The Popular Meaning of a View

- An exploratory study

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Introduction

Popular opinion in visual assessment

Asking people what they like about visual characteristics of the environment is a well established method of enquiry used in a range of disciplines from town planning to sociology (Zube, Sell et al. 1982; Emmison and Smith 2000; Mason 2002). While different academic groups recognise the validity of this approach, there is considerable conjecture about the contemporary significance of popular opinion for the visual appraisals of cities, towns and the countryside (Brodbeck 2005).

At one extreme, popular opinion about the visual appearance of buildings or scenery is regarded as just that and no more – an opinion. Under this thesis, popular opinion about visual appeal has no greater or less credence than popular opinion on other topics of contemporary importance, such as public opinion about the need for water restrictions. The public might have an opinion but this is 'balanced' against judgements of professionals. Under this paradigm, popular opinion about visual characteristics of the environment is a valid input to professional determination of visual quality, and no more. This paradigm relegates principal responsibility for aesthetic evaluation to the artist, architect, town planner or landscape architect, but not members of the 'lay' public (Porteous 1996).

At the other extreme, popular opinion about the visual environment is considered a more accurate and appropriate method of appraisal than professional judgements. Under this paradigm, professional judgements are said to be at risk of bias because of imprecise interpretation of aesthetic theory, and a culture that confuses accepted practice with aesthetic quality. Some philosophers and scientists have called for the abandonment of so-called 'objective' professional assessments on the grounds that they lack rigour, are non-replicable, and do not have statistical validity (Lothian 1999).

Other practitioners have advocated that one of the most effective strategies to secure public involvement in aesthetic judgements is for professionals to use simple and consistent language to describe their methods and maps (Brodbeck 2005). This stance places professionals in the position of listening to community opinions at workshops, which are then considered before reaching a modified professional judgement.

However, an unspecified merge of professional and popular opinion is said to be potentially counterproductive and at best a 'shaky marriage' (Daniel 2001). Keeping a foot in both camps may be politically attractive, but lacks a robust theoretical foundation.

One approach to resolve this 'contest' between professional and public opinion would be for professionals to document the results of public visual preference surveys and use them to inform planning studies (Daniel 2001).

Widely embraced theory and empirical studies (Berlyne, Madsen et al. 1973; Appleton 1975; Ulrich 1986; Kaplan and Kaplan 1989) suggests that untrained people have a competent and inherent ability to evaluate and interpret the visual environment because of our common evolutionary history. Our capacity to understand the meaning of the visual environment evolved when early humans learned to notice and determine which aspects of their environment would either benefit or threaten their survival (Nasar 1990). This capacity and retained knowledge of preferred environments is said to be passed on to all humans from our ancestors (Appleton 1975). These theories are reinforced by evidence from recent cross-cultural studies (Lothian 1999; Parsons and Daniel 2002).

It is also suggested that evidence of this evolutionary basis for our visual preferences and capacity is supportive of principles espoused by the German philosopher and scientist Emmanuel Kant.

"After all, if beauty is indeed survival enhancing, then all surviving humans must respond to it. Nor does it appear to be a learned or acquired skill, rather appreciation of beauty is innate in all humans…"(Lothian 1999)

Quantitative surveys would commonly ask respondents to record their opinion about a number of different scenes by recording their scores on rating scale. One or several questions are asked using "bipolar semantic differential scales" such as like / dislike, good/bad, or beautiful/ugly (Porteous 1996).

One of the more popular models used for the formulation of survey questions suggests defines four response dimensions – pleasantness, arousing, exciting and relaxing as illustrated in Figure 1 (Russell, Ward et al. 1981).

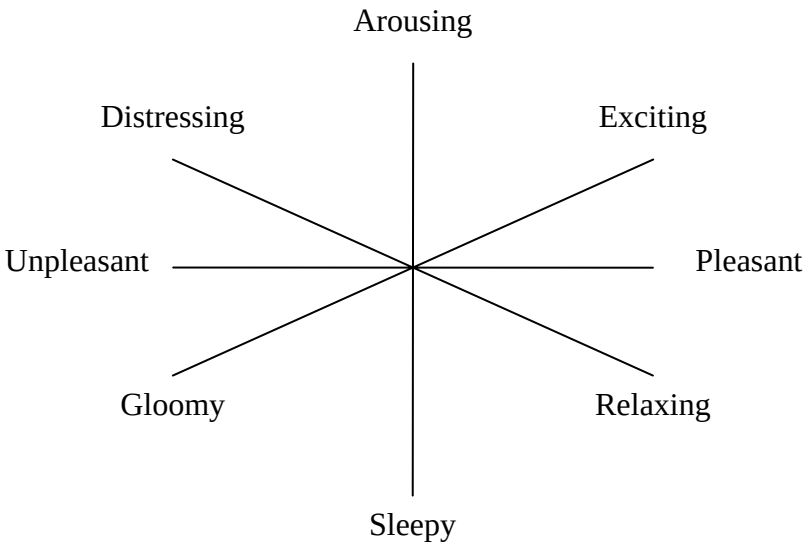

Figure 1. Semantic dimensions of affective response(Russell, Ward et al. 1981)

A second survey method called Scenic Beauty Estimation (Daniel and Boster 1976) records people's responses to forest scenes along a scale from 1 to 10. The procedure calculates a mean score for different scenes for each identified cultural groups, and an overall average score for all sample groups.

Potential limitations of popular opinion surveys

Despite evidence and support to the validity of popular appraisals, this paradigm is rarely embraced by landscape and architectural practitioners because of the perceived limitation of conventional assessment methods and difficulty in the expedient use of results (Porteous 1996).

Of central concern is the tendency to rely on quantitative survey methods to 'measure' public opinions and calculation of an average rating to represent public opinion. The average rating may unnecessarily combine preferences and meanings for individuals or groups into a single numerical value (Porteous 1996).

Secondly, many of the statistical models developed from public preference survey data do not provide evidence to support the choice of descriptive variables about scenes, used to correlate against people's preference score (Porteous 1996).

Thirdly, it is unusual for these models to be supported by theoretical models or an interpretation of meaning (Porteous 1996).

These assertions about the use of statistical methods are therefore crucial to the use of public opinions for aesthetic evaluation. While the notion of popular opinion may be valid, if the method used to assemble evidence is inadequate, then the theory remains just that.

This question has implications for those with responsibility for aesthetic planning of urban and open space, particularly given the trend to increased use of public preference surveys in this domain (Porteous 1996).

This dilemma may be partly assisted by the fact that quantitative surveys are not the only method of enquiry able to record popular opinion about the visual environment. Other research methods include soliciting written public submissions, public workshops, focus groups, individual qualitative interviews, photo elicitation, behavioural observations, and the interpretation of paintings and postcards.

Public appraisals should ideally embrace a combination of methods including verbal, physiological, and behavioural methods (Nasar 1998). These assessments should preferably allow people to nominate characteristics of the physical environment which influence their impressions of an area, and record the cognitive and affective responses of particular groups and the public at large (Nasar 1998).

SEQ Public Preference Survey

Despite this controversy about popular opinion and statistical survey methods, a consortium of government and non-government organisations in South East Queensland recently undertook a public survey with the intent using this information to define the location of valuable scenic areas in the region, and informing the development of guidelines for managing these areas (SEQRSAS 2005).

The procedures used in the SEQ survey of public preference are generally congruent with methods used in similar earlier studies using a survey approach eg (Bishop and Hulse 1994; Preston 2001; Arriaza, Canas-Ortega et al. 2004).

Each participant in the SEQ survey was invited to evaluate 20 different views by placing a photo representing each view on a grid with columns numbered from one (least preferred) to ten (most preferred) (SEQRSAS 2005). Up to 4 photos could be placed under each column. A section of this grid is shown in Figure 2.

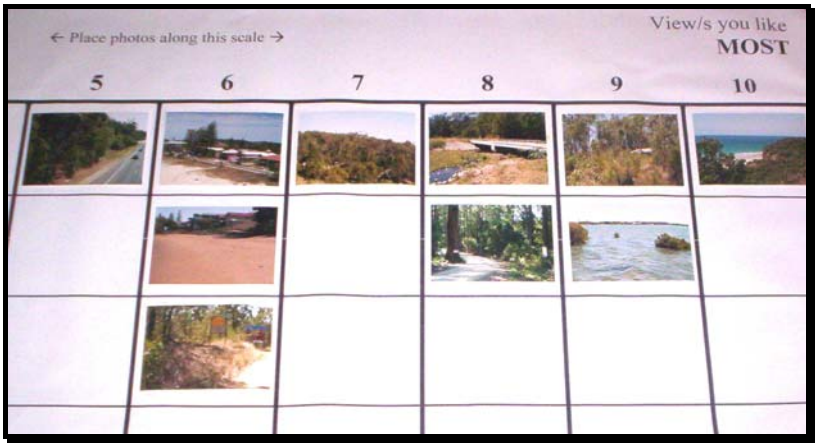

Figure 2. A section of the photo grid used in survey interviews

After rating each photo, the participant completed four other tasks (Appendix 1) which included a qualitative component that may help to explain the diversity of quantitative results and resolve some concerns about the use of statistical techniques. Before investigating this qualitative survey data, it is helpful to examine results from the quantitative component of this project.

