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Social forces around a sustainability-focused family: School/home milieu

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Abstract

This study explores the social forces operating within the school-family sustainability milieu, in the context of a family that lives sustainably, and participates in school sustainability projects. We conducted open-ended interviews with two students who attend a state secondary school, their parents, the sustainability coordinator, and the principal of the school. We have created an ontological model from our data that shows the forces and relationships between the individuals, and allows us to offer explanations for the success and limitations of the sustainability community at the school. We also investigate the social relationships surrounding the children, including those with their peers in the enviroclub, with students outside the enviroclub, their parents, and the sustainability coordinator. Our analysis reveals an intergenerational or *reverse vector of influence* from child to parent. It also shows the importance of a highly motivated sustainability coordinator to galvanizing the parents into becoming a *sustainability-focused family*.

Key words

deep ecology, ecocentrism, secondary schooling, reverse vector of influence, sustainability-focused family

Purpose of study

This article reports on data from a larger study of anthropocentrism and ecocentrism in secondary schools, where the values and relationships between individuals in the school/home sustainability milieu were analysed through a deep ecology lens.

Preliminary analysis of the open-ended interviews in the study indicated that relations of power, status and worth were defining the social identities of respondents. This raised further research questions regarding the mechanisms behind these social forces, and the implications of these for sustainable schools and their families. Schools are recognized as agents of change through the currency of social capital (Smith & Sobel, 2010), as delivered in our case study by the environment club (*enviroclub*) students. We used modified grounded theory as a research approach to analyze the social interactions between individuals involved in the school/home sustainability milieu. Our central focus was on the unidirectional flow of sustainability between the school and home, which for brevity we define as the *reverse vector of influence* (denoting child to parent transmission).

Literature review

The concept that parents *control* their children's behavior is naïve and over-simplistic, as is the idea that socialization is normally unidirectional from parent to child (Ambert, 1992). Whilst parents are the primary influence for the pre-school years, this is not the case when children enter school and gain new primary caregivers. Values transmission is now regarded as a multi-directional process involving schools, peers, and the wider community (Knafo & Galansky, 2008), and is broadly classified as either *active* (direct influence over another), or *passive* or circumstantial (influence over another). Child-parent transfer is more likely in adolescents if the issues are relevant to their lives. It is further recognized that intergenerational influence might be an effective way of promoting a positive environmental ethic in the community, and that the child-parent axis might be a promising way to realise this social influence (Ballantyne, Connell, & Fien, 1998).

Earlier research is not clear whether environmental education programs generate a flow of influence from student to parent (Ballantyne, Fien, & Packer, 2001), even where parental involvement in school sustainability is established. One quantitative study of knowledge flow from child to parent gave positive test results, but did not postulate a mechanism for such an effect (Vaughan, Gack, Solorazano, & Ray, 2003). Intergenerational environmental education is governed by a number of factors including parental involvement in student activities, children's status within the family, school outreach to the community, and teacher enthusiasm (Duvall & Zint, 2007). A recent study in two secondary schools in the Republic of Seychelles confirmed the presence of child-parent knowledge transfer in a wildlife club setting (Damerell, Howe, & Milner-Gulland, 2013), but again did not postulate mechanisms for the social aspects of the reverse vector of influence. Observations of families participating in activities at a nature center showed evidence of the reverse vector of influence (Zimmerman & McClain, 2013), whereby children and parents collaborated to produce negotiated outcomes over the activities at the center. The authors in the latter study attributed this observation to the mutual desire of children and parents to maintain family harmony.

It has been established from other research with sustainability oriented families, that children have situated identities that are a product of a *household ecology* (Payne, 2005), though largely influenced by parents who have a strong sense of agency, a social force that tended to operate from parent to child. Payne's (2005) study was about parental influence and how their children reacted to, or contested, household environmental commitments and values, rather than the reverse vector of influence. In a study of the effect of the *Brundtland Green School Project* on parental environmental behaviors, intergenerational influence was not significant (Legault & Pelletier, 2000). In a more recent study Payne (2010, p. 223), however, shows that children in sustainability oriented families are '(self)aware and proud of their own

sustainability (and family) differences', and form part of a complex socio-ontological structure referred to as the '*post-modern oikos*', although Payne's (2010) study focused on family dynamics and not on school/home interactions.

