

Ramsden

SIGNS AND COMMUNICATIVE EFFECTIVENESS IN THE MANAGEMENT
OF NATURE RESERVES IN WESTERN AUSTRALIA

- A SOCIAL PERSPECTIVE -

TREVOR RAMSDEN

A discussion paper presented to
the Wildlife Research and
Management Seminar held at the
Wildlife Research Centre, May
9-11, 1983.

ABSTRACT

This paper considers the factors which contribute to the effective communication of reserve management objectives through signs. Those factors discussed include the communication process, the cognitive perception of signs, social and contextual influences. The discussion of these factors is made within the perspectives of the social science disciplines of psychology, sociology and anthropology.

Monitoring feedback, using redundancy and fostering good relations are suggested means of solving problems within the communication process while understanding the Gestalt Laws gives insight into how people perceive signs.

Emphasis is also placed upon the significant relationship between the individual and the environmental setting. The paper concludes with a regimen consisting of goals, rules, roles, repertoire of acts, sequence of behaviour, concepts, environmental setting, language and skills. These factors influence behaviour on nature reserves and are a guide as to what and how messages may be communicated.

CONTENTS

	Page
PREFACE	(i)
1. INTRODUCTION	1
2. DESCRIPTION OF SIGNS	4
3. COMMUNICATION AND SIGNS	8
4. COGNITIVE PERCEPTION OF SIGNS	12
5. SOCIAL AND CONTEXTUAL INFLUENCES AFFECTING COMMUNICATION	18
6. PROBLEMS IN THE COMMUNICATION PROCESS	25
7. COMMUNICATIVE EFFECTIVENESS WITHIN THE MANAGEMENT SETTING	31

PREFACE

The document, A Signs Standard for Use in the Management of Nature Reserves in Western Australia, was presented to the Western Australian Wildlife Authority (W.A.W.A.) in November 1982. Its recommendations, which were subsequently approved by the Authority, concerned the specifications of a new signs standard to control public use on nature reserves. In contrast, this document is specifically concerned with defining those factors which make signs significant for the public. It investigates those aspects which make signs effective as a means of communication.

In identifying these factors, a set of analytical guidelines will be established to improve and maintain the communicative efficiency of the new signs standard. The guidelines will hopefully be the basis for specific management decisions concerning the formulation of messages, design and erection of signs. In a way, this document concerns the "science" of signs. It takes a multi-disciplinary approach by including the social sciences of psychology, sociology and anthropology. The emphasis is however, on psychology and its sub-disciplinary approaches. While the analysis is eclectic, the aim is to create a pragmatic synthesis useful in establishing guidelines. However, those specific judgements made in applying these guidelines; that is, "the art" of signs, will not be considered. Such judgements can only be made by professional management personnel in respect to their

previous experience and the existing available knowledge.

The analysis continues on the following three assumptions:

1. Signs are the most appropriate means of effectively communicating the prescribed management objectives when controlling public use on public reserves.
2. Signs on nature reserves are only effective if the message on the sign and the surrounding environment combine to create a significant meaning for the public. A significant meaning being one which sufficiently influences the behaviour of individual members of the public to satisfy prescribed management objectives.
3. A well formulated message and constructed sign will greatly increase the probability of achieving these management objectives.

These assumptions are the basis for the investigation into those factors which make signs significant for the public.

The Introduction highlights the paucity of work done in Australia to examine the social and psychological aspects of signs. The analytical concepts used to analyse nature reserves throughout this document are also introduced while the eclectic approach is further explained. Section 2 gives a description of signs while Section 3 outlines the

communication process. The cognitive perception of signs is outlined in Section 4 with the effects of social and contextual factors being discussed in Section 5. Possible solutions to communication problems are offered in Section 6 with Section 7 providing a regimen in which to analyse the management setting in terms of communicative effectiveness.

1. INTRODUCTION

Little information has been published by Australians concerning the manner in which signs influence people's thoughts and subsequent actions. However, some of the effects of signs have been noted by Moorhouse (1971). Some signs, for example, represent an "anonymous delegated authority backed by a threat" (1971:50). Such signs create an authoritarian relationship between the reader and the sender. The semantic confusion created by signs when they and their messages are not consistent with the natural surroundings has been noted by both Moorhouse and Crook (1982:7). Moorhouse has also observed the care which management authorities must exercise when controlling areas with a history of traditional and customary use. Apart from these observations and the efforts of some national park authorities, the social and psychological effects of signs have received little attention.

Before commencing the analysis of signs, the communication process and the factors contributing to effective communication; a nature reserve must be described with certain analytical concepts.

A nature reserve may be considered as a combination of bio-physical, social and management settings. The bio-physical setting includes the vegetation, topography

and wildlife on a nature reserve. The people who interact while using a nature reserve form the social setting. Finally, the management setting is the level of development or regulation of use applied to a specific nature reserve. It serves to aid the preservation of the bio-physical setting and to control the social setting. The management setting may also be considered on two levels. A macro level which embraces the nature reserve in its entirety and a micro level which operates at a specific site on a nature reserve.