Field work

Most of the field work for the SEQ Regional Scenic Amenity Study was conducted by members of Community Research Teams, each consisting of between two and 10 people

(SEQRSAS 2005). Two teams operated to the north of Brisbane (Sunshine Coast, Moreton Bay Coast), four teams covered western parts of the region (Esk / Kilcoy, Toowoomba, Ipswich, Lockyer / Scenic Rim), three teams conducted assessment for the southern parts of SEQ (Gold Coast / Beaudesert, Redland, Logan) and one team assessed scenery for Brisbane. Members of Community Research Teams attended between one and three formal training sessions conducted by the study's Project Manager with the support of other consultants (SEQRSAS 2005).

Photos were taken with the intention of representing views that contain a range of commonly seen objects in various contexts. Because of the myriad of objects and contexts, a list of principal objects (or Visual Elements) in different contexts (or Visual Domains) was prepared as guidelines for acquisition of survey photographs (Table 1).

Recognising that 'context' is a complex term, four Visual Domains were assumed to encompass the major contexts that occur in SEQ. These are - Bush, Rural, Urban and Coast as depicted in Figure 3. Other studies have used only two categories to define the context of scenes: Nature and Urban (Kaplan and Kaplan 1989).

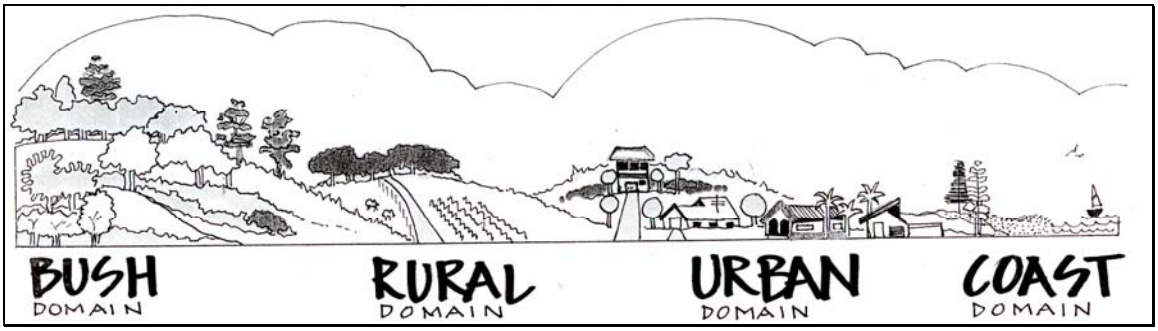

Figure 3. Visual Domains used to describe context[2]

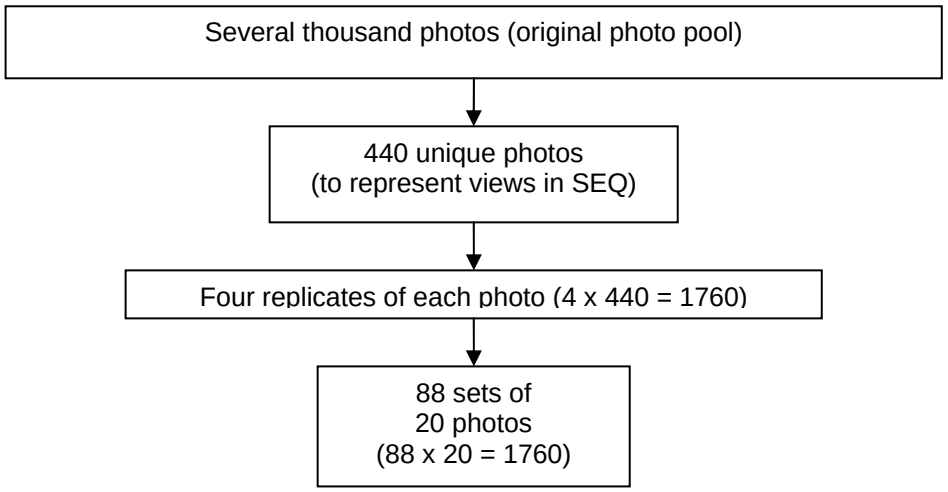

Figure 4.Stages in reducing total photo pool to sets of 20 photos for use in interviews

[2] Diagram by Jan Haughton

Table 1. Guidelines for taking photos

	Visual Domain			
Visual Elements	*Bush*	*Coast*	*Rural*	*Urban*
- Natural Elements				
Coastal vegetation	✓✓			
Crops pasture animals			✓✓	
Euc and assoc. forest	✓✓			
Garden				✓✓
Grass mown				✓✓
Grass natural	✓	✓	✓	✓
Grass unmanaged	✓		✓	✓
Modified vegetation	✓		✓	✓
Mud	✓	✓	✓	✓
Native pine	✓		✓	✓
Pine forest			✓✓	
Rainforest	✓✓			
Rock	✓	✓✓	✓	
Sand	✓	✓✓	✓	
Trees planted			✓	✓
Water bay		✓✓	✓✓	
Water constructed				✓
Water inland	✓			✓
Water ocean estuary		✓✓	✓✓	
- Built Elements				
Building low non- residential				✓✓
Building low residential				✓✓
Building low single			✓✓	
Building medium high				✓✓
Building trees grass	✓	✓	✓	✓
Built elements water		✓✓		
Farm elements			✓✓	
Fence			✓	✓
Mines, quarries, dumps	✓		✓	✓
Park cultural buildings				✓✓
Park elements	✓			✓✓
Path	✓			✓✓
People	✓	✓	✓	✓
Retaining wall				✓✓
Road freeways	✓		✓	✓
Roads	✓		✓	✓
Signs	✓		✓	✓
Towers cables poles	✓			✓
Vehicles	✓		✓	✓

These guidelines were used to obtain a pool of several thousand photos for the region. This pool was iteratively reduced to a set of 440 photos considered sufficient to represent the visual diversity of the region. Each photo was duplicated four times to provide 1760 photos for use in surveys. This set of 1760 photos was further divided into 88 individual interview sets consisting of 20 unique photos (Figure 4).

Prior to use in interviews, a code was written on the back of each photo. This code was not evident to survey participants until the first sorting task was completed. The first part of the code is a character (B, C, R or U) followed by 3 digits such as 001. The first character

indicates the likely Visual Domain of the view. The meaning of this code was not explained to survey participants (SEQRSAS 2005).

Quantitative results

The main quantitative results of the survey are the (a) mean preference rating for each view and (b) an equation derived from survey data which predicts preference ratings.

Mean preference ratings and other statistics for the 10 highest scoring views and 10 lowest scoring views are reproduced in Table 2 (SEQRSAS 2005).

Table 2. Statistics for the 10 highest scoring views and lowest scoring views in the survey

PhotoID	*Mean SPR*[3]	*Lower C.I. Mean*	*Upper C.I. Mean*	*n*	*Std dev*	*Median SPR*
C101	10.0	10.0	10.0	36	0.0	10.0
C017	9.8	9.7	10.0	31	0.4	10.0
B020	9.8	9.7	9.9	43	0.4	10.0
B082	9.8	9.6	10.0	17	0.4	10.0
R018	9.7	9.6	9.9	38	0.6	10.0
B110	9.7	9.5	10.0	14	0.5	10.0
C065	9.7	9.4	9.9	35	0.6	10.0
C068	9.6	9.4	9.8	43	0.7	10.0
B019	9.6	9.3	9.8	38	0.6	10.0
B027	9.5	9.3	9.8	41	0.7	10.0
…	…	…	…	…	…	…
U086	1.2	1.0	1.3	37	0.4	1.0
U039	1.1	1.0	1.2	54	0.3	1.0
U126	1.1	1.0	1.3	16	0.3	1.0
U069	1.1	1.0	1.2	42	0.3	1.0
B008	1.1	1.0	1.2	59	0.3	1.0
B004	1.1	1.0	1.2	37	0.3	1.0
B007	1.1	1.0	1.2	25	0.3	1.0
U044	1.1	1.0	1.2	40	0.3	1.0
B006	1.0	1.0	1.0	31	0.0	1.0
U045	1.0	1.0	1.0	18	0.0	1.0

While it is not possible to examine and discuss all survey results here, it is helpful to develop an impression of major results by examining the views with the lowest and highest overall scores. As depicted in Figure 5, the highest scoring view (C101) is of a natural coastal headland, and the lowest scoring view (U045) is of a rubbish dump with some trees in the background.

[3] SPR: Scenic Preference Rating

Lowest scoring view
(Mean Rating = 1)

Photo U045 by Wally Wight

Highest scoring view
(Mean Rating = 10)

Photo C101 by Jan Haughton

Figure 5. Lowest and highest scoring views from the 2004 SEQ survey

The project also developed an equation derived from survey data which predicts preference ratings based on an analysis of photo content. This was achieved by placing a transparent overlay over a photograph and delineating objects using a black marker pen (*Figure* 6). The Visual Domain, Visual Element, and other basic variables for each photo were recorded to characterise the photo using a computer spreadsheet (Table 3) (SEQRSAS 2005).

