the cosmological, political–ideological system plays a much more minor part than in the political protest groups of the 1960s and 1970s. Rather, the current collective spaces have the character of practical experimentation with alternative ways forward, and thus of sensuous experience-making, which is expressed and exchanged and potentially empowers hope and alternative identity, while at the same time also implying concrete, operational mutual learning. Although these collective spaces do not solely target climate change, but in a more comprehensive way integrate personal and social needs and ambitions, their concrete sensuous and operational character can be seen as an emotional response to the abstract, wicked and complex nature of climate changes. From a change agency and collective learning perspective, it makes good sense to support and unpack this concrete utopian drive. However, as I now demonstrate, doing so is easier said than done as there are a number of psychosocial dynamics at play.

People's aforementioned ambivalence reflects what Sartre (1991) has described as the praxis-inertia field. One important aspect of this dynamic tension is that, by their nature, transgressive efforts (praxis in the Marxian sense) challenge existing social and psychological orientations and practices. As such, while we may want the changes they seek to effect, there is resistance because they go against our basic sensuous–emotional experiences and mental order. Another aspect stressed by Sartre is that the revolutionary group is unstable and will 'stiffen' as soon as it is managed and organised, and become alienated from its original aim, which will further impede transformation. As a change agent seeking to enable transformative collective experience-making, this emotional resistance and potential inertia are key challenges.

In relation to the utopian search, the annoyance with the current situation can easily result in 'neg-topian' visions (Thyssen, 1976); that is, dreams about the opposite. This happened in Denmark in the 1970s when young people established collectives to replace ordinary families but failed dramatically, leading to this radical social experiment imploding and resulting in negative experiences. This example also points to the critical tension between collective and individual in organising spaces for collective experience-making. The idea of such spaces as learning networks might be a viable way of establishing collective spaces, although loose structures may result in forms of collectivity which are vulnerable due to an insufficient level of commitment.

Last but not least, change agents also have to cope with the dynamic relation between the collective and its opponents. This is a key tension in political protest groups, which create their identity in opposition to those they disagree with. While this oppositional stance may empower their resistance, it also risks making them focus more on maintaining their identity than on finding ways to influence policies. They also run the risk of becoming pacified by their opponents' efforts to 'out-define' them as naïve, unrealistic, ridiculous (Mathiesen, 1982). The incompleteness of the current search for sustainable alternatives may prevent change agents from falling into this trap. As Mathiesen (1982) puts it, in order to prevent public exclusion of their alternative visions, collective change efforts should manage to both contradict the existing order and produce proposals which their intended participants perceive as attractive alternatives to this order.

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Think Piece: Intersectional Resonance and the Multiplicity of Being in a Polarised World

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Introduction

Understandings of collective learning and change agency often conjure up an image of a particular group or community identifying important concerns and finding the momentum to learn together to address them. In reality, gaining consensus around what issues need to be addressed is a complex process in polarised societies. It requires an attentiveness to different standpoints and experiences of the social dynamics at play, and the ways in which ecological, political, socio–economic and psychic experiences manifest themselves within different contexts, generating disparate and connected views on what is missing and what is needed to create a more just society. This paper asks questions about what it means to learn in-between and through complex and interrelated societal dynamics amongst a community of change drivers. By highlighting the individual, communal and collective learning of a diverse group of change drivers in a very polarised South Africa, we can begin to ask questions about the following: 1) how different embodied experiences or 'a multiplicity of being', as referred to in this paper, are essential in the pursuit of a sustainable society; and 2) why we need to learn in ways that can foster a sense of 'intersectional resonance' between and amongst change drivers in a polarised world.

Activate! Bringing together Change Drivers from across the Poles

South Africa is rated as one of the most 'consistently' unequal societies in the world (Bhorat, 2015). To think about what change agency and collective learning means in this context is to appreciate the different 'worlds' that make up South African society. The palpable legacy of four centuries of Dutch, French and British colonialism, as well as apartheid and the pitfalls of the current democratic dispensation, continue to create varied experiences and rallying points around what a just, equal and sustainable future for this land, its inhabitants and all sentient beings needs to look like.

   A non-governmental organisation called Activate! Change Drivers is one of the largest youth movements in South Africa. It is a network of young leaders equipped to drive change for the public good across South Africa. The organisation invites a diverse group of young leaders between the ages of 20 and 30 to be a part of the network. The leaders they engage with come from all walks of life: urban and rural contexts, different socio-economic statuses, formal and non-formal educational backgrounds and various identity, gender and sex-based differences. These young leaders truly represent the different poles of South African society. They are invited to be part of the Activate! network on the basis of the work that they already do for the

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public good, hence being called change drivers – they are in their own unique ways devoted to creating a positive and progressive future for South Africa. The initiatives that they are involved in range widely across diverse sectors and encompass ingenious informal and formal initiatives at the local and national levels (Why Activate, 2016).

Since its inception in 2012, Activate! has capacitated change drivers around six spheres. Each sphere invites participants to engage with participatory learning materials that help them reflect on the following: 1) their *identity*; 2) clear and powerful *articulation*; 3) insight into the unique *leadership* style each person possesses; 4) thinking tools on how to create *innovative* engagements; 5) critical thinking and astute *social political navigation*; and 6) how to partner with others to *create ripples and waves of change* in society (Why Activate, 2016).

From 2012 to 2015, I worked as a team leader, quality manager and materials developer for Activate! Change Drivers. Because of my proximity to the project, I have an intimate knowledge of the workshop space. I have been privy to the kinds of exchanges that change drivers have had with the project and, most importantly, the fascinating interactions that change drivers have had amongst themselves. Since 2015, I have been interested in how change drivers' perspectives about the world around them are evolving, and how they continue to grapple with issues of social change in their contexts. This interest gave rise to questions about where this network is instinctively leading itself, and, after four years of crafting the curriculum as an organisation, what would happen if we let change drivers define what they themselves feel are the most crucial issues that we need to be paying attention to right now.

As part of a doctorate in education for sustainable development, I set out to connect with 21 change drivers from across the country that have engaged with the Activate! programme over the years. All have undergone the full formal Activate! training and years after this training they continue to instinctively lead themselves towards their visions for the future. My engagements with them were driven by the need to understand where the edge of the work is, and how change drivers can help us regenerate the praxis of liberatory pedagogy in contemporary South Africa. I was particularly interested in how they make sense of their social contexts right now, how their praxis has strategically evolved over time, how they define the 'status quo' and, most importantly, how they subvert or 'transgress' the limits of the status quo in their current work (hooks, 1994). I also wanted to find out what critical thoughts and insights they hold at the edge of their praxis as they continue to work towards the visions of freedom that they hold dear.

Change Drivers Grappling on the Edge …

I engaged the 21 participants in an art–based multimodal process that invited them to intuitively sense themselves into the evolution of their journey up until now. I use the word 'sense' here purposefully because the intention was to invite a reflection that went beyond rational meaning-making and instead opened the space for them to feel into the 'erotic knowledge' they possess around their journey. Erotic knowledge is an intuitive way of knowing that is formed by the 'erotic – the sensual – those physical, emotional, and psychic expressions of what is deepest and strongest and richest within each of us' (Lorde, 2007:59). Participants worked intensely to

paint cartographies of their journeys by using symbolic artefacts to represent their evolution over time. Participants also journalled as part of this process and used body images to express what they were currently experiencing and the position that they wanted to be in in the future. After exploring their journeys individually and in groups, each participant offered an in-depth interview that shared what they are currently seeing, sensing, feeling and questioning as they navigate the spaces they are in. Participants also shared their lived experience of what it means to transgress in their work right now.

Below is a brief overview of four of the 21 participants, to demonstrate a small but rich sample of the diverse trajectories followed by contemporary change drivers. In each instance, I summarised and paraphrased some of the critical insights and key questions they offered as part of their reflections. Each participant consented to the way that their viewpoints are presented in these summaries, in some instances adding even more nuance to their perspectives at the time. Participants also gave consent to have their real names used in this paper, an aspect of the methodology that sought to connect these experiences to real people (not anonymous entities devoid of place and identity) who are navigating and responding to the issues of their times.

Kristi

Kristi, a primary school teacher, has spent much time asking herself questions about how to equal the playing field between what basic education looks like in privileged communities and how it manifests in deep rural communities. She has immersed herself in contexts where she has had to teach in these varying extremes and holds a clear picture of how unequal the education system in South Africa is. Whilst she sees her teaching as an important vehicle for her activism, she asks critical questions about the privilege afforded her as a white woman to engage or not engage in the current socio-political struggles of the day. She questions what 'community' means in South Africa. Although she felt a sense of 'community' in the rural Eastern Cape, where she worked for two years, she eventually began to acknowledge that the rural community she had inserted herself into was not her own community, and that she perhaps needed to figure out where her community was so she could drive the change needed there. She has an ongoing internal conversation about where the sites of her activism should be. She constantly interrogates her own privilege and race by asking questions about what her presence as a white woman does in spaces that are predominantly black. She also grapples with how to engage with particularly conservative white middle-class people, who in her opinion can be apathetic in their engagements around the current reality of systemic and institutionalised racism in contemporary South Africa. For her, to transgress means making oneself vulnerable enough to learn from other people's experiences and challenging herself to show up to conversations with an apathetic and somewhat disconnected white community when she can (Kulundu, 2016).

Sanele

Sanele is an African languages scholar and activist. He is interested in interrogating an unspoken conversation about class that he feels was not critically unpacked in the student movements that rocked South African universities in 2015 and 2016. He holds questions about

why predominantly black middle-class women, armed with a highly academic and largely inaccessible language around black radical feminism, have positioned themselves to be the gatekeepers of the movements to decolonise higher education. He is also critical of the ways in which such movements are quick to demonise black men of a particular class as rapists and misogynists as part of their discourse. He is passionate about using language in ways that can open up the conversation around equality and social justice in a way that resonates with and is understandable to the simplest grandmother in any community. He is curious about what it means to mobilise in a way that is in solidarity with the most marginalised people in society and concentrates his learning on what it means to consistently resist oppression in ways that go beyond self-serving fashionable trends. To transgress for him means decentring the locus of meaning-making in popular movements in ways that can adequately engage the common person on the street in their own liberation (Kulundu, 2016).

Motsatsi

Motsatsi is a community warrior in a very rural and marginalised community in Limpopo province. She faces daily risks and threats against herself and her family as she chooses to continue to mobilise for much-needed resources for education and development in her community. She has single-handedly confronted corrupt local government structures in her community by standing as the only independent candidate in recent local elections. She won second place in a very contested election against well-funded political parties. She consistently navigates risk in her community because politically she has many powerful opponents that see her as a threat. Despite this, she feels she has no choice but to demonstrate a different kind of leadership in her community because, after all, the resources that she is struggling for are the exact ones that her young son needs in order to go to school and be a positive part of society. For her, to transgress means being a strong example of what leadership could look like if it was not self-serving. She does this at any cost (Kulundu, 2016).

Judith

Judith, a Congolese foreign national, has lived in South Africa since she was eight. She is passionate about creating inclusive spaces for marginalised voices amongst and beyond the student movements at her university. She is particularly interested in supporting the voices of marginalised women and members of the lesbian, gay, bisexual, transgender, intersex, asexual and queer (LGBTIAQ+) community within a largely patriarchal culture of student activism. She consistently works to educate and engage people around what black radical feminism is and why this is an important pillar of the freedom that young people within universities are struggling for right now. Her community of allies ask critical questions about why black women have to repeatedly sacrifice themselves and their needs for social movements that do not acknowledge their struggles as being a worthy part of the ongoing conversations around what oppression looks like in society. She asks questions about why black women should continue to support the dreams of freedom that keep them in the same patriarchal trappings that they still experience now. To transgress for her means moving past a patriarchal imagination of what equality and justice should look like in contemporary Africa (Kulundu, 2016).

A Multiplicity of Being and the Sum of Its Parts

Each participant described above offers a picture of a person who is awake to the complex questions at the edge of their praxis. These multiple perspectives also paint a picture of a fragmented society with different frontiers for active citizenry. Through their actions, each participant actively chooses to transgress their ideas of what the status quo looks like, and whilst this sense of navigation is not by any means complete, it does represent an emerging culture of activism and social justice in contemporary South Africa.

But what do these different perspectives offer when we think about collective learning and change agency? The different points of view demonstrate a multiplicity of being, as well as the varying trajectories around what change agency and collective learning mean for different people in their respective communities. A careful look at the critical insights shared by each of the four change drivers highlights interesting contradictions between the different worlds they occupy, providing a space to conceptualise what collective learning and change agency could mean in the different situations in which they find themselves.

