

PICTURES AND INTERPRETATIONS: TOWARDS AN APPLIED SEMIOTICS

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Pictures and Interpretations:
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by Katie Boot

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in application for the Degree of Ph.D.
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Synopsis

This is a study about the ways in which pictures *can* be interpreted and the ways in which they *are* interpreted; the latter, specifically, in a relatively remote part of Peru.

Chapter II reviews an assortment of picture tests which bring to light differences in the ways pictures are perceived. Chapter III examines the specific cultural context in which a fairly informal picture test was administered. Chapter IV presents some results and asks what cultural and situational factors may have contributed to the variety in interpretations evident.

The drawing of firm conclusions is precluded by the absence of any systematic approach to the interpretations or to the pictures themselves, and it is this which the second half of the study attempts to remedy; by providing a theoretical framework for the assessment of verbalized responses to pictures.

Chapter V offers a definition of "picture" and locates it within a typology of indices. It also examines the notion of "visual resemblance", eventually adopting the view that any picture is infinitely ambiguous. Chapter VI introduces two methodological necessities consequent on this ambiguity: a stipulation as to the identity and the taxonomic specificity of any signified object; and a stipulation as to the spatial extension of its signifier. No other methodological content is presented. Chapter VII classifies types of verbalized responses in terms of their visual motivation, and the degree to which they interrelate the stipulated pictorial units. Chapter VIII acknowledges that signification may continue beyond the representational level. Further, post-representational, types of responses are classified in terms of the nature of the link maintained with the representational signified.

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CHAPTER I

Introduction

1 The communicative context

There is nothing very mysterious, apparently, about the understanding of a picture. To adults living in a modern, urban environment it seems a trivial matter of look-and-see. The pictorial message is a fundamentally self-evident message; so self-evident in fact, that the picture is brought to the assistance of many another medium of communication which is failing in its task. Where an encyclopaedia's verbal definition succeeds only in outline, for instance, a picture fills in the gaps; where foreign exchange students struggle with their vocabulary, the picture breaks the language barrier; and where the claim that "PERSIL WASHES WHITER" is no proof in itself, the picture corroborates. Cautiously wielded, of course, pictures may also be used to diagnose psychiatric disorders, to rate level and type of intelligence, and to investigate the mechanisms of seeing. But to the rest of us they are a lingua franca, worth a thousand words at least; a feast for the eyes, with no risk of indigestion for the intellect.

The aim of this study is to put some of the above – the *incautious* wieldings, perhaps – to the test. It is intended as an examination of the picture's communicative potential, and of its appropriateness in a particular cultural environment. It begins with certain observations I made concerning the extent to which pictures seemed to "say something" to a particular group of individuals; and goes on to explore the extent to which the picture *has the capacity* to "say" something at all, whether that something is indeed PERSIL WASHES WHITER, or CHRIST HEALS THE SICK, or WEAR YOUR SAFETY VISOR AND AVOID EYE INJURIES, or even just A DOG HAS FOUR LEGS. In attempting to reconcile what appeared to be a discrepancy between *having the capacity to say*, and actually *saying*, I realized the need to establish a theoretical framework for the description of verbalized responses to pictures.

Figure 1 illustrates the potential for a discrepancy between saying and being *intended to say*. It is a reproduction of a "Pictorial Proclamation" issued around 1828 by the Governor of Tasmania. The gist is this: "The Natives of this Island being under the protection of the same Laws which protect the Settlers, and

Violation of those Laws, on the Persons or Property of Natives, shall be visited with the same Punishment as though committed on the Person and Property of any other" (Bonwick 1870: 72).

This, it should be noted, is not accompanying text; nor is it merely what the Governor would have written, had the native Tasmanians – forcibly expelled from their lands and understandably hostile – been able to *read*. Rather, this piece of legalese approaches a direct translation of what the Proclamation was considered *adequately to have communicated*; ignorance of which, moreover, was considered no defence.

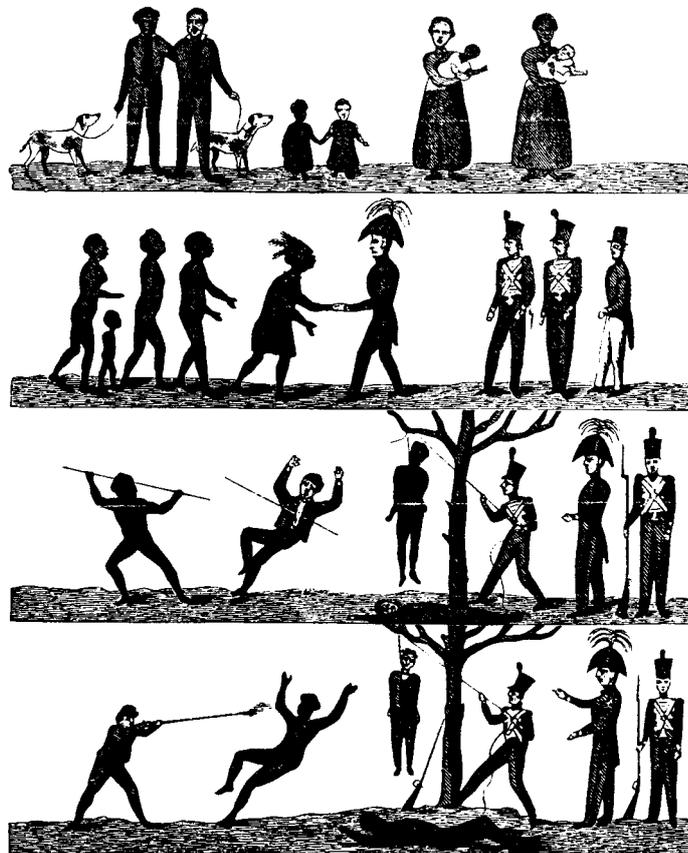


Figure 1 (taken from Bonwick 1870: 85)

If this is rather alarming, at least it is also rather old. Yet it is not out of date in so far as there are now more would-be communicators than ever who do indeed assume that a message as specific as that above is within the picture's power to convey.

Some of these would-be communicators, moreover, subsume within their target audience the inhabitants of Amantaní, an island lying in a remote Peruvian corner of Lake Titicaca, where I spent five months in 1987-88. Yet I had not gone to Peru to study pictures at all; I had gone to study the role of musical instruments in legend – an interest fostered during a brief expedition to Chile in 1986 (Boot 1987). This is no slight shift of focus, to be sure, and its rather erratic history bears some mention here.

2 The viewers

My visit to Amantaní was arranged through a friend who had spent nine weeks there in 1986, and it was with her own former hosts, Juan Mamani and his wife Erminigelda, that I lodged. The island was to have been a short-term haven where I would muster courage for the task ahead and attempt to render my limited Quechua conversational. The first weeks were spent receiving ad hoc Quechua lessons (sometimes in return for ad hoc English lessons), providing clumsy help in the fields, going to church, walking the island, shadowing Juan as he attended various meetings, and striking up relationships with his family and friends.

More to orient myself than with the specific aim of gathering data at this point, I would ask about musical instruments and other physical objects with, potentially, conventionally symbolic meaning: the whips carried by the island's civic officials; the motifs woven into hats and shawls; the designs being carved on to some near-completed stone arches, etc.

The dearth of those traditional associations I had been led to anticipate was disconcerting. In fact, so frequently disappointing were the replies to my naïve questions that I began to despair of my topic. Yet I knew that vast works have been written on the meaning of woven motifs, and that there exist at least a few Titicacan tales of charango-playing mermaids and the like. Purely on the off chance that this particular problem was, after all, a problem of translation, I put pen to paper and drew one such mermaid. When I showed the picture to Juan's

elderly mother, it yielded – in place of the now familiar shoulder-shrug – three sad songs, four sad stories, and, for me, the conviction that pictures were the key to all mysteries.

There followed the feverish concoction of a set of visual aids: pictures of musical instruments, woven motifs, ceremonial knives, crosses, skulls and crossbones, and the innards of the Peruvian flag. The mermaid episode, it turns out, may simply have been a happy encounter with a kind and knowledgeable woman, since these pictures did not live up to my hopes. Nevertheless the damage was done, and the seeds of a new topic were sown.

For some people, the pictures did indeed trigger an outpouring of knowledge; but far more numerous were those for whom they did not. This disparity, however, seemed a phenomenon worthy of study in itself. That is to say, in place of the *content* of traditional and conventionally symbolic associations, I might instead investigate their *prevalence*.

Further motivation was provided by the informal observation that, contrary to expectations, it was *not*, on the whole, the elderly, the conservative and those who had little contact with the outside world who readily wielded these traditional items of information, but the young and the better educated. One implication might be that some of the "exotic symbolism" the literature (whether tourist brochures or scholarly articles) leads us expect of alien cultures is not indigenous but constructed and propagated from without; and that knowledge that, say, a jaguar symbolizes an aspect of Wiracocha is not *replaced* by knowledge that a lion signifies St. Mark, or a tiger Esso Petrol, but is acquired through essentially the same channels. It might be interesting, therefore, to ask not only *what proportion* of individuals think of the condor as a symbol of Andean identity, for example, but also *who these people are* (much as Garro (1986) investigated intracultural variation in folk medical knowledge).

This idea took on a particular relevance, moreover, in consideration of what might be termed the island's "visual environment". One only had to look at the rather abstruse posters pasted to the walls of the community hall to realize that the knowledge my excursions had shown me to be not generally possessed by, or not readily forthcoming from, my informants was precisely that knowledge *relied* upon by the producers of the posters, whoever they might be.

3 *The communicators*

Who indeed? For who is in the business of communicating with communities of the size, isolation, education and limited buying power of Amantani? Peruvian banks, Peruvian and foreign aid organizations, campesino federations, schoolteachers, missionaries, politicians, health workers, agricultural advisers, consumer goods advertising companies In fact just about every type of organization to be found in most other parts the world – although in some instances clearly the potential profitability of the encounter might not seem enough to justify the effort.

The difference, however, between the function of these pictures and that of many similarly abstruse posters here in Britain, for instance, comes down to the fact that many campesinos cannot read. Certainly many of those who can may not read sufficiently fluently to plough through great quantities of written information. There is, therefore, considerably more for the picture to achieve. And yet, in the light of the very superficial soundings above, one might well wonder what chance of success the picturers believed they had – and on what grounds they believed they had it.

My next step was to take a boat to Puno, Amantani's nearest mainland town. I spent five hectic days attempting to find those responsible for the posters, their reasons for using the pictures they did, and the officially "correct" interpretations of the posters I had already seen. The establishments I approached included the Banco Agrario, the Proyecto Experimental de Educación Bilingüe Puno, the aid organization CORPUNO, the magazine *Hojas Escritas*, the Puno branch of Jehovah's Witnesses, the Oficina de los Obispos del Sur-Andino, along with the painters of Puno's revivalist mural (Photograph 8 in Appendix B), and a randomly selected publicity agency. I later added to this list in Cuzco, Lima, and in Chile. All of these have an interest, if not always a specific interest, in communicating visually with campesinos. I asked representatives from each what concessions – in particular, visual concessions – they made to a largely illiterate target audience.

What emerged was clear confirmation that, where Peruvian campesinos are concerned, whether the product advertised is a pump, a solar panel, loans, education, human rights or eternal salvation, it is the pictures which are intended to do the work – not only in their capacity to encourage and maintain interest, or to make a more permanent impression upon a receptive memory, but also to

carry *independently* as much of the message as possible. Crucially, moreover, these pictures should be *simple*.

4 *The pictures*

I was given a vast collection of "simple" posters and pamphlets which I carried back to Amantani. From these I put together a second, rather haphazard array of pictures which included posters, drawings of posters, advertising pamphlets, newspaper cartoons, the Jehovah's Witness extravaganza described below, photographs chopped from magazines, and collages made from the choppings. The number of pictures in this set grew and diminished as the focus of my interest changed. Only some of them have survived to appear in Appendix A.

On the whole, these pictures differed significantly from the first set. Most appeared to contain more than one element, and many incorporated depth information (such as occlusion). Others made use of more specialized graphic devices. One CORPUNO brochure, for example, shows a manual water pump in cross-section underground; a CCP Human Rights poster features extreme perspective foreshortening (Supplementary Picture 1, reproduced in Appendix D); and the Banco Agrario's exclusively campesino-oriented pamphlet uses falling calendar pages to indicate the passing of time (Supplementary Picture 2).

The interpretations offered in response to these pictures only increased my doubts as to their likely communicative value in this particular context.

The pump cross-section, for instance, was frequently misidentified:

Kayta mana allinta intandinichu. Hornochus kanman. No sé, imachá. Mana intandinichu allinta

I don't understand this very well. Would it be an oven perhaps. I don't know what it might be. I don't understand it very well

Supplementary Picture 1 elicited information about the hand:

Mano. Maki. Para trabajar

A hand. A hand. (It's) for working

without reference to either its diminutive owner or the crowd of similarly diminutive protesters behind him.

As for the falling calendar pages (Supplementary Picture 2), they were simply falling pages:

Kay campesinotaqmin thampiyukuspa folletokunata urmachisqa
And this campesino's stumbled so he drops his papers

In other cases, a concentration on barely significant stylistic niceties would dictate the theme of the whole response:

Despues veo una niña se encuentra sin narizito por motivos de su sincera nacimiento
Next I see a girl who was born with no nose

– this particular pictorial girl being not unlike many of the figures in Appendix A's pictures in that her nose is not explicitly rendered.

More surprising, however, were the responses elicited by pictures which incorporated no such specialized devices; only devices which might not be thought to be specifically pictorial. One newspaper cartoon, for example, shows a woman putting a small girl to bed. The girl's left foot is obscured by the bed's headboard. For more than one viewer the occlusion is not registered as such:

Kaypitaqmin wawanta maman hap'ishaspa sayachishan. Manan payqa puriyta atinchu. Mana chakin kanchu. Pero quién puede curar, no?
Here a mother is holding her child upright. She can't walk. She has no feet.
But who can cure her?

I was impressed further by the numbers of strangely static interpretations given in response to obviously dynamic pictures; and by the frequency with which characters "just watched" each other, when a more active interconnection seemed more appropriate. Indeed, in some responses, such as this one (to the *Hojas Escritas* poster of which Picture 19 (reproduced in Appendix A) is a rendering), different elements were not interconnected at all:

Pescado, no cierto? Kay pescado. Kaytaq alambre. Kaytaq wallpa chakin, no cierto?
It's a fish isn't it? This is a fish. And this is wire. And this is a hen's foot, isn't it?

This curiously enumerative approach, moreover, was not confined to fairly diagrammatic pictures, but emerged in response to more obviously narrative pictures too. In response to Picture 13 (reproduced in Appendix A), for instance:

Alqokuna. Michi. Gato. Runa. Humano. Perro. Animal. Gato. Rata. Michi. Michi. Huk'ucha
Dogs. Cat. Cat. Man. Human. Dog. Animal. Cat. Rat. Cat. Cat. Mouse

In addition, there were many responses in which emotions attributed to characters seemed to bear little relation to the facial expressions and body postures of the figures concerned.

Picture 11 (reproduced in Appendix A), for example, is taken from a Jehovah's Witnesses' pamphlet published by the Watchtower Press. It includes a small boy whose eyes are sallow, whose ribs show, and whose hand is raised to his mouth as though in a desperate plea for food. He is evidently, and almost picturesquely, starving.

For one viewer, however, the boy is not obviously even mildly hungry:

Esto es feliz. Tranquillo, si, más o menos
This one's quite happy. He's unperturbed, more or less

This is a small point; he is after all only a small boy, and he fills only a small part of the frame. Perhaps this viewer fares better with the rest of the picture. But there is a sense in which the intended message of the whole picture might be said to *depend* upon such small interpretations as this; and to be completely *undermined*, moreover, by even slight misinterpretations of its constituents.

Let us have a closer look at Picture 11.

5 The build-up of problems

The Puno Jehovah's Witnesses were, at the time of my stay on Amantani, engaged in an awareness programme specifically directed at campesinos in isolated rural areas. A visit to the island was to constitute a part of the campaign. I asked the supervisor what materials he would use when communicating the relevant issues to campesinos. His answer was, like the others, quite definite in specifying the provision of pictures in quantity, and preferably in colour. Picture 11 was selected as a particularly good example of the type to enlighten an average campesino.

A seven-headed fire-breathing serpent thrashes above a soldier taking aim, a World War II style bombing, an earthquake, a planet about which fly futuristic planes and missiles, the bony child, two sneering females and the heads of three

apprehensive-looking adults; these seem to be the main ingredients of the picture.

Of course it refers to the Bible's Revelation of John: "And another portent appeared in heaven; behold, a great red dragon, with seven heads and ten horns, and seven diadems upon his heads" (RSV). And in a sense the understanding of the picture is quite simple. Here is the Devil in the form of a beast and as the cause of famine, war, dissent and fear (so turn to God ...). But what is required in order that this meaning may be drawn from the picture?

Interpreters must be familiar with the biblical allusion to realize that the beast is Satan himself. Once this is established they may then, with knowledge of Satan's destructive powers, recognize the anxious faces, the war-torn world, etc., to be not mere unrelated states but linked to one another as joint consequences of the Devil's dominion. Interpreters should also extrapolate metonymically from "an explosion or two" to "war", and perhaps too from "starving child" to "starvation". Finally, they should not think to themselves "nasty picture" and leave it at that; they should understand it to have, at least potentially, a real-world counterpart, and to refer not merely to one white woman, one black man, and so on, but to the entire human race – themselves included. Out of this may then arise the realization of the need for an alternative state of affairs, this being the ultimately implied and desired ideological message.

Before any of this, of course, viewers must at least recognize that the child is indeed starving, and that the faces are indeed anxious.

In all then, and still only cursorily, the "correct" interpretation of the picture (and from the Jehovah's Witness' standpoint there almost certainly is an element of success or failure) requires a fairly extended accumulation of operations.

It is this accumulation of operations with which we shall be concerned.

6 The accumulation of operations

To illustrate the potentially ordered nature of the functioning of these operations, take Picture 11's bony boy. We may imagine individual responses:

- i) "There's a brownish area breaking up the pink"
- ii) "There's a boy with no legs"
- iii) "This boy looks pretty undernourished"
- iv) "There's obviously a famine"
- v) "That's just it, you see. Famine means people go hungry"
- vi) "It's an evil world we live in"

It might seem from such responses that the hypothetical informants have chosen from a number of equally plausible alternatives (figure 2).



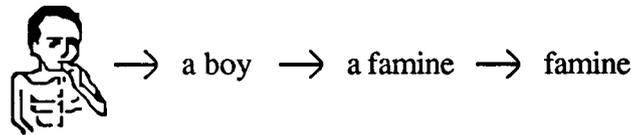
But these do not constitute alternatives in the same manner as would, for example, responses: "it's a thin boy" ~ "it's a fat girl"; "there's a famine" ~ "there's a flood"; "he looks sad" ~ "he looks happy"; "family planning" ~ "dietetics"; since the responses "starving boy", "famine", etc., do not exclude one another in the way that "thin boy" ~ "fat girl" or "sad boy" ~ "happy boy" might.

If not alternatives, how are these responses arrived at?

The individual who responds: "It's an evil world we live in" may well have a purely idiosyncratic mental correlation of the figure with such a message. It seems more likely, however – if far from certain – that this pronouncement has been prompted by the recognition that the brownish area represents part of a boy; by a consideration of the thin and hungry look he has about him; and by a reckoning of such boys with the reality and causes of famines and starvation. That is, the informant has used the *figure* → *boy* as a spring-board for further thought.

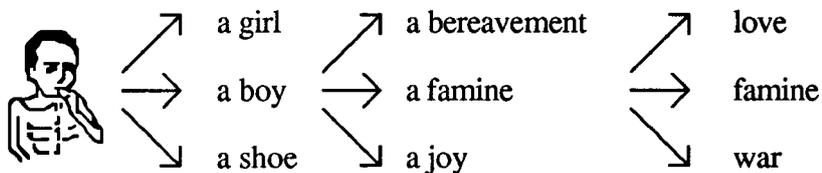
In other words, we are dealing with a build-up of signification; a sequence of stages:

Figure 3



each of which presupposes the preceding to some extent, in that the output of one operation continues the process as the input for the next. There is still room for alternative interpretations, some of which may seem more appropriate or justifiable (with reference to expectations) than others. But each alternative too will find its place as a product of a particular stage of the process:

Figure 4



7 *The interpretations*

Broadly speaking, each of chapters V to VIII assumes responsibility for one such stage. The framework which ultimately results constitutes a fairly crude means of assessing, in terms of their "visual motivation" and their "complexity", verbalized responses to pictures.

Prior to this, however, we attempt a more extended investigation of some potential *reasons* for the surprising variety evident in the responses above.

This investigation is based upon the responses made by fifty of the islanders to a selection from among the many pictures displayed. These islanders are, for the most part, friends and acquaintances of Juan's. Most were approached initially prior to the test, and the interviews themselves took place in their homes, in the fields, or on the beach. I asked these people merely please to tell me in response to each picture *what do you see?*, *what is happening?*, and *what does it tell you?* The informants' answers to these questions were taped along with my own interjections: "Picture 3", "the one in the middle", "the guitar", "left to right", etc. Back at Juan's house, he would listen to the tape, repeating slowly what had been said, while I wrote it down. I would then listen once more, inserting

pauses, picture reference numbers, and so on. It is these transcripts which are used as the data for this study.

Upon what, then, might the differences in their responses depend?

The assortment of picture tests reviewed in chapter II, as well as bringing to light further differences in the ways pictures are interpreted, offers some possible, albeit fairly general, answers to this question.

The task of chapter III is to offer some more specific likely-looking candidates for the role of second variable, asking along what seemingly relevant dimensions the viewers in my sample differ from one another. With a closer look at the physical and social environment in which these individuals live, potentially significant differences emerge in terms of the degree to which each of them is integrated within Peruvian mainstream society; an integration governed to a great extent by (1) their level of education, (2) their ability to speak Spanish, (3) the opportunities they have had for travel beyond the island, and (4) their *attitudes* to life beyond the island. After attempting to rank the informants along each of these dimensions, we go on in chapter IV to match the resulting profiles with their interpretations of pictures to see if any revealing correspondences emerge.

Few, if any, such correspondences do any such thing.

In questioning the reasons for their scarcity, however, I come to realize, first, that my failure to adopt a *context-sensitive* approach to the informants' responses precludes revealing correspondences almost entirely; and, secondly, that this inadequacy is only enhanced by my failure to adopt a *systematic* approach to the pictures themselves.

It is the latter deficiency which the second part of this study attempts to remedy.

CHAPTER II

Picture Tests

1 Introduction

Chapter I offered some interesting differences in the interpretation of pictures. In this chapter we review an assortment of picture tests which bring to light further differences in the ways pictures are perceived, and we begin the task (taken up in earnest in chapter V) of disentangling to what extent pictorial perception is a universal and biologically determined human ability, and to what extent it is culturally mediated.

Underlying the various studies gathered together here as picture tests is one basic hypothesis: that, for all that understanding a picture may seem obvious, this may, or may not, be a "relative obviousness", which depends upon the emotional preoccupations, the age, the culture, and indeed the species of the viewer concerned. Under either banner, picture tests have concentrated on differing aspects of the process of interpretation; the information perceived to be available in non-representational arrays, recognition of pictured objects, susceptibility to optical illusions, viewing strategies, projected interaction between pictured characters, and so on.

The main focus of our survey will be cross-cultural picture tests. We ask whether differences in performance on perceptual tasks reveal fundamentally different perceptual tendencies, and whether any such tendencies may result from culturally mediated experiences, or whether they are simply a corollary of the conventional and culture-specific nature of the pictorial relation. Steinberg, for example, argues that "'technical capacity in the imitation of nature' simply does not exist. What does exist is the skill of reproducing handy graphic symbols for natural appearances, of rendering familiar facts by set professional conventions" (1953: 198).

There are, then, on the one hand, indications that practically any organism which uses visual information should be able to understand information from a picture (Herrnstein and Loveland 1964); and, on the other, claims that "the picture, particularly one printed on paper, is a highly conventional symbol which the child reared in Western culture has learned to interpret" (Biesheuvel 1969: 63).

Somewhere between the two lies the notion that it requires only "practice to see the meanings and the spatial relations in two-dimensional representations and designs" (Stone and Church 1968: 329).

Given the validity of either one of the latter, we should anticipate significant difficulties in identifying pictured objects on the part of the non-Western child and adult, the pictorially naïve Westerner, and also on the part of any non-human viewer.

2 *Pictures and animals*

There appears to be a popular trend in the lay classification of domestic pets: into those which do, and those which do not, watch television. Rhesus monkeys do (Miller, Banks and Ogawa 1963); that is to say, they react appropriately to facial expressions of other televised monkeys. Chimpanzees have been shown able to transfer a taught response from a solid object to its two-dimensional counterpart (Hochberg 1964), and to "perceive a photograph of an object *at first sight*" (Davenport and Rogers 1971: 320). Pigeons too, once acquainted with the test procedure, will respond to human figures in black and white photographs (Herrnstein and Loveland 1964). Even jumping spiders respond appropriately to life-sized pictures of their normal prey (Drees (no date provided), reported in Kennedy 1974). And if spiders can recognize objects in pictures, any more sophisticated organism which uses visual information should surely have no trouble at all.

In each of the above cases there is, however, the possibility that the image provides an instance of the cue, or "releaser", whatever it may be, rather than merely a representation of it. Certainly where colour is concerned, as, say, in the herring gull chick's pecking at a red "mandibular" spot, on its mother's beak and on a crude cardboard cut-out (Hailman 1967), representation and instance may indeed be identical. Hayes and Hayes' chimpanzee, Viki, however, regularly handled pictures, and was, we gather, in no doubt as to their two-dimensionality. She would match objects with pictures from which consistent "form-cues" had been eliminated, and would lean over a pictured watch, for example, in a mime of listening; "she had presumably not mistaken it for a real watch, since her normal reaction would then have been to attempt to pick it up and hold it to her ear" (Hayes and Hayes 1953: 470). While perhaps not conclusive proof in itself that an animal may understand a picture *as* a picture, this does at least suggest that some animals can extract information from a

representation without being versed in any convention. Viki's human surrogate parents had never attempted to train her in picture perception. In fact the BBC Horizon documentary "Chimp Talk" ([Jones] 1993), a survey of research into the chimpanzee's linguistic capacity, leaves me in no doubt whatsoever; the animals featured, at any rate, seem perfectly capable of understanding pictures *as* pictures.

3 Cross-cultural object-recognition

In cross-cultural experiments focussed solely upon object recognition, no significant cultural differences have emerged between responses made by members of non-European cultures and those of Western adults.

Hudson (1960), testing black and white, educated and uneducated South Africans, found that all subjects could identify pictured animals and humans. Much the same conclusion was reached by Mundy-Castle in his tests with Ghanaian children (1966), despite the occasional but plausible discrepancy in interpretation (a deer labelled a goat, for example) (see chapter IV, §2). Deregowski's experiments in Zambia (1968a) and those of Nadel in Nigeria (1937) add further support to the notion that recognition of pictured objects is not the matter of Western convention Biesheuvel and Steinberg claim it to be.

In fact, Steinberg is not suggesting, as Kennedy would have it (1974: 30), that there is no motivation at all for the relation between the picture and its object, but, rather, that some element of conventionality can never be ruled out and that there are limitations on pictorial lifelikeness, even where a picture most closely resembles its object. Constable's Wivenhoe Park, for example, may look wholly lifelike to me, and a Japanese artist's rendition of the same scene Japanese. The Japanese observer, on the other hand, may see the one as characteristically Briton in style and the other as wholly lifelike (Gombrich 1977). It is *naturalism*, then, which is unobtainable outside of a specific cultural or stylistic context (Goodman 1976).