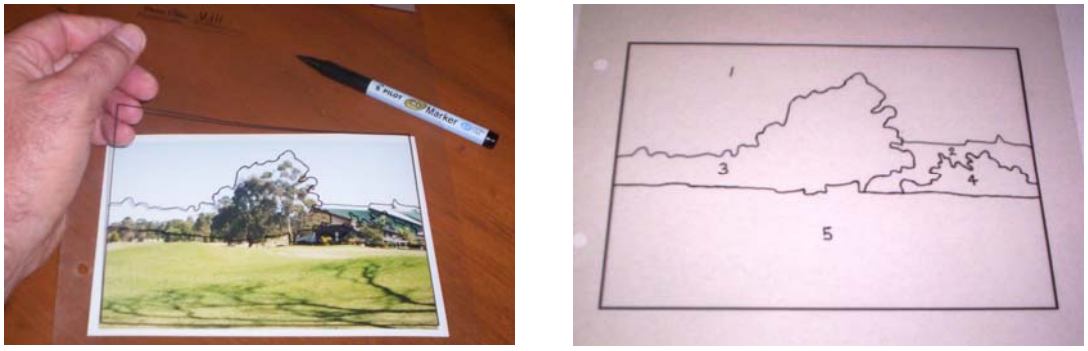

Figure 6. Method used to delineate and code photos (example for U111) (SEQRSAS 2005)

Table 3. Information recorded to characterise photos (example for photo U111) (SEQRSAS 2005)

Polygon	*Visual Domain*	*Visual Element*	*Polygon Area (sq cm)*	*Proportion of terrestrial photo area*	*Distance to element*	*Steepness*
1		Sky	n/a	n/a	n/a	n/a
2	Urban	Building low non-residential	6.75	0.06	10-100 m	Flat
3	Urban	Trees planted native	30.46	0.25	10-100 m	Flat
4	Urban	Trees planted exotic	6.15	0.05	10-100 m	Flat
5	Urban	Grass mown	78.77	0.64	10-100 m	Flat
Total			122.13	1.00		

The relationship between people's rating of a view and the proportion of each Visual Element and Visual Domain was analysed using a statistical technique called Regression Analysis. The produced an equation (Table 4) consists of three terms: (a) an additive term which varies in magnitude depending on which two major Visual Domains are present in the view, (b) a series of multipliers based on the proportion of each Visual Element in the View a constant term and (d) the resulting predicted score between and 10.

To simply demonstrate the application of this equation, consider a photo taken at the beach looking directly out over the ocean, where the only thing visible (other than rhe sky) is the ocean. From term (a) of the equation the view would receive a score of 1.4 because everything (other than the sky) is the Coast Visual Domain. From term (b) of the equation the view would score an addition 1.8, calculated by multiplying the proportion of ocean (1.0) by the Visual Element variable for water in the ocean or an estuary (1.8). (c) The constant term is 6.7. The predicted result (d) being 9.9 out of 10 is calculated as adding each of the component terms (i.e. 1.4 + 1.8 + 6.7).

It is useful also to note that Visual Domains that include Urban receive a negative score, and most built Visual Elements receive a negative score. Water and most trees and vegetation receive a positive score.

Table 4. Statistical equation used to predict public preference (d) from view characteristics (a) and (b)

(a) Visual Domains present	*(b) Proportion of Visual Element*	*(c) Constant*	*(d) Predicted Result*
–1.3 x Rural and Urban	–20.2 x Signs	6.7	= Preference Rating (between 1 & 10)
–1.2 x Urban (only)	–11.2 x Building medium high		
–1.1 x Bush and Urban	–11.0 x Building low non-residential		
–1.0 x Rural (only)	–10.6 x Vehicles		
+ 0.8 x Bush and Coast	– 9.9 x Mines quarries dumps		
+ 1.4 x Coast (only)	– 9.1 x Towers cables poles		
	– 7.3 x Building low res (multiple)		
	– 7.1 x Built elements water		
	– 6.4 x Road freeways		
	– 6.3 x Park elements		
	– 5.4 x Park buildings cultural		
	– 4.8 x Grass unmanaged		
	– 4.5 x Roads (not freeways)		
	– 1.8 x Fence		
	– 1.8 x Building trees grass		
	+ 0.5 x Water bay		
	+ 0.6 x Trees planted		
	+ 0.7 x Modified vegetation		
	+ 1.3 x Rainforest		
	+ 1.5 x Euc and associated forest		
	+ 1.6 x Path		
	+ 1.7 x Water constructed		
	+ 1.8 x Water ocean or estuary		
	+ 2.5 x Rock		
	+ 3.8 x Water inland		

Before discussing these quantitative results, we now turn to the qualitative results of the survey, where we will also consider questions about the popular meaning of a view.

Interpretation of meaning

Survey question

The second interview task during Scenic SEQ 2004 Public Preference Survey was to record information about the meaning of the view to the survey participant. This information may help to develop an understanding of the popular meaning of views, and also help to evaluate the validity of quantitative results.

This second interview task was accomplished by inviting each survey participant to record answers to four questions (Table 5) for selected photos used in the first survey task. Participants were asked to select five photos from the top row of their grid under columns 10, 8, 5, 3 and 1. In some interviews only three photos were selected under columns 10, 5 and 1. The interview worksheet is reproduced in Appendix 3.

Table 5. Survey questions used to generate information about the meaning of views

Q1. Basically, what type of view are you looking at? *A1. I am looking at a view of …*
Q2. How does this view look to you? *A2. I think it looks…*
Q3. What things do you like about this view? *A3. I like the … (repeated 3 times)*
Q4. What things don't you like about this view? *A4. I don't like the … (repeated 3 times)*

Selecting a sample for investigation

While a full analysis of all survey data is not feasible with the resources available for this study, an initial investigation of this information and its meaning can be developed by examining a sub-set of views and people's responses to them.

As one of our interests is the consistency or variation in popular meaning between different groups of people, it would be helpful to examine responses from people with potentially different opinions about the value of scenery. Since familiarity is one of the major factors said to influence people's response to views (Peron 1998), a logical sample of survey data would include people from a distinctly rural area and a distinctly urban area.

A sub-set of survey data was therefore extracted people in the City of Brisbane and people who live in the rural shires of Esk and Kilcoy, north-west of Brisbane.

To facilitate the comparison of response information, the survey data was further sub-divided to select those people that had coincidentally selected similar photos. Since each interview participant recorded information for only 3 or 5 photos out of the full interview set of 20, there is only a small degree of coincidence between photos used at Esk/Kilcoy and Brisbane. It was found that only four photos: B079, C015, C018 and U086 had a moderate level of coincidence in photo sets used for these areas.

Survey data was extracted from the full survey data set for people that recorded responses for at least one of these photos. This resulted in the extraction of response data for seven Brisbane people from Brisbane and nine people from Esk or Kilcoy shires, as listed in Table 6. This list shows that the sample covers a range of people from both genders, age groups and levels of education. The sample from Kilcoy and Esk includes more people with less formal education than the people from Brisbane. As formal education has been reported to influence people's response, this may also contribute to differences between the two groups.

Table 6. List of people from Brisbane, Esk and Kilcoy included in the sub-sample

LGA	*Person*	*Sex*	*Age*	*Education*
Brisbane	03-032	Male	45-64	Bachelor Degree
	03-055	Female	35-44	Certificate
	03-090	Male	65 +	Advanced Diploma, Dip
	03-098	Female	45-64	Advanced Diploma, Dip
	03-121	Male	45-64	Postgraduate Degree
	03-135	Male	65 +	Certificate
	03-139	Female	25-34	Advanced Diploma, Dip
Esk	06-022	Female	15-19	Still at school
	06-024	Male	65 +	Year 10 (Junior High)
	06-037	Female	45-64	Bachelor Degree
	06-038	Male	35-44	Year 12 (Senior High)
	06-039	Male	25-34	Certificate
Kilcoy	10-001	Male	25-34	Year 10 (Junior High)
	10-002	Female	45-64	Graduate Dip, Cert
	10-015	Female	45-64	Advanced Diploma, Dip

LGA	Person	Sex	Age	Education
	10-017	Male	45-64	Year 10 (Junior High)

The survey data includes people's written responses to the four questions from interview 'task B' as describe above. Only responses to three photos were included in this sample, being the photos chosen to represent a person's highest preference (i.e. from column 10), the photo chosen to represent middle preference (i.e. from column 5), and a photo to represent lowest preference (i.e. from column 1). This provides a subset of response data for 48 photos (i.e. 16 people x 3 views = 48 data records).

This sub-sample includes data for 29 different photos (Table 7) with 5 being from the Bush Visual Domain, 6 from the Coast Visual Domain, 10 from the Rural Visual Domain and 8 from the Urban Visual Domain. The sample includes a slightly lower number of responses for Bush photos (8) and a relatively even number of responses for Coast, Urban and Rural views (13, 14. 13 respectively). A full set of images and peoples responses are provided in Appendix 4.