The micro management setting, which includes management elements such as fences, gates, tracks and signs, will be the focal point for analysis. This however, cannot be done without reference to the other two settings. The settings on a nature reserve are so closely associated that reference to one can not exclude the other two.

The approach used for the analysis is multi-disciplinary and therefore eclectic. It contains the sociological, cognitive and behaviourist perspectives of social psychology. Yet, the approach is not of social psychology where studies primarily investigate how an individual's behaviour is influenced by other people. Instead, the analysis considers the relationship between the individual and the specific environmental setting. This approach is more consistent with environmental psychology. But in discussing the influences of the environment upon the individual, cultural factors are also introduced. The

purpose in drawing from many disciplines and sub-disciplines is to derive the most practical and useful set of guidelines possible.

Despite this seemingly disarray in approach, there is a progression in the analysis from psychological, social and cultural influences upon behaviour. The processes which influence on individual's awareness of the meanings of signs are the essence of this document. Awareness, which includes perception and cognition, is developed through a series of selection processes. The sensory organs select a small proportion of the information available in an environment. Further selection occurs as the information is categorized in terms of needs, previous experience, social expectations and cultural influences. In this way, a progression exists from the psychological to social and cultural influences.

In formulating and developing awareness, the individual is searching for balance and stability so as to cope with everyday life. For this reason people "quickly learn to habituate the constancies of the world" (Ornstein 1977:70). For signs and their messages to gain access into the awareness of people, they must preserve balance and stability.

2. A DESCRIPTION OF SIGNS

A sign is a type of visual communication which uses the techniques of graphics to communicate a message. These techniques include words, pictures, diagrams and symbols. The materials used in constructing a sign can vary from paper, timber, metal to lights. Therefore, a sign can generally be defined as "a fixed man-made structure bearing a message in the form of words, pictures, diagrams or symbols." (Carter 1979:2)

A signs standard, as discussed in this document, uses standardized construction specifications to lower production costs and to facilitate the communication of messages. As defined by Crook, "a signs standard is a means of communicating ideas and short messages to people at or passing by a nature reserve." (1982:6).

1. The Aspects of Signs

There are three general aspects to a sign which must be considered when making an analysis. These are: form, objective - definition and significance. (Booth Clibbon and Boroni 1979).

(i) Form is the appearance of the message carried by the sign and includes typography, spacing, layout and the use of symbols. The graphic elements of point, line, shape, texture, tone and colour also contribute

to the form of the sign. Form can enhance or impair the individual's ability to read a sign and consequently is a much studied subject of the Gestalt school of psychology.

(ii) Objective - Definition refers to the physical qualities of the structure carrying the message. These include the dimensions, shape, colour, design and the type of construction materials used. The physical qualities influence the ability of the sign to either compare or contrast with the surrounding bio-physical setting. The degree of comparison or contrast will consequently affect the individual's awareness and attention towards the sign and its message.

(iii) Significance is the total meaning of the sign which includes both its message and its appearance. A number of important elements contribute to the significance of the sign. The tone or the emotional value of the message can imply a friendly, hostile or authoritarian relationship between the sender and the reader. Messages concerning approved (permissive) or disapproved (prohibitive) activities carry this implication.

There are varying levels of denotation and connotation contained in the message. Denotation is the objective reference of the word or sentence carried by the sign and only has meaning within this word-object relationship. The denotative meaning of the word "erosion", for example, refers only to the wearing away of the land by wind and water. In contrast, connotation is the subjective meaning placed upon the denotative meaning by the individual. For some individuals, the word "erosion" has very bad connotations. Indeed, most words used by people imply goodness or badness.

The level of vocabulary and complexity of sentence construction used can inhibit the individual's comprehension of the message. If the message cannot be understood, it has no significance.

Finally, the context in which the sign is placed can either weaken or strengthen the meaning of the message on a sign. The bio-physical, social and management settings all provide the individual with cues which substantiate and reinforce the meaning of a message. These settings justify the purpose of the sign to the reader.

The three aspects of signs all combine to communicate meaning to the users of nature reserves. The form of the sign allows the reader to efficiently read the message on the sign, the objective-definition adds to the perception of the sign within its context while significance gives a total meaning for the sign.

3. COMMUNICATION AND SIGNS

Many factors contribute to making a sign effective. The sign however, is merely the means by which the Department delivers its message to the public. Insight into the transmission of intended meanings to people cannot be gained by only considering the sign itself. Signs are a type of communication which represent the interaction between the Department and the public. Only by investigating the communication process can further insights be obtained.

The Communication Process

The communication process is basically concerned with transmitting a message from one person to another. The message can either be written, verbal or behavioural. This however, does not ensure effective communication which, for this discussion, is the successful exchange of meanings and rapport between the Department and the public to satisfy reserve management objectives. When the Department erects signs on nature reserves, it also formulates an intended meaning for the message on these signs. The primary purpose of signs is to influence the public to formulate that same or very approximate meaning. The secondary purpose is to formulate the message in such a way to promote favourable relations with the public and therefore enhance the image of the Department.