Whilst Kristi tries to navigate her site of activism and sense of community with other white citizens, Motsatsi is so embedded in the struggles in her community that she has no choice but to show up every day at great risk and mobilise for justice. Motsatsi does not have the immobilising sense of choice around where to intervene. The issues that threaten her child's development propel her to act in her community every day. Whilst Judith creates much-needed spaces for black women and LGBTIAQ+ members of her university community, Motsatsi, a black woman from a rural community, holds none of the language and discourse around radical black feminism as she mobilises for social justice in her community. For her the struggle is one of social justice, it could also be said that she wilfully transgresses the norms of what is expected of her as a woman in her community by challenging established and predominantly male-led political parties in her community. Sanele is sceptical about the lack of class consciousness in student movements and how black men of a particular class orientation can be demonised within certain articulations of black radical feminism. Sanele also instinctively wants to reach out to and create a more grounded and relevant language for liberation within marginalised spaces, much like the rural world where Motsatsi lives and struggles for justice.

A question emerging from these criss-crossing experiences is: *How can we make more use of these overlapping and seemingly contradictory concerns?* An intersectional perspective on change agency compels us to look deeper into the different fronts from which struggles for social change are waged, and to see these fronts as symbolic of the way that the systems that underpin inequality function. Crenshaw and Spade comment on the importance of observing identity-based struggles as symptomatic of broader structural and political dynamics: '[…] identity categories or group descriptors are not just "there": They are constructs with political, social and experiential histories of lived impact and socio-political enforcement. They are also highly regulated and managed by the state […]' (in May, 2007:149).

What we see presented in the change drivers' different narratives is the way in which 'social location impacts one's experience of the social world, shapes what is known and

understood about inequality' (May, 2015:149). Each of the different perspectives represents varying indices from which inequality functions. For example, grappling for resources within a burdened social structure in Motsatsi's community is juxtaposed to the apathy, isolation and perhaps assumed wealth that Kristi experiences in white suburban contexts. These two realities are different sides of the same coin of structural injustice in South Africa. The experience of lack on the one end can be argued to be reinforced by the sense of affluence and disconnection on the other. Additionally, a hierarchical understanding of what should count more, gender or class, in Sanele's and Judith's experiences obscures the way in which these fronts are interrelated – that there is a hierarchy at play that can privilege the reality of a black middle-class man above that of his female counterpart. Conversely, a black middle-class females' understanding of oppression can paradoxically impose her preferred trajectories for freedom on the situation without adequately accounting for or being sensitive to other forms of structural class oppression that she might not acutely experience. Here the black working-class man or woman might be left out of her meaning-making and be partially or fully excluded within the terms of freedom that are articulated there. Contending concerns of this nature run the risk of eclipsing each other's experiences in order to advance their own. What further interests me about the contradictions between Sanele's and Judith's experiences is that they are contradictions that exhibit themselves *within* a young black demographic. These experiences highlight the presence of contesting struggles within the same demographic groups as well as those across demographic groups.

Whilst celebrating these change drivers' sense of agency, urgency and collective learning in their respective contexts, one wonders about their potential to piece the puzzle together and sense the larger context at play within their articulated struggles. It is probable that each change driver is aware of the different experiences that other change drivers hold, but all are in a situation where they are driven to act upon what makes the most sense in their own context. I wonder what it would be like if each change driver were challenged to regenerate their praxis in ways that acknowledge the contradictions in the collective perspectives that they hold. From a pedagogical point of view, how could this be inspired and what impact, if any, would it have on the way they define and act on the pertinent issues they face in their contexts? These questions are explored next, highlighting the pedagogical implications of an intersectional way of working.

From Collective Contradictions to Intersectional Resonance and Action?

An intersectional approach to social justice is often shallowly misrepresented through descriptions that overemphasise its desire for a diverse, pluriversal and coalitional outlook on change agency. What is often missed is the depth through which intersectionality seeks to challenge hierarchical power structures through coalitional mobilisations. May (2015) shares a detailed description of this methodological imperative:

Intersectionality is a justice-oriented approach to be taken up for social analysis and critique, for political strategising and organising, for generating new ideas, and for

excavating suppressed ones, all with an eye toward disrupting dominance and challenging systematic inequality. This entails actively finding ways to perceive/interpret/act against the pull of established, single-axis imaginaries and to engage in an ongoing effort to realise meaningful, collective justice via epistemic, ontological, economic, and structure change. (May, 2015:228)

Here the tendency to define social issues based on one perspective of what injustice means is challenged. Instead of single-axis-oriented responses, intersectionality advocates for a matrix-based response to the social justice issues of our times. This is done with the thorough understanding that,

> When single-axis models are relied on, the experiences and knowledge of some are often (falsely) universalized as if they could adequately represent the experiences, needs, and claims of all group members: this obscures within-group differences, the relationality of power, and interactions among and permeability between categories. Likewise, single-axis forms of redress adhere to, rather than challenge, the conceptual 'building blocks' of domination – they leave the foundations of inequality intact and also reinforce them. (May, 2015:82)

The above extract deftly critiques the results of some manifestations of change agency and collective leadership, which can be celebrated for their efforts in responding to issues of inequality and injustice but ironically leave the foundation of inequality intact. It challenges us to consider the ways in which some interventions omit an analysis of the compounded ways that `others' might experience marginalisation and inequality that might be different but integrally bound to the dynamics experienced by us. This critical issue brings to mind Audre Lorde's (2007:140) shrewd reproach of single- axis social movements when she asked the question: `Can anyone still afford to believe that the pursuit of liberation can be the sole and particular province of any one particular race, or sex, or age, or religion, or sexuality, or class?' It is clear from this question she seeks to entice social activists from all walks of life to consider what they need to do together as opposed to the critical experiences that they have apart from each other. In line with this thinking, an intersectional approach to collective learning and change agency insists that we keep on:

> orientating ourselves, and expressly developing interpretive inclinations, modes of being, and political commitments in ways that disrupt, trouble, and fundamentally depart from mainstream logics, ontological habits, and perceptual practices. Intersectionality's both/ and orientation [as opposed to an either/or orientation] encourages developing and honing the capacity to exercise ruptures with hegemony and to embark on (coalitional) journeys toward each other's worlds/selves/histories/meanings/imaginaries. At the same time, we must attend to significant structural disparities within and between groups and consider the impact (and import) of our different positionings in multiple and relational systems of power. (May, 2015:227)

Intersectionality thus portrays itself as the possibility of fostering a form of emancipatory resonance between and within different socio-economic, cultural and psychic demographics. Intersectional resonance as space for pedagogic inquiry could mean learning to connect the dots along the harsh lines of a polarised society and to perhaps gain a picture of the whole system at play through the experience of individual struggles. It could be a space to purposefully surface and engage the contradictions and synergies that sit between and within different experiences with an emancipatory outcome in mind. Most importantly, intersectional resonance as a space for pedagogic inquiry could be a place where such contradictions and synergies can be used as a catalyst in renewing our subjectivities in ways that affirm the collective struggles that we individually experience as well as those that others face.

Braidotti takes this thinking even further by asserting the need to not only create new forms of subjectivity but, more crucially, to 'create collective experiments that can actualise these new subjectivities' (2011:6). This is an invitation to be generative and innovative at the edge of our deepest questions and should ideally endeavour to push past all orthodox boundaries embedded in the heart of the status quo as she understands it:

> One must indeed start from somewhere specific: a grounded and accountable location and the process of becoming is a time bomb placed at the very heart of the social and symbolic system that has welded together being, subjectivity, masculinity, compulsory heterosexuality, and (western) ethnocentrism. The different becomings are lines cutting open this space and demanding from us constant remapping: it is a question, every time, of finding new coordinates. (2011:31)

This is a question of willfully relinquishing some of the trappings of single-axis mobilisation towards the formation and articulation of new struggles that 'move the centre' away from hierarchical and normative understandings of who we should be (Thiongo, 1993). It is a question of locating ourselves from a place that does not concede so easily to the power that is afforded to us by virtue of our race, class, gender or any other defining privilege that separates us from others. Instead, we need to intentionally seek out each other's battles and find the language to speak and act in ways that can address multiple and interrelated forms of oppression.

The individual experiences of change drivers show us the hard-won spaces that they have carved out through their inquiries. This is an essential and potent place to start with. However, there is also a need for intersectional resonance between their worlds – a space that can perhaps acknowledge the binaries or either/or biases that may be operating as part of their thinking. There is a need for participants to see each other in five-dimensional ways across the frontiers of their individualised struggles and meaning-making. This could be an experiment around how their praxis could further evolve if it were to find situated ways to acknowledge and respond to the contradictions and synergies that they collectively grapple with.

In addition to these deliberations, it must be said, however, that this sense of seeing across the divide need not result in forms of action that are steadfastly synchronised in their local

objectives. There ought to be the space for one to tune into intersectional resonance and think carefully about how to apply this pluriversal thinking to one's local context. The local forms of mobilisation would need to be careful that they do not in turn perpetuate hierarchical constructions that favour mobilising on a single-axis but can rather find the language and praxis to weave together seemingly contending aims. Thus, the impasse between Judith's and Sanele's disparate experiences would require a more nuanced affirmation of how injustice plays itself out across gender, sex and class so as to affirm the humanity of all those that are presently bent into painful shapes by the status quo. It would require a way of realising that 'when we are busy arguing about the questions that appear within a certain frame the frame itself becomes invisible; we become enframed within it (in May, 2015:236). Issues of gender, sex and class play themselves out, simultaneously impacting those that fit into the various categories, in different and very real ways. Ironically, it is often those who are challenged with the least power – in this case the black, rural and unemployed woman – who acutely understand the everyday burden that these nexus points generate.

By virtue of their continued devotion to social change, I believe that these change drivers are exceptionally well equipped to face one another and grapple at the edges of their meaning-making. They are their own best teachers, carefully crafted by the contradictions embedded in a fragmented society. I am curious about what it could mean to create a space where change drivers themselves can challenge one another to experiment with the idea of deep intersectional resonance in a polarised society. In what ways could they challenge one another to keep the broader frames of oppression in mind as they work towards social change? What creative coalitions, if any, for the public good could they experiment with in their thinking and praxis? What necessary individual, identity-driven or contextual work would need to be preserved as a part of this, and why? And how would the languaging and actions behind this contextual work benefit from an intersectional reading of the dynamics at play? This could be a space where we could shift one another through the depth of our frustrations with how things are, through our scepticism around how to address this, and the added insight gained from our unresolved questions. It could be a place that challenges us to go beyond the certainties of what we already think we know, into a realm of organisation that could also appreciate our interconnectedness and our uniqueness as the basis of our collaboration.

We do not have a shortage of brilliant young people doing work that they feel is important to change the world. What we have is an inadequate language and praxis around the complexity of working in intersectionally resonant ways. We lack an adequate language and praxis around how to strategically forge and dissipate our emancipatory impulses. The suggestions in this paper seek to challenge our idea of collectivity from the definition of a group of people from the same setting that mobilise themselves around a particular issue to one that highlights a vital knowledge exchange between diverse peoples from the same context who hold and contest very different perspectives around what justice, equity and sustainable development mean. This perspective on collective learning and change agency hopes to challenge us all to evolve our praxis in ways that inspire us to courageously take a step up from the divisions that run rampant in polarised societies and to find innovative ways of making our distinct and collective voices count. As a last thought, I offer the words of bell hooks, sharing in her own way what I believe

to be the work of nurturing intersectional resonance whilst honouring a multiplicity of being in polarised societies:

> Only by coming to terms with my own past, […] and seeing that in the context of the world at large, have I begun to find my true voice […] that no pre-cut niche exists for it; that part of the work to be done is making a place, with others, where my and our voices, can stand clear of the background noise and voice our concerns as part of a larger song. (hooks, 1994:185)

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Think Piece: Food Gardening and Intergenerational Learning in Times of Uncertainty

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> Uncertainty is a universal phenomenon, a lived experience, an unease about acting in view of an unpredictable future. Uncertainty is a rendering of realities, which can lead to innovations and creative solutions, but also can debilitate people through fear or unease, impairing their ability to act. Conceived broadly, uncertainty is logically an element of all action, because outcomes are always unknown and indeterminate. While uncertainty is inextricably present in all human enterprises, plans and aspirations, it is not evenly distributed across time and space. It is not a uniform property of action; rather, how it is perceived, experienced and dealt with varies. (Calkins, 2016:2)

To people who base their livelihoods on land and animals, climate changes generate experiences of increased livelihood uncertainty. With the point of departure in a case story from the Amanzi for Food project in the Eastern Cape and older case material on community gardens in Port Elizabeth, in this paper I reflect on ways of experiencing and coping with uncertain livelihood conditions. The focus of discussion is the intergenerational interactions and learning processes involved in food gardening and their role in shaping responses to uncertainty which point towards 'creative solutions' rather than 'debilitation' (cf. Calkins, 2016:2). In the two cases, I suggest, intergenerational interactions in gardening processes frame actions to manage uncertainty through mediations of knowledge, the formation of new social relations and dependencies, and openings of hope and potentiality. Each case features a central change agent whose agency is shaped by her/his ability to take up a generational position in a creative way.