Table 7. Photos included in the sub-sample (photos with the greatest overlap between samples are highlighted)

Bush		*Coast*		*Rural*		*Urban*		*Total*
Photo	*No*	*Photo*	*No*	*Photo*	*No*	*Photo*	*No*	
B029	1	**C015**	**4**	R008	1	U007	1	
B053	1	C017	2	R024	2	U026	1	
B077	1	**C018**	**4**	R045	1	U039	2	
B079	**4**	C038	1	R060	1	U072	1	
B085	1	C046	1	R083	1	**U086**	**4**	
		C089	1	R090	2	U097	2	
				R100	1	U109	1	
				R108	1	U110	1	
				R121	2			
				R129	2			
Photos	*5*		*6*		*10*		*8*	*29*
Responses	*8*		*13*		*14*		*13*	*48*

Preliminary classification of images

The schema used to describe images for quantitative analysis, based on Visual Domains and Visual Elements has been adopted for the qualitative interpretation of visual images in above the sub-sample. While the quantitative analysis measured the proportion of each Visual Domain and each Visual Element, only the key Visual Domain and Key Visual Element most likely to influence the respondent's judgement is recorded here.

This classification scheme has been applied to views assessed by all 16 respondents with the intention of identifying any trend in people's interpretation of images (Table 8).

In general, most preferred views are from the coast, bush or rural visual domain. The main visual elements are water or rainforest, with no evident buildings. The least preferred images are bush, rural or urban. Common visual elements are towers, roads, freeways, quarries, vehicles or buildings. The middle-preferred images are most varied, including views from the bush, rural, coast or rural. They commonly contain a mixture of natural and built elements.

Table 8. Classification of views by key Visual Domain and Visual Elements

Person	*Preference*	*Least*	*Middle*	*Most*
03-032	*key VD*	Rural *(photo R129)*	Coast *(photo C015)*	Rural *(photo R024)*
	key VE	Towers cables poles	Water ocean estuary Buildings low residential	Water inland
03-055	*key VD*	Urban *(photo C018)*	Urban *(photo U007)*	Coast *(photo C089)*
	key VE	Buildings low residential	Low residential	Water ocean estuary
03-090	*key VD*	Urban *(photo U086)*	Rural *(photo R121)*	Bush *(photo R083)*
	key VE	Road Vehicles	Pasture crops animals	Euc assoc forest
03-098	*key VD*	Urban *(photo U086)*	Rural *(photo R121)*	Rural *(photo R083)*
	key VE	Roads	Pasture crops animals	Built elements water
03-121	*key VD*	Rural *(photo R090)*	Urban *(photo U110)*	Bush *(photo B079)*
	key VE	Towers cables poles	Grass mown	Rainforest
03-135	*key VD*	Rural *(photo R090)*	Coast *(photo C046)*	Rural *(photo R008)*
	key VE	Towers cables poles	Water ocean estuary	Water inland
03-139	*key VD*	Rural *(photo R129)*	Coast *(photo C015)*	Rural *(photo R024)*
	key VE	Towers cables poles	Water ocean estuary Buildings low residential	Water inland
06-022	*key VD*	Coast *(photo C018)*	Bush *(photo B029)*	Coast *(photo C017)*
	key VE	Buildings low residential	Water inland	Rock Water ocean estuary
06-024	*key VD*	Urban *(photo U086)*	Urban *(photo U026)*	Bush *(photo B085)*
	key VE	Roads	Buildings low residential Euc assoc forest	Water inland
06-037	*key VD*	Urban *(photo U097)*	Coast *(photo C015)*	Rural *(photo R100)*
	key VE	Road freeway	Water ocean estuary Buildings low residential	Euc forest etc
06-038	*key VD*	Bush *(photo U039)*	Urban *(photo C018)*	Rural *(photo R108)*
	key VE	Quarries mines dumps Euc assoc forest	Buildings low residential	Euc forest etc
06-039	*key VD*	Urban *(photo U072)*	Rural *(photo R045)*	Bush *(photo B079)*
	key VE	Buildings low non-residential	Buildings low residential Euc assoc forest	Rainforest
10-001	*key VD*	Urban *(photo C018)*	Urban *(photo U109)*	Bush *(photo B079)*
	key VE	Buildings low residential	Grass mown	Rainforest
10-002	*key VD*	Urban *(photo U097)*	Coast *(photo C015)*	Coast *(photo C017)*
	key VE	Road freeway	Water ocean estuary Buildings low residential	Rock Water ocean estuary
10-015	*key VD*	Urban *(photo U086)*	Rural *(photo R060)*	Bush *(photo B079)*
	key VE	Road Vehicles	Pasture crops animals	Rainforest
10-017	*key VD*	Bush *(photo U039)*	Rural *(photo R060)*	Bush *(photo B079)*
	key VE	Quarries mines dumps Euc assoc forest	Pasture crops animals	Rainforest

Methods for interpreting meaning from visual images

A myriad of techniques are available for interpreting the qualitative meaning of visual images and words people use to describe them. Sociologists Michael Emmison and Phillip Smith suggest four broad categories of visual research, being

- Generation and use of photographic images by ethnographically-oriented researchers to augment studies of social and cultural processes.
- Analysis of images by semioticians to uncover ideologies or cultural codes.
- Analysis of diagrams, sketches and figures in scientific research and communication, and
- Analysis of video-recordings of naturally occurring social interaction

Of these four approaches, semiotics, broadly known as the study of systems of signs, provides a highly appropriate theoretical framework for interpreting the meaning of visual images.

Primary research of semiotics was undertaken by the Swiss Linguist Ferdinand de Saussure, who defined a sign is simply anything (such as an object, sound, image word or act) that has an accepted meaning for a person or group of people (Fiske, Turner et al. 1987; Hall 1997). Under this system, very sign has two aspects: the signifier and carrier of the meaning, and the signified, being the mental concept to which the sign refers (Hall 1997).

Photographs provide ideal cultural indicators of meaning which can be decoded according to a further semiotic system of denotative and connotative meanings developed by the French critic, Roland Barthes (Barthes 1973). This system was first developed as a means of reading popular culture by interpreting their activities or objects as signs, and providing a language through which meaning is communicated (Hall 1997). The system of denotation and connotation is described thus:

> *"Denotation is the simple, basic, descriptive level where consensus is wide and most people would agree on the meaning. At the second level – connotation – these signifiers … enter a wider, second kind of code … which connects them to broader themes and meanings, linking them with what we may call the wider semantic fields of culture …" (Hall 1997)*

Semiotics also provides a vehicle for interpreting the positive or negative connotations of each signifier, and the existence of 'underlying' thematic paradigms such as binary oppositions (Chandler 2005). This branch of semiotic analysis, termed 'Paradigmatic Analysis' allows the interpretation of meaning from examining oppositions and contrasts (Chandler 2005). This often involves the identification of binary or polar semantic oppositions such as us/them, or public/private. This system has also been used by the French sociologist, Pierre Bourdieu, who has applied this approach to the sociological interpretation of physical environments (Emmison and Smith 2000).

This system of semiotic interpretation has also been applied by some urban planning to classify and interpret the appearance of cities and their components. In this context, definitions of denotative and connotative meaning have been develop as part of a system for interpreting the meaning of people's visual response to the environment:

> *"denotative meanings refer to judgements of what the place is, and connotative meaning refers to inferences about the quality and character of the place and its users" (Nasar 1998).*

The analysis of positive and negative connotations by urban planners or architectural scholars is usually applied through quantitative studies of semantic differential scales as introduced above. Survey respondents are usually asked to choose between opposite positions. For example (Nasar and Lin 2003) asked survey participants to respond to nine pairs of bi-polar adjectives derived from research by (Russell, Ward et al. 1981) described above.

The concurrent application and interpretation of semiotics and the pragmatic analysis of opposites in both sociology and urban planning for interpreting the meaning of people's response to images provides a firm platform for undertaking an analysis of people's choice of images and their responses to them.

Prior to undertaking this investigation, it is helpful to closely examine the structure of the quantitative response data.

Response data

An understanding of the structure of response data can be developed from considering information for one person. Written responses for the first person in the sample data (Appendix 4) is reproduced in Table 9.

Table 9.Images and written response data for person 03-032

Preference	Least	Middle	Most
Photo	R129	C015	R024
			
Q1 *A view of*	A power pylon in the country	A sheltered beach with a lot of manmade holiday structures and a row of pine trees	Country view of a dam with rolling hills and cattle under trees
Q2. *It looks*	Pleasant view spoilt by intrusive out of place steel pylon	Very touristy. A place attractive to families with young children no surf	Very pleasant and peaceful
Q3 *Like (a)*	Trees and setting		Tree lined creek
(b)	Set in the country		Cattle resting in the shade of the tree
(c)	Hills in the background		Interest created by the water in the dam acts as a focal point
Q4 *Don't like (a)*	Power pylon	Clutter of tourist facilities	Grass could be greener and sky bluer but it is a typical Australian/Queensland country scene.
(b)		Regimented planting of pines	Much of the original vegetation has been removed
(c)			

Choice of most preferred and least preferred views: The most preferred view (R024) is of a small dam in a rural pasture with trees in the background. The least preferred view (R129) is a close-up of a transmission tower in grazing country with many surrounding trees. Photos R024 and R129 are both from the Rural Visual Domain. These photos represent opposites within the same context and exist as 'binaries' reflecting the absence and presence of intrusive built structures in a rural environment.

