

How to Grasp Environmental Complexities? Photographic Narratives and Environmental Concept Formation

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The research problem

The starting points for this research were my experiences as coordinator of seminars for adult learners exploring environmental issues with photography in Germany between 1988 and 1993. At the end of each seminar it came apparent that the involvement in the aesthetic processes led to intriguing developments in the conceptual understanding of most participants. This called for a structured investigation of the what, why and how of these developments. It seemed that answers to this phenomenon could be found in the cognitive realm. This study was to shed light on a) whether and how the photographic work can yield a change in the image-creator's environmental conceptualisations and on b) the nature of the interaction between the aesthetic and cognitive processes. Environmental issues here are defined as any issues with an environmental perspective; they can be related to particular ecosystems or they can be sociopolitical in nature. Cognition in the environmental context has been neglected to date in the literature in the field of environmental education. Therefore, this paper has a cognitive focus, discussing the links between the visual mode of information processing, environmental concept formation and aesthetic, that is artistic/creative, photographic work.

The visual mode and environmental thinking

This section presents the particular qualities of the visual mode as discussed in the literature and their relevance for thinking in the environmental context. The potential of the visual mode of information processing has been highlighted for architectural and industrial design, creative writing and language learning, as well as for mathematical problem solving and scientific discovery (see Bergmann 1998, pp.64-82). One of the most often cited examples for the latter is the account of the chemist August Kekulé. Kekulé discovered through visual imagery that the molecular structure of benzene can be modelled as a closed ring. Roth (1993, p.82) cites Kekulé's account of this experience:

Seeing atoms playing before his eyes while dozing, they suddenly formed a large chain which twisted and

A B S T R A C T

How learners come to grips and can transform their thinking about something extremely complex such as environmental issues are addressed with this research. It is argued that the qualities of the visual mode of information processing are of particular relevance for cognition in the environmental context. This paper reports on a study of the photographic experience of nineteen participants who worked individually on an environmental photography project of their choice over a period of up to ten weeks. It was found that on completion of their project, the participants' conceptualisations of their topics became more differentiated, complex and defined; multiple perspectives were constructed and their own positions and feelings clarified. Above all, a notion of optimism emerged after initial conceptualisations of environmental issues as issues of pollution, degradation, violation and death. This paper discusses the cognitive potential of the visual mode for the development of environmental thinking and presents some examples of conceptual shifts through the photographic work.

turned like a snake. Kekulé writes: 'But look! What was that? One of the snakes had seized hold of its own tail, and the form whirled mockingly before my eyes. As if by a flash of lightning, I awoke'.

The discovery process may be assisted by visual imagery due to the great diversity of visual signs, encapsulating multiple interpretations and polydimensions. There are, in fact, accounts of how language can be a hindrance to scientific creativity, and, by extension, to environmental thinking. John-Steiner outlines that there is no single visual language, whereas (verbal) language is 'socially constructed and conventionalised'. Thus, '[w]ords may fix a notion', as John-Steiner (1986, p.86) states. Koestler (in John-Steiner 1986, p.86) refers to 'the snares of language' that the early physicists had to break away from to be able to conceptualise the atom as a divisible unit of matter since the word 'atom' means *indivisible* in Greek.

Arnheim (1969), the most eloquent and existential proponent of the visual mode of cognition, suggests that visual imagery is the primary mode of productive thought, and visual perception lays the groundwork of concept formation. The literature in cognitive psychology and neuroscience (e.g. Beech 1980; Kosslyn & Koenig 1992; Paivio 1975; Pylyshyn 1981) supports that concept formation is enhanced through visual mental imagery and visual recording. This is particularly relevant for thinking in the environmental context, since conceptually-based thinking is consistent with the complexity of the issues at stake and with the nature of the process of knowledge acquisition. One of the key assumptions of categorisation research is that concepts are formed in relation to each other and within themselves (Bourne, Dominowski & Loftus 1979; Neisser 1987). Consequently, '[t]o characterise knowledge about a concept we must include a complex web of relations involving that concept and the other concepts that depend on it' (Medin & Wattenmaker, in Neisser 1987, pp.33-34). Thus, learning about the environment is a 'constant search for the relationships between new information and a continuously developing concept base' (Townsend 1982, p.6). Images then, with their inherent quality of representing vast amounts of information simultaneously, facilitate the

exploration and construction of concepts of great complexity, potentially accommodating more and more information. ('A picture is worth a thousand words'.)