Drawing on phenomenologically inspired approaches, I am interested in uncertainty as 'the lived experience of a pervasive sense of vulnerability, anxiety, hope, and possibility' (Cooper & Pratten, 2015:1). Calkins (2016) discusses experiences of uncertainty among pastoralists in Sudan. Inspired by John Dewey, she suggests that uncertainty and responses to uncertainty are closely entangled, and that actions to manage uncertainty should be conceived of as 'testing and experimenting' (Calkins, 2016:5). Along similar lines, I have elsewhere suggested that uncertainty provides agency with a provisional and experimental character enacted in different ways depending on the position of the actor and her understanding of the situation (Jørgensen, 2015).

My approach to livelihoods is inspired by anthropological debates on labour and livelihoods in Africa which highlight that livelihood practices are not just about earning one's daily bread, but also about becoming part of social relations through embodied material and moral interactions and exchanges (Comaroff & Comaroff, 2001; Ferguson, 2013; Jørgensen, 2006, 2016). Livelihood uncertainty, in other words, is not only a question

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of food insecurity but also of uncertain sociality. Generational relations are closely linked to livelihood practices, as livelihood practices and understandings are often passed over in intergenerational interactions. As Alber, van der Geest and Whyte (2008) point out, the notion of generation has two meanings. On the one hand, generation refers to '[t]hat which is generated' (Oxford English Dictionary in Alber *et al.*, 2008:2), in other words, to how 'people come into being' through historical forces and social relations and forms. On the other hand, generation also implies agency and creativity, referring to 'the act of generating' through which people take up generational positions and 'pursue their own interests' within these (Alber *et al.*, 2008:3). Drawing inspiration from this double understanding of generation, as structurally formed category as well as singular processual act, I now reflect on the ways in which generational relations are mobilised and negotiated in responses to livelihood uncertainty in South Africa.

Climate Change, Agriculture and Generation in the Eastern Cape

Prior to colonisation, the Xhosa-speaking people of the Eastern Cape based their livelihoods on pastoralism and, to a lesser degree, cultivation (Mayer, 1971; Mostert, 1992). However, extensive labour migration to the mining industry, apartheid resettlement schemes and post-apartheid urbanisation mean that few people today have a long-term connection to the place where they live, and that the passing down of agricultural skills from generation to generation in many cases has been disrupted.

According to an officer in the Eastern Cape Department of Economic Development, Environmental Affairs and Tourism, 53% of young people in the country are unemployed.[1] The same officer characterised the economy of the province as an 'underdeveloped type of economy with vast levels of inequality' (personal communication, 02.08.2016). There are no statistics on the size of the informal economy in the province, but it clearly occupies a large number of people, including those involved in small-scale agriculture.

In the Eastern Cape, agricultural production is relatively low, and according to an officer in the local Economic Development Agency in Nkonkobe Municipality, most small-scale and subsistence farmers in the area are older people. 'No young people are coming up to become farmers – that is why we get failure. Everyone wants to go to university; everyone wants to move to Cape Town or Johannesburg […]. Agriculture is not fashionable' (personal communication, 01.08.2016). Along similar lines, in the early 2000s, when I carried out research on community gardens in Port Elizabeth, non-governmental organisation (NGO) representatives and government officials often complained about young people's lack of involvement in agricultural activities. However, while some young people expressed feeling discouraged about the hard physical work and rather limited economic output of cultivation, others did find their way to the community gardens, often guided by older people. Similarly, in the Amanzi for Food project, a middle-aged female participant, Mrs Peters, has involved a small group of younger people in her cultivation activities.

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1   For recent figures, see http://www.tradingeconomics.com/south-africa/youth-unemployment-rate.

Gardeners and Change Agents

After working as a nurse for 14 years and in private business in Port Elizabeth for a number of years, Mrs Peters and her husband decided 'to come back home' and start cultivating their land in Nkonkobe. Mrs Peters became a member of the NGO Zingisa and was trained in agro-ecology. Later, she heard about the Amanzi for Food project from a Forte FM community radio broadcast, and with the help of the local agricultural extension officer, she got in touch with the Imvotho Bubomi learning network connected to the Amanzi for Food project. This linked her up with other farmers interested in learning new methods for cultivation and dealing with water shortages. Another female farmer in the group had been trained in permaculture methods by an NGO in Cape Town, and Mrs Peters learned various methods from her, which she currently practises in her food garden. Recently, she involved a group of young women in her gardening activities. Thus, Mrs Peters, who has managed to connect with actors and knowledge from elsewhere, now passes on the knowledge to younger people in the area and involves them in testing and experimenting with various methods. She describes her approach as 'trial and error'.

Mrs Peters has at a relatively late stage of her life embarked on a new livelihood learning path. She actively seeks out and moves between different learning communities, accessing knowledge that she then passes on to younger collaborators who, it appears, willingly accept her authority. In Port Elizabeth in the early 2000s, I met an elderly man who took up a position quite similar to that of Mrs Peters. Lungile (pseudonym) was born on a farm near Grahamstown. After being involved in the anti-apartheid struggle in Port Elizabeth in the 1980s and spending a number of years in jail, he moved to Cape Town, where he was introduced to people growing vegetables in the townships. He decided to join the activities of an NGO that trained him in food gardening – in 'how to plant, how to, you know, grow vegetables, spacing, designing, compost bed, everything' (personal communication, 14.01.2001). Later, he returned to Port Elizabeth and joined a community garden in which he quickly came to take up a leading role, sharing his knowledge on cultivation with the younger members of the group, motivating them to work, and networking with NGOs and government agents supporting urban food gardening.

While Lungile and Mrs Peters might have been involved in garden work as children, neither had spent much time as cultivators in their adult life. Yet they managed to take up positions of authority as cultivators in relation to younger people. In the following, I suggest three perspectives which may offer insights into how these two persons became central agents in processes of collective learning and change.

Anticipation and mediation of knowledge

Mrs Peters and Lungile have both been successful in linking up with external agents to access knowledge (and resources) useful for their food gardening practices. Lave and Wenger (1991), in their writings on apprenticeship and learning, describe a certain type of generational learning in which younger people gradually learn from the skills and practices of older ones. However, the situation is slightly different in the case of Lungile and Mrs Peters, as neither can be considered an actual master of cultivation. Rather, they are successful mediators of knowledge who are willing to test and experiment with newly gained knowledge through 'trial and error', to use Mrs Peters' words.

In his work on climate change in Greenland, Nuttall (2010) draws attention to the role of *anticipation* in local strategies of adaptation to an increasingly uncertain environment. Anticipation is about drawing on experiences and skills in the process of finding one's way in the world and involves the connection of several temporal points. Inuits, Nuttall argues, have not just *adapted* to their environment; they anticipate 'the possibilities and conditions for successful engagement with it' (2010:25). 'Successful anticipation depends to a certain extent on the ability to act on previous experience and apply knowledge to new situations and forms of engagement' (2010:33). Mrs Peters and Lungile appear to have a talent for this kind of anticipation. By drawing on different kinds of knowledge and installing themselves as knowledge mediators, they are able to navigate in an environment which offers certain possibilities for cultivation, some related to access to soil and water and others related to support in terms of seeds and advice.

Relations of dependence

A second perspective on Lungile's and Mrs Peters' appeal to younger people may have to do with the way they offer relations of dependency. Ferguson (2013), in the article 'Declarations of Dependence: Labour, Personhood, and Welfare in Southern Africa', proposes that historically, relations of dependency have been of high importance for survival and welfare in South Africa. Using the Ngoni state as an example, he suggests that in the precolonial states when land was in abundance and chiefs became powerful because of their followers, freedom 'came not from independence, but from a plurality of opportunities for dependence' (Ferguson, 2013:226). While colonial conquest and capitalist industrialisation broke up the existing social systems, the industrial economy continued to be built on relations of dependency, argues Ferguson. Thus, while dependency may be seen as an important aspect of personhood in Southern Africa, relations of dependency are under threat in the labour-surplus economy experienced in the country (Ferguson, 2013).

Lungile and Mrs Peters, *qua* their relations to NGO and government actors, their successful gardening activities and their willingness to collaborate with others, appear to offer young people a potentially beneficial relation of dependency, increasingly attractive in the context of profound livelihood uncertainty. Building up new social and intergenerational relations seems to be an important part of managing livelihood uncertainties. People use such relations to access new knowledge, but also to establish new ways of becoming dependent on others. As suggested by Hastrup and Fog Olwig (2012:4, emphasis added), managing new kinds of uncertainties is not just a matter of developing new *technical* ways of living in an environment but also about developing new kinds of *sociality*.

Hope and potentiality

To the young people who 'follow' Lungile and Mrs Peters, the activity in the gardens appears to offer openings of hope and potentiality. Although, as mentioned, agriculture is commonly looked upon as 'backwards', several young people interviewed in 2016 talked about the potentiality of agriculture, perhaps encouraged by an increasing policy and NGO interest in the area. At Fort Cox Agricultural College, two young women told me: 'Many young people want to work in offices, in big cities. They like fancy places. But we saw an opportunity. Agriculture

is in demand, but not many people have the knowledge, so there are more opportunities' (personal communication, 01.08.2016).

Expectations of modernity (cf. Ferguson, 1999) as described by these two young women are widespread globally, nurtured by Western-inspired mass education (Valentin, 2014). However, many young people experience coming of age in an era where the educational hopes of modernity and development are, in most cases, disappointed (cf. Ferguson, 2006; Johnson-Hanks, 2014; Mains, 2013; Prince, 2013). Lungile and Mrs Peters appear to offer the embodiment of a different kind of hope; a future orientation which, like the *anticipation* of Nuttall, involves the connection of several temporal points or eras. The young women at Fort Cox told me that their interest in agriculture was nurtured by their grandparents' stories and gardening practices. In a community garden in Port Elizabeth, young people said that 'as Xhosas we used to depend on gardening. Our forefathers were planting' (personal communication, 24.10.2001). Food gardening appears to be a practice which connects to the past and to an ethnic or African identity, while at the same time directing itself towards the future – a future that does not float on dreams of 'fancy places' but is embedded in hard work, in 'doing something' in a material and embodied way. Lungile told me: 'Our gold in the Eastern Cape is agriculture, that's why we are doing this [cultivation]. In the Transvaal [now Gauteng] and in KwaZulu-Natal, they have mines, but here there is no coal, no mines. And we don't want to be beggars, we want to do something' (personal communication, 01.10.2000). The link between hard work and a successful future is mirrored in the comments, 15 years later, of a young woman involved in Mrs Peters' garden: 'I don't like to sit down and wait for things to happen, I like to make things happen myself. There are no jobs here, so I have to break the soil' (personal communication, 01.08.2016). Lungile's and Mrs Peters' ages, combined with their hard work and their knowledge of new cultivation methods and techniques, place them in a position to mediate the hope of successful agricultural production.

Final Thoughts

This paper had its starting point in reflections on the roles and relations of two Eastern Cape agents who, in different time periods and different geographies (one urban, one rural), in somewhat similar ways took up a generational position and initiated new technical practices and social interactions in the context of gardening and small-scale food production. I suggest that the generational difference between the two change agents and their younger collaborators is an important frame for collective actions to manage the livelihood uncertainties they face. The generational positions of Lungile and Mrs Peters provide them with a space for creatively mediating knowledge, social relations and hopeful visions of the future.

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Think Piece on Amanzi for Food: Working with Critical Realism to Inform a Situated Learning Framework for Climate Change Education

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Abstract

This study is developed as a think piece which deliberates the problem of transformative human agency in a curriculum setting. Using a critical realism perspective and schematic tools it examines the deliberative framing of an Amanzi for Food teaching garden as an education process for mediating the learning of rainwater harvesting. Working with Bhaskar's Transformational Model of Social Activity and using expansions of his 'four-planar social being' schema and its resolution in his 'social cube' model, the study contemplates the framing for a curriculum for the mediation of co-engaged social learning in the contexts of practical work in an agricultural college curriculum setting. In this way the research process is developed as an under-labouring review of the emerging curriculum in search of theory to inform pedagogy for mediating situated processes of transformative social learning.