Question 1. This person's response provides a connotative interpretation of the view context and its components for the two rural views R129 and R024 described as being "in the country". The connotative description of context for C015 is "a sheltered beach". Important denotative elements are 'a power pylon' and 'a row of pine trees'. The responses to Question 1 principally provide an itemisation of objects and their denotative meanings, and some connotative interpretation of context.

Question 2. The person's response provides a connotative interpretation of cognitive and affective meanings associated with the view. For example, components of R129 are "out of place" and the view is "spoilt", whereas view C015 is "touristy". Photo R024 is "pleasant and peaceful". These responses provide richer connotative meanings. Connotative meanings of Photo R024 and R129 are opposites (pleasant / spoilt).

Question 3. The person's response identifies liked denotative components and connotative context descriptors. For example R129 has a "trees" and "hills" and is "set in" the "country". R024 again has objects including a "tree", "creek", "cattle" and "dam". The location of these components is also identified. For example "hills" are in the background and "cattle" are in the "shade of the tree". Interestingly, this person did not record any responses for the middle photo C015, possibly because of the detailed descriptions provided for Q1 and Q2. These responses identify additional specific objects and their positive denotative meanings.

Question 4. People's responses identify denotative and associated connotations that are not liked. The disliked objects in the least preferred view and the middle preferred view (i.e. "pylon" in R129, and "tourist facilities" and "pine trees" in C015) were also recorded in Q1 and Q2. However further responses for C015 suggest that "tourist" facilities create "clutter" and "pines" are "regimented". Even though R024 is the most liked view, the survey participant identified several things they dislike, suggesting that the "grass could be greener" and the "original vegetation has been removed". However, these negative elements are not significant as the respondent concludes "but it is a typical Australian Queensland country scene." These responses identify additional specific objects and a range of denotative and connotative meanings.

Interpretation: The main inferences from this person's choice of most and least preferred images and associated descriptions in Q2, are:

- The 'country' is 'pleasant', 'peaceful' and 'typically' 'Australian' or 'Queensland'. These positive connotations are unaffected by unfavourable conductions such as: 'much of the original vegetation' being 'removed', the 'grass is not very green', and the 'sky is not very blue'.
- The 'country' is characterised by features such as a 'dam', 'rolling hills', 'cattle', 'trees', and a 'creek'.
- The 'pleasant view' of the country is 'spoiled' when it has a 'power pylon' in it.
- The pylon and its material (steel) is 'intrusive' and 'out of place' with other 'typical' elements of the 'country' such as 'trees' and 'hills'.
- The key contrasting message emerging from this interpretation is that power poles spoil country that otherwise peaceful.

This interpretation of images and response information from of qualitative data for Person 03-032 demonstrates the rich content of this information and the use of semiotics for inferring the meaning associated with these images.

Denotative and connotative meaning

The above interpretative approach was applied to response data for the most and least preferred images chosen by the 16 people in the data sample. This analysis suggests a series of positive and negative denotative 'clues' and connotative meanings which are summarised in Table 10 (Brisbane residents) and Table 11 (Esk and Kilcoy residents).

There is a strong tendency for people to suggest two connotative meanings for these views. Survey respondents usually infer both a contextual meaning for the view, such as 'country' or 'wilderness', and affective qualities such as 'peaceful' or 'dangerous'. Connotative meanings have therefore been described using a two-part term consisting of (a) an affective quality and (b) inferred context (eg 'peaceful country').

In some cases it is not clear whether the connotative context descriptors would be best described as having higher-order denotative meaning, or a connotative meaning. The analysis conducted here has assumed that terms such as 'car-park' principally carry connotative, rather than denotative meaning. Cars and bitumen are denotative interpretations, whereas 'car-park' requires a higher order interpretation. In some cases the same term has been listed as having both denotative and connotative meaning, particularly where no denotative meaning was identified by the survey participant.

Table 10. Summary of denotative and connotative interpretations – Brisbane residents

Person	*Preference*		*Denotative (D) and Connotative (C) Meaning*	
	Least	*Most*	*Negative*	*Positive*
03-032	R129	R024	D: power pylon, trees, hill C: spoilt country	D: trees, dam, hills, cattle, C: peaceful country

Person	Preference		Denotative (D) and Connotative (C) Meaning	
	Least	Most	Negative	Positive
03-055	C018	C089	D: houses, trees C: ugly beachside hill	D: bay, hill C: natural wilderness
03-090	U086	B053	D: cars, buildings C: untidy car-park	D: bush, trees, green C: restful mountains
03-098	U086	R083	D: car park, concrete C: awful car-park	D: old bridge, creek, old tree stump C: peaceful heritage of bush
03-121	R090	B079	D: telecom tower, vertical structures C: spoilt hill	D: tree ferns, palms, dense, light, shade C: restful
03-135	R090	R008	D: mobile phone tower, trees C: terrible tower	D: cane, mountains, river C: peaceful country
03-139	R129	R024	D: clearing, electricity pole, metal C: dangerous	D: waterway, pool, green pasture, rain C: peaceful land

Table 11. Summary of denotative and connotative interpretations – Esk and Kilcoy residents

Person	Preference		Denotative (D) and Connotative (C) Meaning	
	Least	Most	Negative	Positive
06-022	C018	C017	D: close houses, trees C: cluttered hill	D: water, rocks, colour, palm trees C: stunning ocean
06-024	U086	B085	D: building, car park C: unattractive car park	D: water, trees, vegetation C: restful waterway
06-037	U097	R100	D: road, bitumen C: busy urban roadway	D: grassland, treed hills C: quiet open land
06-038	U039	R108	D: concrete blocks, timbered ridge C: untidy quarry	D: forest, mountain, pastures C: beautiful open country
06-039	U072	B079	D: weeds, shops, wire, road, car park C: claustrophobic car park	D: vines, tree ferns C: tranquil rainforest
10-001	C018	B079	D: close buildings, trees C: ugly built-up area	D: trees, C: beautiful rainforest
10-002	U097	C017	D: highway, towers, housing C: hectic highway	D: rocks, water, clarity of water, trees C: uplifting sea and foreshore
10-015	U086	B077	D: buildings, concrete C: stark car park	D: shade, garden, greenery, vegetation C: inviting rainforest
10-017	U039	B079	D: quarry, house C: destroyed quarry	D: - C: natural rainforest

These data also suggests a clear relationship between denotative meaning and connotative meanings. Almost without exception, denotative terms such as ‘trees’, ‘dam’, ‘hill’, ‘palms’, ‘shade’, ‘rocks’, and ‘ocean’ infer positive connotations such as ‘peaceful’, ‘stunning’, or ‘tranquil’. Similarly, denotative terms such as ‘power pylon’, ‘cars’, ‘buildings’, ‘tower’, or ‘weeds’ infer negative connotations such as ‘stark’, ‘busy’, ‘spoilt’ or ‘cluttered’.

Secondly, the denotative meanings associated with these objects and their connotative meanings are consistent across different photos and contexts. In particular, positive affective qualities such as ‘peaceful’ and ‘tranquil’ are associated with ‘water’ in the ‘ocean’, ‘rivers’ or ‘dams’, as well as ‘mountains’ and ‘rainforest’. Similarly, negative affective qualities such as ‘ugliness’ and ‘spoilt’ are associated with ‘concrete’ and ‘bitumen’ and ‘close houses’.

The consistent association particular denotative meanings and negative and positive connotations suggests further analysis of contrasts using the ‘Paradigmatic Analysis’ approach (Chandler 2005).

Interpretation of contrasting paradigms

Major contrasting paradigms revealed in the survey data as affective qualities or environmental context in Table 10 and Table 11 have been highlighted as binary oppositions in the tradition of ‘Paradigmatic Analysis’. Only the words recorded by survey participants have been used to generate these paradigms, as listed in Table 12 and Table 13.