With an environmental perspective, Bickerton (1990) goes as far as questioning the adequateness of the verbal mode for representing environmental concepts. He (Bickerton 1990, p.253) proposes that 'perhaps language is, after all, terminally dysfunctional' and leads to dysfunctional representations of reality. In support, N. Gough (1991, p.35) considers language as limiting our creative and critical imaginations. He proposes that Western languages emphasise order, accountability, systematisation, rationalisation, expertise, specialisation, linear development and control. They reduce the complexities of our interaction with the world and lead to a separation of 'matters of fact from matters of value' (Gough, N. 1994, p.200) with obvious implications for environmental concerns. Shlain (1998) goes a step further and argues that it is alphabetic literacy in general that historically led to a shift in the way humans think. Following this line of argument it can be suggested that content and form of discourse not only of Western, but all dominantly language-driven cultures, are not conducive to the construction of ecologically sustainable conceptualisations which include complex constructs such as interrelatedness and interdependency, systemicity and are accepting of ambiguities and context-dependencies.

The position represented here is not exclusive. Rather, it is advocated that the visual mode provides us with qualitatively different kinds of information compared with the verbal mode, and the different forms of representation lead to different associative patterns and constructions of reality (compare Aylwin 1977, 1981; Goldschmidt 1994; John-Steiner 1986), with the visual mode bearing great potential for the exploration of environmental issues. Gathering environmental information and developing understanding through image-driven media has been proposed in the literature for the environmental context (see, for example, Meagher 1995; Porter & Gleick 1990, p.6; Ryan 1993); photographic imagery serves as a strategy along with other creative mediums to learn about a particular landscape and the environment. This study sought to identify in what way visual mental and photographic image can transform environmental constructs.

Methodological issues

On the basis of my professional practice it was expected that the involvement in the aesthetic process with photography led to a development in conceptual understanding. Supported by the literature it was assumed that the visual mode of information processing with the creation of photographic images facilitates the construction of concepts relevant for cognition in the environmental context, or even the construction of ecologically sustainable conceptualisations. Two overriding research questions emerged which addressed both, the content, that is, environmental conceptualisations, as well as the form, that is, aesthetic processes (photographic image manipulation) and presentations:

1. Does the visual discussion with photographic images of an environmental issue yield a change in the image-creator's conceptualisations about that issue?
2. What is the nature of the interaction between the aesthetic and cognitive processes?

Since no similar study was detected in the literature, a new methodological framework and instruments had to be developed. Many authors discussing qualitative research designs (e.g. Merriam 1988, p.29; Strauss & Corbin 1990, pp.18-19; Yin 1985, pp.13-19; Eisenhart & Howe 1992) suggest that the development of the research design should be guided by how the research problem is defined and what questions it raises. Thus, since the aesthetic and cognitive processes under investigation are complex, since they involve a variety of procedures and their status in the current context is to date undetermined, only a qualitative design could yield relevant data. Further, the intention was to identify possible changes in the conceptual understanding of individual participants after an intervention, that is the photographic work. Therefore, a quasi-experimental design had to be employed, which involved interviewing of the participants before and on completion of their photographic project. The research problem was approached as an extended case study (Merriam 1988) in order to be able to account for all possible cognitive and aesthetic processes and developments. With reference to Neuman's (1994) and Lather's (1991) frameworks, this study is interpretive and predominantly designed to describe, explore and understand.

The participants were nineteen students of a photography unit at Southern Cross University, ranging in age from their early twenties to their mid forties. Not all were visual arts students; almost one third of that group were studying coastal management, tourism, communication, art history or social welfare. Representation of such a cross section of participants supports the external validity of this study in so far as if any conceptual developments and or cognitive and aesthetic links emerge, it can be established that this does not depend on previous experience in visual arts. This is consistent with my observations of the earlier conducted seminars.

The objective of the photography unit attended by the participants was to study colour photography techniques. The thematic orientation of environmental issues was added by this research project. During this 10-week unit, each participant chose their own environmental topic, went out to take photographs related to this topic, and then manipulated these images in the studio applying a variety of experimental techniques (collaging/montaging, including manually cutting, pasting, scratching and double-exposing).

