

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 Samsø 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, 'Søren 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 Samsø (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 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

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 ‘hypostatized 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 “café seminar”, called “Café 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 [...]’

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 Samsø 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)

5 ‘Samsø 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 *relationalism* and *relational realism*. The discourses captured above in the competences frameworks appear to be more reflective of *relationalism*, 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).

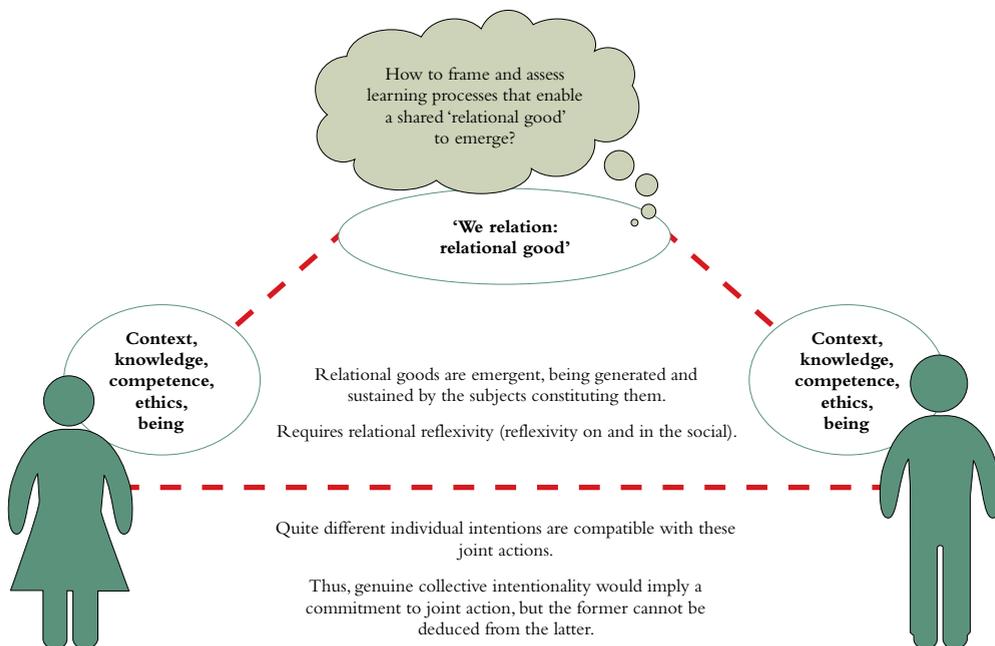
Donati and Archer's (2015) concept of *relational realism* can further assist us in understanding collective learning and change agency in times of climate change, where the impetus is to shape wider societal transitions and transformations to sustainability, as in the cases outlined in this paper. The 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 Samsø 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 'Samsø 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.

References

- Biello, D. (2010, 19 January). 100 percent renewable? One Danish island experiments with clean power. *Scientific American*. <https://www.scientificamerican.com/article/samso-attempts-100-percent-renewable-power/>, visited 26 April 2018.
- CBS News. (2016, 20 April). On global warming, world seeks ‘Viking leadership’. <https://www.cbsnews.com/news/samso-denmark-renewable-energy-climate-change-global-warming-solar-wind-power/>, visited 26 April 2018.
- DoE (Department of Energy of the Republic of South Africa). (2016). *Independent power producers’ procurement programme (IPPPP) – An overview*. Pretoria: Department of Energy.
- Donati, P. & Archer, M. (2015). *The relational subject*. Cambridge: Cambridge University Press.
- Eberhard, A., Kolker, J. & Leigland, J. (2014). *South Africa’s renewable energy IPP program: Success factors and lessons*. Washington, DC: World Bank.
- Engeström, Y. (1987). *Learning by expanding: An activity-theoretical approach to developmental research*. Helsinki: Orienta-Konsultit.

- Engeström, Y. & Sannino, A. (2010). Studies of expansive learning: Foundations, findings and future challenges. *Educational Research Review*.
- Engeström, Y. & Sannino, A. (2016). Expansive learning on the move: Insights from ongoing research. *Journal for the Study of Education and Development*, 39(3), 401–435.
- Hermansen, S. & Nørretranders, T. (2013). *Commonities = commons + communities*, trans. Jonathan Sydenham. Samsø: Samsø Energiakademi.
- Latour, B. (1999). *Pandora's hope: Essays on the reality of science studies*. Harvard MS: Harvard University Press.
- Lotz-Sisitka, H.B. (Ed.). (2012). *(Re)views on the social learning literature: A monograph for social learning researchers in natural resources management and environmental education*. Howick: SADC REEP.
- PAGE (Partnership for Action on Green Economy). (2016). *Guidance note on learning for an inclusive green economy*. UNITAR.
- Rosenberg, E., Rosenberg, G., Lotz-Sisitka, H.B. & Ramsarup, P. (2016). Green economy learning assessment South Africa: Critical competencies for driving a green transition. Report. PAGE, UNITAR, UNEP, ILO, UNDP, UNIDO. http://www.un-page.org/files/public/green_economy_learning_assessment_south_africa.pdf, visited 26 April 2018.
- Sfard, A. & Prusak, A. (2005). Telling identities: In search of an analytic tool for investigating learning as a culturally shaped activity. *Educational Researcher*, 34(4), 14–22.
- Vandenberghe, F. (2014). *What's critical about critical realism? Essays in reconstructive social theory*. London: Routledge.

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)