4 Traditional art and contemporary practice

The traditional art styles of a non-European culture have seemed to some a valuable insight into the perceptual habits of its members. In particular, studies have focused on the possibility of a relationship between perceptual tendencies

and the presence or absence of perspective drawing techniques in the culture's art.

The priority of the "known" over the "seen" is a well-documented feature of the art of non-European peoples and that of children (Adam 1949; Löwenfeld 1973; Arnheim 1974; Boas 1955; Kennedy 1974; Hudson 1967; Elkind 1969). The depiction of the known may be achieved using the "X-ray" technique (Adam 1949), whereby a subject's internal detail (innards, house contents, etc.) is represented, in indigenous art from northern Australia to Alaska; and the "split representation" (Deregowski 1968b) technique, whereby an animal may be represented by two symmetrical profiles, such as is found in the art of some modern North American Indians (figure 1).



Figure 1 (adapted from Boas 1955: 226)

Some investigators have considered that just such a disregard of the laws of perspective suggests that the artists "see objects in a manner much further from the principles of perspective than do the majority of Europeans" (Thouless 1933: 330). Thouless required Indian students to match elliptical shapes with the apparent shape of an inclined circle. Their responses showed a higher degree of "phenomenal regression to the real object" (that is, the circle) than was manifest in those of British students; results in agreement with those of Beveridge in West Africa (1935, 1939). The implication is, Thouless suggests, that "the absence of perspective and of shadows in Oriental art is determined by a real racial difference in perception and not merely by a tradition of 'symbolic' representation" (1933: 337; and see chapter V). Beveridge found that West African subjects exhibited the same tendency to phenomenal regression (1935, 1939). This, he claims, "explains some peculiarities of African drawings which the European tends to regard as mistakes" (1935: 61)

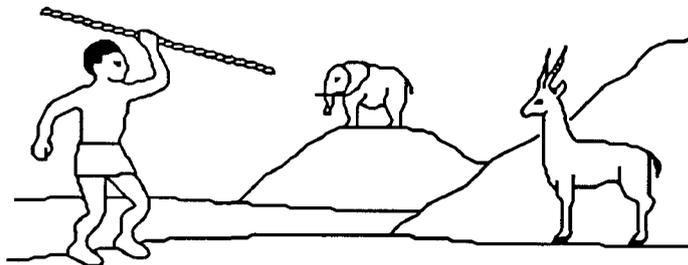
Segall, Campbell and Herskovits (1966) warn, however, that caution should be exercised in assessing a culture's perception on the basis of traditional art or contemporary pictorial skills. A lack of perspective in the art may simply reflect an age-old, culturally sanctioned way of painting. It is also not unlikely that an Indian, accustomed to Indian art styles, might well tend to represent three dimensions according to established tradition. Similarly, the stick-like human figures drawn by Syrian Bedouins (whose own art is completely non-representational) surely do not reflect their perceptions of human beings (Dennis 1960, reported in Segall, Campbell and Herskovits 1966). Performance in drawing tasks may also be influenced by fear of the test situation and unfamiliarity with the tools provided. Boas reports the case of an Iglulik Eskimo asked to draw a walrus hunt on paper with a pencil: "after several attempts he took a walrus tusk and carved the whole scene in ivory, a technique with which he was familiar" (1955: 65).

5 Responses to perspective drawings

Another group of studies has focused upon the possibility of a link between *responses* to perspective drawings and perception. If, as Kennedy suggests, "drawings using perspective conform to the laws of light" (1974: 67) (see chapter V), it might be anticipated that no cultural differences in response would emerge. This is not the case.

Showing pictures similar to figure 2 to a large and systematically varied subject sample, Hudson (1960) posed questions about the proximity of the animals, the hunter's target, etc. Like Derogowski (1968b), and Mundy-Castle (1966), he found that some subjects did not respond readily to perspective cues in drawings.

Figure 2 (adapted from Hudson 1960: 186)



Hudson's results suggest that:

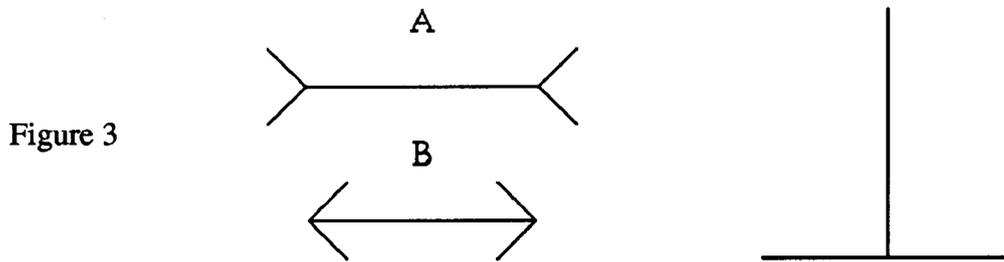
- 1) school-going subjects perceive depth more frequently in pictorial material than do illiterate subjects and those who no longer attend school and live in isolation;
- 2) outline drawings making use of perspective depth cues are less frequently seen three-dimensionally than those using overlap or size depth cues;
- 3) school-going subjects perceive three dimensions in a photograph more readily than in an outline drawing (none of the illiterates saw the photo three-dimensionally);
- 4) intelligence and educational level are factors which independently influence three-dimensional pictorial perception, but they appear to do so only with white school-going samples (ibid.: 201-2).

We shall return to Hudson's experiment in chapter V.

6 Responses to illusions

Another area of perception in which cultural differences are evident is in the realm of optical illusions.

"The point of an illusion is to design an ambiguous set of sensory inputs in order to tease out some characteristics of the perceptual system through an analysis of the kinds of errors made. In this way, it is often possible to examine in more detail operations of the system that normally are not observable" (Lindsay and Norman 1977: 20). The most common optical illusions are the Müller-Lyer illusion (figure 3, left), in which line A is usually judged to be longer than line B, although the lines are of equal length; the horizontal-vertical illusion (figure 3, right), in the vertical line is usually judged to be longer than the horizontal one, although the lines are again of equal length; and those producing figural aftereffects. More dramatic and perhaps the more compelling are illusions in three dimensions (Gregory 1977; Arnheim 1974; Gombrich 1977, etc.).



Experiments by Allport and Pettigrew (1957), and (reported in Segall, Campbell and Herskovits 1966) Rivers (1901), Heuse (1957), Morgan (1959), and Schwitzgebel (1962) all reveal cultural differences in susceptibility to illusions.

Allport and Pettigrew performed Ames' rotating trapezoidal window illusion to an audience of rural Zulus (Allport and Pettigrew 1957). A non-rectangular window-frame is rotated in a uniform circular motion. The viewer's tendency is to see it as a swaying rectangular window-frame. Under certain viewing conditions the rural Zulus reported the illusion significantly less often than did white South Africans or urban Zulus. One possible reason for this relates to usual visual environment; groups more accustomed to the "visual anchor" of the right-angle, who live, that is, in a "carpentered" environment, may be more susceptible to line illusions than those, such as the Zulu subjects, whose culture is relatively uncarpentered (Segall, Campbell and Herskovits 1966).

It seems, however, that this is not true of all line illusions. As early as 1901, Rivers (reported in Segall, Campbell and Herskovits 1966) found that non-Western groups were more subject to the horizontal-vertical illusion and *less* subject to the Müller-Lyer illusion than Western groups; that differences exist in both directions. This might render suspect, then, any explanation in terms of normal environment. But Segall, Campbell and Herskovits claim that the two illusions are of different kinds; only the Müller-Lyer illusion exploits a tendency to interpret obtuse and acute angles as rectangular surfaces extended in space; and only those who live in carpentered environments make habitual use of this tendency. Susceptibility to the horizontal-vertical illusion, on the other hand, follows from a visual inference habit shaped by broad horizontal vistas (*ibid.*).

7 Projective tests

Further types of picture test employed cross-culturally are subsumed within the so-called "projection tests" in vogue during the 1940s and '50s. These include

Murray's Thematic Apperception Test and the Four Picture Test, but range from such table-top techniques as Rorschach's famed inkblots through to play therapy and psychodrama.

What is fundamental to all of them is that, be it a subject's interpretation of a picture, use of doll-play, or characterization of an assigned dramatic role, in each case the subject's handling of the task tells us something indirectly about that individual's mind (Frank 1939; Bell 1948; Lindzey 1959). This is achieved through the essential ambiguity of the task which should allow subjects freedom to respond in their own way. In the Thematic Apperception Test, for example, subjects are asked to make up a story about each of a series of twenty pictures. Since they usually identify with pictured characters, in so doing, subjects reveal something of their self-concept, their attitudes to relationships, conflicts, fantasies, etc. (Bell 1948).

7.1 Cross-cultural projective tests

Hallowell employed the Rorschach technique among the Salteaux Ojibwa Indians (Hallowell 1942), and Henry the Thematic Apperception Test among the Hopi and Navajo (Henry 1947, reported in Bell 1948), not to diagnose psychological problems, but to investigate the effects of acculturation on general personality structure. Thus the usefulness of projective tests lies not only in their capacity to bring to light signs of emotional disturbance, but also to characterize the personality structure of normal individuals (Bock 1980). In fact, the two are undoubtedly bound up with one another; see, for example, Benedict's characterization of the "Paranoid" Dobuans, and the "Megalomaniac" Kwakiutl (Benedict 1932). Bantu responses to the Tomkins-Horn Picture Arrangement Test, moreover, scored conventionally, hint at collective neurotic or manic-depressive tendencies (Tomkins and Miner 1959, reported in Hudson 1967). Hudson, however, is at pains to stress that the attribution of psychiatric syndromes reveals only a failure on the part of the testers to standardize test evaluations cross-culturally (see also Biesheuvel 1969; Spindler and Spindler 1965; Adcock and Ritchie 1958; Henry and Spiro 1953); widespread perceptual difficulties (with pictorial depth, for instance) or culture-specific differences in interpretation may underlie seemingly deviant responses to pictures. One of the Tomkins-Horn pictures, for example, could be perceived as that of a group of people fighting. A standard neurotic response would reject any suggestion of aggression, but, likewise, that of any viewer for whom the scene genuinely resembles a dance. Frozen postures (see chapter VII, §2.4) "tend to be

ambiguous [...] and the viewer's culture can be expected to predispose him toward one imaginative story rather than another" (Kennedy 1974: 70).

Nadel (1937) concentrates more fully on the specifically interpretative aspect of picture perception among the Yoruba and the Nupe, two neighbouring tribes of Northern Nigeria. He used pictures and stories to investigate the possibility of a correlation between diversity of culture and psychological differentiation. We shall look at Nadel's study in some detail.

Subjects viewed a collection of pictures and wrote down what they saw. One week later, they were asked to relate what they remembered of the pictures. Nadel reports no significant differences in identification of objects by the two tribes. Where the responses differed strikingly, however, was in what Nadel calls the "psychological organization" of the material. Responses offered by the Yoruba were "meaning-oriented", while those of the Nupe subjects were "enumerative and appreciative of spatial arrangement" (1937: 211). In his (procedurally similar) story experiment, Nadel found that the Yoruba subjects "laid stress on logical and relational elements" while the Nupe "showed distinct appreciation of situational facts and connexions of time and place" (ibid.: 211).

For example, Nadel's third picture shows, we are told, a native in Mohammedan dress, sitting on a table on which stands a native clay lamp. The lamp, incidentally but importantly, resembles the water-pump at the Yoruba's local railway station. One Yoruba response, later revealed to be characteristically Yoruba, is as follows: "A blind man, wearing a turban and big white gown, pumps water from a fountain in order to drink it" (ibid.: 205). Although, when recalling the picture one week later, this subject now opts for "lamp" rather than "pump", the response still manifests the same degree of organization of the material: "A Mohammedan teacher, wearing white turban, sits and lights a lamp in front of him, he places it on his right-hand side (obviously in order to read)" (ibid.: 205, Nadel's own (rather worrying) brackets). A characteristically Nupe response to the same picture is this one: "A man is kneeling, he wears a beautiful white turban, his eyes are closed. There is something in front of him which looks like the handle of a motor-car" (ibid.: 205).

What characterized the Yoruba responses, then, was an attempt to give a "unitary and consistent *meaning* to the whole picture" (ibid.: 205). "Meaning", for Nadel, is "generally speaking, a recognition of relation, more particularly of a relation bearing on purpose and causality" (ibid.: 207). Among the Nupe there

is no such tendency. The same respective inclinations were reflected in the subjects' recall of the story. Nadel notes, in addition, that imaginary details (see chapter VII, §2) played as much a part in Nupe responses as in Yoruba responses. Moreover, the "explanatory" response to a picture; for example, "The horse is an animal that lives with us people ..." (ibid.: 207), was a feature of Yoruba descriptions completely absent from those of Nupe subjects (see chapter IV, §5; chapter VIII, §8).

Nadel views the characteristic response types as reflections of certain differing aspects of the two cultures. The Yoruba and the Nupe tribes are alike in that they live side by side, in the same material environment. They are, moreover, at the same stage of civilization, exhibiting similar general social organization and employing similar economic systems. Their languages are closely related. Where the two groups differ, however, is in the realms of art, drama and religion. Yoruba art is highly developed and representational, whereas that of the Nupe is non-representational. Only the Yoruba engage in drama and pantomime. Yoruba religion involves an elaborate and rationalized hierarchical system of deities; Nupe religious beliefs centre around a concept of magic of the "mana" type.

The stress on logical cohesion of the Yoruba religion is seen not merely incidentally to accompany, but to *correspond* to, the pronounced meaning-oriented approach to observational data revealed by their responses to pictures. The ornamental, decorative art of the Nupe, on the other hand, along with their vague and impersonal religious system, corresponds to a "psychological type" which is "more detached and inconsequent in observation and memory, enumerative, more sensitive to spatial and temporal arrangement, and stresses unity of situation and emotional tone rather than facts of meaning and rational consistency" (ibid.: 210).

8 Summary

The conclusions which may be drawn from cross-cultural picture tests are mixed, pointing perhaps to a continuum of cultural diversity. On the one hand, whatever the traditional art style, all subjects seem able to identify most depicted objects without difficulty. At the other end, and undoubtedly a cultural phenomenon, lie marked differences in interpretation of pictures (once object recognition has been achieved), the nature of the differences being potentially predictable on the basis of certain features of the cultures in question. In the

intermediate area appear differences in susceptibility to optical illusions, which may correspond to habitual inferences shaped by usual visual environment; and differences in responses to perspective drawings, which seem to relate to level of education (see chapter III).

We have as yet, however, no wholly satisfactory answer to the question of a picture's conventionality, particularly with regard to perspective. Implicit in many of the experiments mentioned is the suggestion of a progression from an unrealistic and convention-laden means of depiction to a thoroughly objective Western art (made explicit in Kennedy's phrase above (§5). But any new approach provided by formal education, for instance, does not consist in leaving cultural considerations behind, but in becoming aware of, and versing oneself in, another set of conventions. Thus, although we may have observed the influence of cultural considerations on responses to perspective drawings, we have neglected to establish the non-conventionality of perspective drawings themselves. Any claims such as Thouless's "real racial difference in perception" (1933: 337), and even Segall, Campbell and Herskovits' rebuttal (§4 above), hinge, therefore, on this supposed objectivity; that is, on the relationship between pictorial and non-pictorial perception.

This relationship is one with which we shall be concerned in chapter V. Only once we have a clearer idea of the relationship between pictorial and non-pictorial perception, shall we be in any position to assess the extent and significance of the cross-cultural and cross-species relativity observed above.

Meanwhile, however, and for the purposes of chapters III and IV, we are provided with a handful of potential explanations for the differences in interpretations of pictures sampled in chapter I.

CHAPTER III

Dimensions of difference

1 Introduction

Chapter II's brief survey of picture tests left us with an assortment of conclusions about the cross-cultural relativity of picture perception, the safest of which seemed to be that *it depends*. But we were also left with some idea of what it may depend upon. For example, it may depend upon the viewer's usual visual environment (Segall, Campbell and Herskovits 1966; see chapter II, §6), the logical cohesion of the viewer's religious system (Nadel 1937; see chapter II, §7.1), or on the viewers' level of education (Hudson 1960; see chapter II, §5).

The question discussed in the coming chapter (chapter IV) is whether such differences in interpretation as those offered in chapter I may also, and revealingly, bear correlation with some second variable, or group of variables. It is the task of the present chapter to offer some likely-looking candidates for this role. How, in other words, and along what seemingly relevant dimensions, might the fifty Peruvian viewers in my sample differ from one another?

In order to begin to answer this question we need to examine in more detail the physical and social environment in which these individuals live (§2). Potentially significant differences emerge in terms of the degree to which each of them is integrated within Peruvian mainstream society; an integration governed to a great extent by (1) their level of education, (2) their ability to speak Spanish, and (3) the opportunities they have had for travel beyond the island (§3). It is these three selected aspects of islanders' experience and lifestyle which are adopted as "*indicators* of the degree of integration within Peruvian mainstream society" (abbreviated to "integration indicators"). In §5 we attempt to *rank* the informants along each dimension, in the hope that the resulting profiles may throw some light on their interpretations of pictures. In §7 we introduce two further indicators: "pro-traditional orientation" and "pro-'Western' orientation". These are intended as indications not of the degree to which informants interact, or are able to interact, with Peruvian mainstream society; but, rather, of the degree to which they take a positive view of such interaction; that is to say, as an *attitudinal* factor.

There are, as we shall see, considerable problems with such a quantitative approach to difference; not least when we attempt to view the indicators as components of acculturation (§4).

First, then, a closer look at Amantaní itself, postponing consideration of themes of particular interest until §7 below.

2 *The setting*

The island of Amantaní lies in the north-west of Lake Titicaca, five water-borne hours from the nearest sizable town, Puno. The terrain is dominated by two barren hills, Pachamama and Pachata, each shelving down into terraced *chakras*, eucalyptus groves and clusters of adobe houses (see Photographs 1 and 2 in Appendix B). There are no roads and not so much as a bicycle by way of transport. Some 5,000 individuals live on the island in five communities: Lampayuni, Sancayuni, Occosuyo, Incatiyana and Santa Rosa. Lampayuni is the major of these, hosting both the Catholic church and the offices of the *alcalde*.

As head of the district council, the *alcalde* is in charge of matters that concern the welfare of the island as a whole and in relation to the state. Typically these comprise the issuing of licences and the imposing of fines. Equipped with office, secretary and antique typewriter, the *alcalde* delegates other aspects of the work to respected and elected members of the island community, called collectively *autoridades* though they may have specific titles, e.g. *comisario*, *mayordomo*. The *teniente gobernador* handles the maintenance of law and order with the intermittent aid of two non-resident members of the Guardia Civil, Peru's national police force. Sharing the task of directing local affairs is the community council led by five respected elders each of whom has been elected *presidente-varayoc* by one of the five individual communities. Their main concern is with public works projects for the island; for example, the upkeep of the school and jetty, and the organization of any community work session, or *faena*. A third, informal but important, network of organization is that maintained through *compadrazgo*, or "co-parenthood": a relationship of mutual obligation established at a child's baptism between the child's father and an elected godparent. The choice is motivated by the desire to gain a personalized tie with someone of higher social standing whose influence and patronage will be of benefit to both the godchild and the godchild's parents.

Agriculture constitutes the principal daily work for almost every islander. The year revolves around the cycle of planting, cultivating and harvesting quinoa, beans, barley and, most commonly, potatoes. Terraced plots are broken up with hoes and ploughed by hand, crops are planted between August and November, and the produce harvested around April. Meanwhile there are sheep to be pastured, chickens and perhaps a pig to tend to.

A modest house is a single-storeyed thatched adobe construction with a separate lean-to kitchen and a tiny patch of rough ground outside. Within this small area islanders must cook, eat, sleep, wash, weave, dry fish, store crops, receive visitors and take care of animals. A wealthier house is one of two storeys roofed in tin and built around a small courtyard. Aided by neither electricity nor chimney cooking takes place in a smoke-blackened kitchen lit by a kerosene lamp, a candle, or just the glow from a clay stove, to the squeaking of guinea-pigs confined only by a raised doorstep. The typical diet is characterized by ample carbohydrate, insufficient protein and little vitamin C. Supper, for example, is commonly a stew of potato in various guises, pasta and barley, with the less common and welcome addition of tinned tuna, tiny home-caught fish, guinea-pig, mutton, seaweed or an egg. By no means everyone eats this well, nor is the diet so limited. A few families grow onions, chillis and cabbages in a small vegetable garden, but there is no fruit other than the occasional orange brought over from Puno.

Although crop-rotation is well-established, and some use made of animal and chemical fertilizers, much of the land is very poor. Terracing cannot prevent soil erosion altogether, and irrigation is a problem for all but the two islanders wealthy enough to possess a pump, and those fortunate enough to own plots near the shore – but not so near as to have been swept into the lake by the flooding of 1986. There is also the constant threat of frost, hail, and fungal crop disease. Added to these worries is the size of the plots themselves. Land is normally acquired through inheritance. With successive allocations to many as ten children a time, the divided plots eventually become so small that they cannot sustain a family for more than a few months. While this undoubtedly occasions extreme anxiety it also affords a certain amount of spare time during which to search for alternative means of raising cash: fishing, shopkeeping, weaving, and tourism.

2.1 *Non-agricultural activities*

Despite the apparent suitability of the location, fishing has been an occupation to which only those with insufficient land resorted. As the fertility of the land diminishes, however, more turn to the lake to supplement their diet and/or their income. When not destined for home consumption, the catch may be bartered on the island, snapped up by buyers from Juliaca, or, more rarely, ferried to Puno market. Fishing is not seen as an ideal activity; it is usually nocturnal and often impeded by rough weather. The profit margin, moreover, is very low, the maintenance of nets time-consuming, and the biannual boat-replacement expensive.

Shopkeeping, while presenting none of these dangers, is no safer financially. Amantaní boasts five shops each of which is poorly stocked with the same limited range of goods: washing powder, kerosene, cooking oil, candles, coca, matches, cigarettes, sugar, sweets, tinned tuna, soft drinks and some sewing items. There is no market.

There are no tradespeople either, in the sense of full-time blacksmiths, masons, shoemakers, bakers and the like. This is not to say that many islanders cannot turn their hand to carpentry, masonry, etc.; but that those with a particular skill upon which they might wholly depend will soon leave an island where demand could never support such a business. Consequently islanders must either fall back on their own and their relatives' abilities, or they must head for Puno.

Everyone, on the other hand, engages in handicraft of some sort, and most especially in spinning and weaving. Most articles are destined for the island's *salon artesanal*, a tourist-oriented weaving and knitwear co-operative. Ironically, the best customers are from the neighbouring island of Taquile where the artisans cannot keep up with the tourist demand and where goods from Amantaní will fetch double the price.

2.2 *Tourists and other visitors*

The travellers' *Handbook to South America* (1987) indulges in a brief but enthusiastic bit of plugging on behalf of Amantaní. Even so, very few tourists come to Amantaní. Those who do are charmed by the beauty of the island, especially if their arrival coincides with that of the potato blossoms. They are also charmed by the scarcity of other tourists – a charm felt by the islanders to be

an acute shortage. Since there are no established hostels, a family's provision of a meal and a bed for the night may generate desperately needed funds. But *lancheros*, who run the passenger-boats, inevitably stake a claim on the visitors before they have reached land. Jealousy and conflict result, while there remains the simple fact that there are just not enough tourists to go around. Yet thousands get as far as Puno and many hundreds journey to Taquile. Faced with this situation, the response on Amantaní, naturally enough, is to attempt to make a visit there more attractive; by lowering prices, sprucing up the jetty area, learning to cook chips, and even engaging in sporadic searches for a fabled underground passage from Pachatata to Cuzco. What the islanders appear consistently not to do is to invest time and energy (and money) getting the message across to the tourists themselves.

The island is not wholly neglected by other outsiders, who contribute various forms of aid, with and without strings attached. The Fundación Interamericana, for example, provided motors for the passenger boats; a team of engineers sponsored by PISA-Puno drew up plans for a cheap means of irrigating the whole island; and the government organization, ONAA, prompted the time-consuming and expensive construction of stone arches promising flour in return.

Islanders' views on such help are by no means wholly positive. Experience has shown that carrots dangled often turn out to be very small indeed; ONAA's flour quotas, for example, a pitiful 2 kilos per family, were greeted with rage and weeping. But lack of enthusiasm also stems from a realization that aid projects tend to benefit only those most closely involved – whatever the intentions of the donor. The boat motors benefit only the boat owning partnerships. And, tragically, in the absence of any prospective monopoly, the aid seems doomed to benefit no-one at all. The irrigation blueprints, proudly shown to me by the island "intermediary", were fished out from under his bed where they had remained for three years in anticipation of inevitably insufficient gratitude on the part of his neighbours.

Spiritual aid, if in principle less vulnerable to abuses of this kind, fares little better than material aid in practice and is often seemingly reduced to it. Most of the islanders are Catholic, though there are a few Mormons and many Seventh Day Adventists. Catholic services, held weekly in Amantaní's only church, are conducted by a priest from the mainland perhaps one Sunday in fifteen. To this extent, their faith is more closely monitored from without than that of the other two congregations, though each group receives its share of pastoral visits.

Adventists and Catholics are not altogether well-disposed towards one another. Of the numerous overt expressions of ill-feeling I heard, only one comment concerned doctrine, while accusations of selfishness, overpiety, and no piety at all flew in both directions. More specifically, the Catholic Church donates rice, milk powder, and second-hand clothes; aid which, say the Adventists, is intended for the whole island but which goes straight and solely to the Catholics. Indeed this aid is cited by adherents of both as a reason for opting for the Catholic faith.

In all, if not to visitors certainly to the islanders themselves, the picture is rather bleak, in terms of both material subsistence and morale. Expressions of great anxiety invariably find their way into conversations on almost any topic, the words "*kaypi mana vida kanchu*" (there's no living to be made here) and "*karselpi hina kayku*" (it's as though we're in a prison) recurring as bitter catch-phrases. It is precisely this, moreover, which inspires intermittent bursts of private enterprise, and which draws islanders to the stability of an urban income elsewhere.

3 Avenues of change

With luck, a move in that direction may indeed bring in more money. But this is not the only change the move will involve. It may involve only a new set of clothes, a taste for Chilean lager, and a penchant for disaster movies; or it may involve learning to read (§3.3), to speak Spanish fluently (§3.2), and perhaps too a rejection of traditional island values (§7).

3.1 Travel

It is clear that the islanders do not live in total isolation. Those who never leave Amantaní may get an indirect taste of life outside through contact with missionaries, tourists, police, aid workers, returning migrants, etc., and by listening to the radio. Most people's experience, however, is not confined to playing host to sundry incomers. Few islanders have never been to Puno, whether to buy foodstuffs, clothes, exercise books and wool; to sell potatoes, fish and handicraft; or, though uncommonly, to engage in legal proceedings, to undergo medical treatment, or to attend Campesino Federation meetings and the like.

But to make economic headway – or even merely to subsist – lengthier excursions are required of islanders, who work in factories, bakeries, and on building sites; as soldiers, maids, miners, street vendors, and weavers; venturing only as far as Puno or Juliaca, or braving the journey to Lima. Money is of course not the sole reason for leaving Amantaní; travel offers the opportunity for education, adventure, and self-improvement.

With very obvious material and social advantages to be gained, it is a wonder, then, that more people do not leave the island. The reason of course is that there are limits to the numbers who may, who want to, who dare, and who can. A youngest son, for example, required traditionally to look after his parents, generally *may* not leave. As to wanting and daring, the prospect of adventure and comparative wealth must be weighed against the understandable fear of the unfamiliar; a fear fuelled by tales of isolation, unemployment, crime, ridicule, traffic hazard, and unpalatable food.

3.2 Proficiency in Spanish

And as to who *can*, mobility, whether physical or social, is practically impossible in Peru without some knowledge of Spanish. Spanish is the language of government, business, law, education (for the most part), and of the printed word; while Quechua is the language of the highlands and the slums, spoken by the indigent and the illiterate.