Orientation

The Eastern Cape province of South Africa as a historical site of high climate variability is said to be getting hotter and drier, with more extreme weather events that are being ascribed to the advent of anthropogenic climate change. The collaborative work on the Amanzi for Food programme revealed some existing knowledge practices that had enabled indigenous people to manage cattle and grow crops in an area of high climate variability but much of this knowledge was no longer widely known and practised in contemporary agriculture. This insight raised questions on collaborative learning and the curriculum mediation of human agency through learning-led change in times of climate change. To address questions of learning and change at the nexus of prevailing institutional knowledge and intergenerational knowledge practices, the study critically explores the emerging knowledge terrain to inform the development of a teaching garden for water conservation farming in the area.

This paper thus explores change-oriented environmental learning around rainwater harvesting practices emerging in response to climate change in the Eastern Cape of South Africa. To contemplate change as transformative processes at the local socio–ecological landscape level, the study opens by probing the challenging question of human agency and change in the social sciences. The purpose of this is to design a curriculum for emergent agency within

deliberative learning in a teaching garden that is being co-developed through the Amanzi for Food collaboration in the area. The study uses a critical naturalism[1] perspective and flowing from this, critical realist tools to shed light on the situated framing and resourcing of learning in the agricultural college curriculum setting examined: critical naturalism for a situated opening of social ecological processes of knowledge mediation, and critical realism perspective and tools for an under-labouring of anticipated processes of learning-led change to frame a curriculum response to increasing climate variation in the area.

Education and Agentive Change in a Globalising Modern World

The study emerged around the question of transformative human agency and a concern for how learning landscapes in curriculum contexts might be more fully constituted for and by co-engaged learners participating in collective processes of learning-led change.

In social research in the mid-20th century, little overt attention was given to human agency as this was assumed to be implicit within mediating social structures. In clarifying expanding human agency in this period, Norbert Elias (2000) traced patterns of sociogenesis and psychogenesis within 'civilising processes' over the long term. His early work on the history of manners in medieval Europe provided insights that informed a relational social processes perspective (process sociology) for the social sciences that was usefully critical of the analytical philosophy of the time. His 'triad of controls' (Figure 1) depicts a relational interplay of social controls (socio-political), biophysical processes (ecological) and self-restraint (personal disposition) in the emergent environmental conditions of the times.

Figure 1. A graphic representation of the Eliasian triad of controls

A traid of controls at the environment–people interface
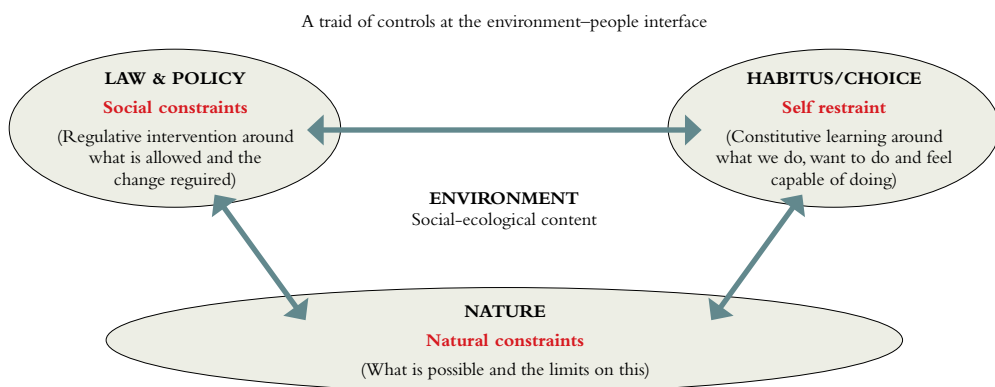
Source: Elias (2000)

1   Here, for analytical purposes, I have maintained a distinction between critical naturalism as a precursor to critical realism. This enabled me to look into `the possibility of naturalism' for a social- ecological differentiation of reality congruent knowledge and from that vantage point to contemplate learning and the `dialectic pulse of freedom' possible with the rapidly expanded perspectives and tools of critical realism. The emergent field of Critical Realism now encapsulate the earlier foundational work on naturalism.

Insights into the processual dynamics of social change over time enabled him to note the emergence of a slight but still doubtful human agency capable of influencing trajectories of change.[2]

Donati and Archer (2015) in a time of much greater concern for human agency note that early sociological work did not yet have an adequate ontological framing for differentiating relational agency. Their work further tilts the earlier structure–agency conundrum in the direction of increasing human capacity to influence events, but it is still difficult to specifically dimension how and to what extent human agency can play out in learning-led change.

To clarify and frame human agency for this study on learning-led change in a curriculum setting, insights on increasing human agency were initially framed around an optimism that emerged in early empirical work on modernity and change after Heller and Fehér (1991). Their analysis of social conditions at a macro level into 20th-century Europe identified successive trajectories of change and an apparent increasing agency in civic governance after the Second World War. This allowed them to identify the emergence of widening political agency shaping the possibility for civic change that had not been readily apparent in earlier times. Their study tracked emergent patterns of the civil society stewardship and reflexivity within the social trajectories of the times. Across these they noted an expanding civil society agency for effecting change, noting in the one case of primarily youth learning that:

> The 'alienation generation' made a case for 'grassroot politics', for a kind of politics embedded in communities and ways of life on all levels of social stratification. It remains uncertain at this stage whether cultural relativization and pluralization will lead to the demise of rational policy-making or whether they will rather be the prelude of a more democratic and more rational form, or forms, of political action, a combination of the parliamentary system with a type of direct democracy. (Heller & Fehér, 1991:143)

These insights were posed without a view of the massification of education and the rapid expansion of new social movements that continued into the 21st century. Today one finds diverse processes of civic activism and curriculum frameworks[3] for collaborative environment and sustainability education. Heller and Fehér concluded that, at the time, there were insufficient data to extrapolate the possibility of increasing human agency. They also did not have sight of global corporatising trajectories that currently appear to be superceding human agency of and in the nation state and patterns of closer regional interdependence that developed around the turn of the 21st century. Reviewing patterns of globalisation that followed widening democratisation in the nation state, Donati and Archer note how

> Multinational and finance capital broke free of national bounds and cast off the shackles of geo-local restraint: of the unions, of accountability to parliament, of the law of 'the land' and of normative regulation. (2015:12)

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2   His reading of evidence of agentive change was more modest than that of Heller and Fehér (see below).

3   Here the study notes how modernist education practices have proliferated. These have been constituted as a diversity of implicit and explicit framings (curricular) for collective learning, models of process for human agency constituting social learning and change within diverse formal and informal settings.

Today, within these globalising processes of decoupling corporate power from the nation state, the rise of civic social movements and the framing of global civic agendas for learning-led change reflect a continuing optimism and increasing urgency for agentive change in the Southern African contexts of our environment and sustainability education work in a post-apartheid state. In South Africa, following the relatively peaceful transition from apartheid, one now finds alienating civic processes in service delivery protests and in the recent emergence of decolonising calls amongst student movements as expanding civil society social learning collectives begin to contemplate restorative socio-ecological justice and future sustainability. It is contemplating the possibility of emerging agency and mediating processes of learning in civil society collectives that is of interest in this paper. Here one finds institutional responses like the teaching garden curriculum initiative under review as mediating interventions to foster the learning-led agency needed for effecting water conservation farming in response to immanent climate change in the area.

A sense of the agentive processes in learning-led change and their emergence in and through learning transactions in curriculum settings will be made more explicit with the critical realism perspective and process tools of Roy Bhaskar (2016).

Emerging Education Processes of Deliberative Nexus Learning

Our educational work of the last 25 years at the Environmental Learning Research Centre (ELRC)[4] developed from early nature-based environmental learning and expanded into diverse co-engaged trajectories which now emphasise collaborative social learning in relation to environmental degradation, social justice, the green economy and future sustainability. Current projects being initiated by the ELRC with diverse institutional and civil society partners include Amanzi for Food, a networked learning initiative developed in response to increasing climate variability in the Eastern Cape province of South Africa. The social learning materials and education practices for the programme emerged within a start-up process of course-mediated learning that was co-developed with the staff of a rural agricultural college as well as some non-governmental organisations and civil society groups in its rural surrounds. The course-based start-up of the local learning network was activated with the support of the rainwater harvesting manuals of the Water Research Commission. These were used to support deliberative nexus learning[5] towards increased rainwater harvesting and social learning processes with participants initiating 'change projects' in their institutional settings and in local contexts of food gardening.

In a recent review of course-supported Education for Sustainable Development processes in Amanzi for Food, I was struck by the diversity of perspectives, along with some compelling evidence of expansive learning and change. We noted, for example, how a rainfall-event

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4   The ELRC at Rhodes University was centred on research on environmental education in the 1990s and developed into environment and development education with the advent of global calls for development education that gave way to Education for Sustainable Development and now to Global Citizenship Education.

5   Deliberative nexus learning refers to collaborative learning at the intersect (nexus) of local matters of concern and future sustainability in co-engaged processes of learning-led change.

approach to food security had the potential for a better alignment of cyclical seasonal food production activities within the increasingly variable seasonal cycles and unpredictable rainfall events in the region. What we also found in a preliminary review of education research on expansive social learning and associated change projects (Lupele, 2017; Tshiningayamwe, 2015) was a sense that the case evidence reflected compelling insights into the collaborative framing of learning processes to inform future curriculum design work in the agricultural college. Here it was apparent that we needed a fuller grasp of co-engaged learning mediation, emerging learner agency and the wider socio-ecological, economic and political mechanisms influencing change.

A Co-Engaged Framing of the Contours of a Teaching Garden for Situated Learning

The Amanzi for Food project developed through a course-based training programme where participants learned on the collaborative course whilst working on a change project in their local setting. The college lecturers (Fort Cox) initiated changes in their curriculum practice by beginning to include rainwater harvesting in their teaching and by planning to have the students visit demonstration sites where local farmers were initiating water conservation farming practices in their local context.

In an early curriculum deliberation, we noted that, as teachers mediating student learning, we had an incomplete sense of the learning that the students would need to have developed for a deep understanding of the agricultural practice of rainwater harvesting. This learning of core concepts was necessary so that they might more fully understand and appreciate what would be shown to them by the local farmers. We thus resolved to map out the materials, knowledge and practices that had been accumulating as the course-based start-up of the Amanzi for Food project unfolded. The accumulating knowledge practices would then be included in a teaching garden as practical learning activities in the college curriculum to inform students prior to and alongside field excursions for them to learn about, in and from the water conservation practices being developed by local farmers.

Mapping Emerging Knowledge Practices to Frame a Curriculum for a Teaching Garden

Figure 2 reflects the rainwater harvesting and conservation farming practices which emerged through the Amanzi for Food initiative. It served to scope what might be included in a demonstration and research 'teaching garden' at the college.

Figure 2 reflects the interplay of water capture and delivery with composting and soil–water management for the growing of vegetables. An unusual dimension of this mind map is the inclusion of Nguni heritage practices that were explored with local households and small–scale gardeners. These included:

- *Gelesha*, a traditional winter practice to prepare lands for the forthcoming rainy season;
- *Izala/ututhu*, a daily waste disposal composting process in homesteads;

- *Imifino*, the practice of retaining edible wild plants (weeds) in a homestead garden; and
- 'Taking the forest'[6] when moving plants from a forest to a homestead.

Figure 2. A mind map of the knowledge practices
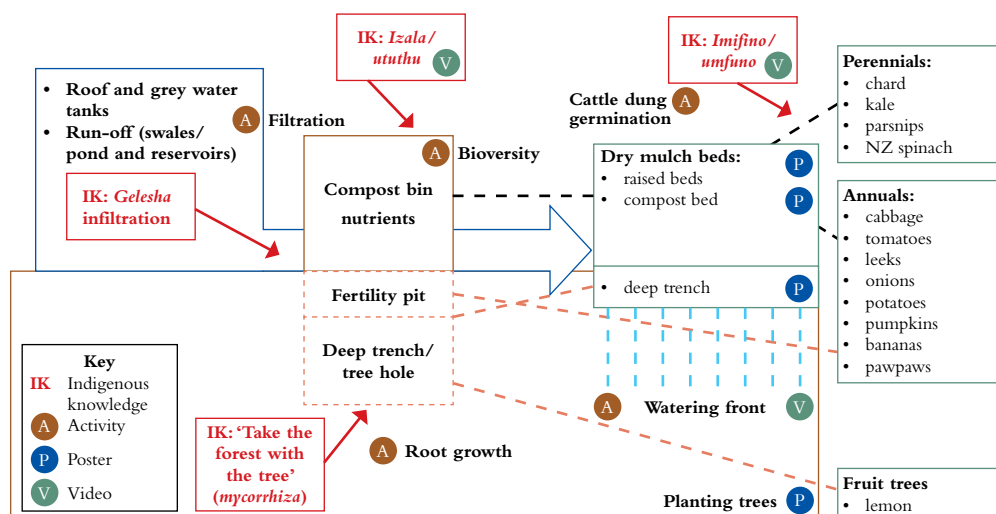
These heritage practices were contemplated against a wide array of agricultural science and associated modern farming processes to be learned so that students would have the concepts to be able to read and deliberate the logic of the agricultural practices at local sites of rainwater harvesting and food gardening.

