People only see what they are prepared to see.

Ralph Waldo Emerson, American poet and essayist (1803-1882).
The previous chapter developed an overview of the people who visited the zoos at Adelaide and Sydney, by constructing a profile and examining their motivations for visiting and their frequency of visitation. This chapter looks at the amount of time visitors actually spent looking at the different exhibits in the zoo and explores the differences in these viewing times as a reflection of their viewing behaviours and activities at the zoo. The viewing times of visitors at various exhibits were measured, and the influences of some of the different components which attracted and held attention were examined. A range of features that created a focus for the attention of visitors was explored to determine whether visitors understood and appreciated the various needs of the different animals exhibited and the many difficulties of providing for them in captivity, or whether visitors were merely enjoying themselves and benefiting from the pleasant atmosphere and surroundings, characterised by displays of rare and interesting animals. In the zoo, a number of competing alternatives confronted visitors, attracting their attention and influencing their viewing times, so that the amount of time spent looking at the different enclosures varied greatly. Two concepts relating to the viewing behaviour of visitors were developed: a ‘half-life’ viewing time and ‘zoo fatigue’. To determine what visitors perceived as successful (or ‘good’) exhibits, the concept of popularity of an exhibit was developed from an examination of the times spent viewing the different exhibits.

The results outlined in the previous chapter showed that people visited the zoo mainly for recreational purposes. It is known that live animals attract attention and put people in a mood for learning and understanding (Bitgood & Patterson, 1987) and that visitor impressions are clearly influenced by the way in which the different animals are exhibited (McManamon & Stevens, 1995). Bitgood et al. (1988) noted that competition existed between exhibit features, exhibit signs, neighbouring exhibits and active versus inactive animals, and Coe (1985) mentioned the problems which have confronted zoo management in developing functional environments for animals, which provide a pleasant atmosphere for visitors at the same time. Little research has been reported examining the importance of the visual effectiveness of various exhibits in the Australian zoo.

From the time that zoos first allowed the public to visit, they have been a place where children have been taken. People have chosen to visit zoos with family and friends for fun and enjoyment, and zoos have also been regarded as potentially providing a site for learning and for developing an education about nature. It is children, more often than not, who motivate the zoo visit. *Henry and Emma’s Visit to the Zoological Gardens*, published in 1829, was the first
guide to London Zoo at Regent’s Park which was addressed specifically to children (Baratay & Hardouin-Fugier, 2002:205). It has long been appreciated that the imagination of children has been ruled by animals. Throughout the 20\textsuperscript{th} century this interest of children was increasingly catered for with the introduction of stuffed toys, illustrated books, comic strips and animated films. Animals have been presented with anthropomorphised behaviour (such as Beatrix Potter’s Peter Rabbit (1902) and A. A. Milne’s Winnie the Pooh (1926)) or set in a humanised environment (like Walt Disney’s Mickey Mouse (1928) and Dumbo (1941)). Zoos enhance the transformation of real creatures from imaginary ones, and in so doing attract the close attention of children and their parents.

In recent years a variety of different and sophisticated methods have been used by researchers to develop an understanding of the ways in which various institutions attract their audiences. Binks and Uzzell (1990) outlined general methods which have proved to be useful in museum research. They noted that behavioural mapping, or tracking, was a useful complement to other techniques such as questionnaires, in that it provided accurate information relating to the amount of time actually spent stopping and viewing different exhibits. To obtain the data discussed in this chapter, tracking observations were carried out at selected exhibits in the zoos during each of the opening hours, on every day of the week, at various times throughout the year, to ensure that the various patterns of season, weather and animal activity were minimised. Groups were selected as they approached exhibits and the total viewing time for one adult person in the visiting group recorded, as well as the number and gender of persons in that group and any other factors, such as weather and animal behaviour, that might have influenced viewing times. This method of tracking provided an accurate indication of the exact length of time that visitors actually stopped to view the different exhibits, at different times throughout the day. Since tracking reflected the degree of engagement and provided an indication of anything that appeared to attract attention, it proved to be a simple method of gaining accurate data without interviewing visitors. However, this technique did not provide a complete account of what the visitors were doing. It was difficult to interpret the actions of visitors, since they may have been intrigued by something they found fascinating, or they may have been experiencing difficulty in seeing or understanding everything in the exhibit. Tracking was carried out at nineteen different exhibits in Adelaide and fifteen exhibits in Taronga at various times throughout the calendar years 2005 and 2006.
5.1. Viewing times

Visiting the zoo to watch the various activities of animals in captivity is a more popular undertaking than is generally recognised. As mentioned previously, the Australian Bureau of Statistics (ABS, 1998) indicated that approximately 43% of the Australian population visit the zoo, on average at least once a year, so that virtually everybody visits a zoo at least once in their lifetime. The various enclosures in zoos have been developed to display animals in a manner which will be for the benefit of these viewers. Consequently, analysing the manner in which audiences are attracted to an exhibit should be an integral part in the evaluation and planning of exhibits. There has been a tendency to neglect this facet of research in Australian zoos, which possibly accounts for the scarcity of relevant management information. The overall time of viewing exhibits at Adelaide was relatively low, with the mean viewing time being 58 seconds, compared with the mean viewing time for exhibits at Taronga of 67 seconds (Table 5.1). These times indicated that as most visitors moved through the zoo, they stopped to spend only short periods of time at most exhibits, or as Rosenfeld (1980) noted, visitors to the zoo tended to ‘scan their environment, looking for something interesting’.

Table 5.1: Viewing times at exhibits.

<table>
<thead>
<tr>
<th>Mean Viewing Time</th>
<th>Adelaide</th>
<th>Taronga</th>
<th>Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>58</td>
<td>67</td>
<td>64</td>
</tr>
</tbody>
</table>

Time in seconds.

Source: 11,196 tracking observations.
(Adelaide 3,549 – Taronga 7,647)

Viewing times of visitors were further examined in terms of the visitor gender and the size and social structure of the visiting category group to determine factors influencing viewing patterns.
5.1.1 Distribution of viewing times

The viewing times at exhibits in both zoos varied greatly, as some exhibits attracted a considerable amount of attention while others were almost totally ignored by some visitors. These viewing times were tabulated (Appendix Tables 5A, 5B) and the distribution shown diagrammatically (Figure 5.1). The large sample (11,196 observations) overcame any possible bias that may have been brought about by factors such as weather and time of the year. It was apparent that a number of factors affected the total amount of time spent viewing the different exhibits, some of which are discussed further in this chapter.

![Figure 5.1: Percentage of viewing times in the zoos.](image)

\[ N = 11,196 \text{ tracking observations.} \]
\[ (Adelaide 3,549 – Taronga 7,647) \]
Reference: Appendix Tables 5A and 5B.
Statistical analysis using this raw data was limited, since the distribution of visitors was not symmetrical and, statistically, did not follow a normal distribution. Initially it appeared that the distribution could be considered bimodal, with one set of short-term and one set of long-term visitors. This could be equated with the terminology of Melton et al. (1936) who described viewers as ‘uninterested’ and ‘interested’. On closer examination, however, it was clear that the data did not fit a bimodal distribution; rather, the percentage of viewers fell with increased viewing times.

As mentioned in Chapter 3, during the summer of 1996 Ward and colleagues (Ward et al., 1998) gathered data in Zurich Zoo, adopting the methods of Stolba and Mullers (1990) to measure the popularity of different exhibits within the zoo. They classified visitors into three groups: those who did not stop at an exhibit were termed ‘passers-by’, those who stopped and looked for less than ten seconds were termed ‘short-term observers’, and those who stopped for longer than ten seconds were ‘long-term observers’. Since this measure best reflected the actual amount of interest shown by viewers at an exhibit, rather than a simple presence or a casual interest, it was adopted for use in this research and the percentage of each group calculated (Table 5.2).

![Table 5.2: Visitors to exhibits.](image)

<table>
<thead>
<tr>
<th>Visitor</th>
<th>Viewing Time</th>
<th>Adelaide</th>
<th>Taronga</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passer-by</td>
<td>0 seconds</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>Short term</td>
<td>1-9 seconds</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>Long term</td>
<td>10 seconds or more</td>
<td>74</td>
<td>74</td>
</tr>
<tr>
<td>Long term</td>
<td>10-20 seconds</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>21-60 seconds</td>
<td>29</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>&gt;90 seconds</td>
<td>20</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>&gt;120 seconds</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>&gt;180 seconds</td>
<td>6</td>
<td>9</td>
</tr>
</tbody>
</table>

Figures expressed as a percentage of total viewers.
N = 11,196 tracking observations.
(Adelaide 3,549 – Taronga 7,647)

The distribution of viewing times at Adelaide and Taronga zoos reflected a number of similarities. For the ‘passer-by’ category, 11% of viewers at Adelaide did not stop at the exhibit being monitored, compared to 15% at Taronga. These ‘passer-by’ visitors apparently saw little to tempt them to stop. This is not a derogatory conclusion, nor could it be assumed
that visitors were not taking anything in or enjoying their experience, particularly since in some cases they could have been passing the exhibit for a second or third time, having spent time viewing it earlier in the day. For ‘short-term’ viewers, it was observed that at Adelaide 15% of visitors viewed for periods of less than 10 seconds, compared with 11% of Taronga visitors. The percentage of long-term viewers was the same in both zoos, although the percentage of viewers staying longer than 90 seconds was higher at Taronga (24%) than at Adelaide (20%), a figure which was obviously reflected in the higher mean viewing time. This average higher viewing time at Taronga was presumably linked with the greater number of exhibits at Taronga classified as third-order exhibits (defined in Chapter 3), most of which had been constructed recently.