Semi-standardised pre- and post-interview schedules were developed addressing the participants' ideas about their topics and how they went about the photographic work. The content analysis procedure for the participants' accounts of their topics before and after their photographic work relied to a large degree on latent content and was dominantly inductive. For

this, Berg's (1989) framework was adopted. The pre- and post-interviews and the images were the main source of data. Other data were available for analysing consistency (reliability) and credibility (internal validity) (compare Miles & Huberman 1994) through triangulation. Each participant submitted one to nine images so that 59 lasercopied reproductions were available. Apart from their function in testing internal validity of the data, the images serve to illustrate the participants' accounts and the study's findings. This contributes to a comprehensive description of the data as part of demonstrating external validity (see Eisenhart & Howe 1992, pp.647-649, 652). Additionally, the participants submitted, together with their images, written summaries varying in length between 200 and 650 words explaining aesthetic concept and technique. Finally, construct and face validity tests (Lather 1991) were conducted. For this, the participants were provided with a description of their particular cases and a summary of the overall results. (Sixteen of the nineteen participants were contactable, eleven returned their responses and one participant responded via telephone.) From the perspective of case studies, a 'thick', 'rich' description is also part of demonstrating reliability (Merriam 1988, p.120), as shown with the full account of this study (Bergmann 1998) but necessarily limited in scope for the current report.

The environmental conceptualisations of the participants were to be investigated from their individual perspective. Since it was the intention to explore and describe the kinds of conceptual developments from no particular theoretical framework other than the one offered by the participants themselves, the application of a realist framework to the reading of all data was required.

The development of this eclectic methodological framework was not only necessitated by the nature of the research problem and its questions as argued above. It is as well a consequence of the complexity of any inquiry embedded within the environmental context as also experienced elsewhere (Gough, A. 1997). Eclecticism has also been identified by Eisenhart and Howe (1992, p.649) as one of three legitimate approaches to validity in qualitative educational research, with the other two being the adaptation of and alternatives to the conventional approach. For a more detailed discussion of the methodology see Bergmann (1998).

Results and discussion of visual and verbal accounts

The first research question: *Does the visual discussion with photographic images of an environmental issue yield a change in the image-creator's conceptualisations about that issue?* has been answered affirmatively. The characteristics of the conceptual developments can be summarised in the following five points:

1. Initially, the participants expressed a bleak outlook on the state of the environment and constructs related to pollution, degradation, violation and death were prevalent. On conclusion of the project, however, the creative photographic work seemed to have induced positive,

reconstructive conceptualisations for most participants.

2. The construction of multiple perspectives on the environmental topics was facilitated.
3. The thinking about the environmental issues became more defined, differentiated, complex and/or focused.
4. The creative process allowed to take ownership of the issue and led to a clarification of the participant's own position and feelings towards that issue.
5. Sooner or later, all participants included a psychological dimension into their photographic work, which related to their own state of being within the environment and the impact of the environmental conditions upon them.

For the following presentation and discussion of results, some of the participants are introduced with their pseudonyms.

All participants' conceptualised environmental issues as issues of degradation, destruction, pollution and death. These were linked to feelings of sadness, disempowerment and alienation. As one of the participants said: 'You try and you are just beating against a wall'. Such negativistic views have been found to dominate contemporary thinking about the environment generally (Cullis 1996; Hicks 1993; Slaughter 1991) and may have been underestimated as driving forces in society. However, the aesthetic work also opened up ways of developing 'positive guiding visions' and 'confidence that things can be radically different' (Hicks 1993; see also Slaughter 1991), which should be an essential component of environmental education. A case in point is Helen's work:



Figure 1

Reflecting on environmental issues, Helen initially recalled her childhood with a lot of time spent happily 'in the bush'. She then thought a lot about residential development, which she finds 'just incredibly ugly. All the same, really uninteresting and boring. It is scary. ... all those beautiful places will disappear. ... It is soul destroying ...' Later, she constructed two images which are identical in form. Their main aesthetic feature is the two clearly distinct planes of foreground and background. The background shows conventional suburban houses with captions from real estate brochures in one image (Figure 1) and monotonous rows of tree plantations in the other image. The foregrounds are defined by trunks of rainforest trees with carefully cut out spaces in between to allow the viewer to see what lies beyond the 'brick veneer suburban development' and the monoculture plantation and to give us an idea of what it must have been

like in the past. Both images are framed with the 'LJ Hooker [real estate] red and gold trade colours, [which] gives them a strange feeling visually. ... - It probably wouldn't look so depressing without it. ... and 'it gives it another layer of meaning' (Helen).

