

Children's Perceptions of Environment: Making visible gender and ecological biases in environmental education.

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My study of children's understandings of environmental concepts was inspired by Davies (1989) and Davies and Banks (1992). These were studies of the ways in which gender was constituted through the discursive practices of girls and boys and the "...political implications of the ways in which children are constrained by the dominant gender discourses..." (Davies and Banks 1992:2). I was also influenced by the current ecofeminist scholarship that looks at the political implications of the perceived right in Western cultures to dominate the non-human (Bird 1987; Di Chiro 1987; King 1990; Merchant 1990a 1990b; Spretnak 1990). This hierarchical relationship between culture and nature can be interpreted within the context of the discourses that underpin current environmental orientations. My study was undertaken to examine the ways, and to what extent, boys and girls entering school have positioned themselves in relation to these discourses about the environment and the implications this has for environmental education.

Identifying available discourses

O'Riordan (1989) uses the terms technocentrism and ecocentrism to talk about the two major orientations of current environmental politics.

The essential difference between these two approaches is that the former values the non-human world for its instrumental or use value to humankind (whether material or otherwise) whereas the latter also values the non-human world for its own sake, irrespective of its value to humans (Eckersley 1990:70).

Merchant's (1990) Western scientific discourses are comparable to O'Riordan's technocentric discourses. In both analyses science is understood as the most effective way to overcome problems in the environment. Within technocentrism it is possible to identify both dominant and hegemonic discourses³. Whilst the interventionists may be seen as the dominant group, since they hold the social, political, and material power, hegemonic discourses stem from the less extreme technocentrists, whom O'Riordan (1989) labels accommodationists⁴. Accommodationist temper dominant scientific discourses with modest reform adjusting to the demands of ecocentric groups. Thus, accommodationists appear to take up aspects of ecocentric discourses by providing 'care for nature'.

The different forms of ecocentrism as identified by O'Riordan can be

understood within the context of Merchant's (1990) marginalised discourses. Ecocentric proponents argue that the limits of the Earth itself prevent unchecked economic and population growth and thus, they see the technological-fix as inappropriate. Yet ecocentrics, like technocentrics, differ on what they see as an appropriate relationship between culture and nature. Dunkley (1992) uses the terms 'light green'⁵ and 'deep green'⁶ to describe the different stances of ecocentrics. The perspectives offered by ecocentric proponents can be understood as oppositional⁷ views.

These environmental orientations are presented as discrete ways of constructing the culture/nature relationship. O'Riordan acknowledges that the boundaries between these orientations are blurred but he does

not offer an understanding of the shifts that individuals make between these orientations.

Ecofeminism: what can poststructuralism offer?

Ecofeminist theory combines ecocentric perspectives with current feminist perspectives to develop theories that move beyond ecocentrism and feminism in understanding the effects of power. Ecofeminist theories and the feminist social theories from which they are drawn are complex and within each theory there are differences in interpretation. However, all forms of ecofeminist analysis are concerned with the unequal location of women and nature in the social formation.

These current theories can be loosely categorised as liberal⁸, radical⁹ and socialist ecofeminism¹⁰. The interpretations of the social world stemming from these theories are vital in identifying the 'who', 'where' and why of social power relations (Kenway 1992). However, I moved away from current ecofeminist interpretations of the unequal relationship between culture and nature and looked to poststructuralism as I began to examine the role of language in organising our perceptions. This perspective also allowed me to unmask the shifts the children in the study made when they were positioned within different discourses.