Few visitors (1% at Adelaide, 3% at Taronga) remained viewing individual exhibits for longer than five minutes. In Adelaide, these viewing times occurred at the lion (awaiting and watching feeding), seal (feeding), hippopotamus (feeding and movement) and the new orang-utan (playing with enrichment items) enclosures. At Taronga, these viewing times occurred at the gorilla (feeding), giraffe (feeding and photographic session), chimpanzee (keeper talk), lion (feeding), sun bear (manipulating enrichment devices), seal (keeper talk) and elephant (playing) enclosures.

The maximum viewing time of 1320 seconds (22 minutes) was recorded at the sun bear exhibit at Taronga, when the viewer was intrigued by the behavioural patterns of the sun bears playing with coconuts and manipulating enrichment logs to obtain food rewards (Plate 5.2). Other high recordings at Taronga were observed at the giraffe enclosure (while viewers were taking photographs or listening to the keeper talk), the chimpanzee enclosure (while viewers were attracted by the activities of young offspring), and the gorilla enclosure (during a period of play activity by baby gorillas).

Although valuable information can be gained by looking at viewing times, the results need to be examined with caution, as a number of factors were involved. The majority of visitors spent only a short period of time looking at most exhibits, but more importantly, they spent longer periods of time looking at a small number of exhibits, so it is at those exhibits that the zoo has the opportunity to educate visitors. Visitors spent longer viewing when the animals were actively moving around their enclosure feeding, playing with enrichment devices, or when young babies or juveniles could easily be seen. It is an almost impossible task for zoos to ensure that such activity can be seen constantly throughout the day,
particularly since some animals, like the lions and the tigers, normally remain idle during the middle of the day. However, the provision of enrichment items, feeding times and keeper talks all have the potential to encourage visitors to stay longer at exhibit displays, all of which are discussed in more detail later in this chapter.

Plate 5.2: Victoria, Taronga’s sun bear, manipulating an enrichment food treat.

*The bear seemed to be very happy playing with the log (TSB12).*

*We liked the sun bears best, they are beautiful creatures (TSB23).*
5.1.2 Gender

The overall mean viewing time for exhibits at Adelaide (58 seconds) was less than the mean of 67 seconds observed at Taronga (Table 5.1). Little difference was noted in the viewing times between male and female visitors at Adelaide (58 and 57 seconds); females tended to have a slightly longer viewing time than males at Taronga (71 seconds compared to 62 seconds) (Figure 5.2). This was possibly related to the higher percentage of females who visited Taronga on weekdays. As indicated in Chapter 4, a higher percentage of visitors to the zoo, particularly on weekdays, were female (58%), many of whom were mothers accompanied with young pre-school children. During the tracking observations it was noticeable that these mothers often became involved in conversations with their young children at different exhibits. Sometimes these conversations centred on explaining various features which described the animal, and sometimes they centred on fantasy or fictional characters to which the children could relate.

Throughout duration of the research, 79% of visitors at Adelaide zoo viewed exhibits for less than 90 seconds, compared with 85% of visitors at Taronga. These results were similar to those obtained by both Rosenfeld and Phillpot. Rosenfeld (1981) tracked visitors in San Francisco Zoo and concluded that for 80% of exhibits visited, the average time spent viewing exhibits was between 15 and 90 seconds. Working at the Gaherty Reptile Breeding Centre at Jersey, Phillpot (1996) noted that the majority of viewers spent between 15 and 90 seconds at the popular exhibits.

At both zoos it was observed that in family groups when both parents were present, the adult males were inclined to adopt an educational role of explanation as they pointed out features and often asked children questions about the exhibit or the animal and occasionally made reference to signs and labels. Adult females, presumably mothers (or often grandmothers), tended to show more interest in caring for the group as a unit and in general were most likely to adopt the caretaking parental role. They tended to refer more to directional maps to determine where they were going and what they intended viewing next. They also gave the impression of attempting to adhere to a strict schedule in an attempt to ‘see everything in the zoo’, which promoted the notion that they were in a constant rush (which, in some cases, was even more pronounced than the movements of the children). This was particularly noticeable on weekdays when a mother was in the company of other mothers;
although they actually stopped at the exhibit, they appeared to pay little attention to either the animals on exhibit or to their own children. On average, females stayed longer at the exhibits, even though at times their attention may have been directed elsewhere, particularly when they became involved in group conversations with young mothers. This feature of viewing was previously noted by Diamond (1986).

Figure 5.2: Viewing times at exhibits – Gender.

N = 11,196 tracking observations.
(Adelaide 3,549 – Taronga 7,647)
Reference: Appendix Table 5C.

This research did not track visitors in the reptile houses, mainly because these houses consisted of a number of different exhibits and it was clear that the attraction of the individual displays varied considerably. It was of interest to note that whereas Matilde Marcellini and Toril Jenssen (1988) found that the viewing times at the National Zoo Reptile House in Washington were not affected by gender differences, Michael Hoff and Terry Maple (1982) found that females spent less time looking at reptile exhibits than males. Although there was a degree of fear and apprehension associated with the viewing of reptiles, it seemed that they were still considered essential viewing, a topic that could be the subject of separate research.
5.1.3 Group size

A number of factors, including groups becoming involved in conversations, observing different patterns of animal behaviour, or reading labels, influenced the length of viewing time. Singles, obviously, were not involved in conversation and although some couples developed conversational patterns, it was noticeable that more than 50% of couples apparently did not discuss the exhibit. The groups which exhibited the greatest degree of conversation were families, particularly those with school age children (Figure 5.3).

In both zoos, the viewing time at exhibits increased with increasing group numbers. Analysis of the viewing times of different sized groups revealed that in Adelaide the mean viewing times of different sized groups varied between 44 seconds (for singles) and 90 seconds (for groups of seven). At Taronga slightly lower variation was observed, with mean times for similar groupings ranging from 56 to 91 seconds.

![Figure 5.3: Viewing times at exhibits – Group size.](image)

N = 11,196 tracking observations.
(Adelaide 3,549 – Taronga 7,647)
Reference: Appendix Table 5D.
Groups which consisted of adults only tended to view for longer periods, particularly when they became involved in conversations relating to the animals on display. Predominantly, the larger groups visiting the zoo were families, which included children, where the viewing times of the group were influenced by the enthusiasm and energy patterns of the children (Plate 5.3). However, it was apparent that a greater length of time spent at the exhibit was linked with greater amounts of conversation. Bitgood et al. (1993) found that larger groups visiting museums appeared to have a negative influence on the total time individuals spent at particular exhibits, whereas in the present research, larger groups had a positive influence on viewing times.

It would appear that the different behaviours displayed by different sized groups had been brought to the zoo as part of the social context of the visit. These were natural behaviours which were dependent upon the other members of the group. For the majority of groups who visited the zoo, the trip was a social experience which centred upon recreation and enjoyment; one in which the unit could experience a pleasant and enjoyable day.

Plate 5.3: Two family groups viewing an enclosure together at Taronga Zoo.
5.1.4 Categories

In the previous section, visiting ‘groups’ were considered as a specific entity, whether they were composed of only one adult (Singles), two adults (Couples) or three or more people (Family and Adult groups). Since classifying visiting groups into categories has been used successfully in a number of museum studies, by researchers such as McManus (1996), a similar approach was adopted in order to provide comparable quantitative data. The composition of these categories followed the pattern outlined in Chapter 3. The viewing times were tabulated (Appendix Table 5E) and are shown diagrammatically in Figure 5.4.

![Figure 5.4: Viewing times at exhibits - Category groups.](image)

\[ N = 11,196 \text{ tracking observations.} \]
\[ (Adelaide 3,549 – Taronga 7,647) \]
\[ \text{Reference: Appendix Table 5.E.} \]

It was noticeable that singles, those who visited alone, tended to pay brief visits to the different exhibits in the zoo. Their viewing times were similar in both zoos (Adelaide 58 seconds; Taronga 56 seconds) as they paid close attention to the animal on display and showed a tendency to focus on information provided in different signs and labels more than other categories.
At Taronga, couples spent approximately the same amount of time (63 seconds) looking at exhibits as did families with school age children (65 seconds) (Plate 5.4). The higher number of international tourists, the majority of whom were couples, might have influenced this variation in viewing times. Although these results were similar to those recorded by Marcellini and Jenssen (1988), who found no variations in viewing times between groups visiting the Reptile House at the National Zoo in Washington, they differed from those of Phillpot (1996) who found that couples spent longer periods of time viewing exhibits in the reptile house at the Jersey Wildlife Centre.

Adult groups without children spent the longest viewing times in Adelaide (65 seconds), whereas groups with pre-school age children spent the longest times at Taronga (80 seconds). This difference was possibly attributable to the larger number of mothers who visited with pre-schoolers at Taronga on weekday mornings. In Adelaide, it was observed that the longer periods of time spent by adult groups were linked with the degree of verbal interaction among the members of the group. The shortest length of viewing times in both zoos was by the singles category – those who visited unaccompanied. Groups with children under the age of five years spent markedly less time looking at exhibits than groups with older school age children. Marcellini and Jenssen (1988), who found that viewing times of visitors were positively correlated with age, observed similar patterns.