In Figure 1 below, the Department sends a message (via a sign) while members of the public take that message. After the message is taken, the public can in turn send a message back to the Department. This is called feedback. In verbal communication feedback can either be verbal or non-verbal. Within the management setting of the nature reserve, feedback is measured by compliance or non-compliance to the message on the sign. For the Department, the point of interaction between taking and sending occurs in the management setting. For members of the public, the point of interaction is the perceived situation in which the sign exists.

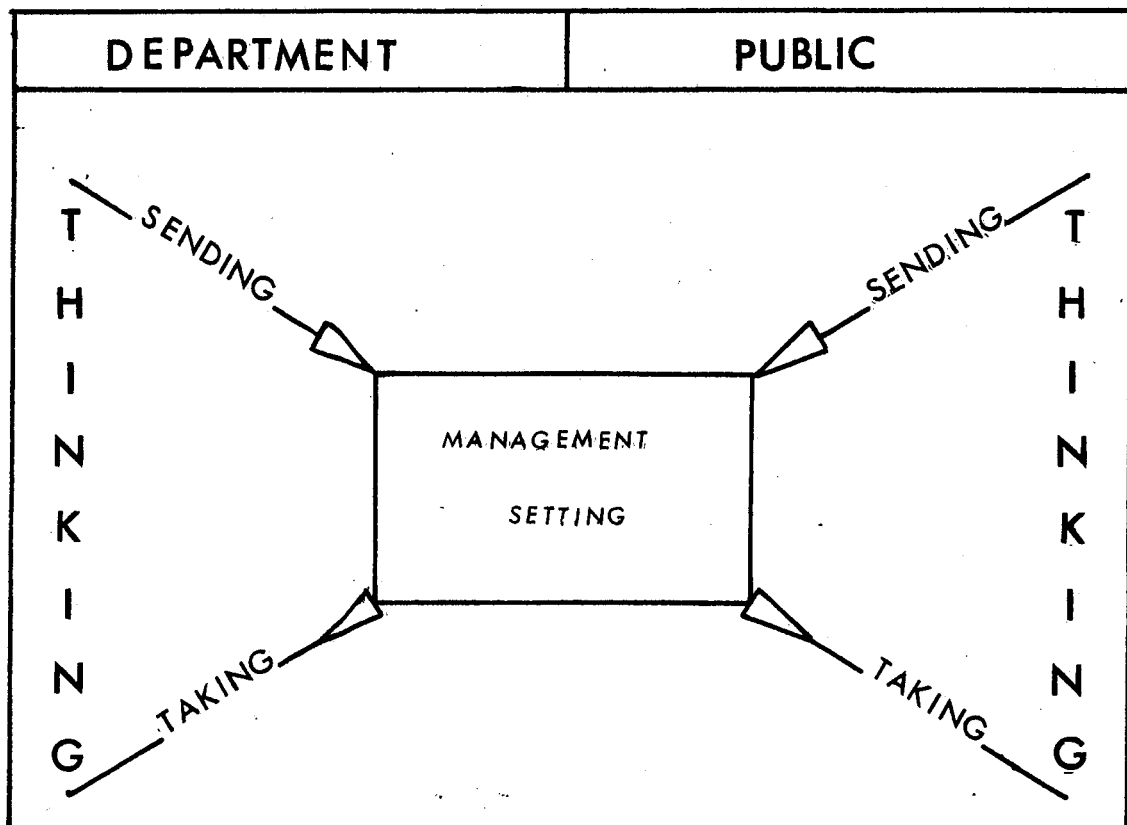


Figure 1 THE COMMUNICATION PROCESS
 During the processes of sending and taking, thinking is carried out by both participants. Thinking acts upon the individual's knowledge, interpretations and, understandings

about himself and his environment. These thoughts then reflect and elaborate upon what is given in perception. Perception being the "process of becoming aware of objects, qualities or relations through the sensory organs and experience." (Hilgard et al. 1975:601).

The taking comprises of three steps. Members of the public must firstly receive the message through their physical senses. A sign on a nature reserve must be easily seen to be effective. Upon seeing the sign, the individual decodes the message. This decoding translates the message into terms which the individual can understand. Decoding is also a process of placing connotative meaning upon the message. These connotative meanings can be evaluative (good-bad, like-dislike, approve-disapprove), potent (powerful-powerless, weak-strong) or active (fast-slow, sharp-dull). The symbolism bestowed upon the sign is a product of the decoding process as it represents connotative meanings. All connotative meanings are derived from an individual's own perceptual field, are very subjective and hence different from person to person. Therefore, only those meanings which are consistent with the individual's perceptual field will be formulated (Trent and Trent 1973:61). After decoding the message, the individual finally assesses the message. This assessment is the emotional reaction of approval or disapproval towards the message and is the basis for subsequent action.

The sending process also comprises of three steps. The

Department firstly forms an intention or purpose to either inform, direct or persuade the public with its message.

The message is then encoded to achieve the desired intention by using those aspects of form and significance within the sign. The Department must adopt these aspects and identify itself to the perception and goals of the public. In this way, signs will be formulated and erected according to the most likely meaning to be assigned by the public. Once encoding is completed, the message is physically sent or transmitted to the public by the physical characteristics of the sign.