The mind map was used to model a teaching garden that would include drip irrigation as the currently most efficient way of providing water to plants in semi-arid farming contexts. For the developing curriculum of practical work for the students to experience and be engaged in explanatory work, we clustered the materials into core practices of nutrient (compost) and water provisioning, with all of the associated socio-ecological processes necessary for ensuring local food security.

At this stage we also held an open day where college lecturers engaged students in the planning of the teaching garden along with local farmers who were invited to participate. In one sense this was a dry run to see what engaged the students and to establish how it might be possible to frame a curriculum that was both locally relevant and practically engaging. We also needed theory to model learning processes that might inform our concern for enhancing agency and learning-led change. Here we explored the critical realism of Bhaskar for emancipatory models of process to inform and research the emerging curriculum design for the proposed rainwater harvesting teaching garden at the college.

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6   This practice would ensure that mycorrhizae (soil flora) were retained to support moisture retention, nutrient transfer and root growth.

Conceptualising Expanding Perspectives on Human Agency and Learning-Led Change

Roy Bhaskar's Transformational Model of Social Activity (TMSA) frames a process model[7] for education that he developed through his work on critical realism as an emancipatory critical project. He worked with the notion of a laminated system to expose how enduring relations emerge over time ('space–time flow').

On the 'four-planar social being' as a process model, Bhaskar notes that:

> […] all social activity and all social being, occurs simultaneously on the four dimensions of:
> a)   *material transactions* with nature,
> b)   *social interactions* between people,
> c)   *social structure*, and
> d)   the stratification of the *embodied personality*. (2016:53, emphasis added)

Bhaskar's early TMSA was expanded into a perspective on a 'four-planar social being' that came to be represented in a 'social cube' (Figure 3). This schema presents as open and interacting models of process, 'where agents are always acting in a world of structural constraints and possibilities that they did not produce' (Bhaskar, 2016:55). Here agency is emergent in laminated systems that tend to govern, condition and circumscribe purposeful practices in embodied systems.

The schema in Figure 3, with its four interacting dimensions (a, b, c, d), was useful for distinguishing inscriptions framing the diverse knowledges that participants were bringing into learning transactions among local food gardeners, small-scale rural farmers and college lecturers. Read as diverse processes producing and interacting within social structures and shaping human agency in each context helped us to map some of the knowledge practices steering (governing) and framing (circumscribing and conditioning) purposeful water conservation farming practices with emergent properties and effects.

I initially read Bhaskar's juxtaposing of material, social interaction, structure and embodied personality from the vantage point of the Eliasian insights on sociogenesis and psychogenesis in his work on 'civilising processes' over the long term in Europe. This framing resonates with the earlier struggle to contemplate human agency in civic processes of change, mapping out how

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7   The expansive works of Roy Bhaskar are notoriously difficult to read as he created new language to escape and transcend much of the conventional wisdom in prevailing philosophical works. Norbert Elias was similarly critical of philosophical conventions that he wholly rejected in the development of a process theory for sociological enquiry. Bhaskar similarly used process modelling but used it to under-labour and transcend the relativist limits of prevailing philosophical perspectives. Using a familiarity with some of the conventions of process sociology and Eliasian work with theory as 'sensitising constructs', I approached work with the perspectives of Bhaskar with critical caution. I read his work as an emergent oeuvre of increasing complexity and sophistication intent on providing process tools for 'realising' much of the ideological mix that developed within and through the political economy and ideological critiques from the use of critical theory in education in the latter period of the 20th century.

Figure 3. Social cube model of process
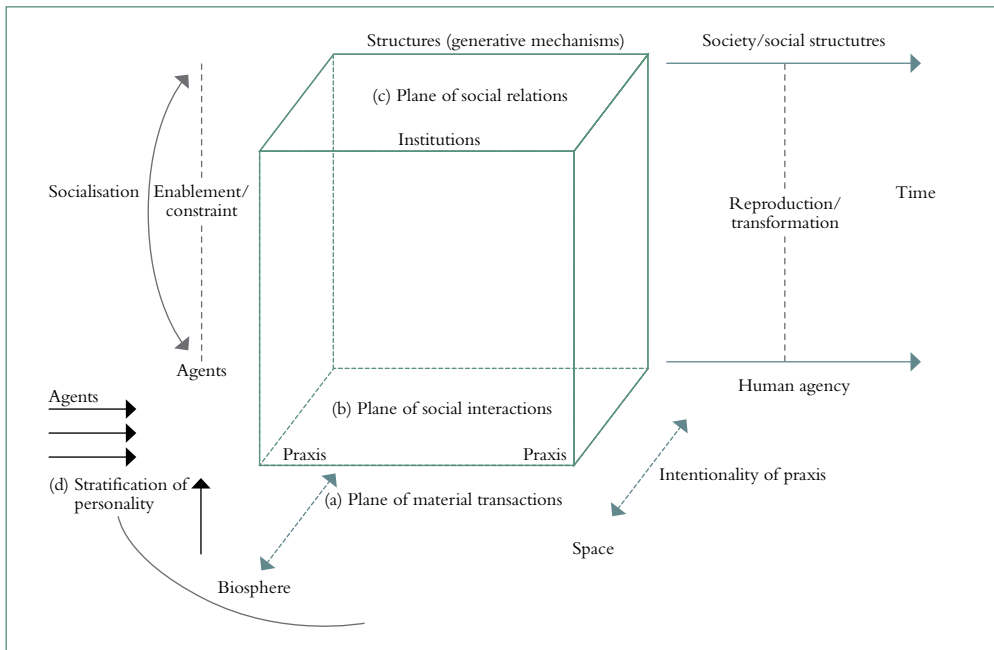
changing social interactions, structures and material transactions shape embodied personality[8] in deliberative learning interactions.[9]

This perspective allowed me to probe how the scientific grasp of water conservation farming had been constituted in the college and embodied in its lectures within the conventions of agriculture as an institutional knowledge practice framed within a scientific disposition somewhat blind to the intergenerational knowledge of outsiders. Similarly, alongside this, it was possible to read the emergence of embodied intergenerational conventional wisdom in indigenous knowledge practices, much of which was lost on the margins of colonial and modernist trajectories of exclusion or modified within wider knowledge conventions steering the expansion of commercial agriculture in rural areas. This allowed me to contemplate how interacting streams of embodied knowledge practices had been interacting and were often mutually edifying in emerging learning exchanges within the developing Amanzi for Food collaboration.

At this juncture it was important to note that central to Bhaskar's work was an emancipatory intent that resonated with our interest in agency and change. His work embodies an emancipatory theory of change that includes an emergent expansion of human agency as mapped out in the opening of this paper and thus an enhanced possibility of collaborative social learning producing the agency to foster changed food security.

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8   Embodied personality can be read as how we come to see ourselves and how this comes to be stratified in social processes of psychogenesis (Elias, 2000).

9   This is not unlike the Eliasian triad of controls. Bhaskar adds a useful emphasis on material transactions that tended to be too implicit in early Eliasian narratives.

In our learning interactions, this had become evident in the positive resonances between farmers and scientists in exploratory exchange at the nexus of scientific knowledge and indigenous knowledge practices. The learning exchanges here commonly gave rise to deeper insights into how and why water conservation farming was relevant as a response to an apparent increase in climate variation and extremes in the region. There were many instances of co-engaged learning that brought insightful 'pulses of freedom' in the Amanzi for Food programme as new insights developed within an accumulation of potentially enhancing knowledge practices for better rainwater harvesting and improved local food gardening.

Notable here was the practice of *gelesha*, the clearing of fields to enhance the penetration of winter rainfall so that there was some useful soil moisture to enable ploughing, especially when the summer rains were late in a drought year and the cattle had lost too much condition to till the lands. Here activity, concepts, space–time dimensioning and relations were all important. It was useful to reflect on how Bhaskar notes in his 'four-planar social being' schema how these processes have pre-eminent/fundamental (cardinal) limits that are:

- **Activity dependent** *(1[10]) within material transactions* as purposeful acts that produce material value that is
- **Concept dependent** *(2), informed by the conceptual structures of an agent's beliefs* with a
- **Time–space dependent** *(3) inscribed in historicised* social activity *(3)* but liable to social transformation with a
- **Social relation dependent** *(4) where established structures and articulations are* socio-culturally inscribed within structures that develop when agents engage in activities and occupy positions within interdependent ontological process of
- **Relational** *– social structures that are materially present in persons and are the results of their implicit and explicit actions (5) which carry an*
- **Internally complex** *(6) and* **interdependent** *(7) importance that stems from the relative richness or modularity of structures and skills (competences) in comparison with events and acts […] consequent upon ontological stratification.* (Bhaskar, 2009: 88–89; my bold of signifier with integrative extracts and summaries[11])

We noted how these processes might be used to contemplate and better frame curriculum transactions for mediating social learning interactions and thus learning-led change. Here agency is emergent and relational within learning progressions that can produce competence where situated curriculum processes were mapped out together, as in the Amanzi for Food programme.

It is not a trivial matter that Bhaskar emphasises how:

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10 The bracketed numbers in this progression reference forward to the review later in this text.

11 I worked with the numbering as this was useful for the referential mapping of the processual dimensioning that Bhaskar framed in his schema as models of process or sensitising concepts for contemplating how things are in the real world. This is not a trivial matter as the abstractions come to be inscribed with meaning that can contribute to an explanatory grasp of learning transactions.

It should be noted that (conjunctive) ontological features (5) − (7) are not peculiar to the social field; nor is (3) unless taken as 'historicity' in conjunction with (1) and (2) and (4). (3) immediately situates a quasi-endogenous modality of change. (2009:89)

The insights on situated and emergent modalities for learning-led change here allowed us to note his qualifying proposition that:

> The essential insight of the Transformative Model of Social Activity is that the social structure is neither foreign to nor something chosen by agents; rather it is what they reproduce or transform in the course of the more or less routine conduct of their everyday lives, as historically specific and axiologically necessary means and media. (Bhaskar, 2009:89)

Read in this way and in relation to the agricultural college case evidence, it is possible to note how the historically constituted practices and purposeful beliefs of co-engaged social agents might come to be activated and actualised (articulated) within a teaching garden as a site of emergent, collective learning.

Here we needed to research the use of appropriate pedagogical materials (means and media) for mediating an onto-epistemic constituting of learning as collective relational conjunctions (5–7 above). Here also, learning conjunctions and an associated transformative agency can be contemplated as situated, emergent and deliberatively constituted in curriculum processes of learning-led meaning-making as an activity-dependent process that 'the possibility of critical naturalism' narrated in critical realism discourse as:

- **Purposeful material activities** (1) where learning transactions with
- **Concept dependent dialectic processes** mediate a clarified grasp of key ideas (2) that are
- **Historicised contextual structures** (3) within a time-space dependence that is emergent within
- **Co-dependent social relations and identity** (4) constituted within meaning-making interactions.

The work with the perspectives and tools of critical realism is enabling us to frame the proposed teaching garden in learning sequences that resonated within locally situated knowledge practices and where learning was mediated as an open-ended process of deliberative enquiry and research.

Towards an Onto-Axiological Chain Enabling Transformative Agency

In this way Bhaskar (2009:xxv) allowed us to begin to contextually model onto-axiological chains[12] for education as MELD dialectical processes; realist socio-cultural

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12 Onto-axiological chains refer to being in the world (ontology) and being impelled by an aesthetic, moral or ethical sense of it being important to do something for the common good.

learning progressions. The implicit curriculum/pedagogical model of process that began to emerge here has a realist, intersubjective opening (1M – first *moment)* around 'What is?' Here something determined and finished, Bhaskar notes, can open into dialectical deliberation at a 'founding edge' of deliberative learning (2E – negativity) around 'What is not?' These processes can then extend to a relational constituting of wholes where 'absences' can be resolved within a realising 'totality' at an emergent level (3L – totality) around 'How things could/should be?' The open-ended model of process or learning progression can 'dimension' and shape transformative agency (4D – constituting transformative agency as a 'product in process') and enabling praxis where participants enact 'What can be and is possible to be achieved?'