Within the zoo environment, it was observed that ‘family’ groups tended to remain together and viewed the different exhibits as an individual unit. Their movements throughout the zoo were influenced by the presence of children, with high levels of energy, which was found to be a determining factor in viewing patterns. Many young mothers accompanied with children under the age of five restricted their time in the zoo to two or three hours, normally visiting quite early in the day. As these young children became tired or fractious, the mother would either simply abandon the idea of further viewing, or move to the food hall in an attempt to relax. On week-ends, older school aged children consistently controlled both the viewing patterns and the rate at which family groups moved through the zoo, although once the family group had stopped at an exhibit it was common to hear adults, particularly fathers, answering questions or explaining actions.
Plate 5.4: A couple looking at Australian parrots in the Helmore Aviary at Taronga Zoo. When visitors became involved in conversations they viewed the exhibits for longer periods of time.

Plate 5.5: Viewers at the hippopotamus enclosure at Adelaide.
5.2 Half-life of viewing times

The amount of time used by visitors in viewing a particular exhibit provided an easily obtainable figure of visitor behaviour. Only a small percentage of visitors viewed exhibits for more than three minutes (4.6% at Adelaide compared with 9.3% at Taronga). In his discussion of visitor studies, Menninger (1990) developed the idea of a ‘visitor survival’ curve to describe the percentage of people viewing a display. His thoughts were later used extensively by Sandra Bicknell (1995) in her work in museums. These researchers developed these curves simply as a statistical depiction of the ‘survival’ experience of the visitors at an exhibit, in the form of a graph which plotted the percentage of visitors remaining at the exhibit after a set period of time. By graphing a distribution of viewing times to construct a visitor survival curve, it was possible to develop the concept of a visitor half-life. This statistic representing the amount of time when half the viewers had left the exhibit. To derive the half-life from the survival curve, a horizontal line was drawn from the 50% mark on the y axis, to determine where it cut the curve. The corresponding reading on the x axis provided the half-life time for viewers at exhibits. Half-life survival curves were constructed for both zoos (Figures 5.5 and 5.6), with the mean half-life at Adelaide being 26 seconds, compared with a mean half-life of 37 seconds at Taronga. This half-life was also calculated for each of the exhibits studied (Section 5.4.3) and used as a measure to gauge the popularity of the different exhibits. This figure varied considerably among individual exhibits in the two zoos, ranging from a few seconds to more than a minute, and as such it was considered a useful method of measuring the level of viewer appreciation of the different exhibits.

The concept of half-life originated from the study of radioactive decay, where the half-life is the amount of time required for a quantity to decay to half of its initial value. The idea has been applied to other fields, including phenomena which have been described by non-exponential decay. In the sense of this research, this half-life statistic provided a figure which gave an indication of viewing behaviour, and represented an alternative method of reflecting the holding power of exhibits. It proved useful in that it provided a statistic for which half of the visitors viewed exhibits.
Figure 5.5: Half-life of viewing times at Adelaide Zoo.
Source: 2113 tracking observations.
Reference: Appendix Table 5A.

Figure 5.6: Half-life of viewing times at Taronga Zoo.
Source: 7647 tracking observations.
Reference: Appendix Table 5B.
### 5.3 Factors influencing viewing times

As already shown (Figure 5.1), the viewing times of visitors in the zoo varied greatly, ranging from zero (passers-by who did not stop) to times in excess of 20 minutes. The half-life survival curves confirmed that half the visitors looked at the exhibits for less than 26 seconds at Adelaide and less than 37 seconds at Taronga. Animal behaviours which involved either feeding or active movement were key factors which increased the amount of time visitors spent looking at an exhibit. Animals manipulating various enrichments effectively resulted in a combination of observable feeding and movement. The results obtained in this investigation (Figure 5.8) revealed that once visitors saw an animal manipulating enrichment items, they invariably became intrigued by the activity and continued to view the exhibit for longer periods of time. Consequently, visitor attention to the exhibit increased and viewing times increased by a factor of up to six times that of viewing when the animal was inactive. The results suggested that this was possibly the most effective method through which the overall experience of the zoo visitor was enhanced. This phenomenon represents a potential for education which could be tapped more efficiently by the zoos. From observations and comments made, it became apparent that as viewers developed more interest in the different behaviours displayed, they attempted to ascertain the various reasons for the presence and use of the different enrichment devices. The influence of the use of enrichments is investigated in Chapter 7.

The tracking observations and responses provided in the surveys indicated that the amount of time visitors spent watching the different animal exhibits within the zoo was influenced by a number of different variables; some of which were related to the exhibit, some to the animal and some to the visitors themselves. Four of these factors are considered in this section:

- appearance of the enclosure
- animal activity
- keeper interaction with animal feeding
- zoo fatigue.
5.3.1 Appearance of the enclosure

Compared to exhibits in a museum, live animal enclosures create a number of questions, since they serve both as a home to the animal and as a viewing and educational site for the visitor. In recent years, major zoos throughout the world have made considerable efforts to improve the standards of their animal enclosures. The South East Asian Rainforest exhibit at Adelaide and the elephant enclosure at Taronga are examples of new enclosures which employ naturalistic effects while providing clear viewing for the public. Although the majority of these changes have been aimed at providing a more naturalistic atmosphere for the animal, many have been developed with the intention of simply providing better and more accessible viewing for the visitor. There are no accepted definitions to determine the success of a particular exhibit, and it is difficult to make comparisons between different exhibits housing different animals. Harris Shettel (1973) specified that any exhibit, regardless of type, had to attract and keep viewer attention to be informative and helpful. John Koran et al. (1986) asserted that attracting attention and evoking curiosity were worthwhile objectives for any exhibit. Exhibits that had a wider, general appeal were more likely to stimulate group interactions than those that appealed to only one person in the group. The results reported in this section relate only to the length of time for which visitors who stopped viewed particular exhibits.

The monitored exhibits in both zoos were examined in terms of the model developed in Chapter 3 which classified exhibits into three orders. The mean viewing times observed at these exhibits are depicted in Figure 5.7. In both zoos, it was observed that the highest viewing times occurred at exhibits which were classified as third order. These third order exhibits were those in which an obvious attempt had been made to provide the animals with an enclosure which simulated their natural environment and as such was perceived by the viewing public as being ‘more natural’ (Plates 5.6, 5.7).
Plate 5.6: Rock wallaby enclosure at Adelaide – A first order exhibit.

It was pretty bare and just looked like a pile of stones (A385).

Plate 5.7: Siamang enclosure at Adelaide – A third order exhibit.

It is such a natural environment; you don’t notice they are enclosed (ASi34).
At Adelaide, the highest mean viewing times for the exhibits studied were recorded at the seal, lion, hippopotamus and meerkat enclosures, and the lowest viewing times were observed at the beaver, flamingo, and Barbary sheep. Both the lion and the seal enclosures provided good viewing areas, allowing clear visibility of the animals and their behaviours. In contrast, the beaver and Barbary sheep exhibits were older exhibits, which visitors perceived as ‘unnatural’. The flamingo exhibit provided an interesting paradox, in that although visitors, on average, did not stop to view the animal for long periods, it was regarded highly, because the proximity of the animal and the open area provided excellent viewing.

At Taronga the highest mean viewing times were recorded at the gorilla, giraffe and chimpanzee enclosures, all of which were regarded by visitors as naturalistic in appearance, and the lowest viewing means were recorded at the Helmore aviary (Plate 5.4), Himalayan...
tahr, Kodiak bear (Plate 5.8) and spider monkey, where visitors perceived the enclosures as old, too artificial in appearance, or composed of too much metal or concrete.

![Plate 5.8: Bear Canyon at Taronga, upgraded in 2000.](image)

*It looked very old, it reminded me of a South American stadium* (TKB5).

An interesting comparison was observed with the giraffe enclosures in the two zoos (Plates 5.9, 5.10). The enclosures, similar in age and appearance, both featured an old giraffe house and a relatively bare sandy substrate to accommodate the movements of the animal. The duration of viewing at Adelaide (37 seconds) was considerably less than that observed at Taronga (101 seconds). The major difference between these two exhibits was in positioning. At Taronga, where viewers look down into the enclosure, the possibility existed for several photographic opportunities of the animal, with spectacular views of Sydney harbour in the background. The giraffe enclosure at Taronga attracted longer viewing attention because of these good photographic opportunities. It was also observed that at the giraffe enclosure, several young mothers used the seating facilities as an opportunity to feed their young children. In Adelaide, visitors viewed the giraffe from across the meerkat enclosure, at ground level. The only visible backdrop to the enclosure above a bare brick wall were the spires of St.Peter’s Cathedral in the background. Adelaide visitors perceived this exhibit as ‘old’, ‘tired’ and ‘boring’, and not presenting a natural appearance.
Plate 5.9: Giraffe enclosure at Adelaide.

*The exhibit is very stark, small and barren; it does not look natural* (AG38).

Plate 5.10: Giraffe enclosure at Taronga.

*A spacious, beautiful natural habitat* (TG8).
5.3.2 Animal activity

Tracking observations indicated that the amount of time visitors spent looking at an exhibit in the zoo was the result of their being attracted by various activities of the different animals on display. According to Bitgood and Patterson (1987), it has long been accepted that live animals attract visitor attention and place people in an appropriate frame of mind for learning and understanding. However, Marcia Linn (1981) and Adelma Hills (1993:111) showed that many visitors to the zoo had already formed attitudes and expectations prior to looking at an exhibit. Throughout this research, analysis of the data indicated that a number of correlations existed between various animal characteristics and the behavioural viewing patterns of visitors. These animal characteristics included activity (or inactivity) of the animal, clear visibility, the presence of babies, and emotional factors.