The communication process moves in a cycle. The meaning derived from the decoding process will encourage the public to make an assessment, form an intention and commence encoding its own message. This is the feedback mechanism of communication. When communicating with signs, the public's encoding and decoding are processes of interpretation. When encoding, the Department has a perception of the public's goals and perceptions. These are interpreted and then translated into a message using the appropriate words and tone for the intended meaning. The public in turn, interpret the meaning of these messages according to their existing perceptions. Interpretation is the key to effective communication. Unless the meanings derived from the encoding and decoding processes are common to members of the public and the Department, no effective communication will take place.

4. COGNITIVE PERCEPTION OF SIGNS

The form and the objective-definition of signs are the two aspects of a sign which are readily perceived by members of the public when they enter the management setting. These aspects provide important psychological cues to the public which contribute to giving signs significance. These cues have been identified by the Gestalt School of psychology and are known as the Gestalt Laws.

The Gestalt Laws

Gestalt psychologists maintain that elements in a visual field are not perceived individually but are grouped together to form a pattern or configuration (a Gestalt). Their work concentrates mainly on figure - ground relationships in explaining particular visual groupings.

When entering a management setting, individuals see signs, gates, fences and other management elements against the background of the natural environment. The signs and other management elements are the figure while the surrounding environment is the background or ground. Important relationships exist between the two. These are:

- (i) management elements appear closer to the

individual.

- (ii) management elements and the surrounding environment are not seen simultaneously but sequentially.
- (iii) management elements occupy a smaller area than the ground.
- (iv) management elements have contours while the surrounding environment does not.
- (v) management elements have shape while the surrounding environment does not.

A number of principles or "laws" have been established by Gestalt Psychology to explain how individuals group visual elements within a figure-ground relationship. The law of Pragnanz is the basis upon which all these laws operate. Gestalt psychologists contend that people search for stability, meaning and balance to cope with life. People feel secure when they understand what they see and experience. If too much information is available, mental selection processes group visual elements into understandable units. If insufficient information is available, people add to it. Both these processes occur to preserve meaning, and to maintain stability and balance for the individual. Pragnanz is therefore the

perceptual organization which leads to regularity, symmetry, inclusion, unity, harmony, simplicity and conciseness.

The other major "laws" are:

- A. Proximity - visual elements which are close together have a greater probability of being seen as a group or pattern.
- B. Similarity - visual elements which are similar in objective - definition (shape, colour, dimensions and construction) are seen as related. Symmetry, or visual balance, is a special case of similarity which reinforces the similarity of visual elements.
- C. Continuity - those visual elements with the fewest interruptions will be grouped together to form continuous straight and curved lines.
- D. Closure - nearly complete familiar lines and shapes are readily seen as complete.

These four principles can be directly related to the form and objective - definition of signs.

Form

The words, letters, symbols and other graphic elements contribute to the figure when considering the form of the sign. The material upon which the message is written is the ground.

The Gestalt Laws influence the effectiveness of the different variations of typography. Some typefaces use the Gestalt Laws very effectively to facilitate the grouping of letters into words. Serif type style is an example where the terminal strokes on letters provide visual continuity. Similarity of size also allows better grouping of letters.

Proximity also affects spacing between words, letters and other graphic elements. For example, the words below can be read as six individual words or three words.

FAT HER

HAT RED

PEN TAX

The layout or arrangement of the graphic elements can be made more effective using the Gestalt Laws. Symmetry which reinforces similarity is a useful technique. The graphic elements themselves, including colour, contribute to the formation of figure-ground relationships which promote proximity, similarity,

continuity and closure.

Objective - Definition

The objective - definition of a sign and other management elements form the figure against the ground of the surrounding environment. The Gestalt Laws are easily detected when considering Figure 2



Figure 2

The track in Figure 2 provides a strong psychological

cue leading into the nature reserve. The signs and other management elements interrupt this cue with stronger cues. The height, length, shape and colour of the signs and fences group together. A continuous line or barrier is perceived across the track aided by closure between the fences and the gates. All elements are in close proximity to each other which brings cohesion to the management setting. The signs are also in close proximity which not only aids cohesion but aids the memory of individuals who read the messages on the signs. The law of proximity is similar to the educational concept of association by contiguity (Zakia 1975:41). Signs which are in close proximity to each other will therefore require less memory storage and retrieval.

5. SOCIAL AND CONTEXTUAL INFLUENCES AFFECTING COMMUNICATION

The meaning of signs attributed by the public is the only relevant meaning when considering the effectiveness of a signs standard. Social and contextual influences are significant factors for the individual in determining the meaning of messages. During the communication process, an individual decodes the meaning in terms of these influences. Social influences include all those internalised psychological, sociological and cultural factors acting on the individual when entering the management setting. Contextual factors are those perceived elements of the bio-physical and social settings which have relevance for the individual.

Social Influences

The individual's socialization process is the most significant feature in determining internalized social factors. This is because socialization shapes the particular behavioural characteristics of the individual through the training received in his/her social environment. As such, the individual carries a complexity of psychological, social and cultural influences which vary from one individual to another.