This abstract model of process or schema was useful for reflecting back on learning instances like *gelesha*, where useful insights emerged in the Amanzi for Food programme. For example, it was possible to note how questions around 'what is' (1M) and 'what is not' (2E) commonly collided around the possibility of new or changed practices (3L) that participants were able to take into their farming practices (4D). At one stage, there was considerable debate around mulching, intercropping and weeds. It was noted that just as mulch reduces weeds so does the intercropping of pumpkins, both providing shade for the soil organics that hold moisture whilst inhibiting the growth of weeds. This insight enabled participants to contemplate what was possible and optimal in home gardens and fields, namely mulching, intercropping or both. It was also useful for the curriculum team to reflect on what might be necessary to support these sorts of deliberative learning flows for students working on learning tasks and research in the proposed teaching garden.

In this way, the MELD schema enabled us to map out possible curriculum progressions for learning-led change as a potentially transformative process. Here, what is, what is not, what should/could be through to what can be enacted/achieved, was contemplated as a progression for framing curriculum materials and activities in situated learning as open-ended and co-mediated and learning-led processes of change. Schudel (2017) uses critical realism to frame a similar learning progression using the MELD schema.

Towards a Situated Curriculum Rationale

In overview, here one has transformative meaning-making contoured for collective learning-led change within an open ontological–axiological chain developing around established experiences, dispositions and beliefs (1M: What is). Within these primarily endogenous processes, one can frame and mediate open questions, uncertainties and contradictions to inform dialectical processes of deliberative learning (2E: What is not). These processes can, in turn, serve to constitute collective learning transactions that may serve to resolve absences/gaps within an emergent sense of rainwater harvesting practices as a coherent totality for agriculture in the area (3L: What should/could be). The learning here can then emerge within a transformative agency (4D: What can be) to be enacted in learning-led change as students come to experience and assess local examples of rainwater harvesting on a field trip to local farms and homestead gardens.

In this way one has useful models of process for framing the contours of open-ended learning progressions. Going back to the 'four-planar social being' schema where we started in work with critical naturalism and critical realist tools, insights emerged that can be developed around an engagement with material activities related to rainwater harvesting (1 – activity dependent[13]). These activities can surface contradictions for learning the concepts associated with practical rainwater harvesting technologies and activities (2 – concept dependent) that can then be contemplated within historicised and idealised images of totalities over time that are also informed by case materials and activities that may serve to resolve gaps/absences in earlier deliberations (3 – time–space dependent). The learning progressions here can open the way to new relational co-dependences and a deeper grasp of rainwater harvesting (4 – social relations dependent) that might come to be inscribed in student identity as competent agricultural scientists who have the background knowledge to advise on improved ways of doing things that are purposefully relevant (5–7 – relational, which carries into ways of knowing and doing things that are contextually complex and interdependent)[14] and that can be freedoms producing.

One of the problems in working with the perspectives of critical naturalism and their development into critical realist schematic tools is that the language and modelling can present as overwhelmingly complex and abstract at times. Some perseverance and the use of codes and numbers to model progressions has been useful for me so I have explicitly left these embedded in the texts above. This has allowed the under-labouring of our work with process models for an immanent critical review of the often complex and fast-moving processes in deliberative meaning-making. Work with the schematic tools and concepts of critical realism has also allowed us to 'rewind' to an earlier stage or to 'rerun' a progression to reflect on ways that learners reacted and reflected in the activity, the concepts associated with this, how these played out in time and space, the socio-cultural relations implicit in these processes and how the relational dynamics involved are shaping the agency to know how best to explore working on water conservation farming practices in a given context of climate change.

This critical realist review of mediating knowledge practices for constituting a teaching garden as a co-engaged learning space enabled the framing of an open-ended curriculum model of process for constituting local learning materials and practices to mediate learning-led change.

Synthesis

Following the teaching garden workshop, and to begin to frame a practical curriculum for rainwater harvesting with local food security, a set of questions was used to help participants to navigate the open-ended teaching and learning progressions in situated

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13 The numbers 1–7 that follow reference back to the bracketed numbers in the 'four-planar social being' schema.

14 See Bhaskar (2009), providing a clarifying expansion of MELD where an enchanting spirituality can add a useful dimension towards a well-rounded grasp of rainwater harvesting in the locality.

curriculum activities around rainwater capture, nutrient and water delivery for rainfall-event food production at a village and small farm level. Here participants might ask:

- What purposeful and *practical transactions* are needed for competence in:
  - rainwater capture and storage for
  - water transfer to root-level soil water delivery?
- What *concept-dependent interactions* (experiences) are necessary for a grasp of:
  - nutrient provisioning using composting
  - capillary action?
- What *historical and contextual propositions* articulate to make learning relevant?
  - *Gelesha* (soil water ingress)
  - *Izala* (humus and nutrient provision)
  - *Imifino* (dung-seeded edible plants)
- How will the practical enacting and modelling of concepts in co-dependent agricultural practices shape student identity as agricultural professionals?
  - Practical tasks
  - Research projects

To mediate learning activities that will engage and realise these questions in both learning streams (rainwater harvesting and nutrient provisioning), we are framing practical learning tools and activities for collective learning in the learning garden at the college:

1. What can we already determine together based on what we already know?
2. Are there any questions and uncertainties (absences) that need to be resolved?
3. What could be changed (absented) for the practice to be more complete?
4. What can realistically be done to transform existing food-growing practices?

After deriving these theory-led tools from the initial teaching garden workshop, we are now mapping out open-ended research tasks to be explored by students, both in practical garden work and on fieldwork with local farmers. It is still early days in the curriculum development process but Roy Bhaskar's 'possibility of critical naturalism' and his critical realist tools are providing us with some better-informed ways of constituting situated learning progressions that are potentially transformative. They also enable research processes as sensitising concepts that 'descend from the abstract to the concrete'[15] in the production of knowledge in the onto-epistemic struggles of being and becoming an agricultural extension worker. Perhaps this is why Bhaskar concluded his life work on critical realism in an education faculty.

An interesting outcome of this curriculum work has been the constituting of water capture teaching gardens as a local response to climate change. This is particularly notable as

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15 Theoretic explanations are preceded by descriptions that require concepts which have been derived within cultural propositions that have been mediated in a real world and over time. Here critical realism provides schema as abstract models of process that can derive descriptive narrative data for the possibility of theoretical explanation to help us steer how we might best learn to change when confronted by contradictions (absences) in a changing world.

rainfall events variability is becoming a key driver of agricultural activities and the farmer and household gardener support by extension staff. Seasonal rainfall was never particularly predictable in the Eastern Cape of South Africa and hence the practice of *gelesha* but we now have the capacity to assess rainfall event soil moisture and water capture to model cropping regimes. In this way, innovative scientific work in teaching gardens can support collaborating farmers and gardeners to strengthen cropping regimes and irrigation practices so as to enhance household food security.

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Think Piece: Action Competence through Ethno-Geography

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The Two-Sided Problem of Climate Change and the Educational Challenge

Hardly a day passes without climate change being mentioned in the news. It affects people's way of living all over the world (IPCC, 2014) and is probably one of the greatest challenges of our time, including for future generations.

Climate change is due to the accelerated greenhouse effect caused by modern Western ways of living, in which factors like the burning of fossil fuels for energy and the high consumption of beef are perceived to be an essential part of living, but which emit increasing levels of greenhouse gases (e.g. carbon dioxide [CO_2] and methane) into the atmosphere. Greenhouse gases prevent long-wave radiation from escaping the Earth's atmosphere, thus causing a rise in the global temperature. People living in different places around the world may or may not experience the various consequences of this temperature rise in their daily lives. Depending on where one lives, these consequences might range from extended droughts to an increased number and intensity of storms, precipitation and flooding.[1]

This two-sided problem, people's modern way of living influencing the global climate and their living conditions in turn being highly influenced by climate changes, is exemplary for the subject of Geography, which is about humans' interaction with nature (Physical Geography).

What are the challenges for climate change education in Geography, or other educational contexts for that matter? That this is indeed a challenge is evident from the fact that the problem of climate change has, at least in the last 25 years, received international attention, for example from the Intergovernmental Panel on Climate Change and the United Nations.[2] And although many people in South Africa and Denmark are well educated and should be aware of the problems associated with the emission of greenhouse gases, these two countries are still in the world's top 50 when it comes to emissions of CO_2 per citizen.[3]

A first issue is that people who practise a modern Western way of living seldom face the problems associated with greenhouse gas emissions – at least not right after they have caused the emissions. Instead, over time the increased concentration of greenhouse gases in the atmosphere and the resulting increase in the global temperature contribute to problems experienced in other regions, including on other continents. That is, the problem is not always experienced by the main contributors, or it is not experienced directly at the moment of contributing to it.

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1   See http://www.ipcc.ch/report/ar5/, visited 7 May 2018.

2   See https://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-chapter1.pdf or https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf, both visited 7 May 2018.

3   The actual emission per citizen might vary according to source. See http://www.globalis.dk/Statistik/CO2-udslip-per-indb or http://data.worldbank.org/indicator/EN.ATM.CO2E.PC, both visited 2 October 2016.

Secondly, gases and global temperatures as physical entities are not easily perceived. Even though we inhale gases from the atmosphere all the time, we do not really think about them as a physical entity because we cannot readily observe them. It is also very difficult for people, especially those living in northwestern Europe, to perceive that global temperatures are rising, because in some years the perceived temperature is lower than the usual annual average temperature for the region. For some, this contradiction removes the motivation to take action. Some find it hard to accept the connection between the emission of greenhouse gases and the rise in temperature – a point of view also encouraged by certain opinion leaders.[4]

In other contexts, including many South African settings, the impact of climate changes is very visible,[5] but it still seems hard to introduce the aspiration to address it. And it is clear that it is not easy for individuals, non-governmental organisations (NGOs) or public institutions to take action on the emission problem. To change lifestyles and development decisions requires a huge effort, since it affects our habits at many levels and the issue of climate change deals with large cognitive abstractions in time and space. This is the third educational challenge.

Here I propose that one way of tackling this challenge is to think of the different kinds of knowledge involved in climate change education.

Powerful Geographic Knowledge and Ethno-Geography

To understand the physical processes associated with climate change – the production of greenhouse gases and the associated rise in the global temperature – requires a certain amount of knowledge linked to Physical Geography. This kind of knowledge can be characterised as universal, rational, coherent and structured, and might be called powerful geographic knowledge (Stoltman, Lidstone & Kidman, 2015; Young & Muller, 2013).

However, to understand is one thing; to be able to change things is another. Powerful knowledge is only one aspect of being action competent (Jensen & Schnack, 1997). Besides knowledge, action competence also requires commitment, visions and action experiences (Jensen & Schnack, 1997). These aspects might be developed through active participation in projects founded in local communities and aimed at changing deeper structural, economic, social and political dimensions of the problem, drawing on people's everyday geographic experiences.

People's everyday geographical experiences can be characterised as untutored, tacit, implicit, unformed and unsystematic, and can be called ethno-geography (Catling & Martin, 2011). Thus, powerful geographical knowledge can be contrasted to ethno-geography. When climate changes affect people's daily lives in South Africa, such as less precipitation in the region around Alice and Fort Cox in the Eastern Cape, their ethno-geography might be challenged. To become action-competent citizens who are able to react according to the challenges requires a certain amount of help from outside, for example from local NGOs, university programmes or the municipality.

In the next section, I suggest an educational strategy of combining both powerful geographic knowledge and ethno-geographic knowledge, and a means of doing so in the context of

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4   See http://www.lomborg.com/ or http://www.ucsusa.org/our-work/center-science-and-democracy/promoting-scientific-integrity/manipulation-of-global.html#.V_NnArn7Uq4, both visited 3 October 2016.
5   For example, the city of Cape Town's lack of drinking water.

practical projects, drawing on a reflection on climate change-related projects observed in Denmark and South Africa.

Climate Change-Related Interventions in South Africa and Denmark

As part of the research cooperation between Rhodes University, South Africa, and Aarhus University, Denmark, field trips to climate change-related interventions in the Eastern Cape of South Africa and Samsø Island in Denmark were undertaken from June to August of 2016.