The mean viewing times of visitors during different stages of animal activity were calculated. The similarities existing within the viewing populations of the two zoos are depicted graphically in Figure 5.8. Viewing times below the mean viewing figure were recorded when the animals were out of sight, inactive, stationary alert or pacing. In comparison, figures above the mean were recorded when the animals were actively moving, feeding, playing or manipulating enrichment devices. These results confirm that viewers preferred to observe some form of activity, as long as the activity was not repetitive, such as pacing. In constructing Figure 5.8, some activities, such as vocalising and preening, were not included, as it was too difficult to be able to compare accurately the different forms observed at the different exhibits in the two zoos (such as the vocalising of the siamang at Adelaide and that of the chimpanzees at Taronga).

The results showed that exhibits became more engaging for viewers when the animals were active, and visitors spent approximately twice the amount of time viewing the exhibit, compared to when the animals were inactive. Similar results were reported by Bitgood et al. (1988). This held true for all the exhibits studied and was independent of the type of activity. Whether these actions were like the slow deliberate movements of a feeding koala, or the quick playful movements of the young chimpanzees or gorillas, whenever the animals were perceived as being active, visitors viewed for longer intervals of time.
Although it was difficult to compare exhibits housing the same species, it was observed that viewing times at the meerkats was almost the same in both zoos. The enclosure at Taronga was somewhat smaller than at Adelaide, but both enclosures were similar in that they allowed visitors good opportunity for viewing and photographic activities. In both zoos it was noticeable that the activity of the meerkats distracted viewer attention from surrounding exhibits nearby. In Adelaide the meerkat enclosure was positioned in front of the giraffe, and at Taronga viewing at the Himalayan tahr was affected by the popularity of the meerkats.
When an animal was not clearly visible, visitors spent considerably less time viewing the exhibit. This was particularly noticeable at exhibits such as the tiger enclosure, where the natural camouflage of the animal made it difficult to see. On occasions when the animals were not easy to detect, such as when they might be resting in thick vegetation, visitors did not spend much time looking for them. The only exceptions to this occurred where a label specifically instructed visitors to search (such as the Red panda in Taronga) or where another visitor happened to find the animal and indicated its presence (such as the wombat in Adelaide). In both these situations it was noticeable that the visitors tended to view for longer periods of time. Both Robert Johnston (1998) and Bitgood et al. (1999), who carried out extensive studies on the potential effects of viewing times of visitors in zoological parks in America, have previously observed similar result patterns.

Whereas the activity, movement and feeding of animals held visitor attention for longer periods, when the animals were out of sight, inactive or pacing viewing times were below the mean. Lower viewing times were observed at exhibits which were often perceived by visitors as ‘not natural’, with the enclosures considered ‘too old’, or having ‘too much concrete’. The longer periods at both the gorilla and chimpanzee enclosures were linked with the degree of animal activity, the keeper talks at feeding time, or the presence of young babies, along with the perception of visitors that the behaviours of these primates resembled those of humans.

Tracking observations indicated that animals at play invariably attracted the attention of the viewing public, suggesting a greatly enhanced potential for learning and education. Survey responses confirmed that animal play was an important aspect in attracting the attention of viewers. Play facilitates the development of behavioural patterns in young animals and fosters well-being in the structure of the animal family. It appealed to people who related to those functions of play and enjoyed watching the activities.

When animals were observed manipulating their enrichments this action noticeably attracted the attention of viewers for longer periods in both zoos. At Adelaide the mean time for viewing enrichment use was 166 seconds compared to the overall mean of 58 seconds; while at Taronga the mean time for viewing enrichment usage was 251 seconds compared to the overall mean of 67 seconds. Survey responses suggested that after seeing these activities, viewers not only developed some form of understanding of the different items but also perceived that the animals’ quality of life was improved through enrichment use.
Although animal young were on display at a limited number of exhibits, there was increased interest from the viewing public in every situation that involved the presence of infants. In Adelaide baby meerkats and young siamangs fascinated onlookers, and at Taronga baby gorillas (Plate 5.11), infant chimpanzees and a young giraffe all confirmed the fact that exhibits with recently-born young generated longer viewing times. In some situations this interest had been encouraged by media publicity, particularly in Adelaide, where Channel 7 and The Advertiser were major sponsors of the Zoo.

A number of the surveys provided responses which, for the purpose of this research, were described as aesthetic or emotional. At Adelaide, the playful activity of the meerkats fascinated viewers of all ages and generated significant interest, with the most common response being ‘they are cute’ (Plates 5.12, 5.13). Endangered animals, such as the sun bears at Taronga, often evoked marked emotional responses, particularly when the viewer was aware that these bears had been ‘rescued’ from the Cambodian restaurant trade. Another factor obvious at Taronga was the amount of empathic interest shown in Australian species, particularly the Tasmanian devil and the koala. This interest was most noticeable among international visitors, many of whom had come specifically to see these particular animals.

Plate 5.12: Otter at Adelaide.

They are really, really cute (AO15).

Plate 5.13: Red Panda at Taronga.

They’re sooooo cute (T312).
5.3.3 Keeper interaction with animal feeding

Viewers constantly expressed a desire to learn more about specific animals and at all times were curious about their background history, which provided another opportunity for learning in the zoo. It was apparent that whether the animals were inactive and difficult to observe or moving actively and clearly seen, the presence of a knowledgeable keeper prepared to impart information about them markedly increased the amount of time spent viewing. Although Mazur (2001) wrote that keepers did not always consider themselves part of zoo educational programmes, it was obvious that when keepers presented information to visitors the length of time spent at the exhibit increased greatly.

Programmes involving the feeding of animals, particularly those which involved interactions with the keepers, produced positive viewing results from visitors, in that the exhibits were viewed for longer periods of time. When keeper talks accompanied feeding sessions the experience of visitors was greatly enhanced and the potential for education increased accordingly. These talks played a very significant role in educating the visiting public, not only providing valuable information relating to the animals, but also increasing visitors’ awareness of the need for conservation of valuable species in the wild as these talks invariably mentioned current research being undertaken by the zoo.

This research studied the influence of keeper talks at feeding sessions on the viewing times of visitors. Since keeper talks represented a variation in the zoo’s approach to the viewing public, two examples of feeding sessions were selected for study at Adelaide Zoo, namely the feeding of the penguins (accompanied by a keeper talk) and the feeding of the lions (with no keeper talk). Both feeding sessions were promoted by the zoo.
Penguin feeding

Each afternoon at Adelaide Zoo, the daily penguin-feeding session was accompanied by an informative keeper talk, usually lasting between six and eight minutes. Normally, the keeper hand-fed the penguins while giving an informative commentary relating to the penguins (Plate 5.14). Before the advertised time of feeding there was a build-up of viewers at the enclosure while they waited for the feeding session to commence. On average, 93 visitors were present at the start of the feeding session, some having waited up to 15 minutes for the opportunity to see the penguins being fed. Observations indicated that 70% of these visitors stayed for at least 6 minutes, 65% staying for the entire length of the keeper talk. As soon as the talk finished, a rapid decline in numbers occurred as viewers moved to the next exhibit. However, the feeding talk was responsible for extending the mean viewing time during the talk to 390 seconds, compared to a mean 44 seconds at other times throughout the day. These keeper talks not only provided valuable knowledge and information for visitors, they also represented an enormous potential to develop and increase visitor satisfaction within the zoo (Figure 5.9).

Plate 5.14: Penguin feeding and keeper talk at Adelaide.

*It was good to learn about the life style of the penguin in its natural setting (AP21).*
Figure 5.9: Distribution of viewing numbers during feeding sessions at penguin exhibit at Adelaide Zoo.

Feeding commenced at Time 0.

Source: 10 feeding session observations.
Lion feeding

A different pattern of visitor viewing behaviour was observed with the feeding of lions at Adelaide (Plate 5.15). Feeding sessions were not carried out on a daily basis and keeper talks were not given. The feeding session consisted of keepers dropping large pieces of meat (usually portions of a dissected carcass) through a chute, with the lions moving away to different parts of the exhibit to eat on their own. Tracking observations reflected a constant build-up of viewers who waited in expectation of seeing the spectacle of the big cats being given their food. On average, 225 viewers were present at the commencement of the feeding session, some having waited longer than 15 minutes. On average, these visitors waited between 8 to 9 minutes to view the feeding. A rapid fall in viewing numbers began immediately after the food had been dropped into the exhibit: 48% of visitors stayed for less than one minute and 60% had left within two minutes. In fact, the majority of viewers only watched the process of the lions being supplied with food, rather than any actual feeding behaviours of the lions themselves. Although the lions continued to feed for times in excess of 20 minutes, 50% of viewers stayed for periods less than one minute, 40% stayed for two minutes, and 7% stayed for more than three minutes (Figure 5.10).

Plate 5.15: Visitors viewing lion feeding at Adelaide Zoo.

*It was great to be so close to the animals to see the way they ate their food* (AL33).

In comparison with the penguins, the lion feeding session appeared initially to be the more popular with visitors, with a mean of 225 viewers compared to 93 at penguins. However, six
minutes after the start of the feeding session 70% of viewers remained at the penguin enclosure, compared to 3% remaining at the lion enclosure after the same period of time. This variation emphasised the importance of the keeper talk and the enhanced potential for education. It was noticeable that at the end of the keeper talk at the penguins there were always some viewers who took the opportunity to ask questions, reflecting some form of interest. In comparison, at the lion enclosure, the opportunity for such questions was limited.

Figure 5.10: Distribution of viewing numbers during feeding sessions at lion exhibit at Adelaide Zoo.