Quechua is also the mother tongue of all islanders native to Amantaní. Other than when communicating with tourists, moreover, Quechua is used in almost all social situations, including church services and public meetings. In school, however, it is Spanish which predominates – not surprisingly, since the teachers have rarely been Quechua speakers. Although children now learn to read and write in their own language this is a recent innovation which has not affected any of the informants in the sample.

For a trip to Puno too, Quechua – plus the odd Spanish numeral, perhaps – will serve very well – so long as the purpose of the trip is a purchase or a sale; so long as business is confined to the market, the lakeside, and the bottom end of town; so long as one does not wish to apply for a job, seek professional help, understand a film at the cinema, or just chat to someone on the bus. In short, so long as one is content not to be able to interact with the vast majority of other Peruvians, Quechua will serve.

3.3 Formal education

A second and closely related factor regulating interaction with mainstream Peruvian society, is level of formal education.

The first school on Amantaní was built in 1940, offering initially only the first two years of primary education, and currently, the full primary curriculum. There is still no functioning secondary school, though one is presently under construction in Lampayuni, its progress frequently halted by a shortage of bricks. To receive a secondary education children must leave Amantaní.

Schooling is free but parents are expected to equip their children with exercise books and uniforms. Although this severe drain on funds is felt as keenly today as at any time in the last fifty years, formerly it served to inhibit enrolment considerably, and enrolment of daughters almost entirely. Attendance was also very low. Children's energies were needed elsewhere: in the fields, with the sheep, or with smaller siblings. There prevailed, moreover, such a mistrust of the school that many parents would not allow their children even to approach the building, let alone enrol. Nowadays islanders are very aware of the benefits of education and readily submit to further hardship on their children's behalf. Truancy meanwhile remains high – teacher truancy included. Working on an isolated island with little excitement and few creature comforts is not an appealing post, and teachers often make unscheduled departures. Continuity is further disrupted by the speed with which teachers seize upon more amenable appointments elsewhere.

3.4 Summary and introduction of indicators

It seems likely that any two islanders, more as victims of opportunity and necessity than of caprice or interest, will differ in the degree to which they interact are integrated within with Peruvian mainstream society. It is possible, moreover, that this interaction, whether visual or verbal, participatory or from afar, may *inform* their approach to the pictures they see.

Since the three aspects outlined within §3 above seem particularly crucial in facilitating, or in constituting, that interaction, we shall adopt them as "indicators of integration within Peruvian mainstream society" (abbreviated as "integration indicators"); that is:

- (1) level of formal education;
- (2) proficiency in Spanish;
- (3) frequency and duration of journeys off the island.

with respect to each of which informants will be assigned a rank (§6 below).
We shall add to the three above two further indicators:

- (4) pro-"Western" orientation;
- (5) pro-traditional orientation,

each of which has five components (§7 below). These indicators are of a different kind in that they are not measures of actual behaviour but of *attitudes* towards the traditions of life on the island and to the world outside. Their inclusion has a basis in the possibility (hinted at in chapter II, and taken up again in chapter V) that there may be such things as *distinct mental approaches* to pictorial representation which may depend upon neither education nor travel nor any other kind of substantial achievement; merely upon attitude. Indeed, in acknowledgement of Nadel's findings discussed in chapter II, it becomes something of a matter of principle to incorporate an attitudinal angle. That said, the ten components are not wholly attitudinal matters. Where mode of dress is concerned, I have scored informants' clothing (that is, what they wear), rather than their preferred taste in clothing. But for the most part the components are questions of preference which need not be enacted in actual behaviour.

4 *Models of change*

It may appear that the changes we are describing fall readily under the umbrella of urbanization, or upward class mobility¹. A not wholly alternative view, however, is that it goes deeper than this; and that the process of which education, peregrination, and (linguistic) hispanization are but contributory episodes is the process of acculturation.

¹ The relationship between class and ethnicity in Peru is far from straightforward (see van den Berghe and Primov 1977; Doughty 1968; Hawkins 1984), and the change we describe below as a passing from one ethnic group to another has been described as a change from marginalized ethnic group to urban middle class.

The acculturative framework is one we shall eventually reject. Nevertheless, since this study was, in the course of its development, envisaged in precisely these terms, it is important that we take a closer look.

4.1 *Acculturation*

"Acculturation comprehends those phenomena which result when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original cultural patterns of either or both groups" (Redfield, Linton and Herskovits 1936: 149).

This definition was conceived in response to a growing interest in the dynamics of culture change as a result of culture contact. Clearly applicable to, say, the adoption of Pueblo Indian weaving techniques by neighbouring Navajo (Kent 1976), initial usage of the term tended to describe only the impact of European upon non-European cultures. As it stands, however, the scope of the definition is itself uncertain, given the semantic elasticity of "groups of individuals", "continuous", and "first-hand" (Herskovits 1964). Subsequent versions, for example:

"By acculturation we mean the process which takes place within a culture, a population, or a social system, in response to the impact of stimuli from other cultures or populations" (Spindler and Goldschmidt 1970: 210 (see also SSRC 1954: 974; Bee 1974: 96)),

adopt a more flexible approach to the nature of the groups involved, while shifting the emphasis from the *type of situation* in which change takes place to the *process* of change itself. Despite its being considered a process, however, it is quite usual to speak of acculturation in terms of three relatively distinct steps: diffusion (the transmission of techniques, ideas, art forms, etc.), evaluation (the acceptance or rejection of incoming traits by the recipient group), and integration (Bee 1974, after Spicer 1961).

4.1.1 *Integration of traits*

Whatever the reason for a trait's acceptance, it must be integrated into the recipients' cultural system. Integration may be achieved in many ways, those most commonly offered being:

i) *incorporation*: new elements are simply added to the recipients' cultural inventory, usually with some modification, but essentially causing little disruption to the system as a whole. The guitar, for instance, unknown in South America before the arrival of the Europeans, was scaled down and backed with armadillo shell to become the charango;

ii) *replacement*: new elements are substituted for pre-existing ones. European paper and parchment replaced the Mexican *amate*, or bark paper, at the time of the Conquest (Stromberg 1976). Replacement is often associated with coercion; as in the case of the Ainu of Hokkaido, whose traditional hunting and fishing practices were made illegal by the Japanese in an effort to promote agriculture (Low 1976);

iii) *fusion*: traits from the two cultures in contact are combined to produce a third, hybrid, pattern. Latin American folk Catholicism is the classic example, a syncretism of Catholic and pre-Columbian ritual (González Martínez 1987);

iv) *compartmentalization*: this is perhaps more properly a form of resistance to integration (Bee 1974). Traits of the donor culture, seemingly incorporated or substituted for existing traits, are isolated, or held apart, from the recipients' own system. For example, seventeenth century Jesuits among the Huron in Canada rejoiced to see all the outward signs of successful conversion to Christianity: church attendance, hymn singing, prayer, etc. What they little realized initially was that their Huron converts were merely going through the motions, whether for fear of reprisals, or in anticipation of some immediate and all too earthly reward; and that in the missionaries' absence indigenous religious practices continued much as usual (Bitterli 1989).

The presentation of integration as a choice between four options is not wholly satisfactory, and the line between the alternative strategies far from straightforward in practice.

Some uncertainty – though by no means all – may be resolved by a clear idea of scope, analytic or chronological, in reviewing a particular phenomenon. The Egungun "Englishman Pursuing Prostitute" masked burlesque, for example, performed in Badagri in Nigeria around 1940s (Bascom 1976), may be viewed as an incorporation (the European character), a replacement (a reprieve for the former lampoon victim), a fusion (of form and subject-matter in the burlesque itself), and (at some further removal) an embryonically revivalist piece of satire.

What is more, an incorporation which seems initially to have little effect on the coherence of the system may have far-reaching consequences. The horse, for instance, was probably adopted by Plains Indians only for its superiority over the dog as a pack animal (Wissler 1914). Yet any broader historical perspective will show horse-culture to have displaced maize planting, intensified nomadism and significantly increased intertribal contact, to become the *sine qua non* of nineteenth century Plains Indian culture (ibid.). In events beyond Wissler's chronological scope, however, the horse was also to play a substantial part in the ultimate downfall of that culture through its role in the extermination of the buffalo (Bitterli 1989).

Such reappraisals notwithstanding, there remain instances of acculturative "double bluff", and reactions to reactions, which are not readily explained in terms of the above (see, for example, Graburn 1976).

4.1.2 *Aspects of individual acculturation*

Traits of course do not migrate of their own accord. Since it is, rather, their human carriers who come into contact with bearers of other cultures, the traits to which either cultural system is exposed will depend on precisely who meets whom and why; that is, on the "conjunctive relations" (SSRC 1954: 980). If young males meet regularly to negotiate hunting rights, for example, their encounters are unlikely to result immediately in the transmission of midwifery techniques.

Any particular contact event will inevitably involve only a certain number of individuals and a certain number of topics. Consequently, members of any group will differ from one another in terms of both the amount and the type of exposure to a second group they have experienced. What is more, they will react to that exposure at different rates and in different ways (McFee 1968). No less inevitably, then, individuals within a single group will come to be differentially "acculturated".

Beals, however, notes that "the frequent reference to acculturated individuals (rather than groups) seems particularly ambiguous in terms of most of the formal definitions" (1953: 628)¹. Nevertheless an emphasis on individual acculturation

¹ Beals should perhaps have taken issue with how individuals, whether singly *or* in groups, may be said to be acculturated at all; since, "while it is individuals who change their habits of

is the approach many researchers have adopted (Spindler and Goldschmidt 1970; McFee 1968; Chance 1965; Christopherson and Dingle 1982; Adcock and Ritchie 1958, etc.).

What these investigators have done is to rank individuals according to certain selected aspects of their lifestyle which are considered relevant to the degree of acculturation in that they constitute points of contact with an alien culture, experience of which may vary from individual to individual.

Their respective lists of indicators vary considerably (see, for example, Spindler and Goldschmidt 1970; Spindler and Spindler 1965; McFee 1968; Chance 1965; Christopherson and Dingle 1982), not because these investigators are operating with significantly different general interpretations of "acculturation"; but because they are working with different sets of individuals; and different groups may not be vulnerable to exactly the same kind of acculturation. On purely practical grounds, for instance, there would be little point in employing either Chance's indicator (4): hospitalization, where no subject had ever been to hospital; or indicator (2): knowledge of the dominant language, where the groups in contact use (solely) one and the same language.

The kind of acculturation to which the people of Amantaní are vulnerable is – if we take the line proposed by van den Berghe and Primov – almost inevitably a question of *crossing ethnic boundaries*, of "mestizoization"; since those aspects of their lifestyle Indians must change if their lot is appreciably to improve are precisely the things which make them less Indian, and correspondingly more mestizo (van den Berghe and Primov 1977).

4.2 "Mestizoization"

What features, then, distinguish the Indian and the mestizo in highland Peru?

On the basis of a questionnaire, distributed in San Jerónimo (a small town some 200 miles north-west of Amantaní), which called for definitions of "mestizo", "campesino" ("peasant"), and "indígena" ("Indian"), van den Berghe and Primov (1977) arrived at the following picture:

doing and believing under the influence of alien forms, it is the body of custom of the society to which they belong that is said to be acculturated" (SSRC 1954: 975).

- 1) Indians are monolingual Quechua speakers;
- 2) they live in rural areas as full time peasants;
- 3) they wear traditional woven clothing;
- 4) they chew coca leaves;
- 5) they maintain traditional beliefs in *apus* (mountain divinities), etc.;
- 6) they are badly educated (ibid.: 18-21).

A mestizo, by comparison, was found to be "a Spanish-speaking person possessing more education, more wealth, more power, more social status" (ibid.: 134). These findings are echoed more or less exactly by Doughty (1968) in his survey of the population of Huaylas, another five hundred miles or so to the north-west.

4.3 Model problems

Now, our indicators (1) to (3) above seem to sit quite comfortably within this context. For example, in responses to van den Berghe and Primov's questionnaire, education was by far the most frequently mentioned means by which an Indian might become a mestizo (1977: 137). Fluency in Spanish, moreover, "is clearly the main test of mestizo identity" (ibid.: 117).

The importance of travel, however, is emphasized neither as explicitly nor to the same extent as that of Spanish proficiency and education; though Doughty, for example, tells us that "the need to migrate is considered inevitable if one has any social or economic ambitions" (1968: 33); and van den Berghe and Primov agree that "upwardly mobile Indians [, finding] little scope for their skills and enterprise [...] have, thus, little option but to move out of the area" (1977: 124). Yet both statements seem to imply that as an index of acculturation travel is somehow more "symptomatic" than "instrumental".

Nevertheless, time spent away from Amantaní intensifies overwhelmingly an islander's contact with Peruvian mainstream society. What is more, though it is by no means as specifically "visually-oriented" an indicator as we might wish, a journey of any duration offers a huge increase in variety of visual stimuli, and, more specifically, a huge increase in *pictorial* stimuli, whether on the walls of bus stations and workplaces, or at the cinema and through shop windows. Indeed, if there is such a thing as "pictorial acculturation", indicator (3) is surely more instrumental than symptomatic.

But, there emerge, with regard to acculturation itself, problems of such magnitude that they far outweigh any conceivable advantages to be gained from anchoring our indicators within any such framework.

The basic problem hinges on the concept of a *continuum* of change; a fundamental concept within both acculturation and mestizoization. According to this model, the allocation of points for the presence or absence of cultural traits deemed characteristic of either Indian or mestizo would assign to any individual a position on a straight line stretching from the unambiguously Indian at one end, to the unambiguously mestizo at the other.

Yet there exist in Peru probably tens of thousands of people who lie somewhere in between; perhaps speaking both Quechua and Spanish; perhaps fulfilling all the criteria for Indianhood bar one (Matos Mar's urban "Indians", for instance (1986)), or perhaps fulfilling no single criterion without qualification (De la Cadena 1991). Indeed, through their espousal of such caricatures, van den Berghe and Primov are persuaded to locate the *whole town* of San Jerónimo in the middle of the continuum (1977: 134) – abandoned, presumably, to a state of "ethnic limbo" (Crespi 1975: 149).

Where the continuum model is flawed is in its inevitable assumption that all changes undergone in the process of individual acculturation are cultural *replacements*; as though, with the adoption of a (characteristically Anglo-American) attitude to material acquisition, for example, one must necessarily renounce, say, any (characteristically Blackfeet) displays of generosity (McFee 1968); or as though a Monday night spent in the bowling-alley somehow precludes admission to Tuesday night's potlatch. It is far from uncommon (see, for example, Sallnow 1989; Banton 1981), however, for individuals to wield two (or more) sets of cultural norms simultaneously – if perhaps in different social contexts (see chapter IV); and it is this which gives us such an astonishing degree of multiculturalism in Trinidad that:

"a Trinidadian feels no inconsistency in being a British citizen, a Negro in appearance, a Spaniard in name, a Roman Catholic at church, an obeah (magic) practitioner in private, a Hindu at lunch, a Chinese at dinner, a Portuguese at work, and a Colored at the polls" (Crowley 1957: 823).

Next to this, McFee's "150% Man" (75% Blackfeet and 75% Anglo-American) (1968), seems positively narrow-minded. Yet even these individuals can *only* be misrepresented on any one-dimensional acculturation continuum. Being *no*

more Blackfeet than Anglo-American in orientation, the rules of the analysis (one point per characteristic) will allocate to such people a position in the middle of the continuum – a position *also* occupied by any ("100%") Person whose acculturation *genuinely* consists only of strategies of replacement (in a classic, if scarcely feasible, case of individual assimilation). McFee argues that only the adoption of a multi-dimensional approach, which does not rest upon an assumption of cultural replacement, and which allows the (in his case) two orientations (Blackfeet and Anglo-American) to be considered *separately*, can yield a distribution which fits his subjects' observed social interaction. What this means, however, is an outright rejection of the acculturation model (*ibid.*).

"New ways can be acquired without abandoning the old" (*ibid.*: 1096). It is in acknowledgement of this, and of the fact that such a phenomenon is in no way exceptional, that I have laid aside all thoughts of locating within an acculturative framework the analysis which follows.

5 Preliminary grouping of informants

There are, as I said, fifty informants in the sample. With the exception of Informant 42, all stated that they had been born and brought up on Amantaní.

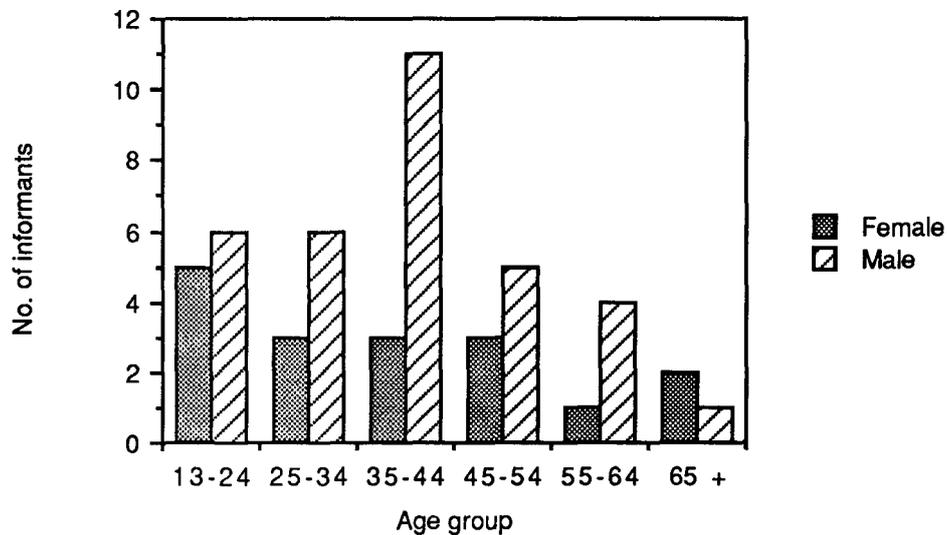
The grouping of informants according to age and sex needs little explanation. Although I had initially envisaged a treatment irrespective of gender, it became very obvious very quickly that such a division is fundamental to an understanding of differences in opportunity and experience. Likewise, age. Informants' ages range from thirteen to over seventy. Few of the oldest informants have any idea of their exact age. Informant 19, for example, told me that she was seventy years old, while her daughter (Inf. 18) assured me that her mother was only sixty. The age category cut-off points are arbitrary.

Clearly this sample is not only small; it is also badly balanced as regards age and sex. The particularly glaring discrepancy in the 35-44 category (see figures 1 and 2) is largely due to the relative accessibility of men and women in that age group. A further imbalance, and one obscured by the table and graph, is that there are no informants between the ages of fourteen and nineteen (see summary table, figure 22).

Figure 1: Age and sex categories

<i>age group</i>	<i>male</i>	<i>female</i>	<i>totals</i>
13-24	6	5	11
25-34	6	3	9
35-44	11	3	14
45-54	5	3	8
55-64	4	1	5
65+	1	2	3
<i>totals</i>	33	17	50

Figure 2: Age and sex categories



6 Ranking of indicators

Informants are ranked *A*, *B*, *C*, *D*, or *E* with respect to each of indicators (1) to (3). The ranks are arranged from, for example, least well-(formally-)educated (*E*) to most highly educated (*A*). They are not intended as absolutes. Within indicator (2) (proficiency in Spanish), for example, rank *A* does not necessarily point to complete fluency, nor *E* to Quechua monolingualism. The ranks are intended merely to reflect as much variation as seems relevant in each case.

As a result each informant is assigned not a score but a profile; beginning in Informant 2's case, for example: *CDB*; that is, ranking *C* on indicator (1), *D* on indicator (2), and *B* on indicator (3). I have, however, also equated each rank with a numerical score:

$$\begin{array}{rcl}
 A & = & 10 \\
 B & = & 7.5 \\
 C & = & 5 \\
 D & = & 2.5 \\
 E & = & 0
 \end{array}$$

in order to obtain a single numerical total for each informant; in Informant 2's case again: 15.

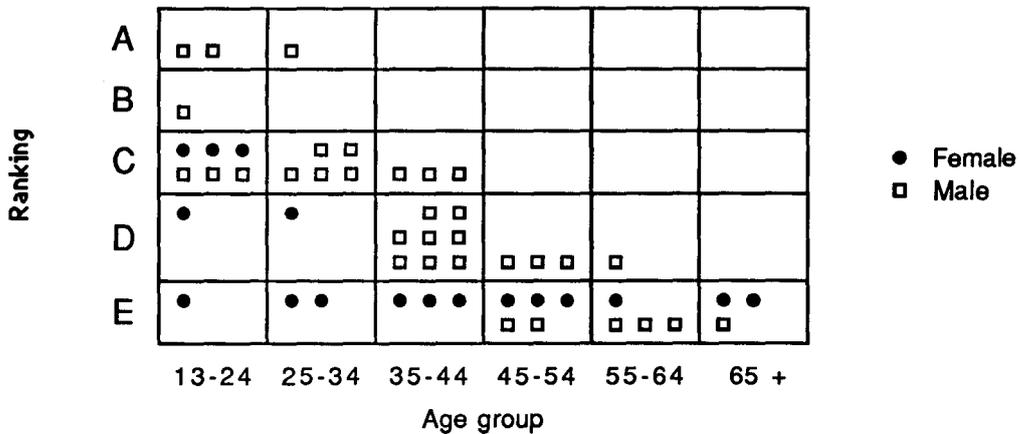
Although this cumulative strategy is not uncommon in similarly oriented studies (see for example Chance 1965; Christopherson and Dingle 1982; McFee 1968), there is, as we have seen (§4.3) much to discourage it. One, to some extent independent, disadvantage, however, is that a cumulative strategy assumes that the separate indicators (and their rankings) are commensurable. It may be, of course, that commensurability of a sort can be engineered through the use of a weighting factor. Yet even supposing we could be sure that, say, a two-year spell at primary school is "equivalent" to three months down a mine in Ica, the qualitative difference is so immense that little would be gained, and much obscured. Nevertheless, when we come to compare informants' integration profiles with their picture interpretations, we shall make use of such numerical totals *to facilitate the initial presentation of the results*. Where a more illuminating pattern emerges with a break-down of those totals into their component rankings, this will also be presented; where none is evident, I shall simply state that none is evident. In fact, this cumulative strategy acquires a certain justification, albeit double-edged, with the realization that the three indicators we have chosen are so heavily interdependent that in ostensibly isolating, say, the influence of schooling from that of Spanish (by considering only indicator (1)), we have in reality achieved nothing of the sort.

6.1 *Formal education rankings*

Formal education rankings are allocated as follows:

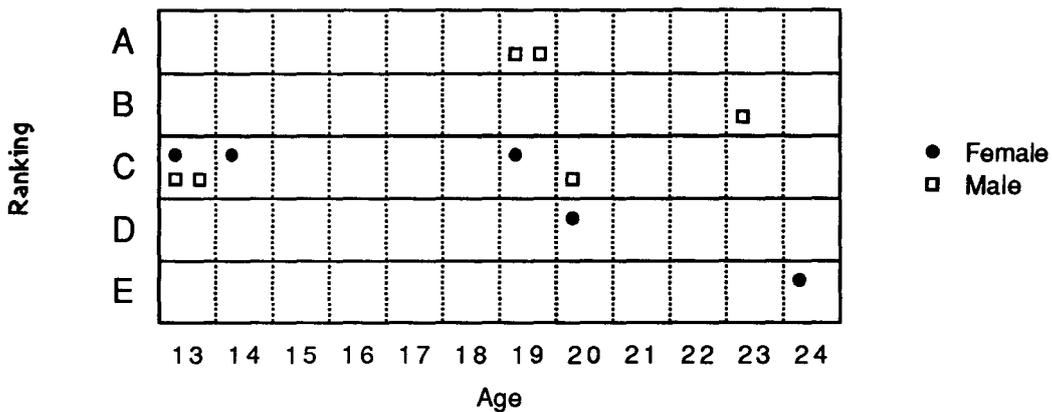
- A* completion of secondary education
- B* some secondary education
- C* more than two years primary education
- D* up to two years primary education
- E* no formal education

Figure 3: *Level of formal education*



The availability of schooling and the changing attitudes to education are clearly reflected in the matrix above. Level of schooling decreases with age. The only female in the 25-34 age group who has attended school is Informant 30 who is thirty years old. Male informants are consistently better educated than women of the approximately same age. The rather diffuse patterning in the 13-24 age group explains itself when the ages are themselves spelt out:

Figure 4: *Level of formal education; ages 13-24*



That is to say, for these few women, level of schooling still seems to take a downward turn with an increase in age. Finance allowing, however, I suspect that the two youngest women (Infs. 23 and 48) will not follow this pattern since both sets of parents are wholly committed to the education of their daughters. It should also be mentioned that the two nineteen year olds are only exceptional in so far as they are still resident on Amantaní – but not for long; having recently completed their schooling, they are both seeking the means to continue their studies elsewhere. Informant 7 has become quite notorious on the island

through rumours of his prodigious grasp of physics, while Informant 8 hopes to become a priest. The only other informant ranking *A* is Informant 42 (aged 29) who is a teacher.

6.2 Proficiency in Spanish

Asking informants under what circumstances they spoke Spanish yielded in many cases professions of a complete inability:

Keshwallata rimani. Mana castellanota atinichu
I only speak Quechua. I can't speak Spanish (Inf. 11);

or an almost complete inability:

Castellanota pocollata atini. Keshwa legitimo. Aymaratapis pocollata atini
I can only speak a bit of Spanish. Proper Quechua, though. And just a bit of Aymara¹ too (Inf. 45);

while others readily claim to speak both:

Ñoqa rimani castellano y quechua. Nada más. Iskay idioma
I speak Spanish and Quechua. That's all. Two languages (Inf. 20)

Clearly, a proficiency ranking based upon such statements is insufficient for our purposes. To complicate matters, Quechua (and Puno Quechua in particular, apparently) is so larded with Spanish loanwords (see, for example, Hoggarth 1973) that – whatever the informants themselves may claim – the bona fide Quechua monolingual is probably something of a rarity. Informant 41, for example, in expressing her complete inability to *spea*k Spanish, does, to some extent (in bold type), just that:

*Unos cuantos kinsa tawa **palabraia** intendini pero mana **parlayta***
atinichu
I can understand a few – three or four words, but I can't speak it. (Inf. 41)

Because of the unreliability of informants' own assessments of their proficiency, some independent alternative is needed. In other words, we need to *measure the degree of their bilingualism*.

¹ Several informants to my knowledge speak or understand some Aymara. It is regrettable that the extent to which this is true of the entire sample is not known.

6.2.1 Degrees of bilingualism

That *measuring* bilingualism should be feasible even in principle has only arisen since Bloomfield's "native-like control of two languages" (1935: 56) was largely upstaged by the idea of a continuum (Diebold 1964; Mackey 1968), with the "coordinate" bilingual at one end and the "incipient" bilingual at the other (see below).

With the acknowledgement that bilingualism is a matter of degree, came an awareness of the many guises in which it may manifest itself. An individual may be able to understand L₂ without being able to speak it; to speak L₂ without being able to translate it into L₁; to read L₂ without being able to speak it, etc. (Mackey 1968). Correspondingly, bilingualism has been assessed on the basis of various criteria: knowledge of L₂ vocabulary (Diebold 1961, reported in Rubin 1972, for example); range of sociological contexts in which L₂ is preferred (Myers 1973); aural comprehension (Ervin-Tripp 1978); "fluency" (in the sense of the "ability to carry on a continuous conversation without hesitating because of morphological or syntactic doubts" (Rubin 1972: 353)), with or without regard for accuracy (see Shapira 1978); number of errors in the production of specific L₂ inflectional categories (Kessler 1971); or deviance of intuitions concerning well-formedness (Coppieters 1987), to name but a few.