However, she stated that she was very unhappy with the end products - not with the images as such - as far as telling a story, the images 'work', but: 'It is a bit depressing. Because it is true, what is happening, everywhere'. In contrast, she 'quite like[d] this one' (Figure 2) which is a montage of 'all these ugly fences', which appear as a 'handmade house' - a transformation of the 'suburban ugliness':

Helen: This image is made with photographs I took of the front fences of houses in one street. The fences are made of concrete blocks, bricks, moulded cement and stones. I wasn't sure what I would do with them when I was taking the pictures but when I began to play with them this image emerged.

... it ended up looking like a strange kind of hand-made house, but it is actually all of these, to me, tasteless and depressing bits of the suburban landscape. It reminds me of handmade African mud houses, which are painted with wonderful designs. The irony of where the image came from and what it ended up looking like is to me another comment on the same subject as the other two images. I like this one more because it is more subtle.

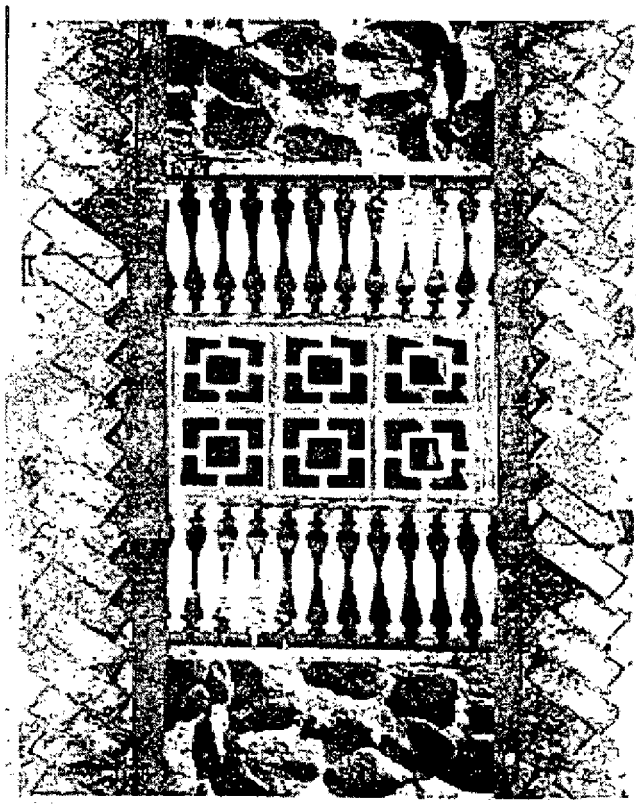


Figure 2

Helen refers to a playful construction of the fence image,

which had emerged from the previous ones. The different aesthetic approach created something which gave rise to positive associations - 'many negatives make a positive', as another participant suggested in the context of his work.

With the above example as with all 59 works of the participants and their accounts thereof it comes apparent that the aesthetic and cognitive processes were strongly intertwined. This is the condensed answer to the second research question: *What is the nature of the interaction between the aesthetic and cognitive processes?* The full account of this study presents in detail the image-making procedures used by the participants. The presentation here has to be reduced to some statements of the pre-interviews, the outline of some relevant aspects of the construction processes and the completed images, and some post-interview responses. Interlinking these data, the reader is at the same time referred to the actual process of manipulating the images in which the participants were involved individually for many hours. This awareness should facilitate an understanding of how the aesthetic process can guide the mental process and vice versa.

Catherine further describes such experience with an emphasis on the aesthetic play. Her topic was 'recycling' and she went out to take photographs of a rubbish dump. When further working with her photographs, she discovered unforeseen relationships of colour and composition between well-known art works and her images:

Catherine: ... There was a photo of a toilet seat and I said it looked like a Duchamp or something like that, this is not a toilet seat. And then I pointed out that the leads, the electrical leads looked like Jackson Pollock and we just kept going 'wow'. And then I went home and went through all my art history books ...



Figure 3

She referred to 'abstract beauty resulting from the relationship between colour and form'. So that is what I think it bore down to in the end, relationships like that'. The discoveries of relationships between colour and composition enabled her to find a positive way of expression, to work 'positively instead of negatively'. This development was for Catherine all the more relevant since 'working positively' is antagonistic to her conceptualisation of environmental issues that led her to '[getting] so down by everything that you are doing. ... we

can get really upset about it and I always do'.