Feeding commenced at Time 0.

Source: 8 feeding session observations.
5.3.4 ‘Zoo fatigue’

The possible effects of zoo fatigue upon viewing patterns were examined. As early as 1916, Benjamin Gilman assessed visitor fatigue and sore backs resulting from the poor design of showcases. He argued that it was only by minimising museum fatigue that museums could accomplish their function as ‘expositors of the treasures committed to their charge’ (Gilman, 1916:74). It could similarly be argued that zoo administrations need to be aware of the problems associated with zoo fatigue, to better accomplish the roles stated in their mission statements, and to have a continuing effect upon the educational function of the zoo. Since visitors perceived the zoo as having an educational function, the effect of any form of fatigue must have a negative effect upon the potential for learning to result from the zoo experience.

After entering the zoo many visitors initially appeared somewhat disoriented, as they spent some time either studying maps of the zoo or making enquiries at the information centre. Once they had determined the path they intended to follow, they proceeded to the first exhibit, where a high degree of attention was focused upon the animals and various features of the enclosure. This high level of viewing remained reasonably constant at different exhibits throughout most of the first hour of viewing, when the behaviour of visitors appeared to be constant and relatively predictable. After viewing exhibits for 40 to 60 minutes, the length of viewing individual exhibits started to decrease. Similar patterns of viewing behaviour have been described by a number of researchers who have studied the behaviour of visitors in museums. In initially investigating ‘museum fatigue’, Gilman (1916) concluded that some form of fatigue sets in after half an hour of viewing different exhibitions. Andrew Melton et al. (1936) were the first to show that museum visitors spent more time in the first few halls of the museum than they did in later ones. After observing visitors to the Florida State Museum of Natural History, Falk et al. (1985) determined that after about 30-45 minutes of viewing, museum fatigue set in and attention to exhibits rapidly dropped to a lower plateau. Bitgood et al. (1986) considered the problem of ‘visitor fatigue’, a condition wherein visitors lost interest in exhibits after a period of time. Chandler Screven (1996) distinguished between physical fatigue (resulting from excessive standing or walking) and psychological fatigue (confusion or difficulty in concentration). Screven also observed that visitors tried to reduce this fatigue by taking refreshment breaks or sitting whenever the opportunity presented itself. In his tracking studies, Hein (1998:104) found that after about 15-20 minutes of viewing, all but the most dedicated visitors became fatigued and then either stopped at displays less frequently or terminated their visit.
A preliminary analysis of the influence of fatigue on visitors in the zoo, as outlined in Chapter 3, was carried out in both zoos. Visitors spent the majority of their time looking at different exhibits or shows, with the remainder of their time being spent in eating areas, relaxing in waiting areas, using rest rooms or browsing in the zoo shop. Visitors tended to move haphazardly throughout the zoo grounds in search of animals which most interested them. As visitors began to feel the effects of fatigue, increasingly less time was spent looking at the animals and reading the labels; consequently the viewing time decreased rapidly, with only a small percentage of visitors staying to view for long periods of time. The tracking results showed that energy and fatigue were key factors influencing the amount of viewing time, particularly with family groups which included young children (Plate 5.16). As the visit in the zoo progressed, viewing times at exhibits diminished, and the number passing by exhibits without stopping increased dramatically.

Plate 5.16: Mothers with young children viewing the tiger enclosure at Taronga. As young children tired, the effects of ‘zoo fatigue’ on viewing times became most noticeable.
Figure 5.11: Influence of 'zoo fatigue' on viewing times
Adelaide Zoo.

Source: 109 tracking observations.
Reference: Appendix Table 5J.

Figure 5.12: Influence of 'zoo fatigue' on viewing times
Taronga Zoo.

Source: 96 tracking observations.
Reference: Appendix Table 5J.
It was observed in several cases that visitors made specific efforts to overcome the problem of zoo fatigue. On occasions, visitors used seating (which was available at a limited number of exhibits), after which viewing time increased dramatically. Mothers with very young children often restricted the total length of their visit to periods of approximately two hours, since their children would become tired and fractious. Families found it easier to control the levels of children’s activity by seeking refuge in eating areas or open areas where children could expend their energy while supervising adults were able to sit and relax nearby. Family groups often commented that meal or refreshment breaks were deliberately planned, to provide parents an opportunity to ‘recharge batteries’ while active and energetic children could release excessive energy. Coupled with the problem of zoo fatigue was the fact that public transport was more tiring than car travel, especially for families accompanied by young children. The results (Figures 5.11, 5.12) showed that the influence of zoo fatigue was greater at Taronga than at Adelaide, a factor that was probably related both to the difference in topography between the two zoos and to the greater percentage of visitors who used public transport to travel to the zoo.

The percentage of ‘passer-by’ visitors (those who did not stop to view) was calculated for each opening hour throughout the day (Appendix Table 5K) and is presented graphically in Figure 5.13. Viewing hours were taken to commence with the official opening time of the zoo, since the two zoos opened at different times (Adelaide at 0930 hours and Taronga at 0900 hours). A further limitation to drawing conclusions was that visitors arrived at the zoo at different times throughout the day.
Figure 5.13: Visitors who passed by zoo exhibits, expressed as a percentage of total visitors.

Source: Tracking observations.
(Adelaide 3,549 – Taronga 7,647)
Reference: Appendix Table 5K.

The graph indicates the increasing number of visitors who moved past exhibits without stopping as the duration of their stay at the zoo increased. Tracking data also showed that the length of viewing times at exhibits also decreased. These figures reflect not only the influence of zoo fatigue, but also the way in which some visiting groups attempted to see everything in the zoo before leaving. It should be noted that in some cases visitors may have already viewed the exhibit earlier in the day. The attracting and holding power of individual exhibits was difficult to assess accurately because of the number of various activities involved, although zoo fatigue obviously influenced these figures.

Despite the number of limitations to drawing accurate conclusions from this facet of the research, it was obvious that after a period of viewing, people became tired. Survey responses indicated that groups that visited the zoo very infrequently attempted to look at everything during their visit and often gave no consideration to the idea of a return visit in the
near future, and the effects of fatigue became more noticeable with the length of time they spent in the zoo. The most noticeable change observed in visitor behaviour throughout the duration of their visit was the change from moving slowly from one exhibit to another and reading labels to a pattern of viewing which involved making selective, occasional stops at exhibits in which they were particularly interested. This change in pattern was considered to be a transition from ‘learning in the zoo’ to ‘looking in the zoo’. As such, this represents an opportunity for the zoos to develop programmes that could assist viewers in the planning of their visit. Such programmes could outline possible highlight tours to assist visitors not only in finding their way around the zoo, but also in developing knowledge and understanding of the animals on display. This type of approach would prove advantageous for those who visited the zoo very infrequently as well as those who were unaware of the layout of the zoo.

Perhaps the problem of zoo fatigue was best summarised by one comment made by a young female viewer to Taronga, when in making reference to the reading of exhibit signs, she wrote, ‘Initially we read all the labels thoroughly, but as the day passed we tended to ignore the signs completely – simply because we were so tired from all the walking that was required’ (T302).
5.4 Popularity of exhibits

Zoo administrators like to know which exhibits are popular with visitors, as this information may be useful for marketing and promotional activities. Exhibits that are more popular can be used to provide more information to visitors, acting as a conduit of knowledge building and education for visitors. In the past, an understanding of visitors has been based on assumptions. Because of this, the making of decisions has often been blurred by personal opinions and judgements. Consequently, it is important to develop ways to assess the popularity of different exhibits on the basis of factual evidence.

Serrell (1993) summarised a number of tracking studies of museum visitors and developed her thoughts as to what constituted a successful exhibit. Her proposals revolved around the rate at which visitors moved past the exhibit and the criterion that more than half the visitors stopped to view at least half the display. Hein (1998:108) commented that although Serrell’s goals appeared to be rather modest, they were in fact rarely met. Little such work has been carried out with visitors to the zoo. Balmford et al. (1996) found in London Zoo that an important factor in exhibit popularity was the distance to the main gate. Ward et al. (1998), working in Zurich, found that exhibits of larger animals were more popular than those of smaller animals. Throughout the development of this research, it became clear that the amount of time visitors spent viewing different exhibits provided a usable and easily obtainable statistic relating to visitor behaviour in the zoo. The results obtained suggested that the position of the enclosure within the zoo and the size of the animal had little bearing upon popularity with visitors. Instead, significant factors influencing the thoughts and perceptions of visitors at Adelaide and Taronga revolved around proximity to the animal, observing activity and movement, and the natural appearance of the enclosure. It was apparent that emotions and the ability to hear sounds also improved the perceived popularity. Conversely, visitors ranked exhibits lower when they perceived the enclosures as old or unnatural, or when the animal was inactive or out of sight. On occasions, visitors formed a dislike when they sensed unpleasant smells or if they perceived some fear or danger.

Four different measures of exhibit popularity were developed in this research. Firstly, visitors were requested to simply rank specific exhibits, giving a score out of ten, a figure which provided a direct indication of the perceptions formed by visitors as a result of their viewing. Secondly, a viewing index was developed based on the average viewing time of
visitors who stopped and viewed the exhibit for any reason. The third method used the construct of the ‘half-life’ of viewing for individual exhibits, a technique similar to that used by Phillpot (1996), who studied median viewing times. Finally, the proportion of ‘long-term observers’, who viewed for periods of longer than ten seconds, was used to determine the popularity of exhibits, using an approach similar to that of Ward et al. (1998). These methods were outlined in Chapter 3.