Two kinds of programmes were visited during the field trips. The first were connected to organisations acting as change agents that intended to improve their own and other people's living conditions because of the negative consequences of climate change they had experienced. Near the town of Alice in the Eastern Cape province, the Amanzi for Food programme featured several interventions involving local people:

- A small-scale project at Lloyds Dam. The local small-scale farmers had faced extended drought periods, and the Amanzi for Food programme, started by the government and educational institution partners, aimed at improving water security through measures that local people themselves could undertake.
- As part of this initiative, Fort Cox College of Agriculture and Forestry, an important educational and research centre in the region for accumulating and distributing agricultural knowledge to students and local people, established a water security demonstration site.
- Just outside Alice, a retired teacher started a demonstration farming project in collaboration with experts from the local municipality, involving new methods and crops.
- Mrs Peters, who had previously been a nurse and also had her own business in Port Elisabeth, ran an ecologic food gardening project, supported by Rhodes University and other partners. She and other locals helped each other by sharing ideas and experiences developed over time; they also shared their local knowledge with the educational institutions. An important feature of the projects is the involvement of young people, thus securing local engagement and saving knowledge for future generations.

The second kind of programme involved government, NGOs and local people who intended to reduce contributions to climate change, predominantly by reducing the burning of fossil fuels. These programmes were:

- The NGO Energy Academy at the Island of Samsø, which intended to reduce the emission of greenhouse gases by empowering local people to produce energy in alternative ways rather than using fossil fuels. The Energy Academy especially emphasised the use of wind power, solar energy and biofuel. The Academy is subsidised by both public and private funds.
- The provincial Department of Economic Development and Environmental Affairs, which, among other things, intended to promote biofuel and wind power in the Eastern Cape.

- The Renewable Energy Training Centre, located at one of the Industrial Development Zones in East London, South Africa. The purpose of the Centre was to help new 'green' industries develop high-technologic know-how and specific skills among industry staff working with, or wanting to work with, renewable energy.

These interventions included people who wanted to make changes in order to improve living conditions for other people and future generations. This paper focuses on two cases, one each from South Africa and Denmark. It will show differences in how the change agents are trying to solve climate change problems, with a focus on bridging the gap between people's ethno-geographies and the use of powerful knowledge. In the conclusion I argue that these projects provide a good educational opportunity for doing the same with school and university students and other learners.

Case 1: Fort Cox College and Mrs Peters, South Africa

The Fort Cox College of Agriculture and Forestry is an established teaching and research institution located in the Eastern Cape. The large hinterland around the college has experienced impacts from climate changes in the form of extended droughts which impact the small-scale and subsistence farming on which many families depend for their livelihoods.

When visiting the college, Professor Rob O'Donoghue from Rhodes University introduced a newly invented drip irrigation system to teachers, students and local small-scale farmers. The lesson was organised as a general introduction by Rob, followed by hands-on experience and then discussions and sharing of ideas among all the participants. When organising lessons like this, Rob and the college teachers made powerful geographical knowledge available to locals and students concerning how to optimise the irrigation system, the appropriate time of year to use it, etc.

The group of local small-scale farmers knew each other well and had a habit of helping each other. All of them were dedicated to developing their small-scale farming, motivated not just by the need to increase their income, but also to make the farming sustainable from a cultural point of view. They were all born in the area, and although some had been living in cities such as Johannesburg for decades, they had returned. They were motivated to keep the heritage from earlier farmers alive. They had started growing the *Moringa oleifera* tree and developed several products from it.[6] Mrs Peters, who was very enthusiastic, had also started her own ecologic gardening and cultivation of small-scale crops in the nearby village. She seemed to act as the key local change agent, involving both adults and teenagers in her projects. A characteristic of all these projects was the mutual sharing of ideas and experiences among those involved, and helping each other with manual work when necessary. For example, they tried to collect knowledge about the local landscape (it turned out that, for some reason or another, some parts of the soil were much more fertile than others) and old ways of cultivating the soil. This group of small-scale farmers contributed a lot of contextual local knowledge (ethno-geography) when discussing the drip irrigation system with the teachers and students at Fort Cox College.

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6   See http://idealbite.com/do-not-try-moringa-oleifera-until-you-read-the-facts-about-it/, visited 2 October 2016.

When different people contributed with powerful geographic knowledge as well as ethno–geographic knowledge, the lesson conducted by Rob at Fort Cox College conveyed different knowledge paradigms to the participants. The lesson acted to bridge the gap between powerful geographic knowledge and ethno-geography. Both knowledge paradigms could contribute to the education and personal development of the next generation of new farmers in South Africa, where new technologies could be used in connection with local knowledge, and, in the process, contribute to climate change adaptation and withstanding the climatic changes the region is experiencing.

Case 2: The Energy Academy at the island of Samsø, Denmark
In 1997 the island of Samsø was appointed to become self-sufficient with energy and ten years later, in 2007, the Energy Academy was established. In 2010 Samsø became self-sufficient with renewable energy (wind power, biofuel and solar energy).[7] The Energy Academy is an NGO with five to ten employees, which, considering the number of citizens on the island (nearly 4 000), is relatively large.

The Academy can be characterised as an informal learning centre, where one of the aims, as explained by one of the leaders, Malene Lundén, is 'the sharing of knowledge (related to energy solutions) among its participants'.[8] As outlined by the founder of the Academy, Søren Hermansen, the main aim is not to 'save the world from climate change' but rather to positively develop the local society of Samsø. In other words, the issue of climate change is not the goal of the activities but rather an important means for initiating the development of the local society. Like many rural societies with a peripheral location, Samsø has come under pressure because of issues such as the migration of young people and the lack of local industries. These geographical features are well known in many outlying areas around the world, including some of the locations we visited during our field trip in South Africa.

Even though the Energy Academy is an informal learning centre, it has established connections to the formal education system in the form of visits by school pupils and university students, and association agreements with universities all over the world. In this way it has brought attention and activity to itself and to Samsø Island as a whole. This implies that the Energy Academy has two foci – to be a central change agent in terms of further positive development of Samsø, and at the same time to establish itself as part of educational systems. Though climate change was not the reason for starting the renewable energy project on the island, by focusing on climate change the Academy has emphasised a topic which is newsworthy and has universal implications.

When hosting visits from schools abroad, the Energy Academy occasionally hires people from the 'outside' who have specialised (powerful) knowledge related to the learning activities offered. When we visited the Academy, an external person was conducting a course on how pupils could make solar panels as an energy source for their cell phones and other equipment familiar to them. According to Malene and Søren, the basic idea of the Energy Academy's

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7   See http://energiakademiet.dk/en/om-energiakademiet/, visited 2 October 2016.
8   Quotes from Malene Lundén and Søren Hermansen, when meeting them at Samsø, 07.06.2016.

courses is for students to experience and use concrete examples from their everyday lives, and to see more general links to energy consumption. Another objective is awakening joy and interest in the students by using humour, drama and what Malene called 'the forbidden'. Drama is also used as a tool for lifting the students' own stories into the context of what is going on at the Energy Academy. Analysed into a pedagogical discourse for Geography, it seems that part of Malene's pedagogy is based on an ethno-geographic stand that emphasises students' everyday perspectives, own stories and experiences, which are interrelated with academic perspectives or what might be called powerful geographic knowledge (Catling & Martin, 2011).

Concluding Reflection

In the context of science education, Ratcliffe and Grace (2003) as well as Zeidler and Keefer (2003) argue that environmental issues, such as climate change, can be regarded as a socio-scientific issue. When engaging with socio-scientific issues, which are often connected to citizenship, students would need to (learn to) be able to take part in related discussions, take a stand and may even develop action competence. Being action competent requires knowledge, vision, commitment and action experiences (Jensen & Schnack, 1997). Being action competent might be regarded as an overarching purpose for teaching activities in formal and informal learning environments, even if it is an ideal which can never be reached (Mogensen & Schnack, 2010). It is a compelling purpose for teaching activities connected to climate change, and, based on the case examples discussed here, bridging the gap between powerful knowledge and learners' ethno-geographies could be an important component of education towards action competence in the face of climate change. Catling and Martin (2011) warn that bridging the gap between powerful knowledge and learners' ethno-geographies is not an easy task for formal learning environments. Teaching (only) powerful geographic knowledge is the norm at schools and universities, but it is only one aspect of the action competence required to tackle climate change. The learners' visions, commitment and action experiences are other relevant aspects of learning, and it is argued here that this can be cultivated through their engagement in local development projects. The Amanzi for Food projects, and some of the projects initiated by the Energy Academy, are examples of such learning opportunities.

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Think Piece on Green Guerrilla: Creating Sustainable Development through Sustainability *Bildung*

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Abstract

By drawing on a 12-week anthropological fieldwork study, I explore how education for sustainable development is perceived and practised in the Danish folk high school course Green Guerrilla. Through the emic approach of sustainability Bildung *I argue that the Green Guerrilla course constitutes a radical political imaginary; a space where the students learn to train their sociological imagination and reflect upon themselves and their own culture and society from an outside perspective in order to imagine how it can be structured differently. I argue that during a five-day study trip to a Swedish forest, the students learn to be in and actively engage with nature through the senses, and experience how they are inextricably connected with their environment. They learn that creating a sustainable world means 'dealing with your own shit', in more ways than one. Through this sustainability* Bildung *the students learn that it is up to them to 'find their own forest' – that is, to figure out how they can create the lives that they want to live in the future.*

Keywords: Education for sustainable development, sustainability *Bildung*, human/nature relations, folk high schools, Anthropology.

Folk High Schools and 'Sustainability Bildung'

Before starting the analysis, let me briefly introduce the concept of Danish folk high schools. The tradition of the schools is deeply rooted within Danish history and started in the 1800s, at a time when Denmark was suffering great financial decline, emigration and agricultural crisis (Borish, 1991; Hall & Korsgaard, 2015). Denmark was in a state of transition from being an absolutist society to a democracy, and in this transition the folk high school movement played a major part in the formation of the Danish democracy, the national identity as well as the formation of the Danish cooperative movement (Hjermitslev, 2015). The folk high schools were an alternative to the elitist universities and were places where people from different social classes lived together side by side and learned about society and human relations. Today there are approximately 67 folk high schools across Denmark, all having the primary aim of advancing life enlightenment, public enlightenment and democratic *Bildung* (The Act on Folk High Schools, 2015). These concepts were important building blocks in what the founder of the Danish folk high schools, N.F.S. Grundtvig, wanted the folk high schools to provide. Very briefly, 'enlightenment for life' is the idea that books or texts are not enough to understand the whole of existence. 'People's enlightenment' is an understanding of the social and historical context that constitutes the framework of each individual for unfolding their personal enlightenment (Borish, 1991). 'Democratic *Bildung*' is a relatively new concept in the history of the folk high

schools. It refers to the common discussions and debates about societal challenges as well as the space to provide solutions; a space where the students learn to unfold their personal freedom as well as engage in an obliging community (Rahbek, 2016). It is thus a type of general cultivating education that teaches the students to engage in all kinds of communities as mature individuals, in other words, to engage in society (Rahbek, 2016). The German concept *Bildung* (in Danish: *dannelse*) is one of the most central and complicated terms in Danish pedagogy, in that it deals with the formation of the whole human (cf. Korsgaard, 2012). Briefly, *Bildung* stands for an educational ideal that centres around the question of what constitutes an educated or cultivated human being. *Bildung* is thus an acknowledgement that education means more than acquiring a specific set of knowledge or skills. *Bildung* has to do with cultivating the inner life, the human mind, soul and person (Biesta, 2002a, 2002b). It is about 'becoming and being somebody' (Biesta, 2002a:343).

In light of the environmental, social and economic challenges we face, the transition to a sustainable society has become one of the most crucial tasks of our time (WCED, 1987). Thus, in recent years the folk high schools have increased their focus on what they call *sustainability Bildung* – or *bæredygtig dannelse* in Danish. An increasing number of folk high schools have incorporated sustainability as part of their values or have established subjects working specifically with sustainable transition (Lysgaard, 2015). The assumption is that the folk high schools once again can be the driving force in a sustainable transition, just as they played a crucial part in the Danish transition from an absolutist society to a democratic welfare state (Nielsen, 2015). Rane Lange, a teacher at Vestjyllands Folk High School, states that a sustainability *Bildung* is about how we can increase an open-mindedness towards other people as well as towards nature (Lange, 2016). But what exactly does this mean? During my fieldwork in the Green Guerrilla course at Jyderup Folk High School, I found that sustainability *Bildung* is about constantly relating oneself to the rest of the world and one's environment. As I will argue, the Green Guerrilla course can be seen as a radical political imaginary, where the students are trained to think critically and reflect upon themselves, their culture and their environment from a new perspective and learn how to imagine new ways of structuring the world. During a five-day study trip to a Swedish forest, the Green Guerrillas learned how they are inextricably connected with their natural environment and that it is an illusion that we can escape our own 'shit' – both in the literal sense, as the massive amount of trash humans produce, and the mental 'shit' we carry with us. When educating for sustainable development, sustainability *Bildung* thus reminds us that learning to create a new world requires an ability to reflect upon our own society, as well as the relations we have with ourselves and our environment, in a whole new way. Now, let us turn to the autumn of 2016 in the small town of Jyderup in northwestern Denmark.