It is not suggested here that Catherine - or any other participant - was embarking on a process of accepting the *status quo*. Rather, what the case studies show is that through the aesthetic photographic work the participants were enabled to generate new meaning, broaden their views or move beyond previously held notions. The case of Therese demonstrates how, in addition to a notion of optimism, a new perspective on the topic could be constructed. Therese had planned to apply alienated colours to images of children to symbolise the impact of nuclear testing, to show 'that there has been an impact of some kind'. Shifting her focus increasingly towards the colour aspect, Therese began to 'isolate bits of colour' with the aim to include as many colour tones as possible. She then noticed that different environments had different 'tonal ranges':

Therese: I went to a few different places and I noticed that every place you go to has a different tonal range. In a national park there would be all sort of earthy colours whereas in some of the gardens in Lismore there would be very bright and mainly all the flowers, those sort of colours. You got a roll [of film] of all these earthy colours and a roll of all these bright colours. ...

She constructed a montage of small colour squares from her landscape photographs and macro-images of plants (Figure 4). She realised how her project had enhanced her awareness of colour: 'I started to take notice of a few things. ... everywhere I look it is like: oh, look at all the different colours ... [Whereas before], ... I would just drive and it would not worry me.'

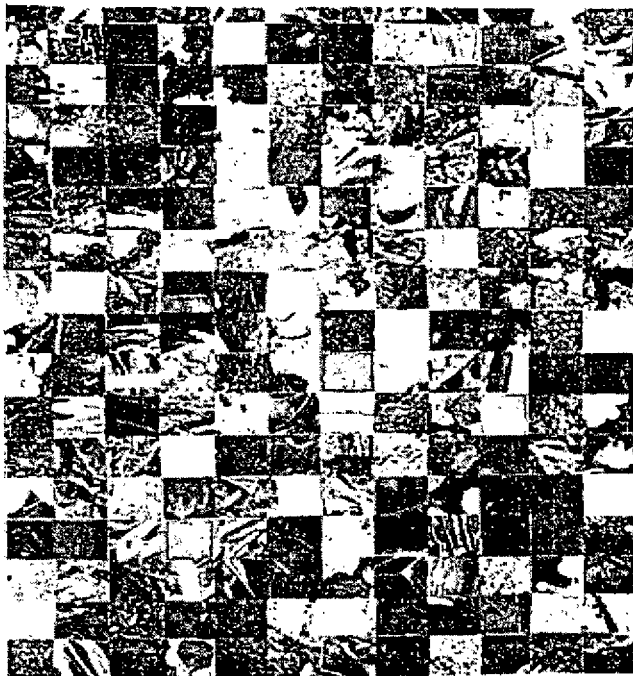


Figure 4

With three more images, the concept of the autonomy of colour is visualised in content and form at its height. In one image,

colour squares are placed before a leaf (Figure 5) and tree trunks, and thus appear like tangible objects. The aesthetic involvement brought about an understanding of a dimension of colour, which culminated in the existential idea of 'colour is life', as she quotes the colour theorist Johannes Itten: 'Colour is life, for a world without colours appears to be dead'. Her thinking transformed into a 'thinking in colour' as a relevant aspect of environmental appreciation.

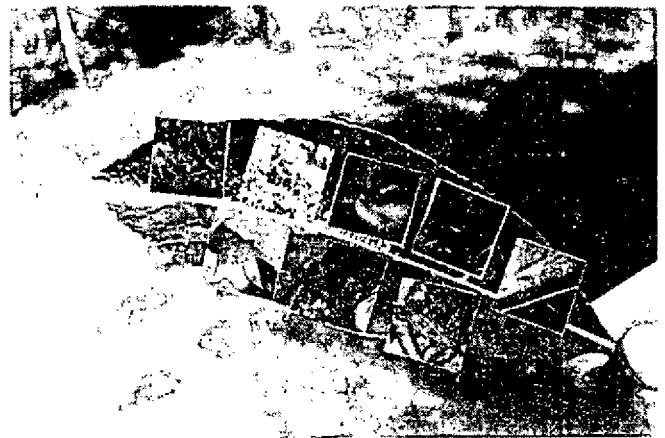


Figure 5

The aesthetic strength and perfection of the presentation of her image triggered for Elizabeth a distinct development in her thinking about her topic. Her final image (Figure 6) is a collage of many glossy cars coming from the left side of the image, changing into old rusty ones, finally being taken over by the bush, which is regenerating itself. There is a convincing cohesion within the image and its myriads of components through the gradual change in colour from left to right, from clear metallic colours to rusty and earth-like tones moving into the blue-green of the forest and the brightness of the sky shining through on the right. A further technical clue is the very fine cut and paste work Elizabeth pursued around car parts, branches and leaves.