The study reported here draws upon the ecosophy of deep ecology (Naess, 1973), and provides a world view that enables us to investigate the social parameters of the school-home sustainability milieu. The deep ecology movement emerged in the early 1970s following a paper published by the eco-philosopher, Arne Naess (1973). Naess' article outlined the framework for a new vision in ecology that was ecocentric in focus (earth-centred) to counter the anthropogenic (human-related) degradation of the planet, species and habitat loss, and plundering of natural resources. Naess was influenced by Rachel Carson's *Silent Spring* (1962) to have a deep humility towards the earth (Naess & Rothenberg, 1989, p. 165), but he also proposed a life-style where humans lived *lightly on the earth.* The deep ecology philosophy promotes anti-neophilia and opposes western, dominant social structures that promote excessive consumerism and disproportionate use of the earth's finite resources.

We sought to investigate the affective, cognitive and behavioral processes behind the way that the family existed sustainably in the context of a school recognized by the Victorian Association of Environmental Education as a leader in sustainability practices.

Methodology

The case study presented in this paper is part of a larger research investigation into deep ecology in secondary schools, which investigated ecocentrism and anthropocentrism in the *enviroclubs* at three Victorian secondary schools, both in the

sustainability curriculum and in the wider sustainability community at each school. This article reports on the data from one of the schools, ('Bunjil'[1]), which came from open-ended interviews with two parents (the mother Ruth[2] and father Martin), and their children who are students at Bunjil (Brandon[3] in year nine and Luke in year seven), the sustainability coordinator (Wayne), and the principal (Kara). Data from the open-ended interviews with Brandon, Luke and Wayne have been published elsewhere (Smith & Gough, 2015a), but are re-examined here in the context of the parent data to illuminate the school/family narrative using the epistemology of social psychology (Stainton Rogers, 2011). The questions used for the parents' interview are given in Appendix 1.

Bunjil is a government school, located in the eastern suburbs of Melbourne, and has a mixed-gender, middle-class demographic. That is, the school was neither disadvantaged nor advantaged, but it did have a strong sustainability focus involving the parents and wider school community. The two students, their parents, and the sustainability coordinator Wayne, were interviewed separately using open-ended questions. The focus of the study was on the elements of the Deep Ecology Platform[4] (McLaughlin, 1995), and the questions were written to evoke responses that would inform us about how the school/home milieu might be operating from the perspective of social forces and responses. Early data from the student interviews had pointed to forces operating beyond the perimeter of the school boundary being significant influences on the students, however these were vectors of influence that could only be investigated by studying the families of the students.

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[1] We used the name of an indigenous supernatural deity to de-identify the school.

[2] Parents, teachers and other adults were de-identified by using psuedonyms from a 1975 database of names; http://www.babycenter.com/popularBabyNames.htm?startIndex=40&year=1975.

[3] Students were de-identified by using psuedonyms from a 1998 database of names; http://www.babycenter.com/popularBabyNames.htm?year=1998.

[4] Connectedness to nature, biospherical egalitarianism, biodiversity and wilderness protection, anti class exploitation, population control, moderated resource use.

It therefore became important to interview the parents if we were to better understand the sustainability community of the school.

The interview data from the students were transcribed, coded and analysed using grounded theory (Glaser & Strauss, 1967), then modified to facilitate rich analysis of the responses (Boeije, 2010). The coding data from the parents, teachers and students were then cross-referenced for common and disparate loci. The analysis in part draws upon social psychology as an epistemology and not as a science (Stainton Rogers, 2011), which we use to explain the motivations for action or inaction in the cohort, the participants' perceptions about their roles in the school sustainability community, and how the various relationships form an holistic sustainability community.