Where proficiency varies considerably within a group of informants, it may be sufficient to classify them impressionistically (Diebold 1964, and Rubin 1972, for example). Rubin, for instance, rates her Paraguayan informants' ability to speak and understand Spanish and Guaraní as "good", "so/so" or "none" (*ibid.*: 352), prior to matching them with the then fairly standard categories:

- 1) "coordinate bilingual"; that is, "any speaker learning more than one language, either during childhood acquisition of two or more native languages or later 'perfect' mastery of a language other than the native one" (Diebold 1964: 496, after¹ Weinreich 1953); in Rubin's terms: speaking and understanding both deemed "good" (1972: 353);

¹ In fact this is not Weinreich's emphasis at all. Weinreich proposed a distinction between "coordinative" and "compound" bilingualism on the basis of whether a speaker functions with two sets of signifiers and two sets of signifieds (as though monolingual in two languages); or with two sets of signifiers and only *one* set of signifieds (the two languages merging at the conceptual level) (Weinreich 1953). Both were to be contrasted with "subordinative" bilingualism, in which "the referents of the signs in the language being learned [are] not actual 'things', but 'equivalent' signs of the language already known" (*ibid.*: 10). All three notions have since undergone considerable modification, ultimately to result in the abandonment of the coordinative/compound distinction, and in the simple (and none-too-specific) list of options presented here (see Grosjean 1982).

- 2) "subordinate bilingual", the minimal qualification for which being "the ability of the speaker to produce completely meaningful utterances in the other language" (Haugen 1953, cited in Diebold 1964: 496); for Rubin: "so/so", and "good or so/so", respectively (1972: 353);
- 3) "incipient bilingual" (Diebold 1964); that is, possessing a knowledge of L₂ which is receptive, or passive, rather than productive (for Rubin: "none", and "so/so or good" (1972: 353)); or
- 4) monolingual ("none" and "none", presumably; though genuine monolinguals are rare indeed (see Grosjean 1982)).

For our purposes, this is not sufficient. The islanders exhibit a wide range of proficiency, but it is not so wide as to render these categories useful. It is safe to say, for instance, that the sample includes no "coordinate" bilinguals; the only informant whose Spanish is fluent (in the "plus-accuracy" version of "fluency") is Informant 42, whose *first* language is Spanish, and whose productive knowledge of Quechua extends only to greetings and a few simple vocabulary items.

6.2.2 Scoring proficiency in Spanish

The strategy I have adopted, though appearing alarmingly involved in principle, is relatively simple in practice. The proficiency score assigned to each informant is an indication of the *syntactically most complex* Spanish string uttered by that informant.

This is not a novel approach; variations upon it have been used in the diagnosis of language (that is, L₁) disability (Crystal et al. 1976); as well as in studies on second language learning by both children (Dulay and Burt 1978; Kessler 1971; Ervin-Tripp 1978) and adults (Bailey, Madden and Krashen 1978). But these studies are not only methodologically alike; results (a term inapplicable in Crystal's case) point to an order of acquisition of certain syntactic structures which is, by and large, the *same* order for all the groups studied. That is to say, adult L₂ learners appear to progress through the same stages in much the same order as child L₂ learners (Dulay and Burt 1978; Bailey, Madden and Krashen 1978; see also Grosjean 1982); and that child L₂ learners appear to progress

through the same stages in much the same order as child L₁ learners¹ (Ervin-Tripp 1978). It is, moreover, much the same order Crystal finds to be *clinically useful* in the assessment of the syntax development of language-disabled individuals (Crystal *et al.* 1976).

These comparisons, of course, are wholly without point if the notions of syntactic complexity espoused are not themselves comparable. Most of the studies above are concerned to establish, or to acknowledge, some independent measure of syntactic complexity, and most are working within the framework of generative grammar – its developmental dimension counting for much (Crystal *et al.* 1976). Menyuk (1969, reported in Kessler 1971), for example, bases her analysis on Chomsky's 1957 model, while Kessler herself opts for Fillmore's case grammar (Fillmore 1971, reported in Kessler 1971). A typical assumption underlying such an approach might be, "for example, that the complexity of a sentence is in direct proportion to the number of transformations used to generate it" (Crystal *et al.* 1976: 26); an assumption Crystal himself judges to be of little use in the long run (*ibid.*: 34-7). But there are two more fundamental assumptions upon which *all* the empirical studies above hinge: that the more complex a syntactic structure, (a) the later its acquisition (and vice versa)²; and (b) the more numerous the errors made in production of it (and vice versa)³.

It is the first of these which we shall exploit here; our assumption being that the *more syntactically complex the most syntactically complex Spanish string uttered, the higher the degree of proficiency.*

Whether focussing upon proportion of errors at a particular degree of complexity, or on maximum complexity achieved, the studies above operate by *volume*; that is, with *frequencies* of possessive markers, or contractible auxiliaries, or whatever. Here, however, we shall merely locate the (single) most complex utterance and assign a score on that basis. An informant who

¹ This is perhaps too strongly stated. Miesel *et al.* (1981), for example, offer a theory of L₂ acquisition as a multi-dimensional, rather than a linear and uniform, process. While they acknowledge that the two approaches are not ultimately incompatible, their own model allows for more variation within each stage, and takes account of L₁ and L₂ learners' relative susceptibility to socio-psychological factors (such as motivation). See also Grosjean (1982), who reviews the successively more convergent views on two processes which were once considered irreconcilably different.

² See Crystal *et al.* (1976: 29-30), who are reluctant to endorse the necessity of this connection.

³ See Miesel *et al.* (1981: 113-114), who express a similar reluctance with regard to this connection.

offers twenty Spanish strings of a certain degree of complexity, then, will be allocated the same rank as an informant who offers only one such string. This method has its disadvantages of course. Someone who recites (albeit appropriately), say, the first line of a Spanish song may receive an undeservedly high ranking.

The type of complexity we shall exploit is not, in fact, very complex. Moreover, the fairly simple discriminations utilized here find support in *all* the studies above; whether working with monolinguals or bilinguals, adults or children, Chinese or Spanish speakers, the relative clause is considered one of the most complex constructions, and one of the last to be acquired by the learner (Kessler 1971; Ervin-Tripp 1978; Grosjean 1982, etc.). It also seems clear that a sentence with one instance of recursion is in this respect more complex than the string with none; and *less* complex than the string with *two* such instances.

With one slight modification (below), the distinction between rank *C* and ranks *B* and *A* is drawn on the basis of the distinction between "simple" and "complex" sentences (Lyons 1968: 178); that is, between sentences consisting of a single *finite clause*¹, and sentences consisting of *more than one* finite clause (Whitley 1986; Quirk and Greenbaum 1973; Crystal *et al.* 1976). The distinction between rank *C* and ranks *D* and *E* is drawn on the basis of the distinction between the simple sentence and the non-sentence.

It should be noted that the categories outlined are tailored to the variety evident in the data. The notions of syntactic complexity employed, moreover, require reference only to the most traditional of traditional grammars (Lyons 1968, in reference to Thrax, for example), to Quirk and Greenbaum, *A University Grammar of English* (1973), and Whitley, *Spanish/English Contrasts: A Course in Spanish Linguistics* (1986) (a Spanish near-equivalent to the foregoing, with more pronounced transformational generative sympathies).

Spanish proficiency rankings are allocated on the basis of whether the most syntactically complex Spanish string:

- A* contains at least *three constituent simple sentences*, at least one of which should be grammatically *dependent* upon another
- B* contains at least *two constituent simple sentences*, one of which is grammatically dependent upon the other

¹ Simple sentences are usually termed "clauses" when incorporated as constituents of larger sentences (Lyons 1968: 178).

- C* is a simple sentence
- D* is either:
- (i) a string containing at least two Spanish elements one of which is a non-finite verb form; or
 - (ii) a string of three or more Spanish elements, none of which is described below
- E* is confined to Spanish elements described below.

For example, the following are simple sentences ranking, in themselves, *C*:

Campesinos están trabajando
Campesinos are working (Inf. 13)

Trabajo en la ciudad
 I work in the town (Inf. 25)

En el año mil novecientos cuarenta se vino la escuela aquí
 The school arrived here in 1940 (Inf. 16)

Está corriendo con su riago
 He's running with his lasso (Inf. 27; Pic.4)

in that there is one and only one verbal element which is inflected for tense, person, number, etc. (Lyons 1968; Whitley 1986; Quirk and Greenbaum 1973).

The following also ranks in itself a *C*:

Esto es ya una canasta pero tiene sus manos, ¿no?
 This is a padlock, but it's got hands, no? (Inf. 26)

in that, though complex, the constituent sentences are linked only coordinatively.

Ranking *B*, however are the following:

Cuando Cristo viene tenemos la verdad
 When Christ comes we'll have the truth (Inf. 43)

Si, principalmente este es un árbol que significa un recto camino
 Yes, basically it's a tree which means a straight path (Inf. 44)

Me parece que está llorando, no?
 She seems to me to be crying (Inf. 26)

The following type of sentence will also rank *B*:

Esos al Espíritu Santo quieren matarlo
 Those ones want to kill the Holy Spirit (Inf. 44; Pic 12)

following Whitley's account of the "reduced" complex sentence (1986: 276-305).

Ranking A:

Bueno esto es una tumba donde representa que ha muerto una niña
Right, this is a tomb where it's showing that a girl has died (Inf. 42; Pic. 23c)

Hay varios hombres primitivos que lo han hecho con piedra que han sacado
There are various primitive men who have made it with stone which they've quarried (Inf. 8)

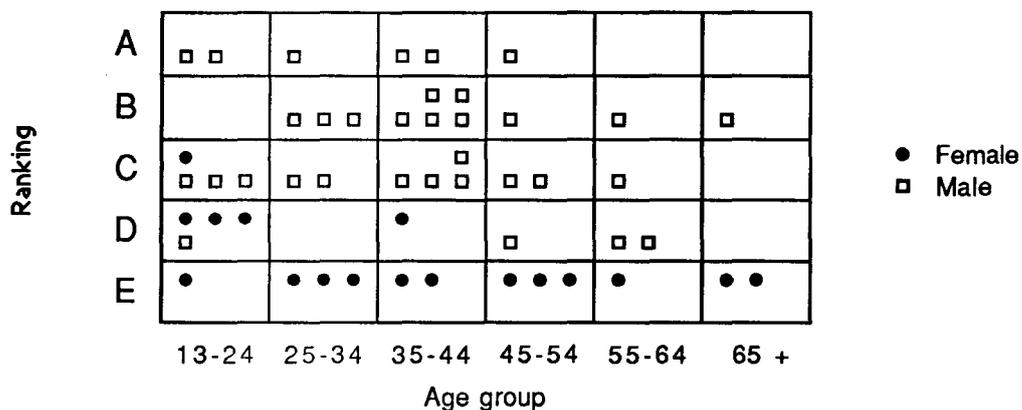
Ranking D, meanwhile, is the following:

Aquí el señor disparando con metrallita (= ametralladora), ¿no?
Here the man shooting with a machine-gun, no? (Inf. 25; Pic. 11)

since the single verbal element, *disparando*, lacks any such inflexion. It is *non-finite* (Quirk and Greenbaum 1973; Whitley 1986). Spanish non-finite verb forms are the infinitive (*disparar*, for instance), the gerund (*disparando*), and the past participle (*disparado*); to which list some would add a present participle (*disparante*) (Whitley 1986: 83).

Ranking E are those informants whose most complex Spanish string consists only of nouns (often arguably loanwords (see Hoggarth 1983)), or numerals, or any one of many idiomatic borrowings such as: *¿no cierto?* (isn't that so?), *pues* (well); *bueno* (well); *muy bien* (very good); *o sea* (that is to say); *más o menos* (more or less); *a veces* (sometimes); *poco a poco* (bit by bit); *no sé* (I don't know); *así es* (that's how it is), etc.

Figure 5: Proficiency in Spanish



It is easy to see that the female informants, as a whole, do not have high proficiency in Spanish. It is not so easy to see whether age is significant, since the scores are so uniformly low.

and for category 5 to continue:

- (E less than once a month)
- D once or twice a month
- C every fortnight
- B two or three times a month
- A every week

In principle, this is still not sufficiently explicit since it takes no account of *when* (or indeed *for what purpose*¹) a journey took place. As things stand, an excursion undertaken over thirty years ago merits the same rank as one which took place only a year prior to questioning. It may well be of course that a first (or sole) visit to Lima tends to stick in the memory despite the passage of time. Nevertheless I am persuaded to limit the timespan within which scoring of each category will apply; limiting categories 1, 2 and 3 in the table above to ten years; category 4 to three years; and category 5 to one year. Provision is made only for long excursions which took place over ten years ago

Figure 7: 11-20 years

<i>maximum duration</i>	<i>frequency</i>											
	1	2	3	4	5	6	7	8	9	10	11	12
1 exceeding three years	B	B	B	-	-	-	-	-	-	-	-	-
2 exceeding one year	C	C	B	B	B	B	B	B	B	-	-	-
3 exceeding three months	D	D	D	D	D	C	C	C	C	B	B	B

that is, ignoring categories 4 and 5, and according to which, for example, in category 3, a B is allocated for seasonal work every year. Clearly by no means all possibilities are accounted for; few people are so uniform in terms of the duration of their excursions. In practice, however, this is already too involved; informants were not asked to list dates and times in their responses. Thus, within these general parameters, I have used common sense and tried very hard to be fair.

For example:

Informant 47 (described above) ranks E;

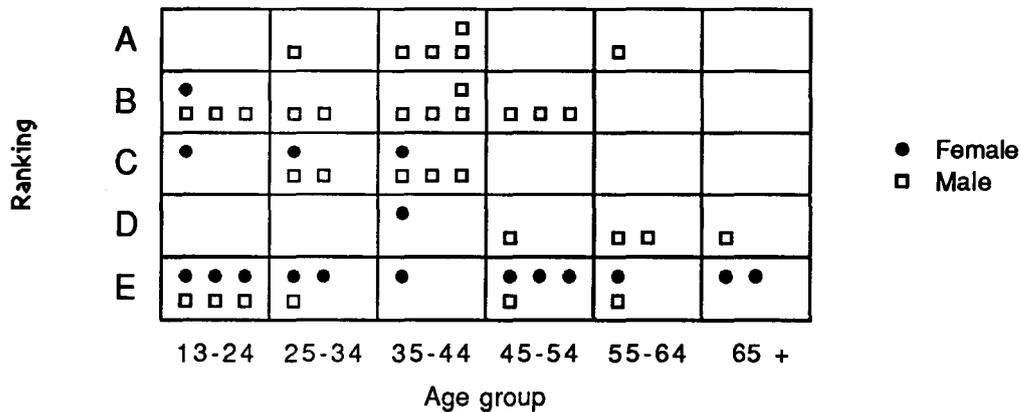
Informant 49 (described above) ranks B;

Informant 25 (described above) ranks A;

¹ I suspect that such information may well be crucial (see, for example, Hallpike 1979). Regrettably, I do not possess the data necessary to explore this angle.

Informant 13 (described above) ranks *A*;
 Informant 1, who recently spent five months in Lima with her brothers, ranks *C*;
 Informant 4, who visits Puno perhaps three or four times a year, ranks *E*;
 Informant 16, who worked down the mines in Ica and Nazca for around seven years (mostly during the last ten years), ranks *A*;
 Informant 22 (Inf. 16's wife), who travels rarely now but who spent nearly a year with her husband in Ica when he first mined, ranks *D*.

Figure 8: *Travel*



A summary of informants' rankings with respect to each of the three indicators above is incorporated into figure 22 below.

7 Attitudinal indicators

We now turn to our two final indicators: (4) Pro-"Western" orientation, and (5) Pro-traditional orientation, each of which has five components:

- 4) *Pro-"Western" orientation:*
 - i) a commitment to Western dress (observed);
 - ii) a preference for Spanish over Quechua (expressed);
 - iii) a positive view of tourists' visits to Amantani (expressed);
 - iv) a positive view of journeys to Puno (expressed);
 - v) preference for "current affairs" radio programmes (expressed);

- 5) *Pro-traditional orientation:*
 - vi) a commitment to traditional dress (observed);
 - vii) a preference for Quechua over Spanish (expressed);
 - viii) a commitment to traditional healing methods (expressed);

- ix) a commitment to participation in traditional recreations (expressed);
- x) the practice of coca chewing (admitted).

Given that the passage from wholly traditionally oriented to wholly Western-ly oriented need not be a straightforward one (see §4.3 above), pro-“Western” and pro-traditional orientations are scored *separately*. It is for this reason, moreover, that we are able (with regard to language preference (§7.2) and mode of dress (below)) to allocate “double points” where this seems appropriate.

7.1 *Mode of dress*

Traditional dress for the women of Amantaní comprises broad woollen skirts (as many as four or five at a time), a woven blouse, sash and shawl, and perhaps also a woollen jacket (see Photograph 3 in Appendix B). Traditional dress for men includes woollen trousers, shirt and waistcoat, and a shawl similar to that worn by women.

Few people conform perfectly to either model. Because they are made of wool and must be laboriously woven, traditional items of clothing are expensive and it is much more profitable to sell a woollen shirt in the *salon artesanal* and to buy a synthetic sweater than it is to wear the woollen shirt. Almost all men wear commercially made, rather than home-woven, trousers; and caps promoting soft drinks, along with many other kinds of Western hat rather than the traditional woollen bonnet. When journeying to Puno even those men who habitually wear entirely traditional clothing exchange it for western dress; or rather, they exchange it for a variety of Western dress which remains non-Western in appearance only in so far as it does not go the whole hog (a shirt buttoned to the neck without a tie, for instance, or a cheap pair of shoes minus socks).

Women's travel wear, on the other hand, alters in the opposite direction, with the addition of an extra skirt or two, and perhaps a bowler hat – the latter a rare sight on Amantaní, even at fiestas.

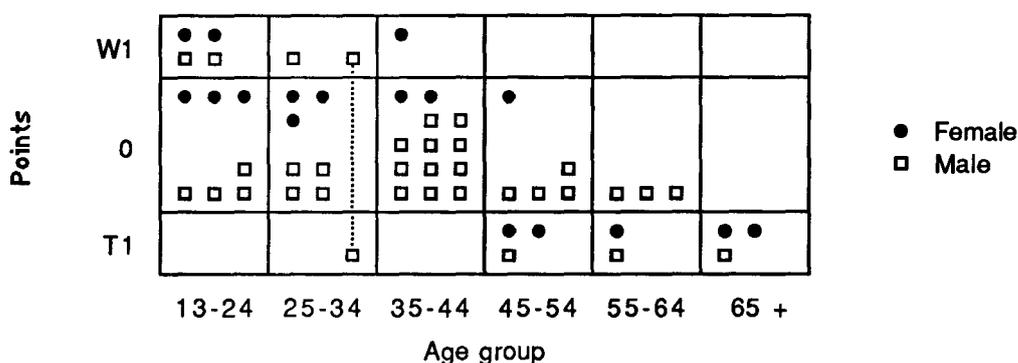
The wholly traditional dresser, then, requires a certain amount of commitment; but no less so the wholly Western dresser who succeeds in shedding all the outward signs of “Indianhood”. And it is such significant deviations from the path of least resistance as these which we shall heed, rather than the fact that most islanders' dress is mixed.

Points are allocated as follows:

- W1 observed commitment to Western dress
- 0 mixed dress, or "non-committal"
- T1 observed commitment to traditional dress

Although there is no reason why an informant may not score W1 *and* T1, I have only accorded "double points" in one instance.

Figure 9: *Dress*



For both men and women, traditional orientation in this respect appears to increase with age. The three women scoring in the W1 category are Informants 1, 23 and 41, all of whom are usually to be seen wearing narrow skirts. In the face of an evidently traditionally oriented women's fashion, it would seem to require a strong, even courageous, "Western"-orientation to diverge from the norm in this way.

The four men in the same category are Informants 7, 8, 42 and 43, each of whom dresses with an undeniable eye for Western fashion, from jeans and training-shoes to the latest style in zip-pocketed shiny jackets and (in Informant 7's case) a tie. Informant 42 appears in categories W1 *and* T1 (linked by the dotted line in the matrix above), since, as a non-islander, and an occasionally shiny-jacketed non-islander at that, his adoption of a woven waistcoat and an ever-present woollen bonnet seems a highly significant token of solidarity with the islanders.

7.2 *Language preference*

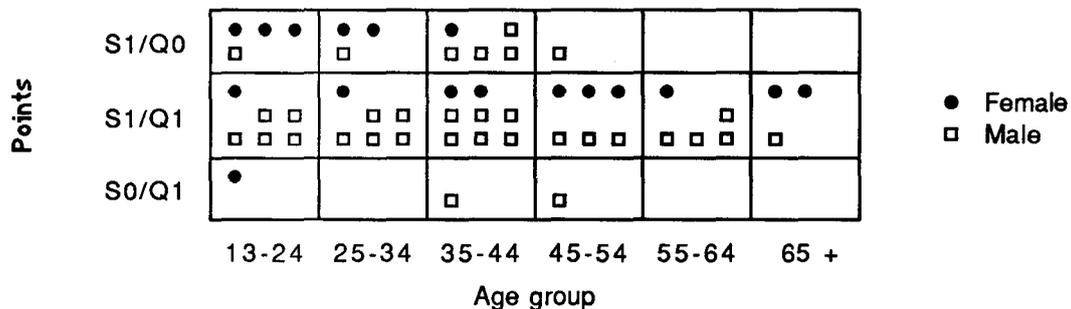
If a group is highly regarded, the chances are that the language they habitually use will be considered more beautiful, more efficient, etc. than the language of a

group which is not highly regarded. Because native speakers of Quechua are, on the whole, not highly regarded, it is only to be expected that Quechua will be viewed as uglier, less expressive, less logical, etc. than Spanish – not only by native speakers of Spanish, but also by the speakers of Quechua themselves (Grosjean 1982).

Informants were asked which language they preferred, Quechua or Spanish. Informants who prefer Spanish to Quechua are ranked here S1/Q0; acquiring, that is, one point towards their pro-western ranking. Informants who prefer Quechua to Spanish are ranked here S0/Q1, thus acquiring one point towards their pro-traditional ranking. No preference is accorded a pointing of S1/Q1; that is, a point towards each orientation ranking.

S1/Q0 preference for Spanish
 S1/Q1 no preference
 S0/Q1 preference for Quechua

Figure 10: *Language attitudes*



The few who positively prefer Spanish gave various reasons:

Porque es más principal parlanapaq. Más útil contestakunaypaq con los jefes.
 Because it's more important. It's more useful to me for answering to the people in charge (Inf. 20);

Chaqay llaqta Puno rinaypaq mistisakunawan parlanaypaq munani
 I'd like to be able to talk to mestizos when I go to Puno (Inf. 18);

because Spanish is more beautiful (*más lindo*) (Inf. 41); because Spanish has nice words (*munay palabra chayrayku*) (Inf.5), etc.

The three informants who score Q1/S0 are Informant 3:

Mana Castellanota. Keshwatapuni ñoqaqa munani porque keshwata parlaytaqa munani masta.
 Not Spanish. I like Quechua because I prefer speaking Quechua (Inf. 3);

Informant 15, who interrupted me with the vehemence of his preference:

Mana, mana, mana – keshwatallapuni
No, no, no. Just Quechua (Inf. 15);

and Informant 23 for whom Quechua is simply "better" (*mejor*).

Most informants, however, do not feel strongly either way:

Noqamanqa gustawan iskaynin. Quechua y castellano gustawan
I like them both. I like Quechua and Spanish (Inf. 2)

Iskayninta munani
I like them both (Inf. 9)

Castellanotawan keshwatawan ancha sumaq chayta
Spanish and Quechua are both very fine (Inf. 7)

A matching of these scores with proficiency rankings reveals that preference bears no obvious relationship to ability.

7.3 A further six attitudinal components

The remaining six components of the attitudinal indicators are more straightforward. Points are allocated on the basis of answers to the following questions:

- 4) Pro-"Western" orientation:
 - iii) Do you like tourists' coming to Amantani?
 - iv) Do you like going to Puno?
 - v) What sorts of radio programmes do you like to listen to?
- 5) Pro-traditional orientation:
 - viii) Do you ever visit a *curandero*?
 - ix) Do you like taking part in fiestas?
 - x) Do you sometimes chew coca?

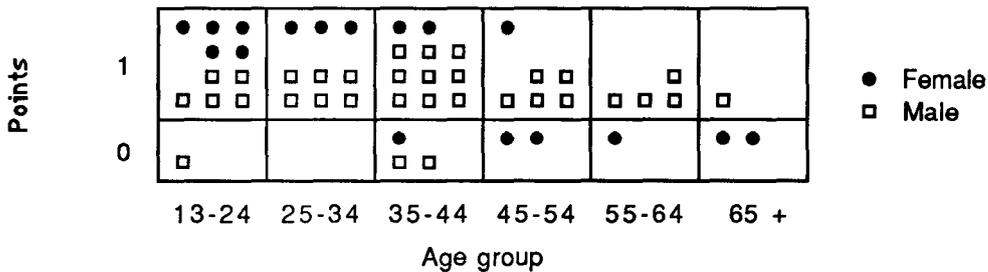
And since, moreover, in all cases other than question (v) they are derived from a simple yes or no, we shall not dwell on them long. Note, however, that in the case of questions (iv) and (ix) an answer pertaining to present infirmity, for example, was followed by "Did you used to?" and scored on that basis.

7.3.1 Tourists

iii) Do you like tourists' coming to Amantani?

Points were awarded for this component as follows:

Figure 11: *Tourists*



The nine informants scoring 0 here are Infs. 4, 11, 16, 19, 30, 33, 41, 46 and 47.

Turistaq hamunanta mana munanichu. (Imarayku?) Imaraykuchá
I don't like tourists' coming. (Why not?) Who knows? (Inf. 4)

Inf. 30 was less explicit and I have, perhaps rather uncharitably, scored him on what seems an obvious subtext:

Wasiyoqkuna alojamientoyoq chaykunaqa turistaq hamunanta munan
The people with rooms to let like it when tourists come (Inf.30)

while the remainder are basically indifferent to tourists:

Mana yachanichu. Mana kaymanchu mana Occosuyoman hamunchu riki
I don't know. They don't come here. They don't come to Occosuyo, that's for sure
(Inf.11)

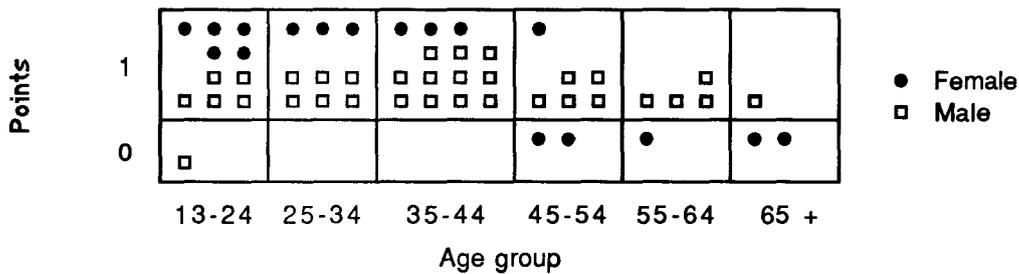
Most informants, however, take a positive view, often with an understandable financial edge to it:

Noqa munani turistaq hamunanta imaraykuchus kay islaykupi mana ancha turismo chayamunchu chaymanta. Hamunanta munani artesanía rantinanpaq
I like/want tourists to come because not much tourism reaches this island.
I like/want them to come and buy handicraft (Inf. 8)

7.3.2 Going to Puno

Informants were asked simply whether they like going to Puno. Those who no longer travel (through infirmity, for instance) were also asked whether they used to like going to Puno. An answer in the affirmative scores 1; in the negative, 0.