Of these influences, values and attitudes are the most prominent products. Values are the subjective estimations of quality placed upon objects, qualities and relationships by people. Attitudes, in contrast, influence "the

readiness to respond in a certain way when the appropriate situation occurs" (Harriman 1971). Both values and attitudes influence the individual's decoding, assessment and subsequent actions upon receiving a message.

The socialization process also provides the individual with a set of intellectual and social skills which are used when entering the management setting. These skills can limit the communicative effectiveness of the sign. Reading and comprehension abilities are examples. Anthropological studies show there exists a close relationship between language and, the shaping of perception and thought. The classical study of Whorf (1956) provides strong indications that different words and expressions describing the same objects within an environment will variously shape the individual's perception and understanding of those objects. Two types of language code which illustrate these differences have been identified by Bernstein (1971). A restrictive code uses words which have concrete, descriptive and narrative meanings. Such a code restricts the expression of the individual. An elaborated code in contrast uses more words with analytical, explanatory and abstract meanings. All people use both codes to some degree depending upon their particular social environment and upbringing. However, the elaborate code is associated with the middle and upper social classes while the restrictive code is more common amongst the working classes.

Social expectations called norms are also instilled during the socialization process and are attached to particular social positions. The set of expectations associated with a position is called a role. A person entering a management setting on a nature reserve has the position of a nature reserve user. Reserve management objectives place a set of expectations on this position. Therefore, the role of the nature reserve user is that set of prescribed reserve management objectives. The messages on signs and other elements within the management setting are the means of placing role expectations upon the nature reserve user.

Dahrendorf has described three types of expectations (1968:21-24). First, must-expectations are compulsory expectations which are reinforced by legal prosecution for non-compliance. Second, shall-expectations are no less compulsory but punishment for non-compliance is social rather than legal. Ostracism is an example of social punishment towards non-compliance of these types of expectations. Third, can-expectations occur where the incumbent's behaviour goes beyond the must-expectations associated with a position. The incumbent does more than what is expected.

The message on a sign and its tone express these three levels of expectations. An authoritarian sign threatening punishment for example, expresses a must-expectation. Advisory messages on signs imply shall-expectations while taking field notes on interpretative trails is an example

of can-expectations.

Must-expectations which are explicitly expressed in messages on signs have a significant influence on behaviour. The effect of an authoritarian sign threatening punishment, for example, is dependent upon the individual's expected outcome of non-compliance. A sign threatening to fine people for non-compliance will not be obeyed if the individual considers that he/she cannot be apprehended. If the individual expects to be caught and the subjective value of this outcome is unfavourable, then he/she is not likely to violate the demand.

Threatening messages on signs also have other psychological and social effects on behaviour. Threats of punishment such as fines and imprisonment have generally proved ineffective (Hilgard et al. 1976:262-264). Such punishments may suppress but not weaken unlawful behaviour. Also, the threat of punishment can encourage the individual to participate in that prohibited activity expressed by the message or the sign. This is called psychological reactance. A sign which restricts an individual's intended purpose will impinge upon that individual's freedom of choice. By engaging in the prohibited activity expressed by the sign, the individual is being rewarded by exercising his/her freedom of choice. In contrast, signs appealing to the support of societal standards are more successful in achieving the desired response. Such messages appeal to socially and personally accepted standards while compliance

offers the reward by substantiating the individual's self identity.

The Context

This discussion deals with the behaviour of the public as related to the management setting. Indeed, all behaviours occur against some form of physical background. These physical settings are not neutral but actively influence behaviour. For example, messages of reassurance or threat can be derived from the physical setting (Harré 1981:366).

A physical setting consists of a spatio-temporal structure and a meaning for physical elements (1981:366). A situation however, arises where tension or conflict exists. Harré uses the term "expressive contradiction" to describe a situation (1981:374-75). He explains that people in a physical setting who occupy a place and time achieve a sense of possession. Any invasion of this possession is the primary source of tension leading to a situation.

A nature reserve, with its bio-physical, social and management settings, is the context in which the user perceives a sign. All those elements which are both perceived and not perceived by the individual from the objective setting. People however, cannot notice all elements in an objective setting. This leads to the formulation of the subjective situation. As Harré suggests, the subjective situation is primarily derived

from tension caused by conflict. A nature reserve user, who visits a reserve for some specific purpose, occupies spatial and temporal boundaries when he/she arrives. The user will however, feel invaded by the messages on signs and other management elements. These messages and management elements may be in direct conflict with the user's intention in visiting the nature reserve. The purpose of the user and the effect of the management setting on that user both seem important influences upon behaviour.

Three factors limit the individual's structuring of the subjective situation. First, there are time limitations. A subjective situation lasts only as long as the individual can manipulate the situation to meet his/her immediate purposes. Once these immediate purposes are satisfied, that subjective situation ends and a new one commences. For example, when at the entrance of a nature reserve, an individual is only concerned with gaining entry. The subjective situation therefore consists of paths, tracks, gates or any other means of gaining access. Once the individual has opened the gate or used a track, that subjective situation ends and a new one commences. Signs in this situation must therefore offer quick and easy directions to gain entry. If not, the individual may manipulate the environment in other ways not consistent with the message. Second, some form of interaction must exist to satisfy the individual's purpose in visiting the nature reserve. As a means of interaction, signs inform

and direct the public to meet particular purposes. The social setting with the presence and activities of other people also shapes the individual's subjective situation. Third, the physical features of the nature reserves and, more specifically, the management setting aid in the formulation of the subjective situation. Such features can induce emotional reactions of pleasantness or un-ppleasantness (Russell and Mehrabian : 1978) and thus influence the subjective situation.