Findings and Analysis

Our data shows the sustainability-focused family as being connected to the school sustainability structure through the coordinator Wayne;

> Ruth: We've always had a compost bin at home. But also with [Wayne] coming to the school, and that's basically I suppose where it really became an impact on the kids and this followed on with us at home. Because we thought well it's no good the kids learning something unless we're going to put it into practice and acknowledge the fact that as the parents we need to show that we're doing the right thing. (interview, March 19th, 2015)

Wayne sees the sustainability culture at Bunjil as a grass roots desire from both the school community and the local community, and adds that it is essential to have the support of a sympathetic principal. Kara's interview confirms this position, even though the sustainability program was underway when she was appointed to the role of principal. This finding is supported by a previous study involving *Waste Wise Schools* program (Armstrong, Sharpley, & Malcolm, 2004). Wayne reports that another factor in establishing a strong sustainability community is in having access to government funding, but it is clear from Wayne's data that the sustainability coordinator needs to vigorously pursue such opportunities. Another important part of school sustainability practices is commitment to the *Australian Sustainable Schools Initiative* or AuSSI (Australian Government Department of the Environment Water Heritage and the Arts, 2005), an Australia-wide program that helps schools implement and monitor sustainable practices.

A precursor to these phenomena are environmental education programs in the primary schools that students attend before enrolling at Bunjil, opportunities that not all schools provide to students. Primary schools running the AuSSI or employing a sustainability coordinator act as a primer for the sustainability club at Bunjil, and contribute to the concept of the ecological generation or *eGen* we introduced elsewhere (Smith & Gough, 2015b). Ruth responded that at Brandon and Luke's primary school, even though environmental education was only part-time, that it was integrated across the curriculum. Together with a predisposition to being sustainable, we suggest that these factors are critical in forming the sustainability trajectories for Brandon and Luke at Bunjil.

Martin and Ruth report that their interest in sustainability was due to the influence of Wayne through their children, Brandon and Luke, in large part because they viewed Wayne as an exemplar for promoting environmental sustainability. The data

show that the strong personality of Wayne galvanizes the formation of the *sustainability family* both via the students and directly at working bees such as the planting for the *urban forest*. Wayne sees his social function as facilitator of the sustainability projects around the school; 'we gave them a space (so that) they could deliver on that (goal)' (00:05:59). The parents took pride in watching the forest grow knowing that they and their children were part of the project. The data here describes a blurring of boundaries between school and family, but also shows two worlds that connect to form positive exchanges at their various points of contact.

During the interview the parents were encouraged to reflect on their own lives, and Martin related the story of being raised in India, tending to chickens as a boy. This seemingly simple association with animals had an impact on Martin;

> Martin: This is why I wanted the chickens; this is what I was brought up with. I wanted the chickens; [Ruth] wasn't too keen on it. Because this is something that is very close to my heart, and this is what are my childhood memories.' (interview, March 19th, 2015)

Martin then stated that this is why he subsequently valued sustainability practices at the school and home, and it was an experience that he wanted for his own children. The data from Brandon confirms that his parents are engaged in recycling, composting, raising chickens and growing vegetables, and that they are knowledgeable about environmental practices. The data does not show how much of the parents' disposition is intergenerational (child to parent), and how much is from their own upbringing. Further work is needed to determine the respective contribution of these two areas of social force.

The flow of influence is not always from Wayne to parents or parents to child. Even before starting at Bunjil, Luke had insisted that Ruth not purchase any products with palm oil, because he had done a project on palm oil harvesting and orangutan habitat (seeing the animals perish);

> Ruth: (Luke) is very much into not using anything with palm oil in it. He will go and look at things in the supermarket and say "mum you shouldn't be buying this", or "mum I'm not eating it anymore because this has got palm oil" (interview, March 19th, 2015)

This story is supported by the interview with Luke where he relates a narrative from Grade Six;

> Luke: We had an exhibition at primary school, and I did palm oil; because of the orang-utan's and deforestation of the palm trees. And that was pretty interesting because I got to learn about nature and how the world forms, and how people who do the smallest things that can affect the earth [in a big way] (interview, May 28th, 2014)

Luke was young but eager to give answers during the interview, has an outgoing personality, and his attitude is positive about environment. He appears to be confident about his views and when asked where they originated, Luke replied: "Well, I've always thought differently about the environment than normal people. I've always thought about how things work, and I've always wanted to interact with animals, and improve the world" (interview, May 28th, 2014)