Taking up poststructural interpretations should not be interpreted as a rejection of other forms of ecofeminist or feminist forms of analysis, but should be seen as adding another dimension to social analysis. From a poststructural ecofeminist perspective the human and non-human worlds are constituted by and are constitutive of each other. Within this perspective technocentric discourses are understood to be sanctioned by hierarchical dualisms such as culture over nature, us over others, and the individual or the individual company or the individual nation over others (Tesh 1988). While radical ecofeminists have exposed the dualisms that function to stand culture in opposition to nature and individualism in opposition to holism, poststructuralism allows us to see how these discourses work to sanction dualisms that place people apart

and above everything else. While discourses that seek to liberate women and nature must incorporate nature and holism in their charter, this is not enough to develop counter-hegemonic discourses¹¹. A counter-hegemonic discourse must make visible the power of these discourses to create and sustain the subjective positions available to individuals and the position made available to nature. It must then provide a discourse in which all that share this planet are not constituted by virtue of particular sex organs or humanness. This is a difficult task when our ability to identify our difference to nature is part of being a social person (Griffin 1978). Adding to this difficulty is the importance of "...our capacity to attribute to others, and to aid others in attributing to us, 'correct' gender" (Davies 1989: x).

The purpose of my research is to analyse the contradictory ways that children take up environmental discourses and the implication this has for the development of environmental education. In examining these contradictions I looked for the way gendered subjective positions worked to construct the children's perceptions of 'environment' as they entered the schooling process. That is, I examined the ways in which children had taken up the discursive practices that position them as human [where human equals male (Hamilton 1991)], and thus, how they had learned to take up their position as superior to nature. This was examined in conjunction with the ways these children had learned the discursive practices that position them as gendered where women are constructed alongside nature and are thus, also constructed as inferior.

The study

My study was conducted in a Catholic primary school. This school is located on the outskirts of a provincial city in Victoria. The school draws from a predominantly working class community. The school has a student population of approximately three hundred and fifty. There are seventeen staff members; thirteen class teachers, the principal, a librarian, a point five teacher and an integration assistant. Eleven of the staff members are female, six of the staff members, including the principal and vice principal, are males. There are two classes at most year levels with the exception of grades prep and one. At the time of this study, there was one straight grade prep class, one straight grade one class and a composite class of grades prep/one. Only the pupils in the straight grade prep were used in this study. The school records show that there are thirty one children in this grade, twelve girls and nineteen boys. Twenty five children were used in this study, twelve girls and thirteen boys¹². The classroom teacher is a white female aged between twenty-five and thirty. Her background is best described as upper middle class. Since her graduation Mary has undertaken extra training in the fields of mathematics and language. Mary has been at the school for six years.

The data analysed in this paper is a section of the interview

component of a larger study (Barron 1993). In analysing the interviews I looked for instances in the transcripts that helped me identify: "1) What dualistic thinking was evident in the children's discursive practices? 2) What storylines are being made relevant? 3) What discourses are being mobilised? 4) Whose interests are being served by these discourses" (Davies and Harré 1991/92).

Children's perceptions of environment

Dr. Seuss' *The Lorax* (1972), was the focus for the first round of interviews. The text itself can be understood as a constraint to the gendered positions that the children were able to take. All of the characters except the Humming-fish are specifically labelled male in the text. Although the Humming-Fish, are not labelled as sex specific this neutrality is most likely to be read as male (Hamilton 1991). If, as Hamilton (1991) argues, that gender specific and gender neutral terms invoke male biased imagery. The text can be seen to construct the reader as male within a masculine narrative.

The subtext can also be understood as a constraint to the gendered positions available to the children. All of the children, on hearing this story, read the actions of the Once-ler as human 'man' actions. The construction of the Once-ler's maleness relied on the children's conscious understanding of the world as well as what is known through the metaphors and patterns of power and desire that are implicated in the narrative structure. The other characters are constructed as animals on the feminine side of the male/female dualism (Whilshire 1989). Thus, the subtext does not disrupt traditional stories where action equals male, male equals human. This functions to limit possible interpretations (Davies (1989)).

The implication of identifying the Once-ler as male and the animals as childlike or female (or both) is that the moral judgements that the children make are an articulation of their understanding of the right that man (male) has in exercising power and control over the feminine and nature, that is their understanding of the 'correctness' of the culture/nature dualism. The correctness of the culture/nature dualism is magnified when the issue is interpreted within scientific discourses. In the following section I have used parts of the interview transcripts to highlight the shift in the discourses that the children mobilised when they were positioned within contradictory discourses.