Learning to Imagine a New World

The Green Guerrilla classes take place about a five-minute walk away from the folk high school, in a big old villa house that goes by the name 'the green house'. The house also has a large garden that the primary teacher of the course, Nana, named their 'green experimentarium' – here students experiment with growing their own food while trying to maintain the

biodiversity of the Earth as much as possible. On the first day of class, Nana told the students that she was neither a farmer nor an expert in gardening, but rather a sociologist. She founded the course in cooperation with an environmental organisation called NOAH Friends of the Earth Denmark in a shared conviction that in order to create a sustainable transition, the youth of today needs to learn about sustainability on many levels. 'It is not enough to learn about the political and economic state of the world if we don't know how to change it,' she says. 'That is why it is necessary to teach action competence' (extract from field notes, 29.09.2016). With help from NOAH, students are taught how to keep a garden according to the principles of permaculture. This way of gardening differs from what they would learn at a conventional gardening or agricultural school, as permaculture seeks a more ecological approach to food production where humans, their creations and activities are seen as interconnected with the natural world (Veteto & Lockyer, 2008). This interconnectedness is considered the best way to create systems that function in a sustainable manner (Veteto & Lockyer, 2008). For example, they learn that soil naturally produces its own fertiliser, and thus never actually needs any external fertiliser. They also learn not to plow the soil, but to protect it by covering it, for example with forest cover, hay or seaweed. Furthermore, they experiment with different ways of constructing beds. To our surprise, we discovered that using cardboard, horse manure and hay works very well to kill weeds!

The Green Guerrilla course can in many ways be viewed as a so-called radical political imaginary. An increasing number of political movements in the 20th century have sought solutions to issues like the environmental crisis, poverty, inequality, exploitation, colonialism and racism by developing a political structure other than the already established one (Hage, 2012). In Anthropology, Maeckelbergh (2009) describes these movements as part of a worldwide *alter-globalisation movement* and Hage (2012) further describes how they can be seen as a *radical political imaginary*. This kind of imaginary is generally characterised by a certain balance between 'anti' politics and 'alter' politics, the 'anti' referring to the oppositional politics aimed at resisting the political order, while the 'alter' refers to the aim of providing an alternative to the political order (Hage, 2012). Seeing the Green Guerrilla course as a radical political imaginary highlights the way that the students learn to imagine their world being structured in a different way. Keeping a garden in accordance with the principles of permaculture exemplifies a kind of 'alter' politics, in that students not only oppose conventional and industrial agriculture, but also learn about alternative ways to grow food that protect both crops and biodiversity. Hage (2012) further explains how academic disciplines like Sociology and Anthropology engage in what he calls *critical thinking* in that they take us outside of ourselves and thereby enable us to see ourselves, our culture or our society in a new way. Where Anthropology reminds us that the manner in which we live and the values we have are not the only possible ones, Sociology helps us to reflect upon the social structures and relations of power in our own culture and society as being social constructs. This ability might be compared to what sociologist C. Wright Mills named the 'sociological imagination', which he defines as the ability to 'understand the larger historical scene in terms of its meaning for the inner life and the external career of a variety of individuals' (2000:5). In that sense, the sociological imagination is the capacity to shift from one perspective to another, for example from a political to a psychological perspective, and then to look at the

relations between the two (Mills, 2000). This ability to reflect upon the relations in our society as relations of power and thus social constructs, reminds us of the possibility that our society can be structured differently (Hage, 2012).

I argue that when learning to imagine a new, sustainable world, and thus balancing the opposing 'anti' with the alternative 'alter', this ability to reflect upon your own life and culture in a new way and being able to question the structures in society is crucial. The Green Guerrilla course can in many ways be regarded as a radical political imaginary, with this sociological imagination being developed throughout the course. In addition to learning about permaculture and the practical work in the garden, the students also learn about different aspects of sustainable transition: the difference between industrial and peasant agriculture, resources and trash, consumerism, what causes climate change as well as different ways of taking action, for example activism or community organising. Thus the course presents global issues and problems that we all face in the Anthropocene era (cf. Steffen *et al.*, 2011).

However, it was not until the Green Guerrillas went on a study trip far into the Swedish forest that the students really learned to reflect upon their relation to the environment, society, each other and themselves in a whole new way.

Learning to Be in Nature

The study trip to Sweden was not originally part of the course. But when 21-year-old Sebastian decided to participate in the course, Nana opted to learn from Sebastian's mother, Andrea Hejlskov.[1] Five years earlier, Sebastian had moved from a small town in Denmark far into the Swedish forest with his family. After living with depression and stress for many years, Andrea and her husband Jeppe decided to quit their jobs, sell their house, take their children out of school and move into the Swedish forest to live 'off the grid' – a lifestyle where people do not rely on the electrical power grid and usually live in a self-sufficient manner.

The first day we arrived in the forest, Andrea and Jeppe helped us build a teepee – a cone-shaped tent that we lived in for the next four days. Jeppe helped us put the teepee together, while Andrea showed us how to cut branches of spruce to line the ground in the teepee, with hay on top as bedding. After cutting for about three hours, Andrea accompanied us to fetch water from the lake, which we carried back to the teepee. Afterwards we picked up pieces of wood and Jeppe helped us make a fire. At about 4pm, Andrea started cooking dinner. It was getting dark and we were tired from all the work.

In Anthropology the relationship between humans and the natural environment has long been of great interest, lately with the main interest being criticising the supposed dichotomy between the two (cf. Descola & Pálsson, 1996; Hastrup, 2013). According to Ingold (2011), a pioneer in anthropological studies of humans and the environment, we are bombarded with information about the environment to such a degree that we tend to forget that the environment is first and foremost the world we live in and not something that we stand on

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1   For further information, read more about Andrea and her story in English at www.andreahejlskov.com.

the outside of. 'We *inhabit* our environment: we are a part of it; and through this practice of habitation it becomes part of us too' (Ingold, 2011:95, emphasis in original). To clarify his point, Ingold opts to criticise the entire discourse that characterises the contemporary debate on environmental issues and climate change. He argues that using the term 'global environmental change' indicates an embedded perception of the environment being something separate from the human. The word 'globe' indicates a round, hard and solid entity where human life happens on the surface and not in the centre. So, when discussing the need for decreasing the destructive consequences of human activity, Ingold's point is that in the very idea about construction and destruction lies a perception that the world is already naturally constructed and thus becomes an object for human concern. In this way the globe is perceived as an object that human beings can affect, damage or protect, but never dwell in, that is, never be an embedded part of. Instead, he suggests seeing the world as a *sphere*, which, as opposed to a globe, is not hard and intact, but hollow and transparent, and where life circulates from the centre (Ingold, 2000). Ingold argues that it is very likely that many of the severe climate issues we are facing today stem from this alienation of humanity from the environment.

I find Ingold's points useful in order to understand how being and living in the middle of a Swedish forest, far from the rest of civilisation, affected the Green Guerrilla group. Having this intense meeting with raw nature made a big impression on the students, myself included. Being in nature this way clarified how humans are supposed to be in, and actively engage with, the natural environment – something that the average person living in an urban environment seldom does, at least not this group of Green Guerrilla students. Cecilie, one of the students, commented on the first night:

> It's been a crazy day. I'm very physically tired. It feels so good getting away from the city and being out here in the forest. I really feel that we are built for this! I feel like when there is peace in your surroundings there is also more peace in yourself. (Extract from field notes, 09.11.2016)

Cecilie was reflecting on the day she had been through in the forest, including learning to build her own teepee and fetching water. Her comment that humans are 'built for this', that we are supposed to be in, engage with and produce in our environments, indicates that, through her sensory engagement and interaction with nature, she experienced how good it was for both her body and mind, as it gave her a feeling of calmness. Similarly, when Jeppe taught the group how to chop wood, he showed them how to hit the piece of wood hard and fast with the axe, turn it around and hit it hard again until it broke. One of the students, My, could hardly put the axe down and continued chopping for the entire afternoon. 'It's really like I can get out some aggressions,' she said. 'I'm sure this works just as good as the anti-depressive medicine I'm taking' (extract from field notes, 11.11.2016). Having followed My during the entire course, most of the group by this point knew that she suffered from anxiety and depression. She was taking the course because she felt she needed to pull the plug on her normal everyday life as a university student in Copenhagen.

My's wood-chopping experience had a therapeutic effect on her. But as Cecilie stated, the entire experience of being in the middle of nowhere, surrounded by beautiful snow-covered trees, the sound of water running from the stream, sparks from the fire and having worked all day, gave us all a feeling that we were built for this and were connected with nature.

Following Ingold, I argue that this intense meeting and sensorial engagement with nature as they learned to build their own teepee, chop wood, fetch water and really engage with their environment, showed the students that they are inextricably connected with that environment – a feeling that many of them could not express and use in their everyday lives at home.

Learning to 'Deal with Your Own Shit'

The next day Andrea introduced us to Astrid, a 24-year-old woman who, inspired by Andrea and Jeppe, had moved out to the forest alone. Astrid told us that she dropped out of her studies as they did not have anything to do with reality. She felt that her relations back home were superficial and her life made more sense now that she lived in the forest almost self-sufficiently. She told us how she managed the trash she produced. Andrea added: 'Living in the forest forces you to deal with your own shit' (extract from field notes, 10.11.2016). She was of course referring to 'shit' in the very literal sense, as regular flushable toilets are usually replaced by a *das* in the forest – a small self-built wooden house with either a hole in the ground or a bucket for collecting human faeces, which is often used as natural fertiliser. Andrea was also referring to the amount of trash one produces and is forced to deal with, as well as the mental 'shit' that people carry around. American anthropologist Nicholas Kawa (2016) argues that humans have created a fantasy in which we believe that we can distance ourselves from our waste and separate ourselves from our natural environment. 'The Anthropocene will offer many lessons for humanity, but one of its most jarring is that we simply can't hide from our shit anymore' (Kawa, 2016). Kawa argues that there is a lot of potential in finding new ways in which to relate to our own 'shit'. This includes new ways of thinking ecologically and new ways of engaging politically and ethically with our environment. Ingold's (2001, 2011) point about how humans and their environment are mutually constitutive becomes even clearer bearing Kawa's words in mind. We cannot physically or environmentally escape the waste that we produce, no more than we can escape the mental shit we produce.

Finding Your Own Forest

During the trip to Sweden the students not only learned to relate to their environment in a new way, they also learned how to relate to each other and to themselves in a new way. This became especially apparent when the class returned from Sweden and started discussing what they had experienced and learned, and how they could use this as an inspiration for their own choices in the future:

> Nana: I think what we need to do now is to find our own forest, wherever that might be. It might be here in Jyderup or it might be in Copenhagen, just doing it differently.

[…]

Malou: Maybe it's not so much about being in Copenhagen or in Sweden, maybe it's more about being critical about the life we live.

Cecilie: Yes exactly, and having the feeling that we're doing something, we're saying no to the society we don't want and we do something different. That can be by buying organic food or moving into the forest, I don't care, but just that we're actually taking a critical stance and saying no to the things we don't believe in. (Extracts from field notes, 14.11.2016)

The classroom conversations changed tremendously after returning from Sweden. Needless to say, being in the forest for five days, isolated from the rest of society, created a strong bond between the group members, which resulted in more personal and deep discussions afterwards. The extracts above indicate that the group reflected on the changes they wanted to make in their lives. They also realised that what is important is not so much what they do, but rather that they take a critical stance and say no to what they do not want. The trip to Sweden taught them that they are inextricably connected with nature, but also that we cannot escape from our own shit – not physically, mentally or environmentally. They learned that it is up to them to 'find their own forest' – to create the lives that they want to live in the future. Sustainability *Bildung* thus seems to be a holistic approach to education, where students learn to reflect upon themselves in relation to the rest of the world as well as their environment in new ways. Maybe this is exactly what the world needs if we are really to learn how to 'deal with our own shit'.

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