5.4.1 Ranking index

This measure of the popularity of exhibits was determined from responses given in the exhibit surveys. The ranking index for the different exhibits was tabulated (Table 5.3). No significant difference was observed in the overall responses of the visitors to the two zoos. Overall, the mean popularity ranking in both zoos was similar (Adelaide: Mean = 7.38, S.D. = 1.73; Taronga: Mean = 7.31, S.D. = 1.88). The median value (8.0) and the inter-quartile range (6-8) were the same for both zoos.

Plate 5.17: Flamingo enclosure, ranked highest by visitors to Adelaide Zoo.
### Table 5.3: Ranking of exhibits by visitors.

<table>
<thead>
<tr>
<th>Adelaide</th>
<th>Mean Ranking</th>
<th>Exhibit</th>
<th>Mean Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flamingo</td>
<td>8.40</td>
<td>Gorilla</td>
<td>8.71</td>
</tr>
<tr>
<td>Siamang</td>
<td>8.04</td>
<td>Chimpanzee</td>
<td>8.40</td>
</tr>
<tr>
<td>Meerkat</td>
<td>7.96</td>
<td>Meerkat</td>
<td>8.16</td>
</tr>
<tr>
<td>Baboon</td>
<td>7.86</td>
<td>Creatures Wollemi</td>
<td>8.10</td>
</tr>
<tr>
<td>Zebra</td>
<td>7.65</td>
<td>Koala</td>
<td>7.89</td>
</tr>
<tr>
<td>Otter</td>
<td>7.61</td>
<td>Giraffe</td>
<td>7.41</td>
</tr>
<tr>
<td>Lion</td>
<td>7.58</td>
<td>Lion</td>
<td>7.28</td>
</tr>
<tr>
<td>Seal</td>
<td>7.34</td>
<td>Tiger</td>
<td>7.20</td>
</tr>
<tr>
<td>Penguin</td>
<td>7.26</td>
<td>Kodiak bear</td>
<td>6.88</td>
</tr>
<tr>
<td>Hippopotamus</td>
<td>7.04</td>
<td>Sun bear</td>
<td>6.74</td>
</tr>
<tr>
<td>Sun bear</td>
<td>7.03</td>
<td>Helmore Aviary</td>
<td>6.70</td>
</tr>
<tr>
<td>Wombat</td>
<td>7.00</td>
<td>Seal</td>
<td>6.16</td>
</tr>
<tr>
<td>Giraffe</td>
<td>6.26</td>
<td>Spider monkey</td>
<td>5.80</td>
</tr>
<tr>
<td>Beaver</td>
<td>4.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tiger (new)</td>
<td>8.31</td>
<td>Elephant (new)</td>
<td>8.80</td>
</tr>
<tr>
<td>Orang-utan (new)</td>
<td>8.29</td>
<td>Elephant (old)</td>
<td>5.45</td>
</tr>
<tr>
<td>Orang-utan (old)</td>
<td>7.36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tiger (intermediate)</td>
<td>7.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tiger (old)</td>
<td>6.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td><strong>7.38</strong></td>
<td><strong>Mean</strong></td>
<td><strong>7.31</strong></td>
</tr>
<tr>
<td><strong>Standard Deviation</strong></td>
<td><strong>1.73</strong></td>
<td><strong>Standard Deviation</strong></td>
<td><strong>1.88</strong></td>
</tr>
</tbody>
</table>

**Maximum Ranking 10.**

Source: Exhibit survey Question 6.
N= 1325 responses.
(Adelaide 725 – Taronga 600)

The most popular exhibits at Adelaide were the flamingo (Plate 5.17), siamang and meerkat, and the most popular at Taronga were the gorilla, chimpanzee and meerkat. The Adelaide flamingo exhibit was described as ‘easy to see’, ‘close by’, in ‘natural surroundings’; the siamangs were described as ‘active’, ‘playful’ and ‘natural’; the meerkats were regarded as ‘cute’, ‘fun’ and ‘playful’. At Taronga, the gorillas were observed as ‘close’, ‘easy to see everything’, and ‘show human-like behaviours’; the chimpanzees were considered ‘fun to watch’, ‘playful’, and ‘looked natural”; the meerkats were regarded as ‘playful’, ‘easy to see’ and ‘cute’.

The least popular exhibits in Adelaide were the beaver, giraffe and wombat. At Taronga the least popular exhibits were spider monkey, seal and Helmore aviary. Similarity was noted in the reasons provided for these least-liked exhibits. At Adelaide, visitors
described the beaver exhibit as ‘old’, ‘dirty’ and ‘boring’. The giraffe enclosure was depicted as ‘old’, ‘unnatural’ and having ‘too much brickwork’. The wombat was ‘too hard to see’ and the enclosure was thought to be ‘empty’ even though the animal was present. At Taronga the spider monkey enclosure was perceived as ‘old’, ‘too much concrete’ and ‘unnatural’. The seal exhibit was thought to be ‘old and tired’, ‘boring’ and ‘unnatural’. The parrots in the Helmore aviary were seen as ‘needing more room’ and the aviary was considered ‘not as natural’ as other exhibits.

New exhibits for the tigers and the orang-utans in Adelaide and the elephants at Taronga were completed during the duration of this research. These new enclosures received considerable media publicity, resulting in increased attendance at both zoos. Both the new enclosures were rated higher than the older style areas which had previously held the animals. This level of appreciation was best reflected by some of the responses of viewers.

**Adelaide.** Old Tiger Enclosure

*The space is too small, the animal looks so sad* (AT2).

*There is not much space and it’s unnatural, the tiger did not look happy* (AT9).

*The animal looked bored and unhappy* (AT27).

New Tiger Enclosure

*It looked nice and clean, it was easy to view and the animals were healthy and happy* (ATs15).

*It was so enjoyable, seeing the animal in such a pleasant and natural environment* (ATs28).

*The animal was so happy playing in the water* (ATs39).

**Taronga.** Old Elephant Enclosure

*In comparison to other exhibits, this one looks awful and unnatural* (TE27).

*It was old, outdated and tired, the elephants looked so bored* (TE32).

*This exhibit is really poor; the elephant is so bored in such a small pen* (TE28).

New Elephant Enclosure

*It is so natural looking and the elephants love water* (TEn6).

*It was great to see the obvious joy of the animals; they looked so happy and playful* (TEn27).

*It was really exciting to see the elephants finally here, and having such a great time* (TEn39).
Perhaps the appreciation of these new exhibits was best typified with the following response, made by the mother of a two-year-old child after viewing the elephants at Taronga:

_We just learned such a lot by observing, learning about its environment, how it moved and the way they played together in the water. My son loved it the most and we could have watched them all day_ (TEn40).

Reasons provided in the surveys by respondents reflected the perceptions of visitors to the various exhibits. Perceptions of the highest ranked exhibits were clearly influenced by the proximity of the animal, animal movements and behavioural activity. In contrast to these thoughts, perceptions of the lower ranked exhibits referred to ‘unnatural appearance’, ‘inactivity’, and the inability to see the animal clearly. It was clear that there was a correlation between this ranking index and the natural appearance of the exhibit, with those exhibits regarded as being more natural (third order) ranked higher, whilst exhibits considered as being unnatural (first order) were ranked lower (Figure 5.14).

![Figure 5.14: Mean ranking of exhibits using classification order of naturalistic appearance. Maximum ranking 10.](image)

_N = 1,325 survey responses. (Adelaide 725 – Taronga 600)_

_Reference: Appendix Table 5F._
5.4.2 Viewing index

As mentioned in Chapter 3, a viewing index was determined for each of the exhibits studied, based upon the mean viewing time of visitors who stopped to look at the exhibit. The conclusions reached using this method, shown in Table 5.4, reflect the way in which visitors behaved once near the exhibit. There was a correlation between the motivations which had initially led to the visit and the displayed preference as observed by the amount of time spent viewing. Using this method, it was noticeable that larger animals (such as the hippopotamus and lion at Adelaide, and the giraffe and elephant at Taronga) were more popular than smaller ones, even though some visitors considered that the enclosures housing these animals were old, dirty or unnatural. The greater amount of time spent at the koala enclosure at Taronga was attributable to the higher proportion of international tourists, and was related to the motivations behind these tourists visiting Taronga.