Exploitation

This difference in understandings voiced by the majority of girls to the majority of the boys is visible in the opening discussion which was concerned with the issue of exploitation. The analysis of this issue relies on the notion that in Western cultures the exploitation of nature is based on the culture over nature dualism that assumes that humans exist outside and above the non-human world.

Girls

DB Here he has cut down a tree. Is it alright for him to cut down this tree?

All No

Skye No-one said to/

Celeste He has to ask if he could/

Natalie and you're not allowed to cut trees. 'cause who ever owns it can/

Jordana you might waste money.

Natalie He might get to go to jail

DB Who might put him in jail?

Natalie

& Louisa The police

DB..Whose trees are they?

Natalie The green things (referring to the Once-ler)...

Celeste You're not allowed to cut the trees down else they get into trouble by their mum and dad.

Natalie I've got trees at home

DB Yeh?

Natalie Well, I cut mine.

DB Why?

Celeste Cause there's not enough trees for them all to eat.

DB What if there's no trees anywhere for them?

Celeste They might die/

Jordana They can come back/

Natalie They can find some/

Celeste So, they might die.

DB They might, mightn't they. Should the Once-ler stop cutting them down?

Natalie No....

...I think the Thingo (the Lorax) has to stop him cutting the trees down.

Boys

DB Do you think it is alright to cut down this tree (referring to the first tree)

Matthew Yep, and we can cut some more

David maybe six, I think about one hundred

Andrew hundred, all of them

Partha

& Simon No

Partha But if you cut down all the trees there will be none left.

DB But what about one tree, can he cut down one tree?

Partha Yes

Simon Um...if you can cut down all the trees, then no birds would come.

DB That's true, but can you cut down some of the trees?

Simon Yeh, only if you cut one.

Bent they could keep growing and they could keep going to make heaps of

money

DB...was it alright for him to cut down the first tree?

RobertUh, no

DBWhy?

RobertBecause the um, because um the, the

DBThe Lorax

RobertYes, um, he's come and then he'll say not to.

The question for the girls was which humans have the right to stop the trees being cut down rather than whether humans have the right to cut down trees. Some gave authority to the police while the others gave authority to adults. In arguing that only some people had the right to cut down trees the girls were also arguing that this was not an assumed right of all humans. When the issue involved the rights of animals all of the girls expressed the understanding that humans did not have unlimited rights to intervene in the non-human world. The problems associated with pollution worked to focus the issue of exploitation more clearly for the girls. While some of the girls tried to find a solution that allowed for the continued exploitation of the natural world by the Once-ler, when faced with the extinction of these animals the girls argued that the animals had the right to survive regardless of the perceived human needs. Most took up light green discourses like Natalie. The problem was still who had the power to intervene in the non-human world, however, agency was limited to the Lorax, the right of humans to exploit the non-human world had been dramatically reduced. Three girls, including Celeste, took up dark green discourses, raising the rights of the non-human world to the same level as the human world.

For the boys there was a greater spread in the positions they took up within this discourse, from Simon who maintained a constant objection to the trees being cut down to Matthew who maintained that "...you can cut down all the trees, you can cut down the house, if he wants the trees cut down well that will be alright won't it."

For most of the boys the human right to cut down some trees was assumed. In making their moral judgement most of the boys claimed agency for themselves, Robert and Bjorn were the only boys who made reference to the Once-ler 'getting into trouble', and thus limiting the right for all humans to intervene and giving authority to adult humans. From the start of the interview both groups of boys related the logging with the economic aspects of the story. The boys also demonstrated concern for the effects of pollution, but the solution suggested by the majority of boys differed from the girls. While Partha and Simon believed that the Once-ler should stop making the pollution the other boys looked for alternatives that can only be interpreted as technological-fixes. While most of the boys just kept stating that the Once-ler had to fix it up (referring to the factory), Andrew, extending

on Matthew's 'big container', talked about developing a separate parkland with a lake "dig a hole and put water there, with grass around it". In this part of the discussion most of the boys positioned themselves in the environmental discourse of the accommodation, while Partha, Simon and Robert took up 'light green' discourses.