Table 12. Contrasting paradigms – Brisbane Residents

Person	Preference		Contrasting paradigms	
	Least	*Most*	*Affective qualities (+ / -)*	*Environment (+ / -)*
03-032	R129	R024	peaceful / spoilt	country / pylon
03-055	C018	C089	natural / ugly	bay / houses
03-090	U086	B053	restful / untidy	mountains / car-park
03-098	U086	R083	peaceful / awful	bush / car-park
03-121	R090	B079	restful / spoilt	rainforest[4] / tower
03-135	R090	R008	peaceful / terrible	country / tower
03-139	R129	R024	peaceful / dangerous	land / pole

Table 13. Contrasting paradigms – Esk and Kilcoy Residents

Person	View		Contrasting paradigms	
	Least	*Most*	*Affective qualities (+ / -)*	*Environment (+ / -)*
06-022	C018	C017	stunning / cluttered	ocean / houses
06-024	U086	B085	restful / unattractive	waterway / car-park
06-037	U097	R100	quiet / busy	open land / roadway
06-038	U039	R108	beautiful / untidy	open country / quarry
06-039	U072	B079	tranquil / claustrophobic	rainforest / car park
10-001	C018	B079	beauty / ugly	rainforest / built-up area
10-002	U097	C017	uplifting / hectic	seashore / highway
10-015	U086	B077	pleasant / spoilt	rainforest / car-park
10-017	U039	B079	natural / destroyed	rainforest / quarry

These tables successfully highlight the dominant affective qualities and environmental contexts associated with a range of views. Positive and negative affective qualities inferred from this response information are listed in Table 14. Positive and negative environmental descriptors are listed in Table 15.

It is interesting to note that some of the individual binary paradigms listed above are not simple antonyms pairs. For example, the pair of words “restful / invigorating” has a more precise linguistic contrast than the affective qualities “restful / unattractive” used by person 06-024. However ‘invigorating’ is clearly not a term that precisely describes photo U086, a car park.

Table 14. Positive and negative affective qualities

Positive affective qualities	peaceful, natural, restful, stunning, quiet, tranquil, beauty, and uplifting
Negative affective qualities	spoilt, ugly, untidy, awful, terrible, dangerous, cluttered, unattractive, busy, claustrophobic, hectic and destroyed

Table 15. Positive and negative environmental descriptors

Positive environmental descriptors	country, bay, mountains, bush, rainforest, land, waterway, open land/country, and seashore
Negative environmental descriptors	pylon, houses, car-park, tower, roadway, highway, quarry and built-up area

[4] The view is of rainforest, although this term was not used by the survey respondent.

Differences between city and rural residents

As stated above, one of the concerns about popular appraisals of the visual environment and the use of quantitative survey methods is the variability of people's responses. This has been a primary motive for selection of people from two different living environments in this sample.

Of the set of common photos used to select participants for this analysis, photo C018 was chosen by one Brisbane person and two Esk/Kilcoy people, U086 was chosen by two Brisbane people and two people from Esk/Kilcoy, and B079 was chosen by one Brisbane person and three Esk/Kilcoy people. C015 was chosen by two Brisbane people and two people from Esk/Kilcoy as the view of middle preference, and was not included in the current analysis.

Comparison of denotative and connotative meanings listed in Table 10 and Table 11 for these key photos suggests that both groups of people hold the same meaning for natural and developed areas. Indeed the language and meanings are particularly similar. Table 16 to highlights the consistency of responses.

Table 16. Denotative and connotative meanings of key views comparing city and rural residents

Photo	*Person*		*Denotative (D) and Connotative (C) Meaning*	
	Brisbane	*Esk / Kilcoy*	*Brisbane person*	*Esk / Kilcoy person*
C018	03-055	06-022	D: houses, trees C: ugly beachside hill	D: close houses, trees C: cluttered hill
		10-001		D: close buildings, trees C: ugly built-up area
U086	03-090	06-024	D: cars, buildings C: untidy car-park	D: building, car-park C: unattractive car-park
	03-098	10-015	D: car park, concrete C: awful car-park	D: buildings, concrete C: stark car-park
B079	03-121	06-039	D: tree ferns, palms, dense, shade C: restful	D: vines, tree ferns C: tranquil rainforest
		10-001		D: trees, C: beautiful rainforest
		10-017		D: - C: natural rainforest

In each case, the respondent has identified similar or identical denotative meanings (eg. 'houses / close houses', 'buildings / buildings' 'tree ferns / tree ferns') which holds a similar connotative meaning (eg. 'ugly / cluttered', 'untidy / unattractive' and 'tranquil / restful').

This investigation suggests that while there is some variation between individuals in the views they choose and the meaning they associate with those views, these differences do not appear to be attributable to their living environment to the extent this is revealed by their place of residence. At a group level, city people and rural people appear to hold more commonalities than differences in their preference for views, and the meanings of those views.

Discussion

Interpretation against existing theories

As suggested in the introduction to this essay, one of the major hypothesis about people's visual preference for the environment is that we are biologically predetermined to like certain landscapes and dislike others because of our early evolutionary adaptation, as espoused through prospect-refuge theory (Appleton 1975). The above analysis is concurrent with the theory that open, lush, and watered natural environments are more preferred than built environments. The connotative meanings of peace and tranquillity attributed to these scenes

suggest that we are more psychologically attuned to these environments than environments dominated by concrete and bitumen, said to be busy, cluttered or ugly.

These results are also congruent with studies by the environmental psychologists, Rachel and Stephen Kaplan (Kaplan and Kaplan 1989), who have observed that:

> *"it is wondrous to find … strong and pervasive consistencies in the way people interpret the environment and … their preference for scenes that reflect nature as opposed to more human-induced elements. (Kaplan and Kaplan 1989).*

This study also supports studies of affective qualities of the environment reported earlier in this essay, (Russell, Ward et al. 1981). There is a high level of concurrence in the connotative meanings used by people in this study (eg. peaceful, pleasant) and the words used to describe affective factors described by Russell and Ward (eg. relaxing, pleasant).

This investigation also highlights that people commonly infer despoliation of nature with connotative terms such as such as 'spoilt', 'cluttered', or 'destroyed'. These meanings are consistent with the theories and study of Berleyne who suggests that people's aesthetic preference is proportional to the level of uncertainty and conflict it engenders (Berlyne, Madsen et al. 1973; Porteous 1996).

Results are also consistent with sociological studies that provide a cultural interpretation of people's use of the outdoors and the beach (Fiske, Turner et al. 1987). Using a semiotic approach similar to analysis described in this essay, Fiske examines Australian's conflicting ideologies to both 'tame' nature and to be 'at one' with nature.

> *"The openness and friendliness of the Australian people is linked with the outdoors as the natural location for social interaction, and this in turn connects with the kind of existence mythologised in the swagman…"*

This mythologised view of Australian culture may partly explain the preference for 'country' and 'open land' reported by both city and rural residents in this study.

Fiske also examined the conflict between the nature and culture which occurs in planned development of the Australian beach as illustrated in Figure 7, which he interprets as follows:

> *"The move from culture (the city) on the right, to nature (the sea) on the left is effected through a number of zones. First there is the road, the public site of transition, the boundary beyond which the car … cannot pass. Next comes the grass, or more typically and significantly, lawn …(which) … provides an easy transition towards nature" (Fiske, Turner et al. 1987).*

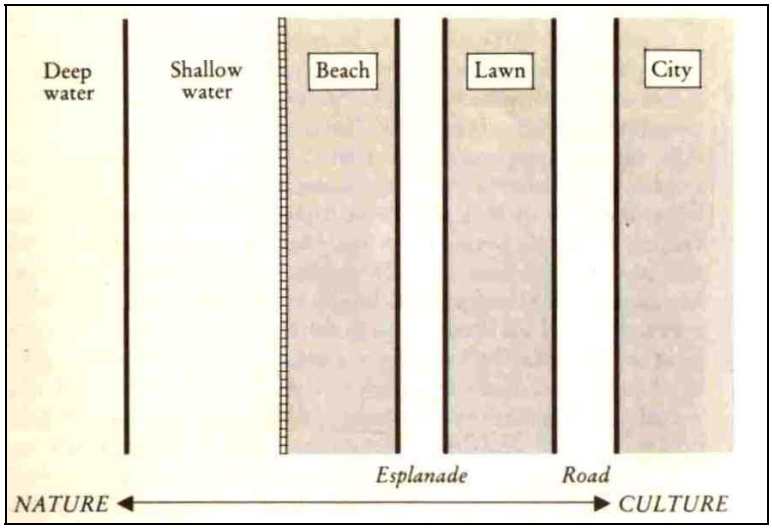

Figure 7. Zones of rhe beach (Fiske, Turner et al. 1987)

The conflict between these zones is evident in statements by people in this investigation, that a beach-side area was been ‘spoilt’ by the rapid transition from suburban housing to the sea. People also observed that ‘housing is too close together’, and ‘too close to the beach’, resulting in a perception that the view was ‘spoiled’ and ‘ugly’.

Comparison against quantitative data

One of the assertions about quantitative methods used in preferences surveys such as the SEQ 2004 Public Preference Survey (SEQRSAS 2005) is that they rely on the use of quantitative statistics to calculate averages which obscure the full diversity of people’s opinion.

While that may be partly true, this investigation suggests that there also good agreement about what people like and don’t like, and the meanings they associate with natural or built-up views. This agreement between qualitative and quantitative results supports the use of quantitative survey methods for indicating major trends about popular preferences for views.

Implications for future public surveys

This investigation has highlighted the utility of qualitative sociological interpretation to improve the understanding and theoretical basis of survey results, and the utility of these techniques to modify and improve measurement procedures.

One of the greatest contributions of this work would be to review the descriptions of Visual Domain and Visual Element against the denotative and connotative meanings defined from a qualitative sociological investigation of this survey data.