Figure 12: *Puno journeys*



Only one man (Inf. 4 again), and five older women (Infs. 11, 19, 33, 46 and 47) score 0 here.

Mana riytaqa munanichu kanpis mana wawakuna apawamunchu ari
I don't like going and anyway the children don't take me (Inf. 33)

Mana purinichu. Mana munanichu. Lanchapi purinapaq manchapuni purinapaq
I don't go. I don't like/want to. The journey in the *lancha* scares me (Inf. 46)

Mana purinichu. Kaypi tiyanihinalla. Más tranquilo
I don't go. I just stay here. It's more peaceful (Inf. 4)

7.3.3 Radio

The radio is the most accessible, if not the most direct, contact islanders have with the outside world. Even the four informants who do not possess a radio (Infs. 16, 22, 30 and 33) have the opportunity to listen nonetheless.

A veces cuando quiero noticias aviso me presto.
Occasionally, when I want to hear the news, I borrow one (Inf. 16).

I have allocated a point to each informant whose response demonstrates, at least in principle, an interest in affairs concerning the rest of Peru; for example:

Noticiata uyarini
I listen to the news (Inf. 24)

Uyarini parlaqta presidentimanta Alan Garciamanta
I listen to what the President, Alan García, has to say (Inf. 6)

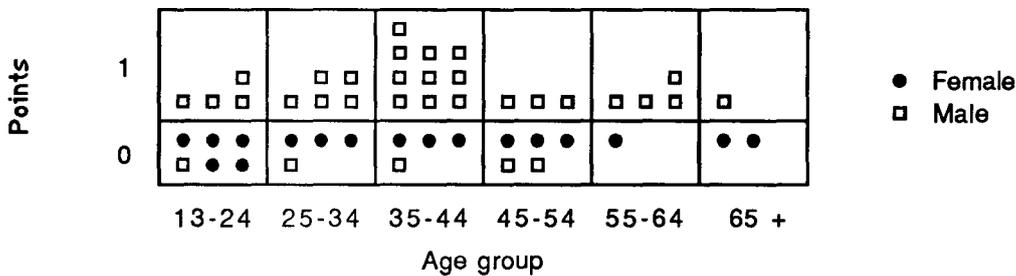
Noticiakunamanta Limamanta maypichá imapichá pasashan terremotos imakunachá es tragedia carros volcán yachani chaykunata emisorasmanta no?
By listening to the news from Lima, wherever it is and whatever it is that's happening – earthquakes, whatever; if there's a disaster, say, cars – volcanos; I learn about all these things from the radio broadcasts (Inf. 35)

Points have not been awarded for responses such as the following:

Wayñukunallata
Just *wayñus* (Quechua highland dances) (Inf. 31)

Algon alegrakunaypaq wayñukunatapis imatapis uyarini
I listen to anything to cheer me up, *wayñus* and so on (Inf. 21)

Figure 13: *Radio programmes*



As we can see, the female informants show considerably less interest in the world at large than do the male informants. While it might be supposed that the women's generally poor proficiency in Spanish could be a contributory factor, this is not necessarily the case; Quechua radio stations exist, featuring news programmes and talk shows as well as highland music; many predominantly Spanish stations, moreover, broadcast programmes in Quechua.

7.3.4 *Visits to a curandero*

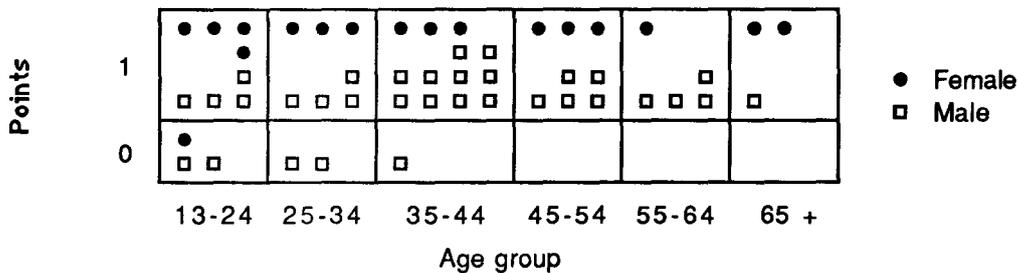
Just as Spanish competes with Quechua, and *wayñus* with President García, so too local healing practices compete with bioscientific medicine; that is, with what is generally termed "Western medicine"

There is no doctor on Amantaní. There is, however, a *sanitario* (health worker), trained in the rudiments of bioscientific medicine and installed in a small shed near the cemetery. Few islanders make use of him. His services are free but prescriptions are not. He is also rarely in residence, bad-tempered at the best of times, and is generally regarded as incompetent. In Amantaní's case, then, the competition is not unduly fierce; islanders are more likely to take their problems to one of several *curanderos* (healers). *Curanderos* tend to be associated with

herbal remedies, guinea pig diagnosis, and with the cure of *susto* (fright) and other "folk" illnesses (Chiappe *et al.* 1985). The range of expertise of at least one island *curandero*, however, is not limited to the above; his skills also include setting broken bones, appeasing malevolent ancestral spirits, and exorcising the possessed.

Informants were asked simply whether they ever visited a local *curandero*, an answer in the affirmative scoring 1; in the negative, 0.

Figure 14: *Visits to a curandero*



The informants who, for whatever reason, do not visit a *curandero* are relatively few and relatively young (Infs. 20, 23, 27, 34, 36 and 42).

Hampiq runaq chayta mana rinichu porque mana onqonichu chayrayku
I don't go to the *curandero* because I don't get ill (Inf. 20)

Most informants, however, do occasionally seek the help of a healer.

Claro, siempre voy
Of course, I go all the time (Inf 10)

Si algun accidente pasan hinaqa purini pero mana cocata yachanichu
If there's been an accident then I go, but I don't take coca (Inf. 3, who had not been asked about coca)

7.3.5 Chewing coca

Here is another response to the *curandero* (n.b.) question:

Noqa mana akullinichu. Prohibido es. Alumnos no
I don't take it. It's not allowed. Not for schoolchildren

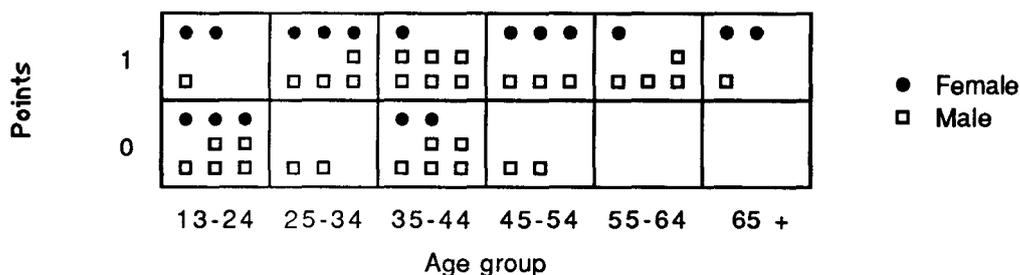
What it is that this woman¹ doesn't take, which schoolchildren are not allowed, and regarding which there is evidently some sensitivity, is coca. Coca is closely

¹ This response was given by a sixteen-year-old woman who is not one of the fifty informants in the sample.

associated with the *curandero* because of its use in healing, diagnosis and divination, for example. The focus of her defensiveness, however, is the *chewing* of it; a practice which invariably accompanies the healing, etc., and which, for some individuals, invariably accompanies every other activity too. Coca is an essential part of any ritual or social occasion (see Bastien 1978); but it is also not unlike smoking – a habit. And just as there are chain-smokers, there are "chain-chewers", of whom Amantaní has its share. Indeed, so universal a practice is it believed to be among "Indians" that chewing coca has found its way into the non-Indian's list of essentially Indian characteristics (van den Berghe and Primov 1977 (§4.2 above)), along with strongly negative overtones resulting from a conviction that it is a dirty and addictive habit, and that most Indians go about their business in a state of narcosis. Consequently perhaps, coca chewing has been harshly criticized by government and missionary bodies alike, as "a sign of Andean backwardness" (Starn 1991: 79).

Informants were asked whether they ever chewed coca, an answer in the affirmative scoring 1; in the negative, 0.

Figure 15: *Chewing coca*



As the young woman cited above predicts, schoolchildren seem not to chew coca; those informants scoring 1 in the 13-24 age category are all beyond school age (Infs. 5, 9 and 49). Informant 48's predictions, meanwhile, are only partly accurate:

Mana akullinichu. Abuelitokunalla
I don't chew coca. Only old people do (Inf. 48)

But there is a second group of people to whom coca is prohibited: the Seventh Day Adventists.

Noqa kani adventista. Kunaqa mana akullinichu cocata. Ninku cocaqa malogran nispa pero unay tempoqa abueloykukunaqa siempre kallpataqa ruwaq kashanku cocata akullikuspa

I'm an Adventist. I don't chew coca now. They say that coca harms the body, but in the past our ancestors used always to chew coca to give them strength (Inf. 3)

Mana munanichu. Mana cocata munanichu. Kani ñoqa religion adventista ari
I don't like it. I don't like coca. I'm an Adventist (Inf. 28)

Mana ñoqa akullinichu cocata. Millay. Millay chay. Mana ñoqa gustawanchu.
(Qan adventista kankichu?) Adventista ari
I don't chew coca. It's horrible. Horrible! I don't like it. (Are you an Adventist?)
Yes I am (Inf. 22)

In fact, with one exception (Inf. 24), Adventist abstinence accounts for every single informant over the age of thirty-four who does not chew coca (Infs. 3, 10, 15, 16, 20, 22, 28 and 41). Interestingly, the apparent need to justify their behaviour to themselves or to me (asserting that (anyway) they hated coca; it made their teeth all green, etc.) is not an exclusively Adventist trait:

Puñuyapaq allin
It's good for sleep (Inf. 45)

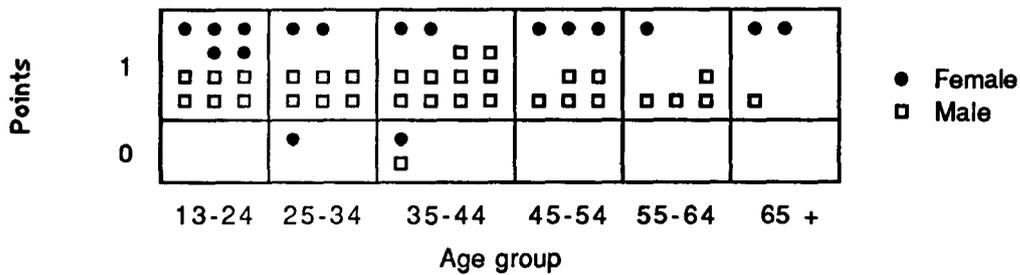
Allin chay coca nanaypaq estomananaypaq
Coca's good for my stomach-ache (Inf. 47)

Akullini porque pescaman purini. Menos alcohol
I take coca because I go fishing. (It means) less alcohol (Inf. 17)

7.3.6 Fiestas

Dotted throughout the year are Amantaní's principal large-scale recreations: fiestas. Some, such as Independence Day, are secular; most are religious. The majority feature costumed dancing and an abundance of alcohol, but each has its own specific schedule in terms of entertainment, participation and sponsorship. Amantaní's own Pachatata fiesta appears to be a clear favourite, with its colourful and breathless procession to the hilltop and back, dancing all the way. Music is provided by rudimentary brass bands, and reed flute ensembles, often several groups playing simultaneously in a cacophonous traditional and mestizo mix. Fiestas also present opportunities for private enterprise; buying soft drinks by the crate and selling them in the square, for example; or baking bread babies for the Feast of All Saints.

Informants were asked whether they liked to take part in fiestas. An answer in the affirmative scores 1; in the negative, 0.

Figure 16: *Fiestas*

Only three informants dissent to any extent. They are informants 16, 18 and 41.

Mana munanichu. Ima pues fiestakuna a veces gustawan ñoqata pero mana machanichu pero gustawan qhawarikuynin ñawiwán
I don't like them. Well, sometimes I like fiestas, but I don't get drunk, but I like watching (Inf. 16)

Mana tiempoy kanchu mana qolqey kanchu fiestakunapaq
I don't have the time or the money for fiestas (Inf. 18)

Unay fiestakunata munarqani. Kunan sayk'urqopuni
I used to like fiestas. Now I find them very tiring (Inf. 41)

7.4 Summary of attitudinal indicators

Points awarded for individual pro-"Western" components are added, and the total is assigned a letter *A* to *E* as above. The totalled pro-traditional component points, meanwhile, are assigned a numerical rank, *1* to *5*, ranging from most traditionally oriented (*5*) to least traditionally oriented (*1*). This difference is purely a matter of presentation and is intended to help prevent confusion of the two. For example, the component pro-"Western" points scored by Informant 6 (Alberto) and Informant 41 (Francisca) are shown in figure 17 below. These points are totalled to yield the rankings *B* and *C* respectively.

Figure 17

<i>Pro-"Western" orientation</i>	<i>Alberto</i>	<i>Francisca</i>
i) commitment to Western dress	0	1
ii) positive view of Spanish	1	1
iii) positive view of tourists	1	0
iv) positive view of journeys to Puno	1	1
v) preference for "current affairs" radio	1	0
<i>Total</i>	4 (=B)	3 (=C)

The component pro-traditional points scored by the same two informants are shown in figure 18, totalled to yield the rankings 5 and 1 respectively.

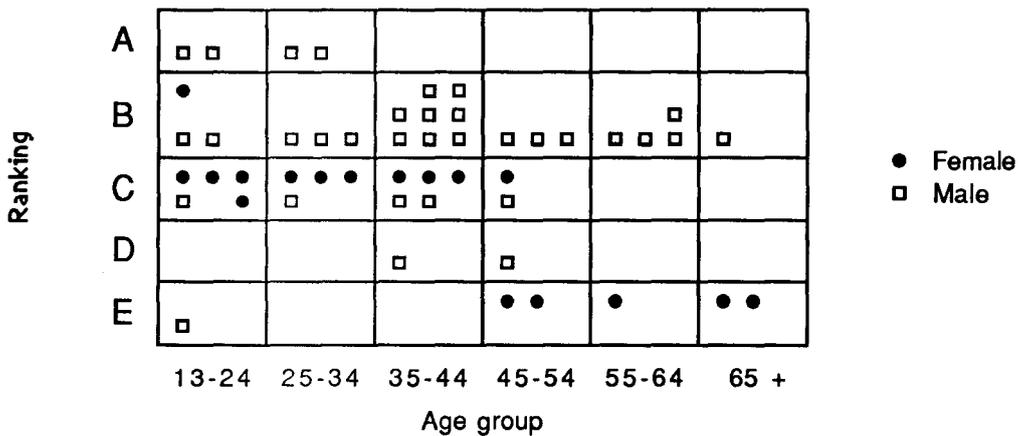
Figure 18

<i>Pro-traditional orientation</i>	<i>Alberto</i>	<i>Francisca</i>
vi) commitment to traditional dress	1	0
vii) positive view of Quechua	1	0
viii) commitment to traditional healing methods	1	1
ix) commitment to traditional recreations	1	0
x) coca chewing	1	0
<i>Total</i>	5	1

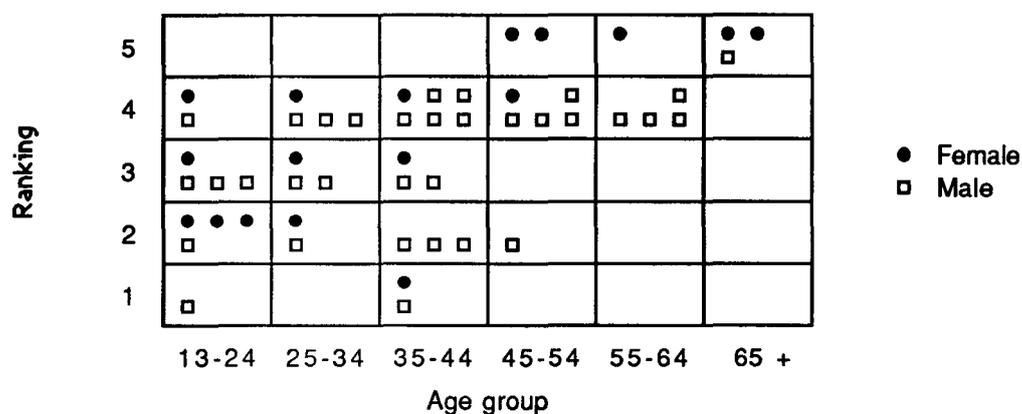
Alberto's attitudinal rankings are summarized, therefore, as *B5*; those of Francisca as *C1*.

Informants' rankings with respect to the two attitudinal indicators may be summarized as follows:

Figure 19: *Pro-"Western" orientation*

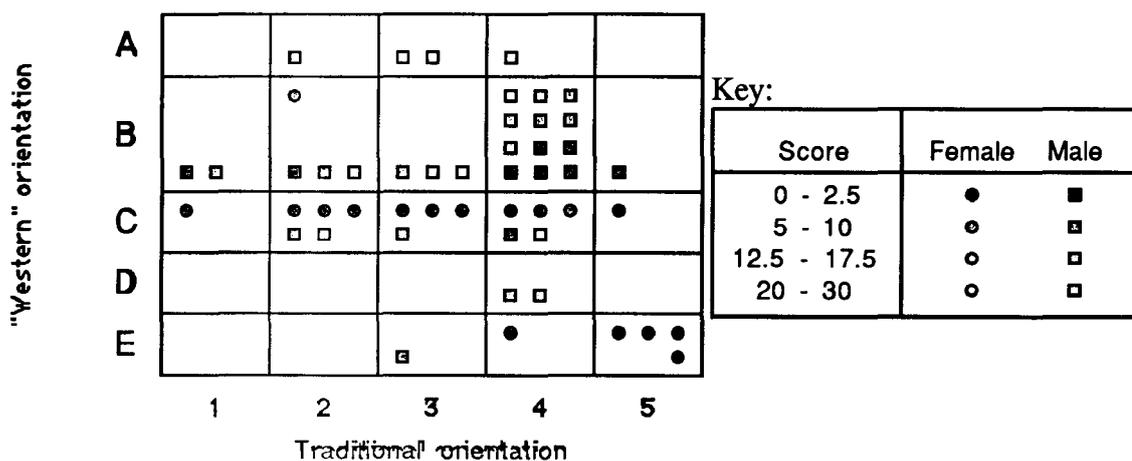


From the clustering within categories B and C, we may observe that most informants seem to have a reasonably positive attitude to (limited aspects of) life outside Amantaní. Those who are, by this account, less well-disposed seem, on the whole, to be the sample's older women. The exception is Informant 4 (aged 20).

Figure 20: *Pro-traditional orientation*

Here again there are few extremes, and perhaps the faintest hint of a tendency for older informants to have a more positive attitude to (limited aspects of) traditional island life than younger informants. The three informants ranking 1 are Informants 20 (aged 42), 41 (aged 35), and 27 (aged 13).

To observe the extent to which a positive "Western"-orientation is accompanied by a negative traditional orientation, and vice versa, informants' two attitudinal rankings are correlated in figure 21, a two-dimensional matrix of the sort recommended by McFee (1968; see §4.3 above).

Figure 21: *Double attitudes*

As we can see, there is no necessary correspondence. The informants whose rankings fall along the *A1-B2-C3-D4-E5* diagonal *might* be said to be conforming to a pattern of "straight-line attitudinal acculturation" – a gross misrepresentation in any case, given the highly limited data and the obvious

questions as to the commensurability of the component indicators (see §6 above). But these informants are a minority. More numerous are those whose rankings conform to no such pattern; either expressing positive traditional *and* positive "Western" attitudes (the twelve informants ranking *B4*, for instance); or not expressing many positive attitudes of either sort (for example, Informant 4, ranking *E3*, and Informant 41, ranking *C1*).

The use of colour in figure 21 allows a further (though simplified) correlation with the cumulative scores relating to integration indicators (1) to (3). Here again it is clear that no high degree of (attitude-independent) integration within mainstream Peruvian society is required in order to express positive attitudes towards (limited aspects of) that society. The scores of the twelve informants ranking *B4*, for example, range from 2.5 (Informants 17 and 50) to 22.5 (Informant 44).

Despite the commitment to a multi-dimensional approach figure 21 attests, we shall see in chapter IV that I have still not fully appreciated its implications, and that this has further repercussions which have yet to be addressed.

8 Summary of informant profiles

We end with a summary of the profiles and scores which in the next chapter will be matched with informants' responses to Appendix A's pictures.

Figure 22

Inf	Edu	Spa	Trav	Total	W/T	Name	S/A	Profile
1	5	5	5	15	B 2	Anselma	f 19	CCC/B2
2	2.5	5	7.5	15	B 4	Gregorio	m 38	DCB/B4
3	0	10	7.5	17.5	D 4	Benerijto	m 47	EAB/D4
4	5	5	0	10	E 3	Ernesto	m 20	CCE/E3
5	2.5	2.5	0	5	C 3	Herminia	f 20	DDE/C3
6	0	7.5	2.5	10	B 5	Alberto	m 73	EBD/B5
7	10	10	7.5	27.5	A 3	Benigno	m 19	AAB/A3
8	10	10	7.5	27.5	A 3	Wilfredo	m 19	AAB/A3
9	7.5	5	7.5	20	C 4	Rufino	m 23	BCB/C4
10	2.5	7.5	7.5	17.5	C 2	Aurelio	m 49	DBB/C2
11	0	0	0	0	E 4	Evangelina	f 50	EEE/E4
12	2.5	5	2.5	10	B 4	Augusto	m 52	DCD/B4
13	2.5	7.5	10	20	B 4	Arturo	m 55	DBA/B4
14	0	0	0	0	C 3	Ana	f 32	EEE/C3
15	5	5	5	15	C 3	Ricardo	m 36	CCC/C3

Figure 22 continued

Inf	Edu	Spa	Trav	Total	W/T	Name	S/A	Profile
16	2.5	10	10	22.5	C 2	Alfredo	m 38	DAA/C2
17	0	2.5	0	2.5	B 4	Hector	m 53	EDE/B4
18	0	0	5	5	C 2	Alvina	f 31	EEC/C2
19	0	0	0	0	E 5	Vincentina	f 60+	EEE/E5
20	5	7.5	5	17.5	B 1	Saturno	m 42	CBC/B1
21	5	5	0	10	C 4	Valentín	m 34	CCE/C4
22	0	0	2.5	2.5	C 3	Natividad	f 35	EED/C3
23	5	2.5	0	7.5	C 2	Juanita	f 13	CDE/C2
24	2.5	10	10	22.5	B 2	Sylvestre	m 35	DAA/B2
25	2.5	7.5	10	20	B 3	Anaclito	m 38	DBA/B3
26	2.5	7.5	7.5	17.5	B 4	Florentino	m 38	DBB/B4
27	5	5	0	10	B 1	Roberto	m 13	CCE/B1
28	2.5	5	5	12.5	B 2	Alejandro Jul	m 44	DCC/B2
29	2.5	7.5	7.5	17.5	B 4	Francisco M	m 40	DBB/B4
30	2.5	5	7.5	15	D 4	Lukas	m 43	DCB/D4
31	0	0	0	0	C 4	Julia	f 35	EEE/C4
32	0	5	2.5	7.5	B 4	Marcelino	m 55	ECD/B4
33	0	0	0	0	E 5	Rosa	f 70	EEE/E5
34	5	7.5	5	17.5	B 3	Julian Q	m 34	CBC/B3
35	2.5	5	7.5	15	B 4	Esteban	m 45	DCB/B4
36	5	2.5	0	7.5	B 2	Juan E.	m 13	CDE/B2
37	2.5	0	0	2.5	C 4	Eudocia	f 30	DEE/C4
38	5	7.5	7.5	20	B 3	Victoriano	m 32	CBB/B3
39	5	5	7.5	17.5	B 4	Jorge	m 32	CCB/B4
40	0	0	0	0	C 5	Luciana	f 50	EEE/C5
41	0	2.5	5	7.5	C 1	Francisca Y	f 35	EDC/C1
42	10	10	10	30	A 4	Chichu	m 29	AAA/A4
43	5	7.5	5	17.5	A 2	Juan	m 32	CBC/A2
44	5	7.5	10	22.5	B 4	Sebastien	m 38	CBA/B4
45	0	2.5	2.5	5	B 4	Herminio	m 60	EDD/B4
46	0	0	0	0	E 5	Maria	f 45	EEE/E5
47	0	0	0	0	E 5	Josepha	f 70+	EEE/E5
48	5	2.5	0	7.5	C 2	Flora	f 14	CDE/C2
49	0	0	7.5	7.5	C 4	Merjilda	f 24	EEB/C4
50	0	2.5	0	2.5	B 4	Veciente	m 55?	EDE/B4

CHAPTER IV

Variety and Context

1 Introduction

In this chapter I attempt to match the types of response offered to the pictures in Appendix A against the integration rankings elaborated in the course of the last chapter. It is in this manner that I originally hoped to be able to assess any influence education, mobility and proficiency in Spanish may have upon picture perception. We shall examine the responses below in terms of a number of general response types, suggested by some of chapter II's picture tests, and also by the variety evident within the responses themselves. Since the aim of this study is eventually to offer a theoretical framework for the assessment of such responses, and since this framework is not yet available to us, the response types are formulated in a deliberately naïve way. It is hoped that by the end of this chapter the reader too will see the need for such a theoretical framework, yet without judging this preliminary attempt entirely lacking in interest.

For there are, I believe, many points of interest. Some of them, however, have much more to say about the *approach* taken to the informants' interpretative choices, than about those choices themselves. So much so, that conclusions drawn from the latter are inappropriate. The results presented here are, then, ultimately disappointing. Yet the reasons for that disappointment cannot but be important in providing pointers to the range of interpretations an adequate theoretical framework should be prepared to deal with. More importantly, they strongly advocate the adoption of a context-sensitive approach to the assessment those interpretations, without which any patterns emerging have little or no value.

It would be coy to pretend that the response types outlined below are not heavily determined by the framework ultimately adopted; and it would be wholly without point to describe response types which bear *no* relation to that framework. It should be borne in mind, therefore, that the range of response types loosely described below, is, by and large, the range of response types more carefully described in later chapters.

Rather than confuse matters by introducing (and inevitably having frequent recourse to) a deliberately naïve set of descriptive terms in this chapter, only to introduce a second, more rigorously formulated, set of terms later on, I have decided to employ the technical terms here without formal definition. It is hoped that what is in any case intended to be a certain intuitively appropriate feel to them will remain to the fore, until such time as their sense may be more formally elaborated. It is also hoped that this will ease the transition from this chapter to the chapter which follows.

We begin by addressing the question of object recognition (§2), before considering a few response types which seem to go beyond the mere recognition and labelling of objects (§3). In §4 we examine some of the conventional interpretations which, to some extent, provided the initial inspiration for this study in its entirety. We go on in §5 to address the "explanatory" response, considering briefly its importance to successful visual communication. In §6, the (lack of) influence of attitudinal integration on picture interpretation is confronted. The summary of results undertaken in §7 leads us to question the relationship of picture interpretation not only to mobility, education, proficiency in schooling and attitudinal integration; but also to the *viewing context* (§8).

2 *Object recognition*

On the whole, there appears to have been little difficulty in recognizing pictured objects. This result seems to be in accord with those of Hudson (1960), Mundy-Castle (1966), Deregowski (1968a), etc. (chapter II, §3). As with Mundy-Castle's informants, however, the informants in this study also occasionally misidentified objects.

2.1 *Animals – recognized and specified*

Most of these misidentifications involve animals; and most of these are in response to Pictures 4 and 7.

For example:

Waka kay kasqa. Kay casa kasqa. Wasi kasqa. Wakachu? Alqochu? Kayri ovejakuna Kayri waka. Y kuchichu? Mana yachanichu.