Technology

When the issue of the Once-ler's right to inflict ecological damage was presented within the context of technology we see a shift in the discourses the children mobilise. Most of the children take up technocentric discourses as their own. Technocentric discourses rely on the elevated position accorded science and technology in Western cultures.

Girls

DBWhat about this invention. Is that a good invention?

SkyeYes.

CelesteNup

DBWhat's good about it?

NatalieHe's chopping down the trees and there's lots of them...

DBIs it a good invention, to cut down four trees at a time? (long pause)

NatalieYes.

AllYes

DBBut didn't you say before that he shouldn't cut down the trees at all. So if he cut them down four at a time, is that really a good invention? (silence) Why is it a good invention?

Louisa'Cause if there's so much trees you can cut them down.

DBRight. Is that alright to cut down lots of them?

JordanaI think he can cut them all...all(indecipherable)

NatalieBut he might make dirt with it.

Celeste He might make dirt!

DBWould that be good or bad?

Celestebad

OthersGood...good...

NatalieSo. he can put it on the concrete.

Boys

DBHere's an invention. What does this invention do?

SimonHe cut four trees at once.

DBYes. Is it a good invention Simon?

SimonNup.

DBNo! Why not?

Simon'Cause um, the cutting's finished, 'cause um...too many axes, they will chop everything around off.

DBDo you think this is a good invention?

AllYes

DB Why?

TomHe wanted to make some more thneeds

Timso you don't have to do it yourself

Robertyou don't have to swing your arms back.

DBDo you think he should use it?

RobertYes...

DB...But you said that you didn't want them to chop down any trees.

(long silence)

DBYou said before, didn't you , that you don't think they should cut down any trees at all. Now he's cutting them down four times as fast as he could just with the axe.

So, do you think he should use this new invention.

RobertUmmm (whispering in background)

Rogerthey want to have food to eat and make sandwiches and...

DBShould he use this invention?

RogerYes

DBWhy?

RogerBecause it chops trees faster

RobertI would have a drink and then cut down some trees

DBWhat would you do then?

RobertMake things out of them to make some money

DBWould you cut them all down?

RobertIf I needed the money then I could cut them all down.

When the children's understandings were framed within the issue of technology we see most of the boys and girls taking up scientific, technological fix all discourses. Celeste and Sharon were the only girls to maintain that the invention was bad because of the environmental impact. Simon was the only boy to disagree with use of the invention. The other children saw the invention as good because it

could do the job faster, but did not see it in terms of the environmental impact of which they had previously disapproved.

The shift towards technocentrism displayed by the boys and girls who had previously taken up ecocentric positions is typified by Robert. I use the example of Robert rather than a girl because he brought to my attention the constraints imposed on children as they struggle to take up the social requirement to construct oneself as a unitary being (Davies and Harré 1989b). Below I have selected pieces from the group interview to highlight the shift in the position Robert takes up during the discussion. The first section comes from the discussion within the discourses of exploitation, the second from the discussion within the discourses of conservation and consumerism and the last from the discussion within the discourses of technology.

Section one

DB...was it alright for him to cut down the first tree?

RobertUh, no

DBWhy?

RobertBecause the um, because um the, the

DBThe Lorax

RobertYes, um, he's come and then he'll say not to.

Section two

DBShould he cut down the tree to make some money?

RobertNo, ' cause he'd kept chopping it, and he'd keep making them so everyone could have any um things. So, so that's why they'll die.

Section three

DBDo you think this is a good invention?

AllYes

DB Why?

TomHe wanted to make some more thneeds

Timso you don't have to do it yourself

Robertyou don't have to swing your arms back.

DBDo you think he should use it?

RobertYes...

DB...But you said that you didn't want them to chop down any trees.

(long silence)

DBYou said before, didn't you , that you don't think they should cut down any trees at all. Now he's cutting them down four times as fast as he could just with the axe.

So, do you think he should use this new invention.

RobertUmmm (whispering in background)

Robert doesn't enter the discussion again until the focus shifts to how they would act if they were in the Once-ler's position. When he finally re-entered the discussion towards the end of the interview it was to make a statement that positioned him within interventionist discourses.