A similar story emerged for Luke's brother Brandon. The father Martin proposed building an outdoor deck at the family home, and Brandon suggested the use of local wood products rather than imported rainforest materials. Several research studies have established that parental involvement in middle school has a positive effect on academic achievement in school-children (Hill & Tyson, 2009), and that such school-parent contact can be benign and not associated academic or behavioral problems (Fan & Williams, 2009). It has also been reported that parent-child communication about their schooling tends to increase academic performance, whereas parental pressure on their child had no significant effect (Lam & Ducreux, 2013). Our study provides evidence for the existence of *the reverse vector of influence* of the parent-child relationship, whereby the student produces a positive social force within our school-family ontological model. This confirms work done in a previous study where a mother reported that her daughter, a year seven student, was exerting a child-home influence; "She [the daughter] turns the tap off and makes sure everyone [in the house] else does" (Ballantyne et al., 2001, p. 34).

It is not possible to show from the data all of the social forces operating within our ontological model, but we can conclude from both the parents' and the children's interviews that child-parent transmission is taking place. We also report that the milieu involves the sustainability coordinator (and less directly the principal), producing a more complex picture than previously reported in the literature. The importance of the school leadership team, particularly the principal, is a significant factor in primary school engagement in environmental science (Gough & Sharpley, 2005). It is essential for the sustainable schools philosophy to permeate school management if it is to successfully engage with environmental issues (Gough, 2005).

The data also reveals some introspection from Brandon and Luke about negative tensions relating to their situated selves as enviroclub members . For example, Brandon believes that students not involved in the enviroclub are often lazy and do not care about the environment. He adds that it is this kind of attitude that could lead to littering and ultimately the death of wildlife, but does hold in the same frame of thought that he too was (when younger) oblivious to inadvertent damage to the environment. Sibling Luke said that 'because I feel strong(ly) about it I probably wouldn't care if I get beat up, because I'm trying to make a difference to the world' (00:11:51). Their social interaction with peers, reflection on their place within the enviroclub, and their situated selves within the school all appear to be important social dynamics. We cannot determine from our results if these thoughts are conveyed to home; perhaps there is a part of the social milieu that remains personal to some students and not shared with their parents. This is an aspect of the social dynamics of the school-home sustainability milieu that requires further investigation.

Other data from Brandon demonstrates an understanding for the *wilderness protection* and *biodiversity preservation* elements of the deep ecology philosophy:

> Like an everyday thing, if you drop a piece of rubbish on the ground
> or something, just unknowingly you don't know where it will get
> blown, something will eat it, and that thing might die. And you just, if
> you were to see what you did to that creature or anything, I think
> you'd feel really bad, but you didn't feel bad at the moment you
> dropped the piece of rubbish (Brandon, interview, May 30th, 2014)

Brandon has also developed a connectedness to the earth and has experienced cognitive and affective change since joining the enviroclub:

> Brandon: I think I'm generally more open-minded. Thinking about what we have, and how grateful for everything around us. Maybe when I was a little kid I would've walked through, and I would've snapped off branches and, as I'm walking through it now you realise how little things can, (like) water, the ripple gets bigger and bigger (interview, May 30th, 2014)

Luke was empathetic to animals and the conservation of their habitat: "Because they have a reason to be on this earth just like us" (interview, May 28th, 2014). On the issue of using forest habitat for timber supply, Luke responded; "We let the animals live and find another way we can make it" (interview, May 28th, 2014). This response was optimistic and offers a simple solution to the problem of habitat destruction. Luke did not agree that natural resources were just for humans and said that leaving forests as habitat was important.

Not all of the social dynamics of school sustainability practices are positive and free from tension. There are some teachers at Bunjil who do not give unconditional or even modest support to the sustainability coordinator Wayne. Some of these tensions arise because Wayne's duties frequently take him away from the classroom (and the school), thus creating extra teaching load for other staff. Wayne reports that this effect causes antagonism amongst staff, even if the discontent is not based on fact, and even when given support from the principal Kara. It would appear that Wayne, to use the vernacular, *bottles up* the problem and tends not to allow the problem to affect his duties.