Qualitative data and its sociological interpretation can provide independent research knowledge useful for developing and refining theory about the meaning of visual images.

Implications for urban and landscape planning

This investigation of the popular meaning of views suggests that photographs and people’s written response to them, carry strong messages relevant to the work of urban planners and designers with an interest in the psychological health of residents and the sustainable development of cities and towns.

This investigation suggests that areas of natural open space provide peace and rest for people, away from busy and cluttered parts of urban areas.

The investigation also suggests the importance of maintaining a gradual spatial transition between nature and cultural elements. This concept is aptly demonstrated by one of the ‘middle’ preference views selected by one of the Esk residents (see Figure 8). This image and the words provide a fitting conclusion to this essay.

A view of:	Residences nestled under a hill with interspersed greenery
It looks like:	A well planned estate.
I like:	Its quietness and green space

Figure 8. Photo U026 (photo by Rob Simson, Brisbane. Description by person 06-024, Esk)

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Appendices

Appendix 1. SEQ 2004 Public Preference Survey - Interview procedures

From (SEQRSAS 2005) page 8.

Each interview participant was asked to individually undertake four principal tasks (A-D) and to provide other supplementary information at the end of the interview. Interviews were conducted for groups of between 2 and 12 people. In most cases 6 people attended each interview session. Interviews lasted about 1 hr and 15 minutes.

The tasks for survey participants were:

Task A. Compare and rate 20 photos by placing them on a grid under columns numbered from 1 to 10. The grid has places for up to four photos in each column ie. a total of 40 cells. Interview participants were asked to place at least one photo in column 10 (representing the most preferred view) and at least one photo in column 1 (representing the least preferred view). Interview participants could place up to 4 photos in any one column. They were not required to place a photo in every column.

Once participants completed the rating of all photos, they recorded the rating and the identifying code for each photo (written on the back of the photo) onto an A4 recording form that has the same layout as the grid. An example of a completed survey form is given in Figure 9.

View/s you like LEAST — View/s you like MOST

1	2	3	4	5	6	7	8	9	10
U131	U004			U104	R070	C061	R034	B108	B024
U083	B004			R016	Z999 [5]	C099	C104	B107	R024
				C075		C094		B088	
				U112					

Figure 9. Example of a completed photo rating form

Task B. Record what they liked or disliked about the view for each of the photos in the top row under columns 1, 3, 5, 8 and 10[6] by answering the following questions:

- Q1. Basically, what type of view are you looking at?
- Q2. How does this view look to you?
- Q3. What things do you like about this view?
- Q4. What things don't you like about this view?

Task C. Record their opinions about management of the areas in each photo for its scenic values, compared to other values of the open space. This question was completed for each photos in the top row under columns 1, 5 and 10 by answering the following questions:

- Q1. What are the main values or uses of this area that you can think of?
- Q2. How important are the scenic values of this area compared to its other values or uses? People were able to tick a box from 1 (the most important value) to 5 (the least important value)

[5] Z999 is used to indicate photos with an invalid Photo identifier due to transcription errors

[6] Task B was completed for 5 photos 1, 3, 5, 8 and 10 for most interviews. During an initial round of interviews, Task B was completed for photos with ratings of 1, 5 and 10.

- Q3. If this area was owned by the Council or the State Government, should the scenic values of this area be protected, managed, or improved? If your answer is yes, what actions should be taken?
- Q4. If this area was privately owned, should the scenic values of this area be protected, managed, or improved? If your answer is yes, what actions should be taken?

Task D. Record basic personal information such as their age, sex and where they live. People were asked to answer the following questions by ticking one of a short-list of possible responses.

- Q1 Are you male or female?
- Q2. What is your age group?
- Q3. What is the level of the highest qualification you have completed?
- Q4. What is your major occupation?
- Q5. If you have a full or part time paid job, what industry do you mostly work in?
- Q6. Which Local Government Areas in South East Queensland do you live in?
- Q7. If you do not live in SEQ, where do you live?
- Q8. If you live in Australia, what is your postcode?
- Q9. If you live overseas, which country do you live in?
- Q10. How would you describe the density of housing in the area where you live? (high density city, city suburb, town, rural residential, bush or rural)
- Q11.Do you live within 1 km of any of the following? (crop, grazing land, river, beach, forest, urban park)

People were finally asked to complete a feedback sheet and to provide their contact details for (a) receiving results of the survey and (b) entry into a holiday competition.

Appendix 2. People and photos used for the analysis of meaning

Person	*Sex*	*Age*	*Education*	*LGA*	*PhotoID*	*Preference*
03-032	Male	45-64	Bachelor Degree	Brisbane	R129	Least
					C015	Middle
					R024	Most
03-055	Female	35-44	Certificate	Brisbane	C018	Least
					U007	Middle
					C089	Most
03-090	Male	65 +	Advanced Diploma, Dip	Brisbane	U086	Least
					R121	Middle
					B053	Most
03-098	Female	45-64	Advanced Diploma, Dip	Brisbane	U086	Least
					R121	Middle
					R083	Most
03-121	Male	45-64	Postgraduate Degree	Brisbane	R090	Least
					U110	Middle
					B079	Most
03-135	Male	65 +	Certificate	Brisbane	R090	Least
					C046	Middle
					R008	Most
03-139	Female	25-34	Advanced Diploma, Dip	Brisbane	R129	Least
					C015	Middle
					R024	Most
06-022	Female	15-19	Still at school	Esk	C018	Least
					B029	Middle
					C017	Most
06-024	Male	65 +	Year 10 (Junior High)	Esk	U086	Least
					U026	Middle
					B085	Most
06-037	Female	45-64	Bachelor Degree	Esk	U097	Least
					C015	Middle
					R100	Most
06-038	Male	35-44	Year 12 (Senior High)	Esk	U039	Least
					C018	Middle
					R108	Most
06-039	Male	25-34	Certificate	Esk	U072	Least
					R045	Middle
					B079	Most
10-001	Male	25-34	Year 10 (Junior High)	Kilcoy	C018	Least
					U109	Middle
					B079	Most
10-002	Female	45-64	Graduate Dip, Cert	Kilcoy	U097	Least
					C015	Middle
					C017	Most
10-015	Female	45-64	Advanced Diploma, Dip	Kilcoy	U086	Least
					C038	Middle
					B077	Most
10-017	Male	45-64	Year 10 (Junior High)	Kilcoy	U039	Least
					R060	Middle
					B079	Most

Appendix 3. Survey Form B

Participant Number: _____ View rating *(circle):* 1 3 5 8 10 Photo code: _____

Imagine you are standing at the spot this photo was taken, looking at this view

Q1. Basically, what **type** of view are you looking at?

I am looking at a view of …

Q2. How does this view look to you?

I think it looks…

Q3. **What things** do you like **about this view?**

I like the …

I like the …

I like the …

Q4. **What things** don't you like **about this view?**

I don't like the …

I don't like the …

I don't like the …

Appendix 4. Written responses to survey task B

Person: 03-032 **| LGA:** Brisbane

Preference	Least	Middle	Most
Photo	R129	C015	R024
			
Q1 A view of	A power pylon in the country	A sheltered beach with a lot of manmade holiday structures and a row of pine trees	Country view of a dam with rolling hills and cattle under trees
Q2. It looks	Pleasant view spoilt by intrusive out of place steel pylon	Very touristy. A place attractive to families with young children no surf	Very pleasant and peaceful
Q3 I like the	Trees and setting		Tree lined creek
I like the	Set in the country		Cattle resting in the shade of a the tree
I like the	Hills in the background		Interest created by the water in the dam acts as a focal point
Q4 Don't like the	Power pylon	Clutter of tourist facilities	Grass could be greener and sky bluer but it is a typical Australian Queensland country scene.
Don't like the		Regimented planting of pines	Much of the original vegetation has been removed
Don't like the			

Person: 03-055 **| LGA:** Brisbane

Preference	Least	Middle	Most
Photo	C018	U007	C089
			
Q1 A view of	Residential beachside hill	Beachside medium high density residential	A bay and hill mountain in background
Q2. It looks	Ugly	Messy unplanned	Exquisite
Q3 I like the	Trees. The hill	Sea	Natural wilderness
I like the	Houses which are almost invisible among the trees	Trees	
I like the	Sand	Trees in front of the two level townhouses front right	
Q4 Don't like the	Style of the houses	Haphazard building design	
Don't like the	Lack of integration of houses and hillside. Lack of integration of houses and trees.	Buildings without any trees between or next to them	
Don't like the	Ugly design of houses		

Person: 03-090 **| LGA:** Brisbane

Preference	Least	Middle	Most
Photo	U086	R121	B053
			
Q1 A view of	Car park	Sugar cane farm	Mountainous bushland
Q2. It looks	Boring	Green and combination of agriculture and bush land	Restful. Calm
Q3 I like the	Few trees left	Bush background	Space. Green
I like the	Shade given by trees	Tidy appearance and cut cleared area and the still growing area	Variety of trees in foreground
I like the		Even though it is agricultural it is still green	
Q4 Don't like the	Buildings surrounding	Clearing of bush for use for agriculture	Heat haze
Don't like the	Untidy functionalism		
Don't like the	Untidy car buffers		