RobertI would have a drink and then cut down some trees

DBWhat would you do then?

RobertMake things out of them to make some money

DBWould you cut them all down?

RobertIf I needed the money then I could cut them all down.

Thus, Robert who had taken up a 'light green' perspective for most of the interview had shifted dramatically to a technocentric perspective. In questioning the different position Robert had given to the non-human world I had also questioned his failure to construct himself as a unitary being. This pushed him to choose a unitary position, the position he chose relied on his understanding that he was human, above

and apart from the non-human world. While this was the most dramatic shift only three children did not take up technocentric perspectives

when they were positioned within the scientific discourses of technology.

Understanding the subjective positioning of boys and girls within contradictory discourses

It is interesting to note that most of the children do not take up a unitary position to interpret this story. This can be understood as the children taking up multiple subjectivities in relation to contradictory discourses; eg. Robert when positioned within the discourse of conservation states that the Once-ler should not chop down the trees. His positioning shifts to allow the Once-ler to chop down some trees, and if need be all of them, when he engages with the text through a technological discourse. That is, the child could be seen as taking up contradictory understanding of his role; the need to provide material well-being versus the need to care for all the non-human life that is affected by consumerism. When he is faced with the notion that he is being contradictory he takes up the masculine, scientific discourses of intervention. From an ecofeminist perspective, the discourse that needed to be disrupted was that of the unitary being, for as Argyle and Little (in Davies and Harré 1991/92) demonstrate, contradictions are a characteristic of people living in complex societies.

The girls also took up contradictory positions in relation to the text. First they position the Once-ler as a human who has the right to exploit the natural world. This runs contrary to their understandings of themselves as female, concerned with caring and nurturing. Since we are pushed to take up one coherent position (Davies and Harré 1991/92) the girls seek a rational remedy to these contradictions. In coming to terms with these contradictory positions the girls called on a higher authority. For the girls hegemonic gender discourses allow them to be caring and nurturing but robs them of their ability to be agents. Thus, while most of these girls believe it is wrong for the Once-ler to cut down the trees, because of the impact this would have on the animals, and he should be punished for this wrong doing, the responsibility for preventing this wrong doing lies outside their control and rests with those holding sovereign power. Field-Belenky, McVicker-Clinchy, Rule-Goldberger and Matluck-Tarule (1973) argue that one of the constraints on girls in positioning themselves as feminine is that obedience to authority is of utmost importance. This positioning only allows action to be in the form of unquestioned submission to a greater authority. The girls argue that the Once-ler should also submit to this authority.

What are the implications of this analysis for environmental education? One answer would seem to be to teach environmental education within caring and nurturing discourses. But this would not allow children to question the way they are positioned by other discourses. Identifying the constitutive power of different discourses would involve a recognition of the inevitability of contradiction in a world made up of contradictory discourses and a recognition that these discourses are

subject to change (Davies and Harré 1991/92).

This examination leads me to argue that, 'ecocentric' environmental responses may be stimulated by presenting environmental issues through particular discourses but that this will not necessarily disrupt other hegemonic discourses thus, leaving the status quo intact. I see radical environmental education reform arising from the identification of the non-unitary self which makes it possible for new subjective positions to be established and taken up as one's own leading to the development of new discourses.

However, the possibility of taking up new, less oppressive discourses about nature is limited by gender discourses. The positions made available to individuals (such as male or female) are constitutive of the way we are able to take up environmental discourses. This extends on the understandings of gender positioning generated by Davies (1989) and Davies and Banks (1992).

Looking at the positioning of nature within gender discourses Jean Chapman's (1986), *The Terrible Wild Grey Hairy Thing* was the focus for developing my understanding of the constitutive role of gender discourses on environmental perceptions. This book can be understood as an even greater constraint to the positions that the children were able to take up than *The Lorax* (Dr. Seuss 1972). While there are some female characters in this story the girls may feel uncomfortable with the female image that is presented, that of the fat girl. The boys have many more positions available to them through an array of male characters. This narrative relies heavily on gender stereotypes to position the reader. In keeping with traditional storylines the characters behave in gender stereotypical ways. The subtext does not disrupt the traditional storyline given through the text, where action equals male, passivity equals female.