**Table 5.4: Viewing index for selected exhibits**

<table>
<thead>
<tr>
<th>Adelaide</th>
<th>Viewing Index</th>
<th>Taronga</th>
<th>Viewing Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seal</td>
<td>131.4</td>
<td>Gorilla</td>
<td>146.1</td>
</tr>
<tr>
<td>Lion</td>
<td>104.6</td>
<td>Giraffe</td>
<td>115.2</td>
</tr>
<tr>
<td>Siamang</td>
<td>96.1</td>
<td>Chimpanzee</td>
<td>112.4</td>
</tr>
<tr>
<td>Hippopotamus</td>
<td>84.1</td>
<td>Koala</td>
<td>94.1</td>
</tr>
<tr>
<td>Orang-utan (new)</td>
<td>82.1</td>
<td>Elephant</td>
<td>91.2</td>
</tr>
<tr>
<td>Gorilla</td>
<td>80.1</td>
<td>Meerkat</td>
<td>82.1</td>
</tr>
<tr>
<td>Meerkat</td>
<td>76.1</td>
<td>Lion</td>
<td>78.2</td>
</tr>
<tr>
<td>Otter</td>
<td>72.9</td>
<td>Sun bear</td>
<td>73.7</td>
</tr>
<tr>
<td>Orang-utan (old)</td>
<td>56.9</td>
<td>Seal</td>
<td>68.8</td>
</tr>
<tr>
<td>Tiger (new)</td>
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<td>Spider monkey</td>
<td>64.4</td>
</tr>
<tr>
<td>Tiger (old)</td>
<td>49.0</td>
<td>Kodiak bear</td>
<td>49.1</td>
</tr>
<tr>
<td>Penguin</td>
<td>47.8</td>
<td>Helmore Aviary</td>
<td>24.1</td>
</tr>
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<td>Wombat</td>
<td>45.5</td>
<td>Tahr</td>
<td>20.8</td>
</tr>
<tr>
<td>Giraffe</td>
<td>43.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sun bear</td>
<td>42.9</td>
<td></td>
<td></td>
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<tr>
<td>Zebra</td>
<td>33.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barbary sheep</td>
<td>25.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flamingo</td>
<td>22.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beaver</td>
<td>13.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>65.3</td>
<td></td>
<td>79.4</td>
</tr>
</tbody>
</table>

Source: 9620 tracking observations.
(Adelaide 3,153 – Taronga 6,467)
It would seem that this viewing index was closely related to the presence of children in the viewing categories. Children showed a preference for looking at larger animals and were also interested in animals to which they could relate various characters from stories and fantasy. Although larger animals tended to receive more attention from visitors, it was apparent that the meerkats, one of the smallest animals on display in both zoos, received considerable attention from visitors. It was common for visitors to express emotional sentiments as their attention was attracted and held for longer periods of time. Although the flamingo exhibit in Adelaide was regarded highly in terms of natural appearance and the proximity of the animal, visitors tended to move past it, mainly because they were intent on progressing quickly to the next viewing opportunity. Consequently, the flamingo exhibit was not viewed for long periods of time.

One problem apparent with this type of index was that although it related to the amount of time spent at the exhibit it did not necessarily reflect the reasons why people stopped, nor did it reflect the thoughts and opinions of viewers. Observations confirmed that this amount of time was influenced by several factors. The provision of seating, such as at the penguin exhibit in Adelaide and the giraffe enclosure at Taronga, often increased the amount of time spent viewing, particularly when mothers used the opportunity to relax and provide their young children small quantities of food. Other factors included issues such as photographic opportunities (Plate 5.18) and personal activities not related to the animal (such as telephone calls).

*I spent 20 minutes at the red panda enclosure because I was trying to get a photograph, but the bloody thing would just not stand still* (T251).

Plate 5.18: Red panda exploring its enclosure at Taronga Zoo.
5.4.3 Viewing ‘half-life’

Tracking observations were used to calculate the ‘half-life’ for viewing each of the selected exhibits (Table 5.5).

Table 5.5: Half-life for selected exhibits.

<table>
<thead>
<tr>
<th>Enclosure</th>
<th>Half Life</th>
<th>Enclosure</th>
<th>Half Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seal</td>
<td>86</td>
<td>Gorilla</td>
<td>93</td>
</tr>
<tr>
<td>Siamang</td>
<td>73</td>
<td>Koala</td>
<td>64</td>
</tr>
<tr>
<td>Meerkat</td>
<td>63</td>
<td>Chimpanzee</td>
<td>60</td>
</tr>
<tr>
<td>Orang-utan (new)</td>
<td>58</td>
<td>Lion</td>
<td>47</td>
</tr>
<tr>
<td>Gorilla</td>
<td>56</td>
<td>Meerkat</td>
<td>45</td>
</tr>
<tr>
<td>Lion</td>
<td>54</td>
<td>Sun bear</td>
<td>43</td>
</tr>
<tr>
<td>Hippopotamus</td>
<td>48</td>
<td>Giraffe</td>
<td>39</td>
</tr>
<tr>
<td>Otter</td>
<td>44</td>
<td>Seal</td>
<td>27</td>
</tr>
<tr>
<td>Sun bear</td>
<td>33</td>
<td>Kodiak bear</td>
<td>24</td>
</tr>
<tr>
<td>Penguin</td>
<td>32</td>
<td>Spider monkey</td>
<td>23</td>
</tr>
<tr>
<td>Tiger (new)</td>
<td>32</td>
<td>Elephant</td>
<td>22</td>
</tr>
<tr>
<td>Tiger (old)</td>
<td>28</td>
<td>Tahr</td>
<td>8</td>
</tr>
<tr>
<td>Wombat</td>
<td>28</td>
<td>Helmore Aviary</td>
<td>4</td>
</tr>
<tr>
<td>Orang-utan (old)</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Giraffe</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zebra</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barbary sheep</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flamingo</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beaver</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: 9,116 tracking observations.
(Adeelaide 1,786 – Taronga 7,330)

At Adelaide the high figure recorded at the seal exhibit (86 seconds) (Plate 5.19) was attributed to the feeding sessions and the constant movements of the animals clearly seen from the viewing platform. Survey responses indicated that at the meerkat enclosure, the emotional appeal of the animals, as well as their continuous activity, resulted in the higher viewing times, whereas at the lion and hippopotamus exhibits visitors seemed most interested in the size of the animal. At Taronga, a high reading was recorded for the half-life of viewing the koala enclosure, even though for the majority of observations the animals were inactive or asleep. Survey responses indicated that this viewer response was the result of the higher proportion of international visitors, who were intrigued by the unique characteristics of the animal and were intent on concentrating their efforts on photographic opportunities. In
comparison, both the gorilla and chimpanzee exhibits at Taronga attracted attention because of constant movement and activity of the animals, particularly the young infant offspring who engaged in playful activities with each other. Survey responses reflected that many viewers also recognised similarities of behaviour with that of humans.

The lowest of these half-life observations at Adelaide were the beaver exhibit (4 seconds) and the flamingo exhibit (5 seconds). In contrast to these very low readings, half-life periods exceeding one minute were recorded at the seal (85 seconds), meerkat (63 seconds) and hippopotamus (61 seconds) exhibits. For all exhibits researched in Adelaide Zoo, the half-life time for viewing was found to be 26 seconds (shown in Figure 5.5). At Taronga, the lowest half-life periods were recorded at the Helmore aviary (4 seconds) and the Himalayan tahr (8 seconds), and half-life periods exceeding one minute were recorded at the gorilla (83 seconds), koala (64 seconds) and chimpanzee (60 seconds) exhibits.

Plate 5.19: Seal Bay, the enclosure in Adelaide Zoo where the highest ‘half-life’ was recorded.
5.4.4 Popularity index

The fourth method used to measure the popularity of different exhibits used a technique similar to that of Stolba and Mullers (1990) and Ward et al. (1998). Ward and colleagues determined the proportion of visitors who exceeded an arbitrary stopping time of ten seconds, which the authors considered minimal for a long-term viewer. Using the formula given in Chapter 3, the popularity index for each of the exhibits was calculated (Tables 5.6). Since this figure revealed the actual degree of visitor interest rather than simply a casual interest or a mere presence, it reflected the percentage of long term viewers at the exhibit.

<table>
<thead>
<tr>
<th>Exhibit</th>
<th>Popularity Index</th>
<th>Exhibit</th>
<th>Popularity Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seal</td>
<td>97</td>
<td>Lion</td>
<td>93</td>
</tr>
<tr>
<td>Siamang</td>
<td>91</td>
<td>Gorilla</td>
<td>89</td>
</tr>
<tr>
<td>Hippopotamus</td>
<td>90</td>
<td>Sun bear</td>
<td>88</td>
</tr>
<tr>
<td>Orang-utan (new)</td>
<td>87</td>
<td>Koala</td>
<td>87</td>
</tr>
<tr>
<td>Meerkat</td>
<td>86</td>
<td>Meerkat</td>
<td>86</td>
</tr>
<tr>
<td>Lion</td>
<td>85</td>
<td>Chimpanzee</td>
<td>83</td>
</tr>
<tr>
<td>Gorilla</td>
<td>85</td>
<td>Seal</td>
<td>75</td>
</tr>
<tr>
<td>Otter</td>
<td>84</td>
<td>Giraffe</td>
<td>75</td>
</tr>
<tr>
<td>Penguin</td>
<td>79</td>
<td>Spider monkey</td>
<td>67</td>
</tr>
<tr>
<td>Tiger (new)</td>
<td>78</td>
<td>Kodiak bear</td>
<td>65</td>
</tr>
<tr>
<td>Sun bear</td>
<td>77</td>
<td>Elephant (old)</td>
<td>60</td>
</tr>
<tr>
<td>Tiger (old)</td>
<td>74</td>
<td>Himalayan tahr</td>
<td>42</td>
</tr>
<tr>
<td>Wombat</td>
<td>70</td>
<td>Helmore Aviary</td>
<td>35</td>
</tr>
<tr>
<td>Orang-utan (old)</td>
<td>66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Giraffe</td>
<td>64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zebra</td>
<td>62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barbary sheep</td>
<td>36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flamingo</td>
<td>35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beaver</td>
<td>27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>74.1</td>
<td>74.0</td>
<td></td>
</tr>
</tbody>
</table>

Maximum index Score 100.

Source: 11,138 tracking observations.  
(Adelaide 3,491– Taronga 7,647)  
Reference: Appendix Tables 5L, 5M.

At Adelaide, the exhibits which showed the highest degrees of popularity were those of the seal, siamang and hippopotamus. Survey responses suggested that these results were attributable to animal activity and movement (seals), vocalisation and play (siamang) and
general interest (hippopotamus). Similar response patterns were observed at Taronga where feeding (lion), playful activity of juveniles (gorilla) and enrichment usage (sun bear) were evident factors that attracted attention and were responsible for longer periods of viewing.