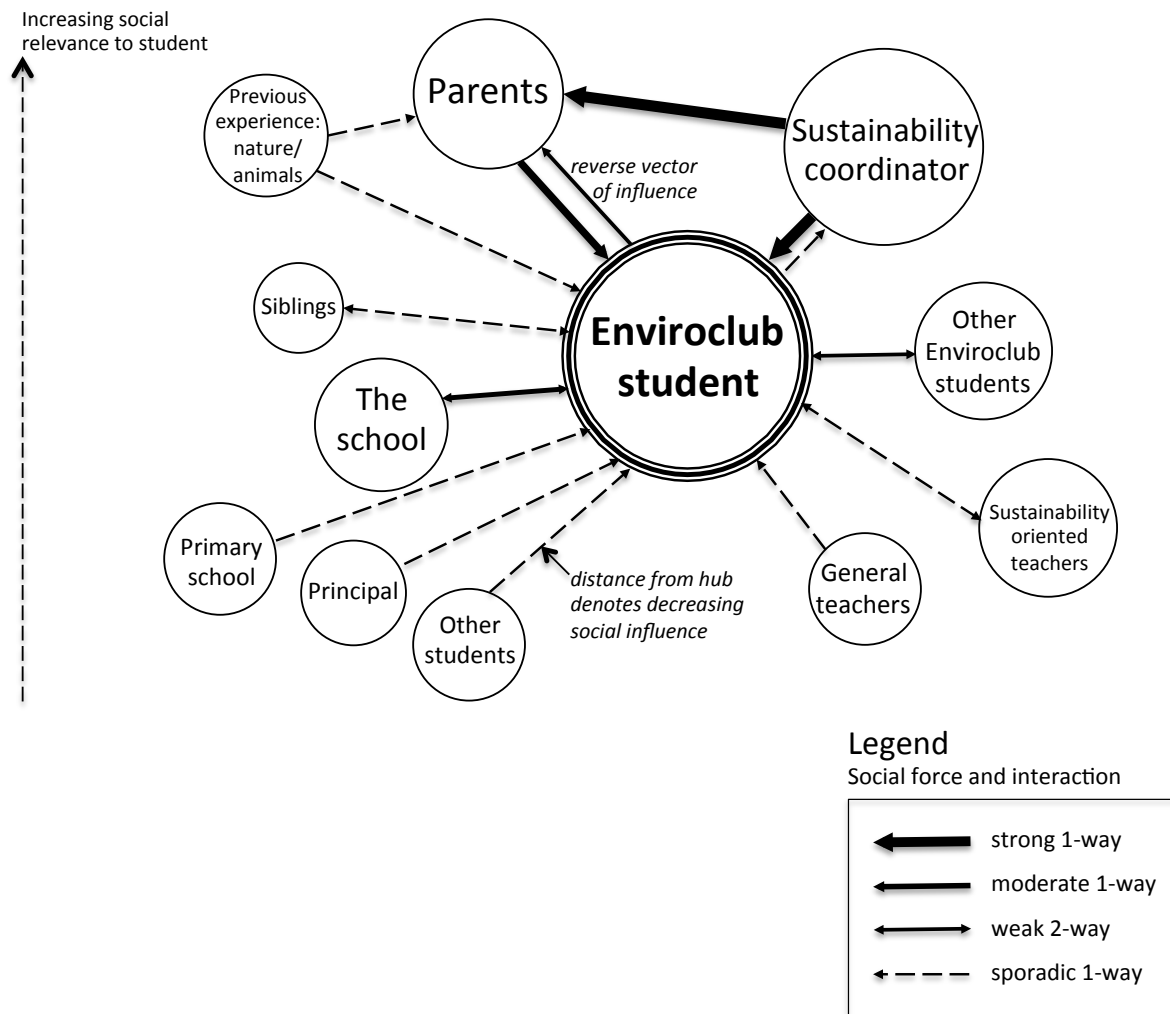## Social forces around the school/home sustainability milieu

Figure 1. Ontological structure and social forces of the sustainability family.