The boys' understandings

Throughout the reading most of the boys became more demonstratively active. They rose to their knees, flexed their muscles and used their fingers as guns. They positioned themselves as adventurers, and did not recognise the alternative narrative, that of the harmless creature being attacked. In analysing a display of masculine aggression in the playground Davies (1989:109) wrote,

It was this form of dominant masculinity that many of the children called on to interpret the stories... even if this form of masculinity is not achievable in one's own behaviour, it constitutes both ideal and an ideal through which the category male and its relation to the category female will be understood.

This statement applies equally to my observation of most of the boys and their responses to the reading of this story.

DBWould you try to kill the Terrible Wild Grey Hairy Thing?

MatthewYes.

DBWhy?

MatthewBecause it might have killed somebody.

DBDid you think it was going to kill somebody?

MatthewYes .

DBWhy?

MatthewBecause if had fur on it.

Within this story the boys were confronted with the ideal of masculinity. Davies (1989) has already indicated that in becoming masculine boys are pushed and push themselves toward the left side of the male/female dualism (Wilshire 1989). Matthew, like most of the boys, was pushed and pushed himself toward the ideal male. In doing so he must abandon everything on the right side of the dualism, the feminine and nature. In abandoning the right side females and nature are constructed as opposites and in the hierarchical order they are constructed as inferior. His right to dominate comes from this understanding that male is the 'correct' way of being both as a boy and as a human. In taking up the ideal of masculinity he is unable to hear the alternate environmental storyline, although he does understand that this creature was harmless.

DBSome people say that it could not have hurt them. What do you think about that?

MatthewThey say that because it was just a sausage ...

When the boys were asked how they would act when faced with the unknown most continued to voice the position they had taken up within the imaginary storyline.

DBIf a strange animal came to your place, or you saw one in the bush would you kill it?

MatthewYes.

DBWhy?

MatthewCause it would be scary.

While this can not be interpreted as a something they would do, their responses to environmentalism are lost within their masculinity. Hegemonic masculinity is an idea of masculinity which leads to generalisations that make men superior in terms of strength and power in relation to women and nature. Thus, powerlessness is seen as undesirable in hegemonic discourses. Superiority is physically asserted in the face of the fear and terror at the loss of control.

Whilst I was reading the story Simon and Partha were the only boys not engaged in displays of masculine aggression. When I interviewed the boys Partha declined to comment on the story. Simon did offer his

opinion and gave a different view to the other boys.

DB Would you have killed the Terrible Wild Grey Hairy Thing?

SimonNo

DB Why not?

SimonBecause I wasn't scared of it.

DB If you were scared of it would you kill it/

SimonNo.

DB Why not

SimonBecause (long pause)

.....it might not be very dangerous.

Simon is able to understand the alternate storyline. This was the same boy who had maintained an ecocentric perspective in response to the reading of *The Lorax* in the first round of interviews. He has access to a discourse that does not always place culture above nature or male above female, difference does not necessarily equate to inferior.

The girls' understandings

The girls tended to clasp their knees or fold their arms during the reading of the story, I believe closing them off from the story. This combined with their answers during the interviews shows a very different attitude held by the girls than by the boys.

DBDid you like the story

CelesteNo

Natalieit was silly

Celesteit was really silly...

DB ...Should the men tried to have kill it?

CelesteNo

Natalie it was only a sausage and a dog came and the dog ate it.

Celeste(laughing) it was silly!...

DB ...Why did they want to kill it?

CelesteThey thought it would bite them.

Natalie It wouldn't have bit them.

DB What should they have done with it?

Natalie Just kept it, lying there.

Celeste It would be a bit smelly

Natalie and the house would stink

Celeste and it would be a pig sty

DB Maybe they could put it outside!

CelesteNo,

DB Why?

CelesteIt would stink outside-

Natalie and when you went out to play it would sink...

DB ...Would you have tried to kill the Wild Grey Hairy Thing?