The actual definition of the situation by the individual is essentially an interpretation of the subjective situation which gives meaning in terms of psychological, sociological and cultural influences. A sign is therefore an element of the objective situation which, when perceived, forms part of the individual's subjective situation and consequently aids that individual's definition of the situation.

6. PROBLEMS IN THE COMMUNICATION PROCESS

Certain factors can lead to inefficiencies within the communication process. These have been identified by Beale (1974) and contribute to the further understanding of making signs effective.

1. Absence of Communication

This occurs where a sign does not exist in a situation requiring one. In an area undergoing restoration for example, signs warn the public to avoid this area. If no sign exists, the public will enter the area and disrupt restoration activities. Therefore, the absence of communication between the Department and the public leads to both the destruction of the natural environment and wastage of management resources.

2. Failures of the Communication Process

In these situations, communication takes place but fails for one reason or another.

- (a) **Mechanical Failure:** this is the most fundamental type of communication failure. It is a physical failure occurring at the Department's level of transmission and at the public's level of reception. Insufficient volume, noise and inadequate reception are types of mechanical

failure. Volume refers to the prominence or 'loudness' of the form and objective-definition of the sign while noise is anything preventing the public receiving an undistorted message. Where a sign is not located in a prominent position in relation to movements of the public and lettering is too small for example, insufficient volume exists. The presence of undergrowth obscuring the sign and, limited or excessive sunlight which prevent the public reading the sign, are examples of noise. Mechanical errors also occur at the Department's transmission and the public's reception levels. These are errors in grammar, spelling or through the mis-reading of the sign by the public.

- (b) Semantic Failure: this occurs during the Department's encoding and the public's decoding. That is, semantic failure is failure of the interpretation process. The Department's encoding must be precise so decoding by the public gives the intended meaning : no ambiguity must exist. An example made famous by the noted anthropologist, Noam Chomsky, is "flying aeroplanes can be dangerous". Signs must avoid such ambiguity as confusion in meaning can result. Lack of clarity is another type of semantic failure. The wording on a sign must be easily understood by the public; be free from

slang, technical and abstract language; sentence construction short and clear; while the simplest words which carry the thought must be used.

There is conflict between achieving clarity and brevity for messages on signs. Indeed, finding the optimum combination between the two is an art of communicating through signs.

(c) Relational Failure : all messages imply a relationship which should be appropriate for the message and its physical context. The relationship is transmitted through the tone of the message. The tone should be factual, helpful, courteous, sympathetic, honest but firm. It must foster the desired response. Signs which do not carry a favourable tone symbolize authority and consequently contribute to defensive communication. Defensive communication being that behaviour occurring when the public perceive or anticipate threat in a message. As the public become more defensive, the less able they are to perceive the purpose of the sign and intentions of the Department.

3. Communication Breakdown

An important distinction exists between a failure in communication and a breakdown in communication. A failure occurs where a feature of the communication processes is incorrectly operating and fails to facilitate the intended meaning of the Department. A

communication breakdown however, is where the communication process is efficiently working but a clash of interests occurs between the Department and the public. There is a conflict between the intention of the Department and assessment of the public. Figure 3 illustrates an example of communication breakdown.