These are cows (units E and I (and F?)). This is a house. It's a house. Is this a cow? (unit I) Is it a dog? (unit I) These are sheep (unit L). And this is a cow (unit J). And is this a pig? (unit K) I don't know. (Inf. 46; Cat. 0; Pic. 7)

in which all the animals mentioned are in fact (intended as) sheep.

And in response to Picture 4:

Ya aquí hay distintos clases animalitos, no? Lo veo en esta carta. Allí está ... hombre. Este debe ser una vicuña. Ya un chivo llevando su cabrito. También está arando hombre y mujer. Y también lo mismo que están en chakitaqlla, no? Más o menos. Ya pues arando también, no? Los dos. Hombre y mujer igualito aquí nosotros aramos. Así es. También una casita con su arbolito. También están cargando ... Llant'a están cargando. También su llama. También ya ... ya más o menos está jalando con su ... Ya, tiene su amarra, no? Con ésta está jalando. Ya aquí la mujercita, la gallenita ya así. El coral debe ser esto, no? Allí más viene estas animalitos los perritos. Debe ser esto. Los perros con su cría. En quechua es "uña". Entonces, muy bien entonces. Así es.

Right, here there are various types of animals, aren't there? I see it in this picture. There there's ... a man. This one must be a vicuña. And a goat raising its baby goat. Also there's a man and a woman ploughing. And the same here with a foot-plough, isn't it? More or less. Yes, ploughing too, aren't they. Both of them. It's just like that that we plough here, with a man and a woman. That's how it is. Also there's a little house with its little tree. Also these are carrying ... They're carrying firewood. Also his llama. Also ... yes, more or less, he's heaving at it with his ... Yes, he's got his rope. With this he's heaving. And here there's a little woman, little hens like this. This must be the pen, mustn't it? And coming along here too are these animals, the little dogs. It must be that. The dogs with their baby. In Quechua it's called "uña". Ok, fine, right. That's how it is. (Inf. 26; Cat. 17.5; Pic. 4)

in which the "dogs" (units a, b and Z) are actually pigs, and the "goats" (units c and d) some species of the genus lama (sic).

It is patently clear that Picture 4 is not a wise choice of stimulus picture; its many animals are only slightly differentiated, and it requires close attention to neck and ear-length, and especially tails to distinguish them. In fact, the frequent misinterpretations of unit c as a dog (Inf. 16); a goat (Inf. 10, and Inf. 26 above); a calf (Inf. 39), etc. are perhaps less remarkable than that any one should bother to look long enough and closely enough to arrive at the "right" animal.

But people *do* seem to bother where animals are concerned. In response to Picture 17's unit C, for instance, seventeen informants ask me, if only in passing, to tell them what it is (or what it is supposed to be).

For example:

Chivochu kayri? (Someone in background: Asno) Asnochu? Mana asnochu kanman. Asnotachu kay fusilan kay.

Is this a goat? (Someone in background: donkey) Is it a donkey? It wouldn't be a donkey. This one's shooting the (doubted) donkey. (Inf. 46; Cat. 0; Pic. 17)

Alqochu? Asnochu? Chivo. Auto.

Is it a dog? Is it a donkey? A goat. A car. (Inf. 11; Cat. 0; Pic. 17)

Phuyu. Phuyu kay. Caballochu? Chivo. Chivo manachu? Yachanki qan? (Me: No) Noqaqa niyman asno nispa.

Cloud. This is cloud. Is this a horse? A goat. Is it a goat or isn't it? Do you know? (Me: No) I'd say it was a donkey. (Inf. 17; Cat. 2.5; Pic 17)

Este ... cómo se llama? Burro, no? Burro
This ... what's it called? It's a donkey, isn't it? A donkey (Inf. 2; Cat. 15; Pic. 17)

Imatataqchá? Wañuchishan kay caballotachu[s] No sé. imatachá wañuchinra
What on earth's that? He's killing this horse – is it? I don't know. Whatever it is, he's killing it (Inf. 16; Cat. 22.5; Pic. 17)

Given that I too should be hard put to find a name for this element, Informant 42's suitably vague (and unquestioning) response seems the safest:

Bueno, hay un hombre sentado con cerveza. Y aquí otro hombre que está apuntando al animal con fusil
Ok, there's a man sitting down with a beer. And here another man who's aiming at the animal with a rifle (Inf. 42; Cat. 30; Pic. 17)

Yet in response to Picture 21c's dog, he might be thought to be unsuitably vague:

Bueno el mapa del Perú con un animal.
Ok, the map of Peru with an animal. (Inf. 42; Cat. 30; Pic. 21c)

This is hardly a misidentification, of course. When a response is unsuitably specific, however, a clear line between the two is less readily drawn.

For example, Informant 10 labels Picture 7's units E and I "ovejas medinos"; that is, a particular, large and expensive breed of sheep:

Kaytaq ñoqanchiqhina runacha purishanku a trabajaspa chakrata. Wasinku. Kaytaq ovejas. Kaytaqmin, pues, medinos. Ovejas medinos.
These men, like us, are going to work the chakra. (These are) their houses. And these are sheep. And these are, well, medinos. Medino sheep. (Inf. 10; Cat. 17.5; Pic. 7)

All there is to see, meanwhile, is a sheep-like woolliness and some legs. Informant 22, along with many others, labels Picture 7's similarly indeterminate tree-like leafiness (units B and C) "eucaliptokuna" (eucalyptus trees):

Orqokuna. Eucalyptokuna. Ukyakuna. Puñukushan. Ukyá. Uranpata q'epirisqa tawnantin purikushan.
Hills. Eucalyptus trees. Sheep. He's sleeping. Sheep. Down below, the one with he bundle is going along with a stick. (Inf. 22; Cat. 2.5; Pic. 7)

Informant 47 – along with many others again, labels Picture 19's all-purpose fish "trucha" (trout).

Trucha, eh? Trucha kayqa kashan. Hap'ishanku. Chay makiwan truchata hap'ishanku.
Trout, eh? This is a trout. They're grasping (it). With that hand they're grasping at the trout. (Inf. 47; Cat. 0; Pic. 19)

Unwarranted specificity and unwarranted vagueness may co-occur in response to a single pictorial element. For example:

Kaytaqmin hoq cerro maypichus hoq comunidad tarikun hoq orqontin plantakunantin como eucalyptus, con sus animales ... sus ovejas.
And this is a hill where a community is to be found together with its hill, its plants like eucalyptus, with its animals ... its sheep. (Inf. 7; Cat. 27.5; Pic. 7);

that is, employing both "plant" and "eucalyptus" in preference to "tree". The extent to which the unjustifiably specific label qualifies as a misidentification is examined in chapter VI.

Further misidentifications emerge in response to pictures of inanimate objects. Picture 8's unit D, for instance, is described by Informant 29 first as a star, then as a clock (both descriptions also encompassing the other two clocks), before he finally plumps for "compass":

Si esto es ... son las estrellas o reloj. Este es la brújula de veinte y tres. Es una brújula de ... Es un hombre.
Yes, this is .. these are the stars or clocks. This is number twenty-three¹'s compass. It's a compass of ... It's a man. (Inf. 29; Cat. 17.5; Pic. 8)

Informant 3 seems similarly spoilt for choice over the identity Picture 11's unit I:

Luna, no? O mundo también? (Me: No sé) Luna será. Más o menos la luna.
Luna, eh? No sé. Mondo. [laughs] Huevecito.
The moon, isn't it? Or the world too? (Me: I don't know) It'll be the moon. The moon, eh? I don't know. The world. [laughs] It could be a little egg. (Inf. 3; Cat. 17.5; Pic. 11)

2.2 Misidentifications and valid alternatives

The further the "misidentification" angle is pursued, the more inappropriate the term becomes. Some of the above (and we shall investigate *which* in chapter V) may not be misidentifications; some not even "plausible discrepancies"; they may be *valid alternatives*. All that obscures their alternative validity, moreover, is simply the obviousness (to me) of my own interpretations.

Once we begin to attempt to transcend this obviousness, and to look for reasons underlying "misidentifications", up to a point, they are readily forthcoming.

¹ This picture was formerly numbered, and is still visibly numbered, "23".

Informant 50, for example, tags men as women and vice versa – a habit which might some years ago have earned him the projective psychologist's label "schizophrenic" (Bell 1948; see chapter II, §7). Picture 12's units A, B, and C (each a man), for example, are called "señorakuna" (ladies); and Picture 10's unit F (a woman) "caballero" (gent).

But how do we know Picture 12's unit A is a man? Because he has a beard. Along with this seemingly incontrovertible gender signal, however, is a second seemingly incontrovertible gender signal – which appears, nonetheless, to contradict the first. Unit A is wearing a typical New Testament era manly Judaeen robe¹. In other words, he is wearing a dress. If the dress is accorded more "significatory weight" than the beard (and it is certainly *bigger*), the alternative interpretation is unremarkable – likely, even. The same might be said of Picture 10's unit F. *I* may deem waists and busts more *interesting* than ties and suits. But I have yet to provide any reasons why they should be deemed more *valid* in terms of significatory weight (see chapters VI and VII).

What we do have is ample evidence that Informant 50 is at least slightly interested in ties and suits. Clothing, in fact, is the theme of many of his responses; for example:

Munay ñaqchasqa umankuna pollerankunapis zapatokunapis munaylla kashan

Her hair is nicely combed and her skirts and shoes are nice too (Pic. 1)

Kaypi hoq munay ninri ch'ulluyoy

Here's one with a hat with nice ear-flaps (Pic. 3)

Munay sumaq verde q'omer pantalonniyoy

He's got lovely green trousers on (Pic. 8)

More noteworthy alternative identifications are two responses to Picture 3's unit E (an aeroplane, I should say). For Informant 44 (Cat. 22.5) it is a condor; for Informant 47 (Cat. 0), a fish. Now unit E may indeed look more like a fish than a condor; but only "condor" is appropriate to the mountainside context.

Context may also have a part to play in Informant 46's response to Picture 7 (above). Rudimentary though it is, for example, I do not think that "waka" (cow) bears an acceptable correspondence with Picture 7's unit I. These are not simple misidentifications, however. Informant 46 is happy to offer "ovejakuna"

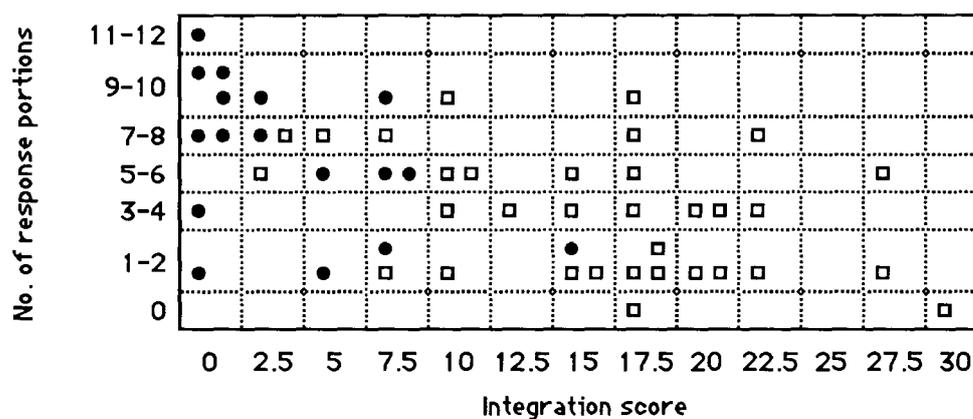
¹ In fact, it is no such thing; "since most Jewish looms were only three feet wide, [...] the seamless [garment] worn by Jesus was something of an exception" (*The Lion Handbook to the Bible* 1973: 90).

(sheep) for the tiny sheep (unit L) even though there is little to see but the odd squiggle and some impressionistic legs. Unit K (another sheep), meanwhile, is "khuchi" (pig).

Informant 46 is not alone in this seemingly cavalier approach to shape. Informant 2 (Cat. 15) also appears to use "cow" and "sheep" interchangeably; and Informant 10 (Cat. 17.5) labels the sheep at the bottom of the picture "ovejas" (sheep), and the bigger sheep on the horizon "ovejas medinos" (a large and expensive breed of sheep). Thus there may be reason to suppose that these informants are juggling with their labels as a way of dealing with the anomalous relative sizes of the animals. That is to say, they may be taking context into account to the point of ignoring the physical features of the animals concerned.

There are 211 instances in the data of labels which I had deemed "misidentifications", but which I have subsequently come to view as valid alternatives to my own interpretations.

Figure 1: "Misidentifications"/valid alternatives



3 Imagination and relations

The response portions considered above *named*, and *did no more than name*, pictured objects. But interpretation does not end with mere labels. Picture 13's unit A, for instance, is not just "a man"; he is "a man wearing trousers", "a man holding a stick above his head", "an angry man guarding a meat safe", "a man hitting a dog", etc.. These – "wearing trousers", "holding a stick above his head", "angry", and so on – tell us more about the man; they "characterize" him.

The types of response portion addressed in this section are all "characterizations". But they may be distinguished from one another according to the degree of imaginative input they seem to have required. The question we ask, and according to which responses are classified, is how much visual evidence, or "visual motivation", there is for any particular characterization.

"Wearing trousers", for instance, is assumed to be more or less self-evident in unit A's case. It is an elementary observation – an "elementary characterization". Since he is holding a stick above his head (and since there is a cowering dog within his reach), it seems reasonable to suppose that unit A is in none too good a mood. "Angry", then, is a reasonable inference – an "inferred characterization". Since there is no meat safe in the picture, however, "guarding a meat safe" seems neither an elementary observation nor a reasonable supposition. In fact, it seems a highly gratuitous assertion – an "asserted characterization".

We shall also consider responses in terms of how many pictorial elements they correspond to – one, or more than one. "Guarding a meat safe", for all its gratuitousness, nevertheless characterizes only the man, and in this respect is quite a "simple" response. "Hitting", meanwhile, corresponds to both the man *and* the dog in that it posits a relation between them. Responses which deal with each element separately are less complicated – or less "complex", than those which "relate" elements to one another.

It is these types of response: the purely descriptive ("elementary"), the reasonably supposed ("inferred"), the highly gratuitous ("asserted"), the "simple", and the "complex", which we shall examine below.

3.1 Treatment of results

To facilitate the comparison of informants' responses, and to keep our sights firmly fixed on the *relative* complexity and imaginative content of informants' responses, in this section we shall deal in *proportions*.

For example, Informant 31's response to Picture 7:

Eucalipto. Runa. Wasi. Oveja
Eucalyptus. Person. House. Sheep (Inf. 31; Pic. 7)

contains five labels and nothing else. 100% of this response consists of labels.

In Informant 27's response to Picture 17:

Auto. Runa fusilakushan asnota. Campana. Q'osni
 A car. A man's shooting the donkey. A bell. Smoke (Inf. 27; Cat. 10; Pic. 17)

there are also five labels (Auto, runa, asno, campana, and q'osni). But Informant 27 offers us additionally "fusilakushan", which is not a label. The percentages of labels and non-labels in this response (to the nearest whole number) are 83% and 17% respectively.

Informant 1's response to Picture 4, then:

Waka. Llamakunata pusashanku. Wasi chayqa. Rumimanta. Pastota mikhushan. Inti lloqsimushan
 A cow. They're leading llamas. That's a house ... out of stone. It's eating grass. The sun's coming out (Inf. 1; Cat. 15; Pic. 4)

may be segmented as follows:

1 <i>waka</i> label	2 <i>llamakunata</i> label	3 <i>pusashanku</i> non-label	4 <i>wasi</i> label	5 <i>chayqa</i> non-label
6 <i>rumimanta</i> non-label	7 <i>pastota</i> label	8 <i>mikhushan</i> non-label	9 <i>inti</i> non-label	10 <i>lloqsimushan</i> non-label

"Inti" ("the sun") is, perhaps (at this stage) counter-intuitively, deemed not only a *non-label*, but a *conventional non-label* (§4 below; and see chapter VIII, §3.3). As such, it is not considered further here, and its presence is not registered in any of the figures or graphs below. "Chayqa" ("that (is a)") is also ignored for present purposes, in acknowledgement of the relative obligatoriness in Spanish and Quechua, and hence the relative frequency, of such segments as this (see chapter VII, §2.1). There remain in Informant 1's response four labels and four non-labels; that is, 50% each.

But we may go further; specifying, for example, that of these eight remaining "portions", five portions (portions 1, 4, 6, 7 and 10) correspond to single elements in the picture (62.5% (scored as 63%)), and three portions (2, 3 and 8) to more than one element in the picture (37.5% (scored as 38%)). Of the non-labels considered (3, 6, 8 and 10), moreover, three portions (3, 8 and 10)

incorporate movement (75%), and one portion (6) incorporates no movement (25%).

It is this simple strategy which is used to compare responses below.

Notice that these figures are not necessarily an indication of *length*, in the sense of the quantity of paper required in transcription, say. Single response portions need not be *short*. The following, for example, are both single portions with much the same import:

Cuerponmanta hoq iskay kinsa tawa uno dos tres cuatro cinco seis sietilla umayoq ch'ullalla cuerpon

From its body there are one, two, three, four, one, two, three, four, five, six, seven heads and only one body (Inf. 49; Pic. 11)

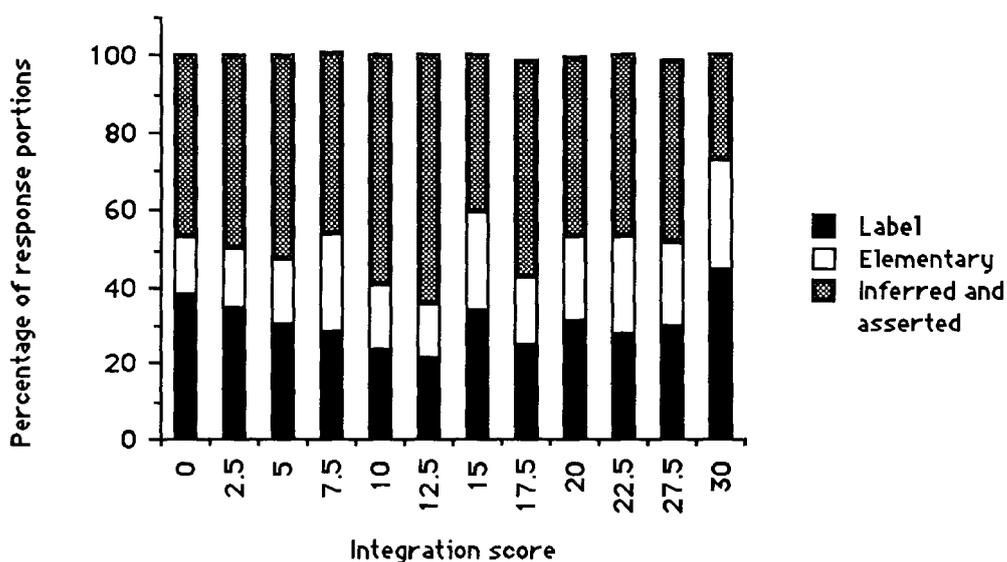
Tiene siete cabezas

It's got seven heads (Inf. 10; Pic. 11)

3.2 Imagination

Figure 2 shows the proportions of labels, elementary descriptive observations, and inferred and asserted characterizations, to give an outline of each integration category's relative degrees of imaginative input.

Figure 2: *Imaginative input*



Note that there is an initially fairly uniform decrease in the proportion of labels at the left hand side of the graph; coupled with (in most of those cases) a corresponding increase in the proportion of reasoned inferences and gratuitous

assertions. There is also perhaps the very vaguest hint of a V-shape to the label pattern as a whole. This impression probably hinges upon the low proportion of labels provided by integration category 12.5; and upon the particularly high proportion in category 30. Remembering, however, that there is only a single informant in each of these categories (Infs. 28 and 42, respectively), we should probably postpone further comment.

Elementary, or purely descriptive, characterizations are the least common type of characterization within each of the integration categories. They may correspond to one, or to more than one, element within a single picture.

The following underlined portions are elementary characterizations corresponding to a single element:

Pájaro sinchi hatun senqayoc
A bird with a very big beak (Inf. 23; Cat. 7.5; Pic. 24b)

Kay qhari huch'uy ñawiyoc
This man has little eyes (Inf. 49; Cat. 7.5; Pic. 3)

The following underlined portions are elementary characterizations corresponding to *more* than one element:

Munay wasikuna
Nice houses (Inf 19; Cat. 0; Pic. 2)

Runakuna lasuwan
People with lassos (Inf. 14; Cat. 0; Pic. 4)

Unos niños se encuentran por todos lados
Some children are found on all sides (Inf. 7; Cat. 27.5; Pic. 16)

Despues kay niñokunaqa kinsantin munayta tiyashanku sillapi
Next, these three children are sitting nicely on the seat (Inf. 50; Cat. 2.5; Pic. 6)

Of course, there is a certain amount of flexibility about the spatial boundaries of any "single" element. This elasticity is illustrated by the following four responses, each of which again incorporates an elementary characterization.

Aquí un señor con lentes
Here a man with spectacles (Inf. 25; Cat. 20; Pic. 10)

Kaytaq martillota hap'ishan
And this one is holding a hammer (Inf. 22; Cat. 2.5; Pic. 15)

Un amigo está con la cerveza
A chap with a beer (Inf. 28; Cat. 17.5; Pic. 17)

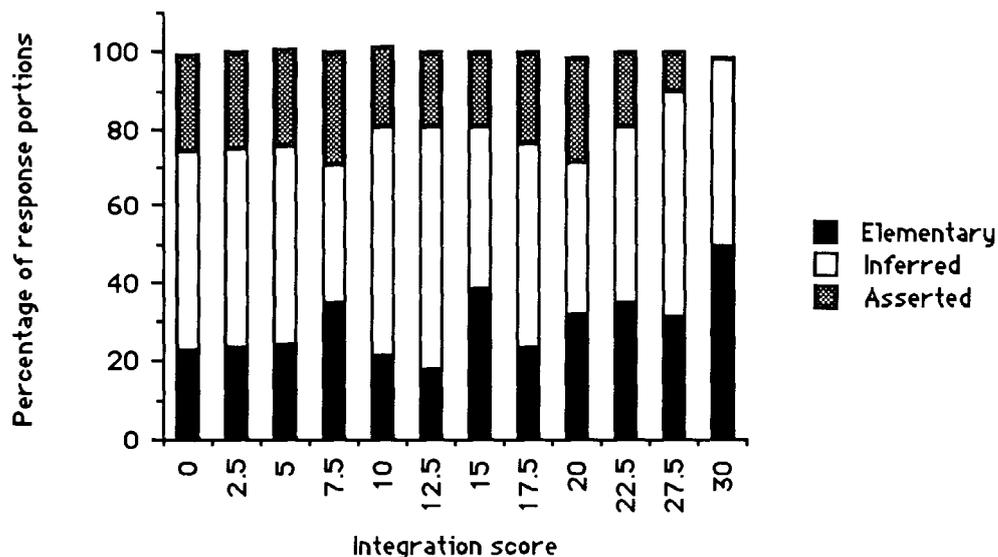
Kaytaq runa waqahina waqrayoq makiyoq chakiyoq
And this is a man with a horn, hand, and foot like a cow (Inf. 39; Cat. 17.5; Pic. 22b)

It is this elasticity, moreover, which leads us in chapter VI (§7) to the conclusion that spatial boundaries, if only arbitrarily assigned, must be made explicit.

The proportions of more imaginative responses, or inferred and asserted characterizations, in figure 2 above seem to vary considerably. Again, however, we should be aware of the degree to which integration categories 12.5 and 30 appear to contribute to that pattern.

A break down of the proportions of characterizations into its component categories: elementary, inferred, and asserted, provides us with the following:

Figure 3



The only particularly striking feature here is the sudden decrease in the proportions of assertions towards the far right of the graph. Inferred and asserted characterizations elicited by the pictures include the following:

a) inferred:

Kaytaq hombre cojo
And this man is a cripple (Inf. 12; Cat. 10; Pic. 12)

Kay warmi purishan

This woman is going along (Inf. 13; Cat. 20; Pic. 1)

Pikushan papata

She's hoeing potatoes (Inf. 23; Cat. 7.5; Pic. 2)

Son policía, no? Están arrestando a la chica

They're policemen. They're arresting the girl (Inf. 29; Cat. 17.5; Pic. 9)

b) asserted

Hoq campesino sinchita trabajarqon hinaspa samarishan

This campesino has been working very hard so he's resting (Inf. 45; Cat. 5; Pic. 7) (simple)

Aquí una chicita huérfana podíamos decir

Here's a little orphan girl, we might say (Inf. 3; Cat. 17.5; Pic. 10)

Astronautas, no?

Astronauts (Inf. 44; Cat. 22.5; Pic. 8)

Waleqllachu ninku cómo estás nispa how are you si si más o menos, no?

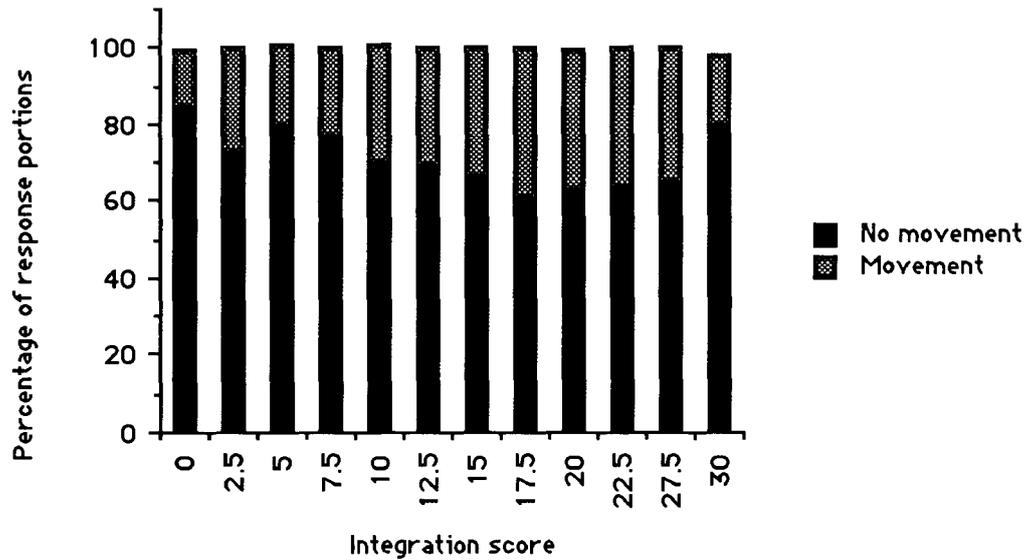
They're saying "How are you; how are you; yes yes" more or less, aren't they? (Inf. 3; Cat. 17.5; Pic. 8)

Son policía, no? Están arrestando a la chica

They're policemen. They're arresting the girl (Inf. 29; Cat. 17.5; Pic. 9)

Many inferences from clothing recur throughout the sample, most especially from Picture 9's unit F, in the form of "guardia" (policeman) (Inf. 17), "policía" (policeman) (Inf. 37 and Inf. 29 above), "soldado" (soldier) (Inf. 40), and the like. Further examples include Informant 50's cross-gender inferences mentioned above (§2.2).

Figure 4 gives us an idea of the degree to which informants incorporate movement into their responses, showing the relative proportions of movement-responses, and no-movement, or "static", response portions provided.

Figure 4: *Movement*

Accompanying an increase in integration score – yet with exceptions – there seems to be a slight increase in tendency to incorporate movement.

An interesting phenomenon is the frequency with which less integrated informants offer *static* characterizations when one might suppose movement to be an almost *inevitable* inference. For example:

Kaytaq escalerapi pukllayta munashan
And this one on the ladder wants to play (Inf. 46; Cat. 0; Pic. 6)

Alqota qhawashan
He's watching the dog (Inf. 37; Cat. 2.5; Pic 13)

Picture 6's unit B seems to me to be suspended in mid-air; while Picture 13's unit A, whose arm and foot are raised and whose body is inclined forward, has – I should say – very much the look of one who is not about to maintain that posture for long.