CelesteNo-

Natalie it was only a sausage.

DBIf you were out in the bush and you saw a strange animal, would it be alright to kill it?

CelesteNo

NatalieNo

DBWhy?

NatalieIt might be somebody's

CelesteIt might not bite you

Natalieyou could just touch it.

In interpreting the girls' understandings I believe that it is important to consider the body language displayed throughout the reading. As members of the category female they are constructed as opposite to males, they resist the boys behaviour by withdrawing. In many ways they are constructed alongside the sausage, which although harmless must submit to male domination. But as members of the category human they do not want to be constructed alongside the sausage, they are pushed to position themselves as different and apart from the sausage. The girls make sense of these contradictions by rejecting the story as "silly" the men are not wrong in taking action against a harmless creature but are silly because they believe the sausage is alive. Thus, although the girls do not agree with the actions of the men in the story, they do not take up the alternate environmental storyline. I believe that it is this perceived need to avoid contradiction that prevents the girls from taking up the alternate storyline and as such is detrimental to the expression of their knowledge.

Understanding the positioning of nature within gender discourses

It would be foolish to take the views expressed in these interviews as proof that boys and girls are so socialised that they will always hold such diametrically opposed views. Nonetheless, at the time of this interview most boys did construct the moral meaning of the story differently to the girls. Davies (1989) tells us that the dominant discourse of masculinity and femininity functions to create male as opposite and superior to female. Davies (1989) asserts that children become locked into masculine and feminine subject positions through discursive practices which create them as opposites. In their interpretation of *The Terrible Wild Grey Hairy Thing* (Chapman 1986) the children not only take up gender appropriate positions but also human appropriate positions. In this analysis I see the boys being able to take up their masculinity in human appropriate positions and gender appropriate positions while the girls struggle between taking up human appropriate positions which are masculine and gender appropriate positions which are feminine. We can see the difficulty that the children face in coming to terms with these contradictory positions. It

is this push for the rational coherent self that is disempowering for

these girls and it this issues of the non-contradictory person that feminist poststructuralists strive to disrupt.

Implications for environmental education

In the majority of cases, the girls responded differently to the boys to the environmental issues presented, most of the boys take up technocentric discourses as their own while most of the girls take up ecocentric discourses as their own. It is possible to see the children's interpretations of the stories in terms of them taking up their subjectivities within their female or male categories. Yet all of the children, in varying degrees, maintained a separation of themselves, as human, above and apart from the non-human world. We can see from this analysis that the children in this study have learned the discursive practices of our society that position them as human and as gendered beings. Two possible implications of this are; 1) That in presenting hegemonic environmental discourses as 'truths' the boys' interpretations are sanctioned while the girls' interpretations are marginalised by virtue of their purported inferior world view and 2) Even if alternate environmental discourses are presented the children will not necessarily take them up as their own.

This has implications for the positioning of the non-human world. If masculine interpretations of environment remain as the 'correct' interpretation the dualistic social order is left intact. The current social order of culture over nature is maintained legitimising the continued domination and manipulation of the non-human world. This research indicates that there is an urgent need within environmental education to give children the opportunity to explore the gendered nature of 'environment' and to make visible the way language works to marginalise women and nature.

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1 In this paper 'environment' refers to the relationship between the human (culture) and non-human (nature) worlds.

2 In this paper dominant discourses can be understood as the preferred discourses of the dominant group. Dominant discourses come from the most extreme technocentrics, whom O'Riordan (1989) labels interventionists. They speak of the limitless capacity of people to improve public well-being by employing scientific methods to transform ecosystems; that is, the manipulation of nature is not only possible but also highly desirable.

3 Hegemonic discourses can be understood to work through the effects of power. Hegemonic discourses, thus, foreground practices and techniques

accorded value in coming to understand 'truth'; "We are subjected to the production of truth through power and we can not exercise power except through the production of truth" (Foucault 1980:93).