The Barbary sheep exhibit at Adelaide (Plate 5.20) and the Himalayan tahr exhibit at Taronga (Plate 5.21) were viewed for short periods of time and consequently were rated low on this scale. Both exhibits were perceived as old and unnatural because of the ‘concrete mountains’ provided for the animals. Viewing times at the tahr enclosure at Taronga were markedly influenced by the distracting presence of the meerkats in the neighbouring enclosure. It was observed that viewing times at the giraffe enclosure at Adelaide were similarly affected by the meerkats.

The basis for this popularity index revolved around the actual length of time which visitors spent while stopped at the exhibit. The time spent viewing was often the result of the visitor attempting to photograph the particular animal, listening to a keeper talk, watching a feeding or training session, or being intrigued by animal activities (in particular the presence of young animals). The times were variable and could have been the result of any number of factors, some of which might not even have been related to the exhibit, such as situations where visitors were observed talking on mobile phones or when mothers were caring for young children.

A limitation of this type of assessment was observed with the flamingo exhibit at Adelaide. Table 5.3 indicated that the flamingo exhibit received the highest rating from visitors. In comparison, Table 5.6 rated the same exhibit very low in terms of the popularity index. An explanation of this inconsistency was the position of the flamingo exhibit, which was situated on a main pathway along which the majority of visitors moved without stopping, thus accounting for the low popularity index. Survey responses suggested that although visitors did not stop, they clearly viewed this exhibit as they strolled past.
Plate 5.20: Barbary sheep enclosure at Adelaide – A first order exhibit.
*A bare enclosure, with too much concrete – it’s not real (ABs).*

Plate 5.21: ‘Tahr Mountain’ at Taronga, constructed in 1932.
5.5 Summary

A problem facing administrators and designers in zoos is that indices of the attracting and holding power of the different enclosures imply that there is some unique feature or quality which the enclosure should possess in order to attract and hold the attention of the multitudes of people who come to the zoo. The results summarised in this chapter indicate that, in reality, characteristics of the visitor rather than the enclosure were of key importance, a feature which was also noted by Bicknell and Peter Mann (1993) when they studied museum visitors at the Science Museum in London. In the present research it was concluded that visitors to the zoo were not a homogeneous group, but fell into three main categories. The first category was the ‘expert’, visitors who knew specific details about both the enclosure and the animal. They were mainly frequent visitors who tended to stay for long periods of time at specifically chosen exhibits, ignoring other areas in which they showed little if any interest. The second category was the ‘children orientated’, who adopted the approach ‘it’s for the kids’. Two main sub-groups were recognisable: those who focused on learning specific details and those who seemed to have the attitude of ‘we came for the kids, so let’s get it over with quickly’. The third category comprised was those who were ‘doing the zoo’, a group which consisted mostly of tourists or people who visited the zoo infrequently. They often adopted a methodical approach in their viewing and tended to systematically work their way through the zoo, seemingly intent on looking at every exhibit in the zoo, with the expectation that the animals would be active.

Falk (1982) used an analogy to liken museum visitors to people who were window shopping, in that when something caught their eye they stopped and looked and in some cases eventually made a purchase, or in the museum situation, took away ideas and information. In general, the present research found that visitors to the zoo attempted to look at as many exhibits as they could and spent significant amounts of time at only the small number of displays that attracted them. Most viewers spent short periods of time at most of the exhibits, and few if any looked at everything in an exhibit, which suggests that (to misquote Abraham Lincoln) the zoo can encourage some of the people to look all of the time, the zoo can encourage all of the people to look some of the time, but the zoo cannot encourage all of the people to look all of the time.
Visitors to the zoo tended to wander throughout zoo grounds in search of something which interested them, with few specific aims except that of ‘seeing animals’. Several exhibits were visited for short periods of time, with 30% of visits lasting less than ten seconds (33% at Adelaide; 26% at Taronga). The mean viewing times of visitors at various zoo exhibits in both zoos was similar, with 46% of visitors viewing between 15 and 90 seconds (46% at Adelaide; 45% at Taronga). It was apparent that family groups with pre-school age children spent longer times viewing than did other categories. The concept of a half life of visitor viewing was developed.

Viewers to zoo exhibits were considered to fall into three main groups. Viewers who did not stop to look at the exhibit were classed as ‘passers-by’. Viewers who stopped for periods of less than ten seconds were ‘short-term’ visitors. This short period was the result of lack of interest, inability to see the animal clearly, animal inactivity, or simply the perception that the exhibit was ‘old’ or ‘unnatural’. ‘Long-term’ visitors were those who spent more than ten seconds viewing. At some exhibits, the visit lasted for considerably longer than ten seconds.

Although valuable information can be gained from viewing times, the results need to be examined with caution, as a number of factors were involved. The majority of visitors spent only a short period of time looking at the majority of exhibits, but more importantly, they spent longer periods of time looking at a small number of exhibits, so it is at those exhibits that the zoo has the opportunity to educate visitors. Visitors spent longer periods viewing when the animals were actively moving around their enclosure, feeding, playing with enrichment devices, or when young babies or juveniles could be clearly seen (Plates 5.22, 5.23). It is almost an impossible task for zoos to ensure that such activity can be seen constantly, particularly in the middle of the day or at times of inclement weather. However, as was observed, enrichment items, feeding times and keeper talks have the potential to encourage visitors to stay longer at exhibit displays.

Numerous factors influenced the amount of time visitors spent looking at exhibits. These factors related to the animal, the visitors themselves, the exhibit, and physical constraints of the zoo location. When animals were active, particularly during feeding sessions or when they were manipulating enrichment items, viewer attention was held for longer. In comparison, when animals were asleep or out of sight, visitors viewed for only short periods of time and often formed negative perceptions of the exhibit.
The concept of zoo fatigue was explored. This research indicated that during their first hour of viewing in the zoo visitors spent on average 90 seconds at each exhibit. After viewing for about an hour, the factor of zoo fatigue set in and this viewing time progressively decreased. The longer the amount of time spent viewing different exhibits, the greater the influence of zoo fatigue upon the viewing patterns of visitors. This zoo fatigue was increased by poor directional patterns, physical exertion and the presence of children. Zoo fatigue played an important role in visitors’ experience of the zoo. For many visitors, just visiting was sufficient to provide a pleasurable experience. However, it was clear that all visiting groups were affected by the zoo fatigue factor at some stage of their visit, whether this developed as a result of attempting to match the pace set by children, physical exertion, or simply tiring psychologically from continual viewing. The concept of zoo fatigue suggested the existence of some form of paradox. Visitors found their visit to the zoo satisfying and graded the zoos highly (Chapter 4). Their visit, however, featured shorter and shorter times of viewing exhibits as the day progressed, so that towards the end of their visit, some exhibits received very little if any attention, and some were ignored completely.

A number of different animals were on display within the zoo, and with the animals there was a considerable amount of information available, which required time to fully study and comprehend. As a result, visitors to the zoo normally became tired and needed an area where they could relax and rest as well as access supporting services and facilities. The quality of these resting places and services affected the length of time that visitors spent in the zoo. There is potential for the interest of visitors to be developed so that the activities of the zoos could become better known. In turn, this would improve the likelihood of visitors returning on a more frequent basis.

Before visitors can learn anything from an exhibit, it is obvious that they need to direct their attention to it for some period. Hein (1998:107) indicated that the length of time spent at a museum exhibit was a necessary condition for learning. Thus it could be assumed that the higher the median value the greater the possible potential for learning in the zoo. It was observed, however, that the amount of time spent was not always a true indication of actual viewing time. At some exhibits, visitors were able to sit on benches to view animal activities; at others, viewing was restricted because of limited viewing space or overcrowding. It was also observed at some exhibits that visitors became involved in reading directional maps, talking with friends, organising photographic equipment, and even feeding young children. However, just as Falk and Dierking (1992) noted that a museum visit was more than simply
the amount of time spent viewing, so too the zoo visit was an experience involving personal, social and physical activities.

The times spent viewing in the zoo represent something of a paradox in that people found their zoo experience quite memorable despite the short periods of time they spent at the different exhibits. They also found that the time spent in the zoo was educational, even though this had not been a motivation for visiting. The occurrence of teaching in science museums has previously been noted by a number of researchers, including Robert Weiss and Serge Boutourline (1963), Wallace MacBriar (1976) and Cynthia Cone and Keith Kendall (1978). Although these authors have clearly indicated this point, there are few systematic investigations of the way in which social factors and education in particular operate in the science museum, let alone in the zoo. In his first annual report as director of Bronx Zoo, William Conway wrote, ‘Zoo visitors should have the opportunity to learn something about each animal’s environment through natural habitat displays, to explore the mysteries of wild animal behaviour, [and] to be informed by special displays’ (Hancocks, 2001:110).

The results of the research outlined in this section gave a guide to the way in which visitors appreciated the different exhibits. The first method of ranking provided a direct indication of visitor opinion, whereas the other methods were based on calculations which considered the viewing patterns and the amount of time visitors actually stopped to look at the exhibit. As observations, these stopping times gave no indication as to what visitors perceived or their degree of satisfaction. These aspects are explored in the next chapter.
Plate 5.22: Hamadryas baboon family at Adelaide Zoo.

Plate 5.23: Mother Himalayan tahr and young kid at Taronga.

*I just loved seeing the babies, I could watch them for hours (A127).*