What is more, it is *also* the less integrated informants who offer movement characterizations when one might suppose a static characterization to be a *more* obvious inference.

Kaytaq tosushan
And this one is dancing (Inf 47; Cat. 0; Pic. 22c)

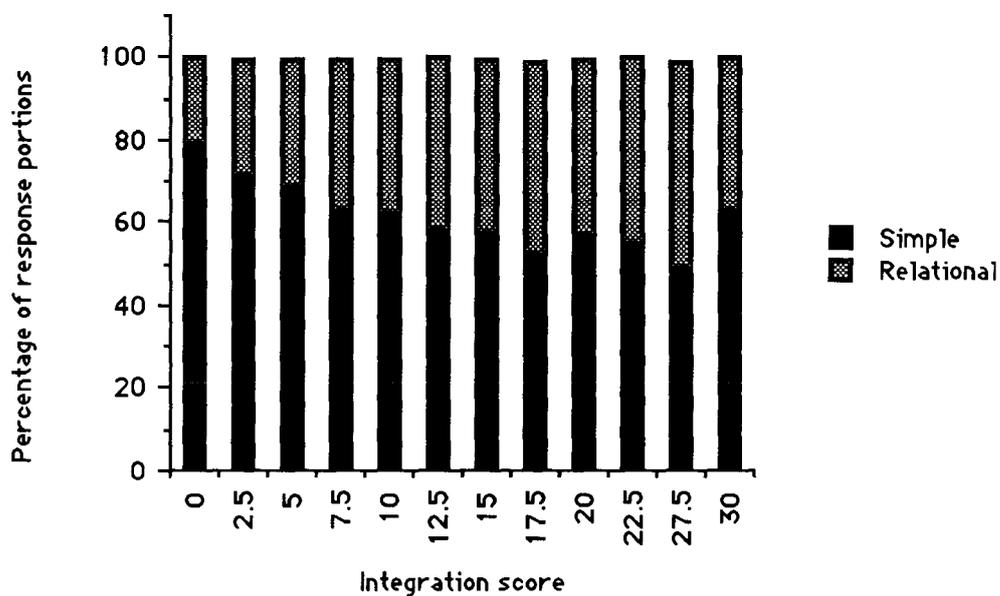
Paykuna purishanku hoq eskelitowan
These ones are going along with a skeleton (Inf. 23; Cat. 7.5; Pic. 16)

3.3 Relations

Response portions may deal with each pictorial element separately ("simple" portions), or they may "relate" elements to one another ("relational") portions.

Figure 5 shows the proportions of "simple" and "relational" portions offered by each integration category.

Figure 5: *Simple and relational responses*



The patterning here is a little more marked; that is, the degree to which informants relate distinct elements seems to increase with degree of integration; the only exception being again category 30; i.e. Informant 42.

For example, where less integrated informants offer:

Phuyu. Runa fusilashan. Fusilashan. Botellata marq'akushan. Kaytaq carro phawakushan. Kaytaq caballo

Cloud. The man is shooting. He's shooting. He's carrying a bottle. And this is a car speeding along. And this is a horse (Inf. 31; Cat. 0; Pic. 17)

Phuyu. Phuyu kay. Caballochu? Chivo? Chivo manachu? Yachanki qan? (No) Noqaqa niyman asno nispa. Punku. Kayqa tiyakushan runa. Kaytaq auto. Kaytaq fusilakushan

Cloud. That's cloud. Is that a horse? A goat? Is it a goat or isn't it? Do you know? (No) I'd say it was a donkey. Here's a door. This man's sitting down. And this is a car. And this one is shooting (Inf. 17; Cat. 2.5; Pic. 17)

(neither of which contains any relations); typical responses by more integrated informants to the same picture are:

Aquí está el señor. Creo que es el comandante en cuartel, no? Y una gente que estaba apuntando al cabrito. Tiene su autito y tiene su mesita
Here's the chief. I think it's the commander in the barracks, isn't it? And there's a person aiming at the goat. He's got his car and he's got his table (Inf. 25; Cat. 20; Pic. 17)

Kaytaq ukyashan vinota imatachá ukyashan. Kaytaqmin auton churarashan kaytaq - imataqchá? Wañuchishan kay caballotachu[s] - no sé - imatachá wañuchinra.
And this one's drinking wine or whatever it is he's drinking. And that's his car which he's parked. What on earth's that? He's killing this horse – is it? I don't know. Whatever it is, he's killing it (Inf. 16; Cat. 22.5; Pic. 17)

the first of which contains four relations; the second, three. There are exceptions within both groups, however; for example:

Auto. Runa fusilakushan asnota. Campana. Q'osni
A car. A man's shooting the donkey. A bell. Smoke (Inf. 27; Cat. 10; Pic. 17)

Por ejemplo es caballo. Aquí una campana. Aquí está un pensamiento. Aquí es un tirador. Aquí es un carro. Aquí es un señor
For example this is a horse. Here's a bell. Here's a thought. Here's a marksman. Here's a car. Here's a man (Inf. 44; Cat. 22.5; Pic. 17)

We might also distinguish, for example, the following:

Ya aquí también otro. Ya también un ... Ya un dibujo muy ... muy ... Es se llama una trucha. Una trucha ya. Aquí es ya ... Ya pan esto debe ser, no? Casi no comprendo eso más en este partecito, no?
Ok, here's another. It's also a ... Yes, a picture which is very ... This is called a trout. Yes, a trout. Here's a ... Yes, it must be bread, mustn't it? I really don't understand any more in this part (Inf. 26; Cat. 17.5; Pic. 19)

(which does not relate any element to any other element) not only from:

Kaytaq hoq alanri na alambre trucha hap'ikukusqa. Kay ima khulluchu? Kay t'anta. Chayta runa ruwan
A trout is caught in this wire. What are these round bits? This is bread. People make that (Inf. 39; Cat. 17.5; Pic. 19)

which contains one relation involving two elements; but also from:

Kaytaqmin hoq maki hoq challwata mallapi hap'ikushan
And this hand is catching the fish in a net (Inf. 43; Cat. 17.5; Pic. 19)

which again contains only one relation; but which relates *three* elements. A fairly readily (if again informally) observable tendency indeed is for more

integrated informants to relate *more* elements at one throw, than less integrated informants.

The relations we have considered here are explicitly stated relations. There is much to suggest, however, that *implicit* relations are just as important in assessing a response. As with Informant 46's potentially size-related identifications of Picture 7's sheep (above, §2.2), these potential contextual relations can only be guessed at.

For example, both:

Kayqa invalido runakuna. Purinku paykuna k'aspillawan. Seguramente chakin mana allinchi. Kaytaq mana ñawin kanchu. Chay avion hamushan. Doctorkuna hamushanku paykunapaq hampinankupaq

These are disabled people. These ones are walking with sticks. Probably their feet are poorly. And this one's got no eyes. That plane's coming. Doctors are coming to cure them (Inf. 20; Cat. 17.5; Pic. 3)

and:

Kaytaq hanaqpachata mañakushan parata. Kay orqokunamanta unu phawamushan
She's praying to heaven for rain. From these hills water is flowing. (Inf. 39; Cat. 17.5; Pic. 1)

despite the paucity of explicit relations, manifest a degree of overall coherence nevertheless.

The subtlety of such associations alert us to the possibility that seemingly gratuitous imaginative detail is, instead, an inference we (or rather, *I*) had not anticipated and had thus overlooked.

For example, Informant 44's gives us "astronauts" in response to Picture 8. There is nothing about units A, C and F to hint that they may be astronauts; no helmets, no flags, no breathing apparatus, no nothing. What there is, of course, is a barren, strangely-lit background which might well look like the moon.

To take another example; Informant 8, in his response to Picture 11, does not mention the devil. He does, however, mention God:

Kay wakinkunaqa tristememente llakikuspa. Kaypi kashanku mondota yuyarispa Diosta pensarispa Diosta mañakuspa. Diostaq mana rikurinchi

These others are distressed. Here they are remembering the world, thinking of God, praying to God. And God doesn't appear (Inf. 8; Cat. 27.5; Pic. 11)

(see also Informant 3's response to Picture 11 below)

In addition, when we reconsider, there are also probably hundreds of *inferred* characterizations which have only been classified as inferred (rather than asserted) because we too have made the same, wholly context-dependent, inference. For example, any informant who tells us that any of Picture 14's units A, D, G or K is a builder (Inf. 5), or a carpenter (Inf. 15), or an architect (Inf. 32) must, surely, have noted the elements' positions with regard to the house(s). And if implicit inferences from unexpressed houses are acceptable as inferences nonetheless, why not astronauts from moonscapes too? Once again this underlines the part expectations have played in the scoring of responses.

4 Conventional interpretations

We noted in chapter I that "successful" interpretation of some of the posters distributed around Amantaní seemed to rely upon the viewers' knowledge of certain conventional significations. Poster 2 (reproduced in Appendix C), for example, seems to require that the viewer recognize "peace" in the dove, and certainly "Christ" in the human figure. We also noted, however, that responses to the first tentative sets of pictures displayed did not bode well in this respect, since they did not appear to tap any anticipated reservoir of symbolic associations.

The pictures in Appendix A also abound with potential for interpretations of this type. There are clocks and scales, fishes and doves, crosses and condors; time, justice, death, etc. are all available to the viewer who knows the convention and who cares to look. *Recognizing* a conventional interpretation for what it is, of course, presupposes our *co-acquaintance* with that convention. So far as is feasible, therefore, we should verse ourselves in the repertoire of likely candidates, while resigning ourselves to the possibility that some will slip through the net.

Appendix A's pictures yielded in total 249 conventional interpretations in response to single pictorial elements. Of these 249, only "novel" instances will concern us further. The reason for this reduction is amply demonstrated, I hope, by Informant 16, who responds to Picture 11 with:

Diablo waqrayoq. El diablo con su waqra. Kay qanchis umayoq diablo kashan
The devil with his horns. The devil with his horns. This with seven heads is the devil (Inf. 16; Cat. 22.5; Pic. 11).

Although there are three instances of conventional signification, there is only one "novel" instance. The important point, however, is not simply that Informant 16 has come forth with "diablo" three times. It has, moreover, nothing to do with his Quechua-Spanish repetition. The three responses are scored as one because (a) they are in response to a *single element* in the picture; and (b) it is the *same* conventional signification. It is, if you like, a policy of "one-element : one-convention : one-score". Repetitions of this kind number 23, and are not included in any of the tables below.

There remain 226 instances of novel conventional signification in response to single pictorial elements.

Some informants are quite explicit in their acknowledgement of the convention:

Kay cruz representaq Jesús

This cross represents Jesus (Inf. 12; Cat. 10; Picture 15)

Hay un pájaro que representa la paz

There is a bird which represents peace (Inf. 42; Cat. 30; Pic. 18)

La cruz es un símbolo de la muerte y resurrección de Cristo vivo

The cross is a symbol of the death and resurrection of the Living Christ. (Inf. 8; Pic. 15)

Kaytaqmin Espiritu Santo significan

This signifies the Holy Spirit (Inf. 20; Cat. 17.5; Pic. 18)

Chayqa diablo. Chayqa representan diablo

That's the Devil. That represents the Devil (Inf. 17; Cat. 2.5; Pic. 11)

More often, however, they are not so explicit and it is up to us to find the convention.

4.1 Unconventional religions

The conventional symbolism elicited by the data is predominantly Christian. Over two fifths (97) of the total conventional significations are derived from Picture 12 alone, as "Christ", "God", "Lord Jesus", etc. Indeed the only informants who do not explicitly recognize that the bearded man may signal Christ are Informant 48, who concentrates instead on the cripple's bandage and the soldier's "skirt"; Informant 45, for whom units A, B, and C are "campesinokuna" (campesinos); and Informant 50, for whom they are "señorakuna" (ladies) (§2.2 above).

Of course, the high number of conventional responses Picture 12 gives rise to is not surprising when we consider that there are three Christ-like figures to play with; and that a reduction to novel instances is inapplicable in the case of the following:

Jesús. Jesuspis. Jesuspis
Jesus. Jesus too. Jesus too (Inf 36; Cat. 7.5; Pic. 12)

each "Jesus" corresponding to a separate figure.

The Holy Spirit is responsible for eleven of the responses in this section. Three of these may have been offered as a means of resolving Christ's apparent triplehood in Picture 12; and four are n-ary interpretations of Picture 18's unit D (a dove):

Kaytaqmin Espiritu Santo significan
 This signifies the Holy Spirit (Inf. 20; Cat. 17.5; Pic. 18)

The biblical allusion needs no explanation; and its graphic counterpart crops up in colonial and contemporary art all over Peru.

The Holy Spirit is also provided as an interpretation of Picture 24b's condor. The condor is of course a bird of great significance in Peru. It features in ancient art (Bushnell 1965; Sánchez Montañés 1986), in legend (*Huarochirí MS.* 1991; Ansión 1987), as a character in contemporary folk-dances (Portugal Catacora 1981), and in the flesh in ritual battles (Boyer 1976); as a "metaphor of Andeans" (Bastien 1978: 63), as a political emblem and symbol of Indian identity (Flores Galindo 1987), and on revivalist murals (see Photograph 8 in Appendix B).

For these informants, however, with one exception, the condor's *only* conventional signification is "Holy Spirit".

Espiritu Santo
The Holy Spirit (Inf.33; Cat. 0; Pic. 24b)

Es un ave. Me hace pensar el Espiritu Santo
 It's a bird. It makes me think of the Holy Spirit (Inf.6; Cat. 10; Pic. 24b)

Chay pájaro Espiritu Santo
 That bird is the Holy Spirit (Inf. 12; Cat. 10; Pic. 24b)

Now this might be explained in terms of a spontaneous, though minimally evocative, metaphor: condor → dove¹. But it need not be; an iconographic tradition originating in the Colonial period (Adorno 1981), and perpetuated in folk art today (*Takisunchis*: 114, for example), links the Holy Spirit with a bird possessing long talons, a hooked beak, and an eagle-like flight silhouette; a bird bearing a far greater resemblance to a condor than to a dove.

The remaining conventional response to Picture 24b is Informant 40's:

Ángel
An angel (Inf 40; Cat. 0; Pic. 24b)

Here we might appeal to one of Ansión's myths, which associates condors with angels (Ansión 1987: 130); but again the link may be more direct. An islander (not a member of the sample of informants) gave the following response to a picture of a very basic, duck-like bird:

Kay Espiritu Santo angelninchiq kay
This is the Holy Spirit our angel

In any event it seems likely that the association condor → angel is neither spontaneous nor idiosyncratic, but an association with a history. Likewise, and undoubtedly better documented, the association between reptilian animals and Satan. The few informants who recognized Picture 11's biblical allusion were Informants 15, 16, 17, 20, 35, 38, and 44).

For example:

El diablo es. Siete cabezas
It's the Devil. Seven heads (Inf 35; Cat. 15; Picture 11)

Chayqa diablo. Chayqa representan diablo
That's the Devil. That represents the Devil (Inf. 17; Cat. 2.5; Pic. 11)

Kayqa manamá allinchi. Kayqa dismayashan runakuna porque imaraykupaq Satanás kay mondopi runakunata pensachin mana allinta
This is terrible! These people are afraid because in this world Satan makes people think ill (Inf. 20; Cat. 17.5; Pic. 11)

The remaining "the Devil"'s came not in response to Picture 11's red seven-headed version, but to Picture 22b's green, horned alternative; for example:

Este es diablo
This is the Devil (Inf. 21; Cat. 10; Pic. 22b)

¹ That these informants should agree, of course, renders this explanation less plausible.

Satanás
Satan (Inf. 45; Cat. 5; Pic. 22b)

Bueno aquí al diablo lo satiriza. Satirizan aquí al diablo
 Ok, here the Devil is satirized. They're satirizing the Devil (Inf. 42; Cat. 30; Pic. 22b)

while for others the picture represents merely a dwarf with horns (Inf. 23); a sheep (Infs. 10 and 22); a cow (Inf. 4); a man with a horn hand and foot like a cow (Inf. 39), and the like.

4.2 *Non-religious conventions*

The conventional interpretations are not all Christian in origin. Among the others offered are:

to Picture 20a's flower: *Pensachiwan alegrata*
 It makes me think of happiness (Inf. 48; Cat. 7.5; Pic. 20a)

to Picture 16's skeleton: *Wañuyta muerte yuyachiwan*
 It makes me think of death (Inf. 4; Cat. 10; Pic. 16)

to Picture 20b's flies: *Alma*
Soul (Inf. 19; Cat. 0; Pic. 20b);
 (a Peruvian fly commonly, and most specifically on the Feast of All Saints, being believed the bearer of the souls of the departed (Hocquenghem 1987));

to Picture 17's clouds: *Aquí está un pensamiento*
 Here is a thought (Inf. 44; Cat. 22.5; Picture 17)

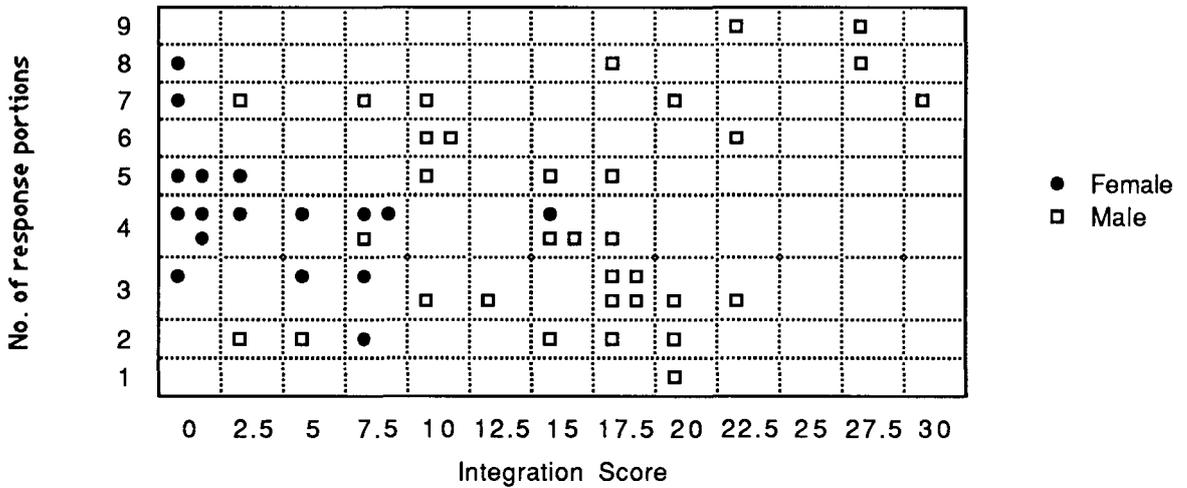
to Picture 8's clock: *Tiempo. Tiempo es oro*
Time. Time is money (Inf. 7; Cat. 27.5; Pic. 8)

and to Picture 4's face: *Inti lloqsimushan*
The sun is coming out (Inf. 1; Cat. 15; Pic. 4)

4.3 *Conventions and integration categories*

By members of *which* integration categories, then, are these responses provided? The answer is that they come from all categories. A correlation of the number of conventional significations with each informant's cumulative integration score gives us a rough idea of their distribution:

Figure 6 *Conventional signifieds*



No more revealing pattern emerges with any breakdown of the cumulative integration score into its component indicators. Neither is the scatter significantly altered by a removal of the scores for Picture 12 (the abundance of which might have tended to swamp those in response to other pictures), other than in that it reduces the totals of five informants (Infs. 9, 13, 18, 23, and 27) to 0; it brings thirteen individuals down to 1; and it leaves the maximum number of responses standing at 7 rather than 9.

Likewise, a correlation with Indicators (4) and (5), seems no more enlightening:

Figure 7 *Convention and pro-"Western" attitudes*

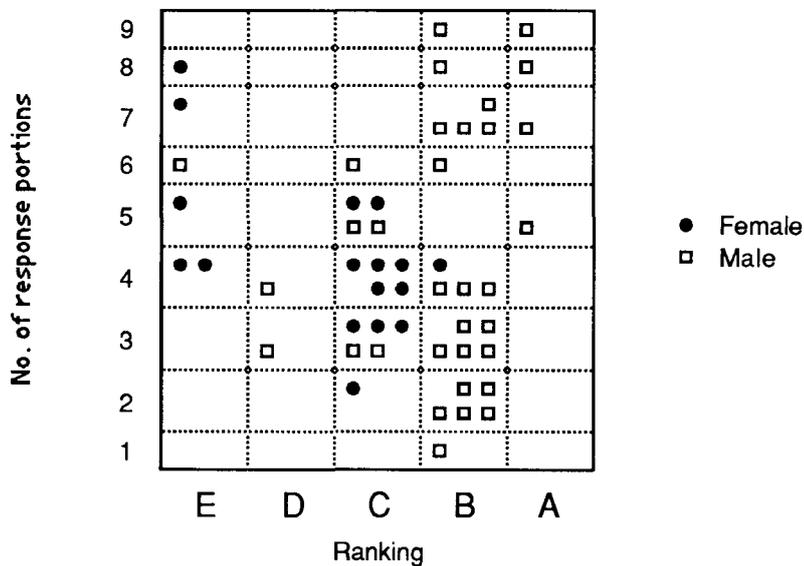
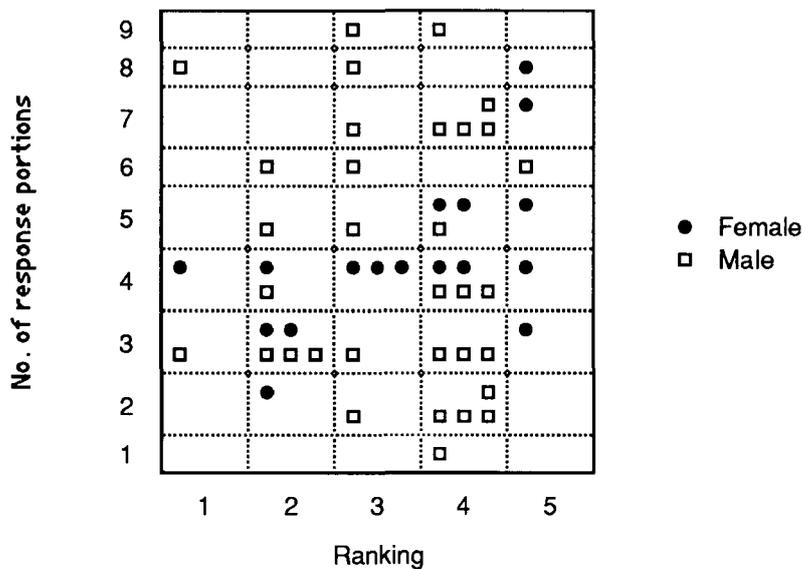


Figure 8 *Convention and pro-traditional attitudes*

No pattern emerges, moreover, with a correlation of these conventional responses with both sets of attitudes simultaneously. For instance, the most numerous category is *B4* (12 members); and the number of their responses still ranges from 1 to 9. On the basis of the above, then, it would seem that the degree of integration within Peruvian mainstream society has little predictive power with regard to the comparative frequency of conventional interpretations of pictures.

Of course, these pictures, for all that they may provide ample opportunity for conventional signification, may not provide the right *kind* of opportunity; perhaps they are not especially *Peruvian* opportunities; perhaps, moreover, the test situation does not favour symbolic digressions.

5 "Explanatory" responses

The final type of response we shall look at is Nadel's "explanatory" response (chapter II, §7.1); "the horse is an animal that lives with us people" (1937: 207), being the example provided. This is a kind of *generalization* (or "generic"; see chapter VIII, §8), in that the viewer, given a singular pictorial animal, sees fit to talk about any number of, in some respects, *equivalent* animals in the real world. Offered by only one of the two groups he studied, Nadel sees a potential correspondence between the tendency to offer such responses to pictures, and the logical cohesion of the viewer's religious system.

It is certainly a type of response which ought to be of particular interest to visual communicators, since it allows the picture to make *general statements*. Without generalization, a pictorial child with a pictorial disease, say, can have no bearing on everyday matters of health care and disease prevention, and remains informative only to the extent that any fictional one-off event is informative. If, however, the pictorial child *could*, in some sense, be "children in general" – perhaps including *my* child; and the pictorial disease *my* child's disease, then that picture acquires the beginnings of an "extra-pictorial" relevance (see chapter VIII).

Explanatory interpretations in response to single elements number 268 in total. These include both the relatively objective:

Kay Perunacionpiqa kay animalitokunan kawsan. "Perro", mana: "alqo" nisqa quechuamanta simimanta
 These little animals live here in Peru. It's/they're called "dog" - no - "alqo" in Quechua (Inf. 20; Cat. 17.5; Pic. 21a) (noting that this is in response to Picture 21a);

and the somewhat less objective:

El ratón cuando se entra a las casas se roba hasta las quesos hasta los, por ejemplo, hasta las frazadas. Todos se come y se malograba todo total hace este animal
 The mouse, when it comes into a house, steals things, even cheese, even, for example, even blankets. It eats everything and ruins everything completely, this animal does (Inf. 3; Cat. 17.5; Pic. 13)

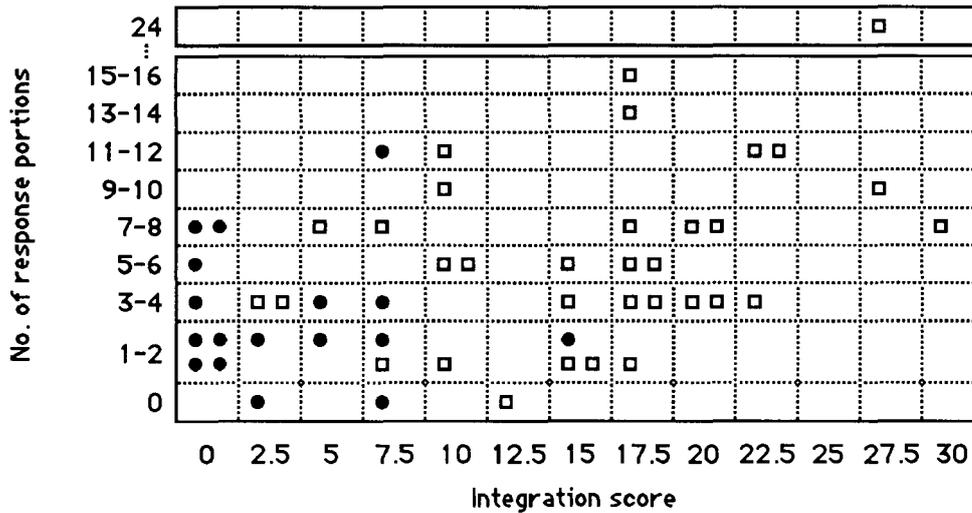
Cuando toman alcohol o es borracho es kay animalkuna sonqonmanqa waykun lokuyachin
 When you drink (one drinks) alcohol or when you're drunk, these animals enter your heart and make you start talking (Inf. 6; Cat. 10; Pic. 22c)

Of this total, 43 instances also involve a conventional signification. For example:

Cruz Roja significa. Quiere ayudar en todo Perú
 It means the Red Cross (conventional). They want to help in all of Peru (explanatory) (Inf. 44; Cat. 22.5; Pic. 6);

The distribution of explanatory responses is as follows:

Figure 9 *Explanatory responses*



What is interesting to note here is that the majority of explanatory responses provided by informants who feature towards the *right* of the matrix are offered in response to pictures containing only a *single* element (Picture 21a, for example); whereas those of informants on the left derive from single and multiple element pictures.