4 Within this discourse science is able to maximise production while inflicting the least amount of damage on nature. There is still a strong tendency to monetise ecological functions and human aspirations as if economic determinism is an unquestioned given (Colquhoun and Robottom 1991) and nature and natural systems exist to satisfy the interests of human needs and wants. Within this discourse rainforests would be preserved because they provide oxygen or raw materials for medicine within a cost-benefit analysis (Dobson 1990).

5 'Light greens' are more concerned with environmental losses than with conventional economic logic, thus, 'light greens' are not anti-technology as long as it is appropriate. This perspective offers an oppositional view to notions of economic determinism, the growth of technology, the production of surplus goods and the accumulation of private property by placing a higher value on ecological concerns than on economic concerns. Thus, 'light greens' are likely to accept the sustainable development argument if the cost-benefit analysis was tipped in favour of nature, a version of the 'sustainable-earth world view' put forward by Miller (1990), or the 'sustainable development' view described by Huckle (1991). Within this perspective science is not problematised in terms of its masculine bias but rather in terms of the observable damage that is inflicted on nature.

6 " 'Deep greens' are at the radical end of the environmentalist spectrum..." (Dunkley 1992:64). Deep greens elevate the value all non-human life forms to an equivalence with humans (Fox 1990). Discourses from the 'deep greens' oppose notions of scientific rationalism, anthropocentrism and economic determinism, the growth of technology, the production of surplus goods and the accumulation of private property.

7 A way to understand the interplay between dominant and oppositional discourses is to draw on Gramsci's theory of hegemony. This theory implies that the programs of the dominant groups are advanced by locating oppositional discourses within hegemonic discourses where they are harmless (marginalised) or even supportive of the status quo.

8 Liberal ecofeminists draw on Liberal feminist perspectives and argue that nature can be analysed scientifically to discover how nature and

ecosystems operate. In discovering the 'how' it is possible to manipulate nature and ecosystems to maximise material progress while limiting the damage to nature (King 1990; Merchant 1990a). Thus, a new human/nature relationship can be provided for by the passage of new laws, that is, it does not question the rationalist bias in hegemonic discourses about the environment.

9 Radical ecofeminists (Bird 1987; Daly 1978; Griffin 1978) argue that fear and resentment were the reason behind the dominance of male over female and this was the key to comprehending every expression of patriarchal culture including the dominance of man over nature, here they employ the concept of hierarchical dualism. Bird (1987), Daly (1978) and Griffin (1978) also argue that women and nature share many inherent characteristics and that it is this shared identity that draws women to ecofeminism. This essentialist view is refuted by ecofeminists such as Di Chiro (1987) and Spretnak (1990) who argue that there is no inherent "womanhood" and as such women can not be classified as a unitary group to be identified with anything. Despite these differences radical ecofeminists do agree that patriarchy is imposed on nature as it is on women and argue for the liberation of both women and nature by celebrating femaleness and nature. While radical ecofeminism has provided crucial insight into the dualisms that underpin gender and environmental discourses it has not provided a means by which we can move beyond these dualisms.

10 Merchant (1980 in Merchant 1990a) appears to be the first of the ecofeminists to employ a socialist perspective. Socialist ecofeminism sees the domination of women and nature as grounded in capitalist patriarchy. In this case "...Earth and nature are exploited for human programs through technology" (Merchant 1990a:103). Priority is given to the structural features of society, in particular the society's power structures. It does this by locating social groups in terms of these power structures, and by locating people and nature as members of these groups. Structuralism is a systematic way of thinking about the whole process and institutions whereby each part of a system defines and is defined by the other parts maintaining a separation of the individual (including nature) and the structures.

11 I use the term counter hegemonic rather than oppositional discourses because oppositional discourses do not always offer a disruption to the unequal power relations in society. While it is possible for oppositional discourses to be counter hegemonic. Any discourse which supports the hegemonic order can not be considered counter hegemonic, While oppositional and counter hegemonic discourses can be the same they are not always the same and as such cannot be used interchangeably. This implies that counter-hegemonic discourses need to critique both dominant and oppositional discourses and their place in the hegemonic order.

12 On the days of the interview four children were absent, all boys. One child, a boy, elected not to take part in the interviews and another child, a boy was not allowed to take part because of disciplinary action.