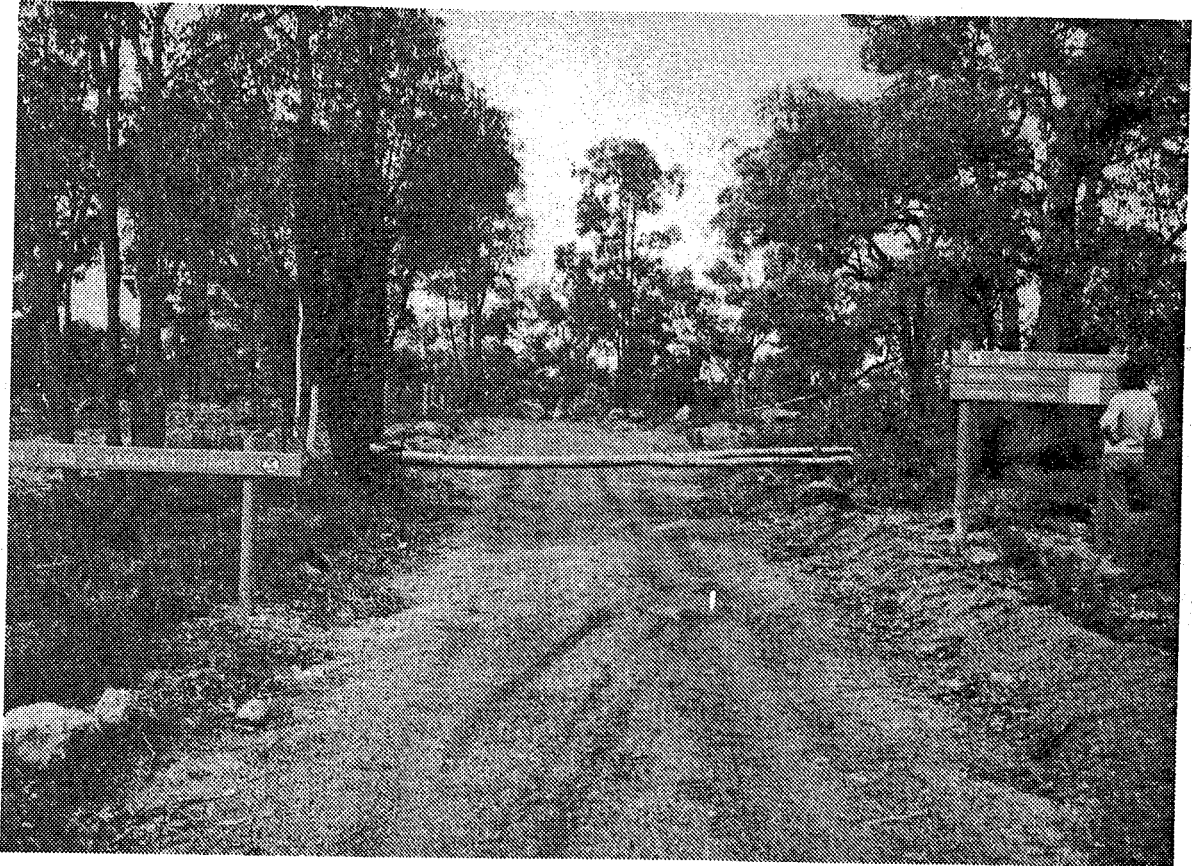


Figure 3

The log barrier across the track clearly suggests that entry is prohibited. Indeed, the sign on the right shows the limited access area for vehicles on the nature reserve. The vehicle tracks however, indicate that people have ignored the sign and bypassed the barrier. The intention of Department is in conflict with the assessment of the individual.

Beale suggests three avenues of preventing communication failures. First, feedback acts as a mutual adjustment between the Department and the public. The Department may have to modify its messages depending upon the behavioural reactions of the public. If members of the public ignore the signs and continue to use a restricted area, this is negative feedback for the Department. Negative feedback discourages the Department from using the same message on the sign by forcing it to modify the message. Positive feedback which is the public compliance to signs, encourages the Department's existing use of signs.

Second, redundancy can be used. This can be done by either using more signs to repeat messages, using additional words to express meaning or using graphic symbols to reinforce the message on the sign. However, the context is of far more importance in making the sign redundant as it reinforces and substantiates the public's expectations of the message. A sign reading "No Path - Erosion", for example, must clearly describe the surrounding area so the public easily understand the meaning with little interpretative difficulty.

Third, the Department must attempt to foster good relations between itself and the public. Messages on signs should induce favourable rapport with the public. Antagonistic words and tone should be avoided while the information should be helpful for the public to achieve its public. As

11 Beale concludes, "in a good relationship, the self-image of both parties is bolstered "(1974 : 94).

7. COMMUNICATIVE EFFECTIVENESS ON NATURE RESERVES

The foregoing discussion suggests that the communication process, cognitive perception, social and contextual factors are most influential in determining the effective communication of signs. These four factors all make some contribution to the public's formulation of the subjective situation within the management setting. The communication process however, is the mediating means which reflects those cognitive, social and contextual activities within the management setting. Furthermore, the communication process makes an active contribution to the subjective situation. This concluding section outlines those features of situations occurring within management settings. These features offer a guide to further inquiry and allow the communication process to be better used within the management setting.

Situational Features of the Management Setting

The following nine features have been taken from Argle, Furnham and Graham (1981:6-9).

1. Goals

Situations on nature reserves cannot be understood without first referring to the goals of the participants.

As shown within the communication process, the Department must form an intention towards the public

but must also take into account the goals of the public. This is necessary because all situational goals are related to motivation and people expect to achieve these goals.

2. Rules

The public's behaviour on nature reserves is influenced by the prevailing rules. Regulatory messages on signs express behaviour which is permitted, prohibited or required. Rules expressed within the management setting regulate behaviour to achieve prescribed management objectives. Such objectives aim towards the preservation of the bio-physical setting. A rule exists if it has general compliance and if there is general disapproval to its violation. Signs are clearly an important means of communicating the rules for behaviour on nature reserves.

3. Roles

The messages on signs also suggest the roles for both the Department and the public. Expectations are placed upon the Department to erect signs with suitable messages and the public is expected to comply with such messages.

4. Repertoire of Acts

There is a repertoire of acts which are permitted and regarded as being meaningful within the management setting. Using entrance gates, car parks and interpretative trails are examples of such acts. Messages on signs guide and direct these activities on nature reserves.

5. Sequence of Elements

Behaviour in all situations, including those within the management setting, has a distinct sequence. The communication process for example, has shown that the formulation of intentions eventually leads to either positive or negative feedback. Likewise, rules expressed in messages on signs have the effect of indicating roles.