Person: 03-098 **| LGA:** Brisbane

Preference	Least	Middle	Most
Photo	U086	R121	R083
			
Q1 A view of	A car park	Field of wheat and a road	A beautiful old bridge over a creek in the bush
Q2. It looks	Awful	Nice but boring	Like it could be painted. Peaceful and calm
Q3 I like the	Trees are quite beautiful	Trees in the background	Creek with water
I like the		Wheat	Old tree stumps
I like the			Trees in the background
Q4 Don't like the	Cars	Road looks dusty and dry	Very little water
Don't like the	Concrete	Too organised field	
Don't like the			

Person: 03-121 **| LGA:** Brisbane

Person ID	03-121	**LGA**	Brisbane
Preference	Least	Middle	Most
Photo	R090	U110	B079
			
Q1 A view of	Hillside tinkered in background dominated by the telecom tower	A vista fashioned golf course with hills in background	Significant. Dominated by tree ferns and palms
Q2. It looks	Spoilt. The natural plane and slope is sharply intersected by vertical tower	OK. Easy on the eyes	Cool, restful, exotic
Q3 I like the	Blue sky with a couple of clouds	European-like park landscape	Interplay of light and shade
I like the	Forested slope	Variety of shades of green	Vertical elements contrasting with dense foliage
I like the	Some variation within the forest and some dominant trees on skyline	Shadow and light interplay	
Q4 Don't like the	Stark visual dominance of vertical structure	Use of cypress	
Don't like the	Contrasting colours of the manmade structures		
Don't like the			

Person: 03-135 **| LGA:** Brisbane

Preference	Least	Middle	Most
Photo	R090	C046	R008
			
Q1 A view of	A mobile phone tower in front of a treed hill	Beach and ocean	Countryside cane fields and river with mountains in distance
Q2. It looks	Terrible	Very peaceful	Great
Q3 I like the		Continually changing view of the sea	Peaceful river
I like the		Warning sign on beach	Cane fields
I like the			
Q4 Don't like the	Mobile phone tower and associated building	Rubbish on beach	Fact that the canfields are threatened by development
Don't like the			
Don't like the			

Person: 03-139 **| LGA:** Brisbane

Preference	Least	Middle	Most
Photo	R129	C015	R024
			
Q1 A view of	Cleared land with a huge electricity pole in the middle of it	An urban beach	A waterway (flowing existing) through pastured land green from recent rain
Q2. It looks	Dangerous unhealthy	Overused overcrowded and polluting	Peaceful nurtured by water the land at peace with itself.
Q3 I like the	Blue sky	Water	Pool of water
I like the	Young native trees	Obvious community nature of the area	Peacefully grazing cattle
I like the	Greenness	Trees in the background	Feng Shui. Yes the large tree next to the pool and the line of the trees in the background.
Q4 Don't like the	Radiation which would be coming off the metal	So many cars parked so close oil and tyre chemical run off	Knowledge that it was cleared
Don't like the	Fact that it is cleared land	So many structures built so close it looks overcrowded and therefore damaging	Houses in the distance

Person: 03-139 **| LGA:** Brisbane

Preference	Least	Middle	Most
Photo	C018	B029	C017
			
Q1 A view of	A frontal street of houses at the beach	A creek surrounded by trees	The ocean and rocks
Q2. It looks	Cluttered crowded busy	A little dirty but peaceful	Absolutely stunning, relaxing, gorgeous
Q3 I like the	Trees on the hill separating houses	Green leaves and trees surrounding either side like a frame	Colour of the water
I like the	Sand in the corner	Curve of the river the water looks cleaner and nice	Palm trees in the corner
I like the	Palm trees along the road	Little rocks in both bottom corners	Little rock pools
Q4 Don't like the	Houses so close together	How dirty the river creek is	I like all of it. Being picky - buildings to the right
Don't like the	How the houses ruin the view	Dead tree in the water on the left	Colour of the sky

Person: 06-024 **| LGA:** Esk

Preference	Least	Middle	Most
Photo	U086	U026	B085
			
Q1 A view of	A car park	Residences nestled under a hill with interspersed greenery	A stretch of water with tree growth at the waters edge
Q2. It looks	Unattractive	A well planned estate	Restful
Q3 I like the	Few shaded car parks	Its quietness and green space	Stretch of water
I like the			Healthy vegetation
I like the			
Q4 Don't like the	Unimaginative architecture of the building		
Don't like the			
Don't like the			

Person: 06-037 **| LGA:** Esk

Person ID	06-037	**LGA**	Esk
Preference	Least	Middle	Most
Photo	U097	C015	R100
			
Q1 A view of	Looking down a roadway	Looking from water back to picnic area	Open grassland moving up to treed hills
Q2. It looks	A fairly busy urban road	A fairly busy but relaxing area	Quiet
Q3 I like the	Trees and scrubs dividing the roads	Water	Combination of open space and trees
I like the		Provision of plenty of shade areas	
I like the			
Q4 Don't like the	Great expanses of bitumen	Lack of natural shade trees	
Don't like the			
Don't like the			

Person: 06-038 **| LGA:** Esk

Preference	Least	Middle	Most
Photo	U039	C018	R108
			
Q1 A view of	Quarry with a shed and concrete blocks in the foreground and a timbered ridge behind	An esplanade roadside dwellings and dwellings on an elevated ridge behind the esplanade	Open forest country with timbered mountain country in the background
Q2. It looks	Barren and untidy	Affluent	Peaceful and pleasant
Q3 I like the		Relaxed appearance	Beautiful open pastures in the foreground
I like the		Modern dwellings	Lovely shade trees
I like the			Well maintained neat appearance
Q4 Don't like the	Starkness of the photo	Spindly trees in the foreground	Fact that it looks so dry
Don't like the	Untidiness of the surrounds		

Person: 06-039 **| LGA:** Esk

Preference	Least	Middle	Most
Photo	U072	R045	B079
			
Q1 A view of	Standing in a park oval looking across the road at a car park and shops	Looking down on spread out houses in a lo density subdivision	Rainforest vines and tree ferns
Q2. It looks	Cluttered messy claustrophobic	Interesting but the housing spoils the pristine scrub land	Tranquil quite calm
Q3 I like the	Palm trees	Densely wooded areas	Depth of darkness in the background
I like the		Quite road leading up to the farm house	Tree ferns
I like the		Clear blue down near the house	Straightness and tallness of trees
Q4 Don't like the	Building architecture. Square and unimaginative.	Small areas of dense housing	
Don't like the	Barbed wire on top of high fence		
Don't like the	Dirty pump electric motor in car park. Weeds along fence.		

Person: 10-001 **| LGA:** Kilcoy

Preference	Least	Middle	Most
Photo	C018	U109	B079
			
Q1 A view of	Built up coastal area	Semi urban	Rainforest bush
Q2. It looks	Over populated	Built up but not overly	Peaceful
Q3 I like the	Remaining trees	Trees	Trees
I like the		Lawn	Feel it invokes
I like the		Tidy yard	Beauty
Q4 Don't like the	Ugly buildings	Brick house	
Don't like the	Way too dense housing		
Don't like the	Road too close to beach		

Person: 10-002 **| LGA:** Kilcoy

Preference	Least	Middle	Most
Photo	U097	C015	C017
			
Q1 A view of	A highway	A beach and water	Rocky foreshore and sea
Q2. It looks	Unnatural and hectic	Relaxing	Uplifting and fresh
Q3 I like the	Trees and shades beside the road	Water	Colour and clarity of the water
I like the		White sand	Rocky foreshore
I like the		Pine trees	Pandanus trees
Q4 Don't like the	Towers	Parked cars	
Don't like the	Road	Shelter shed	
Don't like the	Housing in the background		

Person: 10-015 **| LGA:** Kilcoy

Preference	Least	Middle	Most
Photo	U086	C038	B077
			
Q1 A view of	Car park	Non-surf beach sweeping to a point	Rainforest garden near / between road
Q2. It looks	Stark unplanned cluttered	Peaceful isolated	Cool and inviting
Q3 I like the		Pebbles on the beach	Greenery
I like the			Shade
I like the			Vegetation
Q4 Don't like the	Clutter of buildings	Fact that its a bit bare	
Don't like the	Lack of trees and shade		
Don't like the	Bare concrete and disarray of car stoppers		

Person: 10-017 **| LGA:** Kilcoy

Preference	Lowest	Middle	Highest
Photo	U039	R060	B079
			
Q1 A view of	Quarry	A pineapple farm	A pocket of rainforest
Q2. It looks	Sheer destruction of nature I hate this photo	Shows how primary production can suit and fit in with the landscape	Nature at its best
Q3 I like the		Trees in the background	Beauty
I like the		Balance of buildings and layout of area	Words cannot do it justice
I like the			
Q4 Don't like the	House in background is too close to site	Fact that no people are in photo	
Don't like the	Foreground is untidy	Fence post in front of photo	
Don't like the			