Figure 6

Before Elizabeth embarked on her project, she had maintained a strong stance against motor vehicles. She lived some 30kms from the regional centre but decided not to obtain a driver's licence herself and not to own a car and instead use public transport. 'Car' as an environmental issue meant to her 'air pollution', 'greenhouse' and 'what is happening in the sky'. Then, the aesthetic work made her think also about 'where all the wrecked bodies of cars go'. And she realised that these are

Elizabeth: ... only a tiny amount of what people do discard. It is just all bad, buried underneath the ground

or something and what is going to happen to it all just sitting there. It is going to just sit there and it takes a while for it to become part of everything again. It is so foreign, it is just hard things that don't break down.

...

Then, her initial firm position was shattered and she experienced disorientation in the course of the creation of her image:

Elizabeth: ... So, there are all different opinions. I wanted to keep that opinion open and not just have of what I think about it. I actually don't even think I know exactly if it is a good or bad thing. I think it really is a bad thing to have these cars lying dead in the bush, but they are there and they don't look like they are going to move. Maybe it is good to see that this all just becomes part of the forest one day and it will be okay maybe.

... I sort of had a clear idea of how I thought about it, but now I don't. Maybe it is okay for them to be there, maybe it is not okay.

Her questioning of her former position is remarkable because she displayed a strong commitment to ecopolitical beliefs in her day-to-day life and decision-making. Although she might have become unsure about what to think, she had begun to 'think a lot more about it' and she conceptualised a positive, re-constructive, future vision: 'Maybe it is good to see that this all just becomes part of the forest one day and it will be okay maybe'. This seems like a first step to counteract feelings of sadness, of being 'overwhelmed', of getting 'quite upset sometimes when I think about the environment too much. ... Doomsday kind of ...' (Elizabeth). The aesthetic work which is interlinked with the thinking about the particular issue opens up a way of coming to grips with the ambiguity and complexity of that issue. Here, the definition of imagery in cognitive psychology as analogue processing has particular relevance. What amount of verbal information would have been necessary to shatter Elizabeth's initial position, if it had been at all possible to do so?

Further answers to the second research question regarding *the nature of the interaction between the aesthetic and cognitive processes*, emerge from the variety of images created by this group of participants. They show how the photographic work made it possible to visualise links, to bring elements together that initially might not have been seen as being related, to combine and to merge into one. As for Zoe, taking photographs of 'things that I liked, things that appealed to me ... was a way of bringing them all together'. This, however, did not only refer to the spatial dimension, but also to temporal relationships. Comparing past, present and future is regarded an essential ingredient of understanding in the environmental context (e.g. Fien 1991; Mikelskis 1988). Zoe referred to 'looking at the damage of the past by using images of the present'. For Helen, photographs made her realise that she now lived in a different time (see Figures 1, 2), and Ernest

was able to anticipate future development in his image: '... what possibilities could happen by putting high-rises there ...' (Figure 7).

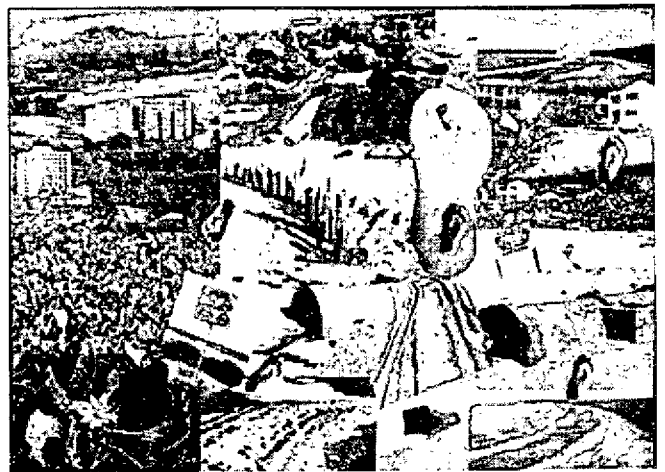


Figure 7

It is evident that working with visuals does not require or permit a clear naming, classifying and separating, which were identified as counterproductive strategies in the process of creating ecologically sustainable narratives (Gough, N. 1990, 1991). But also, image construction can lead to a more differentiated, clearer and defined focus. Further, visual narratives are potentially anti-dualistic and interweave realities and visions as a step towards the construction of new realities: Norma, producing double exposures of drawings of a human body and machine parts, for example, dealt with the transcendence of dualisms between humans and machines. A variety of other double-exposures merged organic and inorganic existence, animals with paving, landscape with humans (Figures 8-9). These images in particular illustrate how the participants shifted their focus to a psychological dimension addressing their own being within the current conditions thus relating themselves, their feelings and values to the environment.