6. Concepts

When members of the public enter the management setting they must possess the appropriate concepts to classify:

- (i) elements within the bio-physical, social and management settings.
- (ii) the relationship between themselves and the management setting.

(iii) the tone of interaction as inferred by the messages on signs.

(iv) those elements of the management setting which are related to the purpose.

In essence, the public must have the appropriate cognitive ability to understand the situation and to deal with it.

7. Environmental Setting

Following the approach of the environmental psychologists, the environmental setting refers to place and space. The place is the management setting with the associated influences of the social and bio-physical settings. Space refers to the distance between the public and the elements within the management setting.

8. Language

Language is generally situation specific. The vocabulary, grammar and tone are generally applicable to the situation and must be for communication to be effective.

9. Skills

The public entering the management setting must possess perceptual, motor and linguistic skills if communication is to be effective within the management setting.

BIBLIOGRAPHY AND REFERENCES

- Argle, Michael; Furnham, Adrian; Graham, Jean Ann 1981.
Social Situations. Cambridge Press : Cambridge.
- Beale, John. 1974. "The Pathology of Communication" pp
83-95 in ETC - A REVIEW OF GENERAL SEMIOTICS Vol.
XXXII, No. 1.
- Bernstein, Basil 1971. Class, Codes and Control - Volume
I. Routledge and Kegan Paul : London.
- Bickman, Leonard and Green, Susan K. 1977. "Situational
Cues and Crime Reporting: Do Signs Make a Difference"
pp 1-18 in Journal of Applied Social Psychology Vol.
7, No. 1.
- Booth-Clibbon, Edward and Baroni, Daniele 1979. The
Language of Graphics. Thames and Hudson : London.
- Breckon, Colin J. 1975. Graphic Symbolism. McGraw Hill :
Sydney.
- Carter, R.W. 1979. Interpretation - An Approach to the
Conservation of the National and Cultural Heritage of
Australia. Queensland National Parks and Wildlife
Service.
- Crook, Ian G. 1982. A Signs Standard for Use in the
Management of Nature Reserves in Western Australia.

(Unpublished). W.A. Department of Fisheries and
Wildlife.

Dahrendorf, Ralph 1968. Homo Sociologicus. Routledge
Kegan and Paul : London.

Gibb, Jack. 1974. "Defensive Communication" pp 332-337
in Messages - A Reader in Human Communication. ed
Civikley, Jean M. Random : New York.

Gowers, Sir Ernest 1973. The Complete Plain Words.
Penguin : Harmondsworth.

Harré, Rom 1981. "The Dramaturgical Model" pp 363-376 in
The Psychology of Social Situations - Selected
Readings. Pergamon Press : Oxford.

Harriman, Philip L. 1971. Handbook of Psychological
Terms Littlefield and Adams : N.J.

Hawkins, D.E. and Vinton. D.A. 1973. The Environmental
Classroom. Prentice-Hill : New Jersey.

Hendee, John C., Starkey, George H. and Lucas, Robert C.
1978. Wilderness Management - Miscellaneous.
Publication No. 1365. U.S. Dept. of Agriculture :
Forest Service.

Hilgard, Ernest R; Atkinson, Richard C and Atkinson, Rita

- L. 1975. Introduction to Psychology 6th Edition.
Harcourt Brace Javanich : U.S.A.
- Katz, David 1950. Gestalt Psychology. Ronald : N.Y.
- Moorhouse, Frank 1971. "The Silent Naggers" pp 50 in The Bulletin, May 22.
- Reich, John W. and Robertson, Jerie L. 1979. "Reactance and Norm Appeal in Anti-Littering Messages" pp 91-101 in Journal of Applied Social Psychology. Vol. 9, No. 1.
- Russell, James, A. and Mehrabian, Albert. 1978. "Approach - Avoidance and Affiliation As Functions of the Emotion Eliciting Quality of an Environment". pp 355-387 in Environment and Behaviour Vol. 10, No. 3, Sept.
- Starkey, G.H. and Wood, J. 1982. 'The Recreation Opportunity Spectrum : An Introduction' pp 6-14 in Australian Parks and Recreation Feb.
- Stebbins, Robert A. 1981. "A Theory of the Definition of the Situation". pp 346-362 in The Psychology of Social Situations eds., Furnham, Adrian and Argle, Michael. Pergamon : Oxford.
- Trent, Jimmie D. and Trent, Judith J. 1973. "The Process

of Human Communication" pp 58-65 in Concepts in Communication ed Trent, J.D., Trent, Judith S. and O'Neill, D. Allyn and Brown : Boston.

Whorf, Benjamin Lee 1956. Language, Thought and Reality : Selected Writings of Benjamin Lee Whorf ed John B. Carrol. M.I.T. Press : Mass.

Wertheimer, Max 1958. "Principles of Perceptual Organization" pp 115-135 in Readings in Perception ed Beardslee, A.C. and Wertheimer, M. Nostrand : N.Y.

Zakin, R.D. 1975. Perception and Photography. Prentice-Hall : N.J.