Discussion and implications

Figure 1 illustrates the important relationships between the various entities in the school-home sustainability milieu, focusing on the student, the parents and the sustainability coordinator. Our findings show that the central line of force is from Wayne to parents, illustrated above with a strong 1-way vector. The sustainability coordinator is a pivotal part of the school-home milieu. The parents respond to this by participating in working bees over which they feel a sense ownership and pride, and ultimately see their role as important to the school sustainability program. We

also find that students identify strongly with the enviroclub and that this is primarily seen as a strong vector of influence from the sustainability coordinator, with a smaller reverse vector of influence. The latter vector from student to coordinator is a reflection of the strong personality of Wayne, which in part materializes as military metaphors in Wayne's interview, during which Wayne refers to the enviroclub students as 'troops'. Our study provides preliminary evidence that there are complex social interactions between individuals in the school sustainability milieu, and that some of this is intergenerational and via child-parent transfer. This confirms findings from a previous study (Armstrong et al., 2004), where the authors concluded that student ownership of an environmental program was amongst various factors critical to intergenerational transfer.

Our data show a line of force, a *reverse vector of influence*, from student to parent. We recognise that this case study reports on interviews with six individuals and that the findings need to be confirmed by a larger study. However, our data does show that the socio-ontological structure and function of the sustainability milieu is more complex than previously reported, and has potential implications for school communities with sustainability programs.

These implications are as follows:

- students can act as change agents for sustainability practices, but they need to suitably *experience environmental education as a lifelong process* from primary to secondary school in formal and informal environmental education,
- sustainability coordinators provide a crucial function in schools galvanizing individuals in the school/home sustainability milieu and providing opportunities for families to participate in sustainability programs,

- schools have a duty to make sure that <u>all</u> teachers accept the sustainability focus and policies of the school,
- teachers need to be supported to explore new ways of implementing sustainability across their curriculum, and
- principals need to adopt a sustainable schools program and support a sustainability coordinator's position.

Our study agrees with previous research on the social and educational factors that regulate the sustainability milieu (Armstrong et al., 2004). They also agree with a national statement on the role of good school governance in implementing a sustainability framework in schools (Australian Government Department of the Environment and Heritage, 2005).

Conclusion

The findings from this case study indicate that the school-family sustainability milieu is a product of positive forces from the sustainability coordinator and the school enviroclub, probably mediated by their children attending the school. The principal plays an indirect but important role in supporting the milieu. We also found evidence for a *reverse vector of influence* from the child/student to the home, seen as changes to food purchasing (via the mother) and choice of building materials (via the father). From these findings we have developed the concept of the *sustainability-oriented family*, a term we define as one where the socio-ontology of the family sees social forces operating to compliment the sustainability goals of the entire family. In our view this picture is a mirror of the best sustainability practices of the school. Our data also shows that students in an enviroclub are capable of higher-order cognitive and affective thinking, in keeping with the deep ecology philosophy. Using social science to investigate the sustainability ontology reveals

that the key players are the children, the parents and the sustainability coordinator. Positive past life experiences of the parents, and a sustainability program at primary school, both produce positive vectors of social influence across time. There are aspects of the social self in the children/students that seem to be insulated from the home/parents, an observation that requires further study.

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DEEP ECOLOGY AND THE SECONDARY SCHOOLING PROJECT

LIST OF QUESTIONS FOR PARENTS

SEMI-STRUCTURED INTERVIEW

Q1. Can you tell me a little bit about how your child became interested in sustainability and if it has altered the way that you and your family think about the school in general?

Q2. Do you think that the home environment is important to your child's views on sustainability and if so, have you got any examples of how this occurs?

Q3. How does it make you feel when your child works on an environmental problem and ends up either solving or reducing the problem? Is it mostly a positive experience or are there some ups and downs in the process as well? Do you get a chance to talk to them about such issues?

Q4. Have you noticed any transformation in their ideas that might be viewed as a more sophisticated way of thinking about the environment? What I mean here is whether, since joining the sustainability club, they have become ecologically more robust so as to ward off critics.

Q5. The deep ecology movement serves to protect the planet by adopting an ecological philosophy whereby every creature including mountains and rivers have equal value to humans? Do you think this level of thinking is too much for your child and that we should just stick to the basics like numeracy/literacy?

Q6. Do you think that science has the answer to all of our sustainability problems? If not, what sorts of actions would you like to promote in your child to resolve environmental issues?

Q7.   Some people try to solve environmental problems just so that we can

      have more resources for humans. What do you think about this

      approach? Does this issue come up with your child?