Figure 8



Figure 9

Athena's comment illustrates that the cognitive interaction with visual narratives does not allow for one-dimensional cause-effect representations of issues that are rather complex:

Athena: ... But when you talk about it, it is like 'there are the facts and that is how it is', whereas visual things allow people to carry on with their own imagination and how it is for them and their own questions.

The effectiveness of manipulating the photographic images for the enhancement of cognitive processes lies in the similarities between aesthetic image creation (such as cutting, ordering, re-assembling and pasting) and mental image creation (see Kosslyn 1983, p.103). As the image-creators manipulated the pictorial elements, their mental constructs were involved and seemed to be manipulated simultaneously. An important aspect of this process seems to be the transformation of abstract thinking into a concrete form, which Shlain (1998, pp.1-3) considers to be a characteristic of visual imagery, and which is an important step in coming to understand.

Norma: If you work through [the environmental topic] in words, it just becomes like a newspaper broadcast. Whereas in images it actually becomes more personal and more feeling is created in it. ... [P]utting it in images makes it a little bit more real and you can actually see the contrast between metal and flesh and it gives it realism.

Maie: Once you make an image, it is there, you know. When you talk, the words last as long as you say them. ... [Images] can be contemplated over a long period of time.

Maude: [Putting thoughts into photographic images] is more, ... it is concrete. It is not that you think about it and it just goes away. It is something concrete, it is there. You can think about it and you can see a head actually down there on paper. It is quite confronting

....

The results of this study demonstrate the potential of the visual mode for environmental concept formation in accordance with the literature. Creating photographic images about environmental issues is a way of re-narrating our relationship with the environment as advocated by N. Gough (1990, 1991, 1994).

Conclusion

The photographic aesthetic involvement makes it possible for the participants to develop a qualitatively new relationship with their topic, which is built on the assemblage of the final work as a participatory and uniting event. It is an active, self-guided, highly personalised process of negotiating a new position towards environmental issues. This shift in thinking is not so much a paradigm shift but a broadening of the initial view, including a clearer differentiating or focusing. Multiple perspectives can be constructed and the own position and feelings clarified. The visual work confronts the participants with their creations and what these embody, namely their conceptualisations, and it acts as a connecting agent between participants, topics and thought constructs. There is an active interplay between the thinking about the topic, the image-creation process and the growing and completed image itself. The effectiveness of the aesthetic work for concept formation lies in the similarities between the visual aesthetic and mental representations and processes, but also in that the ontological difference between the environment, its photographic and its mental representations diminishes. The creative visual work is not only conducive to the creation of environmentally sustainable conceptualisations. Moreover, it opens up ways of reconstructing positive future visions. There may be opportunities for the enhancement of ecologically sustainable thinking in an increasingly image-driven culture.

'I really believe there are things nobody would see if I didn't photograph them [- not even myself]'

appropriated from Diane Arbus

Acknowledgments

My sincere gratitude goes to the participants for their involvement and for their approval to reproduce the images: Figure 1 Residential Development by Judith Tilyard; Figure 2 Fences by Judith Tilyard; Figure 3 The Tip – Trash and Treasure by Jasmin Rogers; Figure 4 Colour is Life 1 by Tahnee Berthelsen; Figure 5 Colour is Life 2 by Tahnee Berthelsen; Figure 6 Consume-Resume? by Isabelle Whyte; Figure 7 Encroachment of the Coastal Buffer Zone by Russell Hasthorpe; Figure 8 The River by Anthony Ellis; Figure 9 Macadamia Plantation by Gitama Day. Figures 1-8, 1995, © Dr Iris M. Bergmann; Figure 9, 1995, © Gitama Day. I also gratefully acknowledge the financial assistance of the Graduate Research College, in particular Professor Peter Baverstock, Southern Cross University, for doctoral research and conference attendance.

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