Their different strategies in this respect are to some extent brought out by Pictures 20a to 25c. Many informants provide explanatory responses to the first two parts of a picture trio; for instance:

Kaytaqmin hoq león, no? Kay león tarikun en la selva
This is a lion. The lion is found in the jungle (Inf. 7; Cat. 27.5; Pic. 24a)

Kaytaqmin ñoqaq pensaynipi hoq condor, no? Kaykunaqa orqopatapi kawsan
And this, to my mind, is a condor. They live in the mountains (Inf. 7; Cat. 27.5; Pic. 24b)

reverting, however, to a *non-explanatory* reading in the third:

Kaytaqmin kunitan rato león entre condor se encuentran en una pelea grande.
Cuál de los dos ganarán?
And now the lion and condor are joined in a great battle. Which of the two will win?
(Inf. 7; Cat. 27.5; Pic.24c)

This suggests that, where particular (rather than general) readings are readily available, it is the *less* integrated members of the sample who tend *still* to opt for the general interpretation; a tendency, moreover, to which their lower proportion of *relational* responses (figure 5 above) seems perhaps to correspond.

Exceptions include the previously quoted response to Picture 19 offered by Informant 39 (§3.3), which contains:

Kay t'anta. Chayta runa ruwan
This is bread. People make that (Inf. 39; Cat. 17.5; Pic. 19)

In its entirety (above), however, the response (along with that of Informant 26 preceding it above) gives the strong impression of someone struggling for something to say in the face of a rather abstruse picture.

6 Attitudes and Informant 42

The range of response types treated above by no means exhausts the types offered by informants.

Two items are notable for their absence from the above. The first is attitudinal integration, the amount of space devoted to which in chapter III might have heralded more than two simple matrices here. The second is Informant 42.

Informant 42 does not belong in this sample; he is just too different. He is a teacher, a native speaker of Spanish, and he is far better educated than any of the other members of the sample. And his picture responses are too different too.

On the basis of the few and slight trends formally and informally observed here, we might expect that, compared to the responses of any informant with an integration score of under 10, say, Informant 42's responses would contain:

- 1) a lower proportion of labels (figure 2);
- 2) a lower proportion of asserted characterizations (figure 3);
- 3) a higher proportion of responses which incorporate movement (figure 4);
- 4) a higher proportion of relations (figure 5);
- 5) a higher proportion of explanatory responses (figure 9);

since these appear to be some of the major ways in which the more integrated differ from the less integrated. Yet Informant 42 conforms to only one of our expectations: (2) he provides a lower proportion of asserted characterizations. This ought not to matter, of course; he is after all only one out of fifty. The hope, however, had been that his responses would provide some idea of what other informants' picture interpretations might be *working towards*.

Informant 42's responses are on the whole succinct;

Bueno es un paisaje costumbrista. Un paisaje
Ok, it's a traditional local landscape. A landscape (Pic. 7)

tending additionally to be either pronouncedly descriptive:

Bueno el mapa del Perú con un animal. Pero este mapa no tiene ningún nombre, ningún tipo de nombre de los demás repúblicas
Ok, the map of Peru with an animal. But this map hasn't a single name, not any sort of name for the rest of the republics (Pic. 21c)

Bueno aquí se pegó una sucesión de elementos que desde las guerras hasta los estos días
Ok, here someone's glued a series of elements from the time of the War to the present day (Pic. 10)

or to keep to well trodden metaphorical paths:

Bueno esto parece uno se enseña el correr del tiempo. Reloj
Ok, this seems to be one which teaches the passing of time (Pic. 8)

Bueno aquí es, parece indicar que tiene dos personalidades en una persona
Ok, this one seems to indicate that he has two personalities in one person (Pic. 22c)

Since his experience of Peruvian mainstream society is, in *real* terms, very different from that of Informants 7 and 8 (from whose integration scores (Cat. 27.5) Informant 42's score (Cat. 30) differs by only 2.5), we are of course in no position to judge whether Informant 42 is simply abnormal.

The informants' attitudes constitute the second notable omission in this chapter. In fact correlations of these indicators, whether with asserted characterizations, movement, relations, etc. yield *no single pattern* any more revealing than figures 7 and 8 above. This, of course, could mean one of a number of things. The most obvious explanation at this point (see below) is simply that there are too few data to be able to tell whether there is a match or not.

7 Summary: mismatching the data

It must be admitted that the results of this survey are hardly persuasive. We have encountered the very occasional trend-like tendency (figure 5's, for example), but little of note. Perhaps, after all, picture perception genuinely has nothing to do with level of education, mobility, and degree of proficiency in Spanish. This is perfectly possible. My strong impression, however, is that it

is not the case. There are many possible reasons for this failure, some of which are in themselves highly significant.

The deficiency for which I shall attempt to make amends in the coming chapters concerns the lack of any sound basis for deeming any two responses "equivalent" in any respect. The present chapter has been rife with unjustified assumptions concerning the status of entities discussed and their relationships to one another.

For example, since we did not come to any conclusions in chapter II as to the conventionality or otherwise of the picture, we do not know on what basis "conventional interpretations" are distinguished from any other kind of pictorial interpretation. Similarly, we have treated the generalizing "explanatory response" with some awe, while offering no reasons why it should be considered more remarkable than any more particular response. It was left to the readers' intuitions, moreover, to decide what constitutes a "pictorial element", without any kind of guarantee that the spatial boundaries of their elements would coincide with those of my own. Yet the classification of responses as either "simple" or "relational" has relied upon the assumption that these boundaries would indeed coincide. In short, lacking any kind of systematic approach either to the picture responses or to the pictures themselves, we have *no idea* of the status of the entities we are dealing with.

Other inadequacies relate to the second of the two variables matched; that is, to the integration categories and to the categorization of informants.

Let us assume that there *is* some interesting relationship between picture perception and integration within Peruvian mainstream society. Why was I unable to bring this to light?

Firstly, it may be that there is some more significant variable, or group of variables, at work which has not been examined. Two candidates have in fact been suggested (though both hidden in footnotes). First, we might have assessed degree of *bilingualism*, rather than proficiency in Spanish; thus taking into account any informant's bilingualism in Quechua and *Aymara* (and also Informant 42's lack of proficiency in Quechua). Secondly, we might have attempted to rank informants according to the activities pursued on any trip away from the island – rather than the fact of the trip itself. Clues as to why this might be relevant are provided by Hallpike (1979) in his examination of the

relationship between modes of classification and generalization, and the cognitive demands of the environment.

Another reason for the disappointing nature of the results presented here may be that the rankings were not assigned with sufficient care. This is quite likely. The education rankings, for example, might profitably have incorporated a recency factor similar to that used in scoring travel rankings. As things stand, it is possible that schooling actually *distorts* the data; by allowing the young a good 2.5 point headstart on everyone else – and without their necessarily having begun to explore the world outside. The Spanish rankings, moreover, might have been based upon the *frequency* of particular Spanish syntactic constructions, rather than on maximum syntactic complexity. My impression, however, is that either alternative would merely have shifted the source of the misrepresentation. Additionally, I ought perhaps to have matched *separately* responses given in Spanish and those given in Quechua. Studies of language choice and bilingual code-switching (Fishman 1972; Harvey 1991, for example) would predict differences in what anyone might *tend to say* in one language as opposed to another – quite apart from any question of its comparative "sayability" (Whorf 1972; Lenneberg 1972; Cole *et al.* 1971, etc.).

The obvious objection that I should not have added together scores for indicators (1) to (3) is *not* responsible for the failure. All types of picture response were also (and initially) correlated with each indicator separately (see chapter III, §6). No revealing patterns emerged; and it is for this reason that they were not presented in this form.

As regards the influence of attitudes, another strong impression I have is that they *are* relevant – *despite* the staggeringly unilluminating correlations of attitudinal indicators with picture responses.

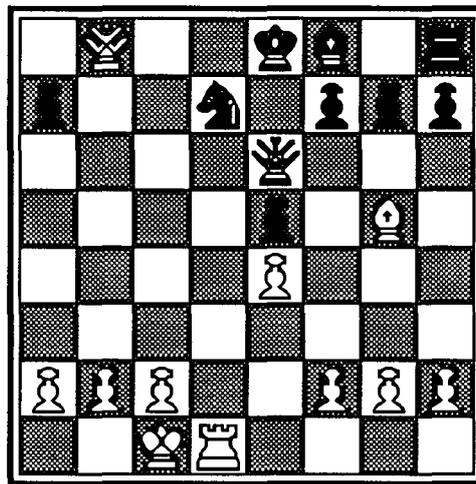
I argued strongly against adding pro-"Western" totals to pro-traditional totals. Perhaps I should simply not have added any component to any other component at all. Certainly, the attitudinal indicators were very easily manipulated – as I realized when experimenting with various alternative scoring methods before settling on what I term to myself "double positive" (in that all points are for liking; none for disliking). Indeed, I might have investigated the influence of coca chewing alone, say, on the degree of imaginative input. To have done this however, would only have accorded even more weight to responses which were, after all, just "yes/no" answers made *on the spur of the moment*.

8 A new focus for responses

The spur of the moment. This brings us, belatedly, to a crucial point which relates not only to the attitudinal indicators, but which has implications for the assessment of picture responses too.

For what *does* one say in the face of questions like "What's this?", or "What's happening here, then?", or – worse still – "What does it *mean*?"?

Figure 10



If someone were to find me poring over figure 10 in the Sunday paper, asking any of the above questions, my answer might be:

"It's a game for grown-ups";

"It's a chessboard";

"It's the chess";

"The white queen has the black king in check but if the black knight takes her, it exposes the king to check mate from the white rook";

"It's that famous 1858 Morphy/Allies set-up".

There are few situations under which I could see myself answering "White stands at K on QB1; R on Q1; QRP on QR2; QKtP on QKt2, etc.", or commenting on the asymmetry of the black pawns – certainly not without a good deal of provocation, for a complete verbal rendering of all that I see, even assuming its feasibility and my motivation, would be a lengthy business.

What I *choose* to say will certainly depend upon what I see, what I recognize and what I understand of figure 10. But it will undoubtedly depend *more* on

who is asking me. How is their eyesight? What do *they* see, recognize and understand of figure 10. *What* do they want to know? *Why* are they asking me? Why are they asking *me*?

If the enquirer is a young relative, I will have a fair idea of how much is required. If the enquirer is a blind chess player, I will modify my response accordingly. But if the enquirer is a strange and rather awkward white woman with a tape recorder, *who brought the picture with her*, I am at a loss. Anything and everything I am able to tell her will be filtered through a sieve of expectations, and will emerge more a product of the relation between me and her, than between me, the pigment on the page, and any integration into mainstream chess circles I may have had (cf. Sperber and Wilson 1982).

It is this interactive, context-specific, information which is missing from the analysis above; the lack of which, moreover, renders any meagre findings practically worthless.

8.1 *The communicative context re-viewed*

In fact the informants possessed more information than that contained in "strange and rather awkward white woman with a tape recorder" though that in itself is plenty to go on.

They knew that I was staying with Juan and Erminigelda. They'd seen me around. Some of them had given me vast meals, and others had smoked half my cigarettes. They knew, in the beginning, that I was asking questions in order to improve my Quechua – and this was at least half true at the time. Later – and especially if they were in church the day it was publicly announced, they knew that I was doing a study on the efficacy ("how well they work") of some of the posters which found their way to Amantaní. This again was at least half true.

Even so, it is difficult to imagine that this information would have entirely dispelled the feeling of being put on the spot; nor indeed put an end to any doubts as to the confidentiality and destination of the results.

Add to this the seeming pointlessness of the task, and one can readily see how responses may have been inhibited.

Or *not*, as the case may be. For some informants seemed positively to revel in it:

For example:

Ah, si si! Estos son los serpientes. Mira! Ahí! Estos son los serpientes. Esto ... esto es ... esto mundo, por ejemplo. Avión. Luna, no? O mundo también? (Me: No sé) Luna será. Más o menos la luna. Luna, eh? No sé. Mondo. [laughs] Huevecito. Ellos, por infierno. Infierno, no? Más o menos, pues, todo esto fuego así. Entonces ellos veían. Oyían, con ruido así. Entonces lo admiraban esos. Tenían pena. Se escuchaba más o menos ya. Querían qué hacen? Esto es ... Entonces él ha escuchado más o menos. Por ejemplo podía hacer un ruido. [makes a noise; then, like unit A, covers his ears] "Ah!! qué pasó?" Está en pena. Pero ellos ... también están en pena. Pero más o menos estos son los creyentes a favor de Dios. Estos más o menos casi no. Esto es feliz. Tranquillo, si, más o menos.

Ah yes! These are the serpents. Look! Goodness! These are the serpents. This ... this is ... this is the world, for example. An airplane. The moon, isn't it? Or the world too? (Me: I don't know) It'll be the moon. The moon, eh? I don't know. The world. [laughs] It could be a little egg. That's hell. It's hell, isn't it? More or less, I mean, what with all this fire. So those ones [units A, B and C] could see it. They could hear it, with noise like that. So they were surprised by it. They were distressed. They could hear it more or less. They wanted to know what they could do. This is ... So he's heard it more or less [unit A]. For example, I could make a noise [makes a noise; then, like unit A, covers his ears]. "Oh!! What's happened?" He's distressed. But *them* [units B and C]... they're distressed too. But these ones more or less [units K and L] are the believers in (the) favour of God. These ones [units A, B and C], not really, no. This one's quite happy [unit D]. He's unperturbed, more or less. (Inf. 3; Cat. 17.5; Pic. 11)

Informant 3 is Benerijto Pacompia, *ex-gobernador* of Incatiyana, and comparatively rich for an islander (he has shares in a passenger boat, he owns a windpump, and occasionally receives tourists as paying guests). I see I have written in my notes "nice old bloke", though in fact was only forty-seven. Though he was obviously used to being listened to, he did not seem so conscious of his own importance (nor of mine) that his responses are devoid of fun. Far from it (see (about one third of) his response to Picture 13 in §5 above).

Other informants were entirely at the mercy of their audience. Informant 34, Julián Quispe, is employed to run the *wawawasi* (formally, the Centro Materno Infantil), a pre-school playgroup attended by around twenty children three mornings a week (see Photograph 4 in Appendix B). The children sing songs, play games, practise marching, and generally get used to the idea of going to school. I had told him I would come at lunchtime, and I was early. The tape begins:

Julián: *Kaypi ñoqa kashani como wawawasi promotor de voluntaria de Incatiyana. Wawakuna ya ama ch'aqwankichiqchu! Ya, kaypi ñoqayku parlasaqku, ya. Qankuna parlaytachu munankichiq nichu munankichiq? Wilmacha? Noqa imata kani?*

I'm here as the voluntary leader of Incatiyana playschool. Look, children, don't shout! We're going to talk here, ok. Do you lot want to talk too? Or don't you want to? Wilma? What am I?

Children: *Julián.*
You're Julián.

- Julián: *Julián. Promotor?*
I'm Julián. Am I the leader?
- Children: *Promotor.*
You're the leader.
- Julián: *Yo soy Julián, promotor de Incatiana voluntario. Si. Bueno, kay señora hermananchiq Juan chaypi kashan. Hoq señora – Katalina, no? Disculpe, no? Señora Katalinawan parlasaq. Parlaripusaqku, no? Ya, si. Los wawitos también pueden grabar, no?*
I'm Julián, Incatiyana's voluntary leader. Yes. Right, this lady, our sister, she's staying at Juan's. This lady.. (To me:) It's "Katie", isn't it? Sorry.
- (To the children:) I'm going to talk to Miss Katie. We're going to talk, ok?
Yes.
- (To me:) The children can go on the tape too, can't they?

The picture responses which follow, accompanied by scuffles and giggles, are all of much the same form as this response to Picture 4:

- Julián: *Ama ch'aqwankichiqchu, ya.*
Stop shouting, alright?
- Child: *Waka.*
A cow.
- Julián: *Ima nashantaq kaypi? Kaypi trabajashanku kaypi. Trabajarqoshanku. Ama saruwankichiqchu!*
What's going on here, then? Here they're working. They're working very hard. Don't squash me!
- Child: *Yapushan.*
He's ploughing.
- Julián: *Yapushan. Imawanmin yapukun? Taqllawan yapukun.*
He's ploughing. What do you (does one) plough with? You plough (one ploughs) with a plough.
- Children: *Taqllawan!*
With a plough!
- Children: *Taqllawan!*
With a plough!
- Child: *Chilwe.*
Baby chicks.
- Julián: *Chilwe ya. Qaraykushanchu? Imatataq qaraykushan? Siwarata qaraykushan. Kay ima iskapasqa chayta hap'ishanchu manachu? Hap'ishan. Imamantataq hap'ishan? Kunkamantachu? Kunkamanta.*
Yes, baby chicks. Is she feeding them? What is she feeding them?
She's feeding them barley. This one that's escaped, is he catching it or not?
He's catching it. And how's he catching it? Is he catching it by the neck?
He's catching it by the neck.
- Children: *Kunkamanta!!*
By the neck!!
- ... and so on.

Clearly this response is not only generally geared to its (most obvious) audience of small children (in its abundance of "doing-words", its question-and-answer format, and perhaps its focus upon single small areas of the picture at a time), it is also determined by the elements individual children select and upon which Julián subsequently elaborates.

These are not, however, the responses on the basis of which Julián was allocated his scores. For the children eventually disappear for their lunch, leaving Julián and me to do the pictures "properly". Here is his first response, to a photograph of Philippine women making jewellery while in the background others scavenge a rubbish tip for food:

Chinos, no? Mercadopi tiyashanku kanastakunawan aretekunawan
They're Chinese, aren't they? They're sitting in a market with baskets and earrings

And here is his response to the reappearance of Picture 4:

Kaypitaq animalkuna – ovejakuna llamakuna alpacakuna wakakunataq ima. Chakrata ruwashanku runakuna
Here there are animals: sheep, llamas, alpacas, cows, all those. People are working the field (Inf. 34; Cat. 17.5; Pic. 4)

All of Julián's second batch of responses are shorter and more enumerative; there is less movement and less imaginative detail¹. There is also what might be seen as an immediate initial demonstration of some specialized knowledge (*Chinos, no?*) to mark his switch from ChildSpeak to (alien) grown-up talk.

The same demonstration of specialized knowledge is fairly frequent within Informant 43's responses.

Informant 43, Juan Cari Yucra, had just returned from a spell in a Lima fur workshop. He was interviewed as he sat catching up with some friends outside the *salon artesanal*. Although his picture interpretations are not so explicitly geared to his audience as those of Informant 34 above, I had the distinct feeling that he was trying to impress his friends and/or me with his fancy sunglasses, his huge bunch of keys, and the cosmopolitan nature of his responses.

He begins in Quechua with firm evidence that he knows what a television looks like:

Kay runakuna kay televisorta qhawashanku. Kay television kay hatun runa kaypiqa qhawachishan. Paykunataq punkunta hina televisionta waykuykuyta munanku
These people are watching this television. The big man here is making them watch the television. And they want to go through the television as through a door. (Inf. 43; Cat. 17.5; Supplementary Picture 3, reproduced in Appendix D)

switching to Spanish when we reach Picture 1:

¹ Of course the novelty will have worn off by this time.

Kaytaqmin hoq india warmi risakushan. Está rezando ... Debe ser en la puna.
Here an Indian woman is praying ... She's praying ... It must be in the puna ... (Inf. 43; Cat. 17.5; Pic. 1)

almost as though to dissociate himself from the "Indian" woman in the picture¹. Subsequent responses continue to manifest the same ever so slightly ostentatious modernity:

Este es batalla . Aquí ... debe ser terrorista. Aquí están conversando. Aquí el señor está con su enamorado. Aquí el señor está mirando este avión de cuetas (= cohete). Ya, muy bien.
This is a battle. Here ... this must be a terrorist. Here they're chatting. Here the man is with his . Here the man is watching this rocket plane. Ok, fine. (Inf. 43; Cat. 17.5; Pic. 11)

in which the helmeted man is not just a soldier but a terrorist; and the plane not just any old plane but a rocket plane. He later pursues the matter of three (photographic) characters' nationalities:

Aquí hay uno también de bonito. Ya aquí lindo. Ya también un ... Este debe ser ... debe ser un estudiante. Un estudiante debe ser esto también. Kay uno también. Ya mas o menos que ... De Japón me parece es esto, no? De Japón o de China? (Me: De China) Ya, de China. Este debe ser ya de otro país. También el otro debe ser. Los tres. Dos. De tres, no? De tres también que ... Aquí está volando ya un ... avion. Avion panamericana, no? Ya, muy bien.

Here's another nice one. Yes, it's lovely. Another ... This must be ... it must be a . This must be a too. This one too. Well, more or less ... This one looks as if he's from Japan, isn't he?. Is he from Japan or from China? (Me: From China) Yes, from China. This one must be from . And the other one must be too. The three. Two. All three of them are, aren't they? And all three ... Here there's an airplane flying. A Pan-American airplane, isn't it? Ok, fine. (Inf. 43; Cat. 17.5; Pic. 3)

with the same persistence I had remarked upon with regard to animal identification above (§2). It is not all bluff, however. To a (wordless) advertisement for a film version of a Tennessee Williams work, he responds:

Ya, estas niñas. Película, no? Películas.
Yes, these girls. It's a film, isn't it? Films. (Inf. 43; Cat. 17.5)

reacting, I can only suppose, to the typically cinematic composition and soft focus of the photograph.

¹ Only one other informant uses the word "indio" anywhere in response to any question or picture. This is Informant 22 (Cat. 2.5), responding to a shakily drawn picture of traditionally dressed people having a meal in the open: *Runakuna. Wawakuna. Niño indio* (People. Children. An Indian child).

It should be noted, finally, that each of these three informants (3, 34 and 43), whose responses differ markedly from one another, has been allocated the *same* cumulative intergration score (that is, 17.5). And though their attitudinal rankings differ (*D4*, *B3*, and *A2*, respectively), the attitudes most to the fore in the picture test context will not necessarily have had anything to do with coca, fiestas, etc.; but rather more to do with *me*.

CHAPTER V

Pictures and Representation

1 Introduction

The results of chapter IV's picture test were disappointing, and the reasons for that disappointment hinged most crucially upon an inattention to the test context itself.

But we noted, additionally, that we were hard put even adequately to *describe* the types of response informants provided, having no systematic basis for our categorizations of response types, and no clear idea of what we meant by "pictorial element". Neither had we any clear idea of *what* could be taken for granted as regards the picture's communicative capacity, and *what* was somehow "extra" to the picture's basic meaning.

In this chapter we begin the task of clarifying our terms; eventually to offer a theoretical framework for the assessment of verbalized responses to pictures. This is, in a sense, a step backwards. Should any practical application of this framework be envisaged, it should, of course, adopt a context sensitive approach to the responses it describes.

In §2 we offer a definition of pictorial representation, and discuss how pictorial representation may be distinguished from other types of indexical relation. Subsequent sections compare pictorial perception with non-pictorial perception, examining in more detail the notion of physical resemblance, in a continuation of chapter II's attempt to disentangle to what extent pictorial perception is a universal and biologically determined human ability, and to what extent it is culturally mediated.

The first and already belated task, however, is an explicit formulation of what we understand by "pictorial representation", and a tentative siting of the notion within a typology of message-bearing entities.

2 *Indication and pictorial representation*

Communication comes about through the conveying of information by a signal. The word "car" may convey to me a sense of "that red vehicle outside"; the approach of lights may tell me that my taxi has arrived; a certain configuration of colours on a tie may indicate that the wearer is a member of the Automobile Association. In each case it is the presence of a certain phenomenon, *x*, which allows me to infer a second phenomenon, *y*. To have any expectation that such an inference will be valid, there must be a correlation between *x* and *y*, where *x* indicates, or acts in a capacity of conveying, *y*. Phenomenon *x*, then, may be termed an "indicator", *y* an "indicated" and the relationship existing between them one of "indication" (see, for example, Saussure 1974; Prieto 1966; Mulder and Hervey 1980; Hervey 1982; Martinet 1980).

2.1 *In search of a definition of "picture"*

Here is a preliminary attempt to delimit the range of possible representational indicators and that of the indicated, along with a general pointer as to the relationship between the two:

"A picture is a *repraesentans* in its capacity of conveying, via the visual stimuli alone, a *repraesentatum*; where the *repraesentans* is an essentially two-dimensional, essentially continuous surface, and the *repraesentatum* is a real or hypothetical experiential correlate, which, if it were to exist, would be a visible object and which, if it exists, is a visible object."

This is really only the start. It establishes the medium and delimits, in a preliminary way, the domain of the representable. Some points need clarification:

"essentially two-dimensional"

such that the expression-substance does not reveal three-dimensional properties which are, in their turn, indexical of a represented content

Thus, while this qualification excludes from picturehood a table-top model of Buckingham Palace and Michaelangelo's "David", it admits not only the particularly knobby oil painting and the etching, but also "faces in the fire", "chariots in the clouds", etc.

"essentially continuous"

such that the expression-substance does not reveal discontinuities which are, in their turn, indexical of a represented content

This admits the jigsaw and the mosaic.

"real or hypothetical experiential correlate"

This admits pictures of mythical beasts, events which never happened; for example, a meeting between Confucius and Oliver Cromwell (see Harré 1970b; Hervey 1979).

"which if it were to exist, would be a visible object"

This is an awkward categorization to attempt, but I believe the idea is evoked easily enough through illustration. A unicorn, for instance, would be visible, an angel's voice audible and the smell of a demon's lunch olfactory. Note that these do not need to appeal to metaphor or synaesthesia as would, for example, "the smell of victory".

"which, if it exists, is a visible object"

This may seem unnecessarily restrictive and even counter-intuitive, since it excludes probably hundreds of great works of art (see, for example, Steinberg 1953). In fact, this condition, along with that preceding it, becomes a corollary of the requirement of a visual resemblance introduced below.

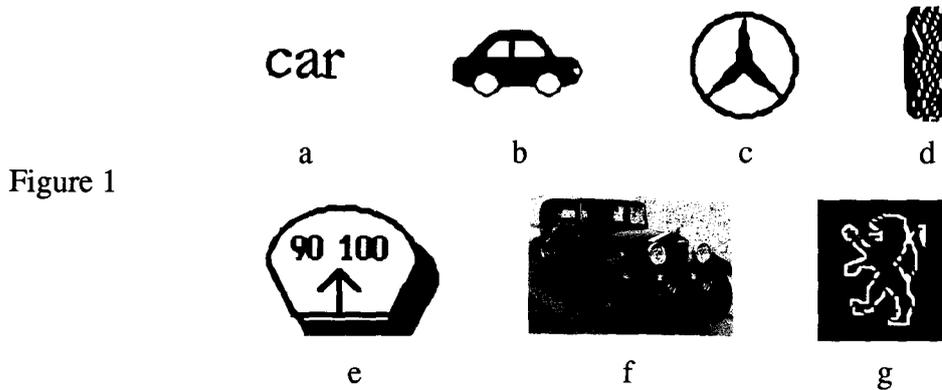
Imagine, meanwhile, two paintings each entitled "Fear". One represents a man screaming at the sight of a giant spider, and the other a collection of dark shapes. I should maintain that neither qualifies as a picture of "fear"; the first is a picture of a man screaming at the sight of a giant spider, and the second a collection of dark shapes. Fear may well be alluded to, symbolized, or even evoked, but it is not, and can never be, pictorially represented.

"via the visual stimuli alone"

This excludes the unlikely situation in which a tape recorder concealed behind a plain red canvas suddenly announces: "remember what a tomato looks like".

2.2 The relationship of representation

The definition above deals with the general nature of a picture in terms of its concrete being, but as yet only cursorily with the relationship between *repraesentans* and *repraesentatum*. As it stands, it permits as pictures of a car each of the following with equal validity:



Intuition tells us that only b and f are pictures of cars. But we need a definition that will account for, and perhaps amend, this intuitive stance; one that will distinguish pictorial representation from other types of indexical relationship.

2.2.1 Indexical relationships

There are basically two types of indexical relationship: those wholly mediated by natural/causal links, and those dependent, at least partially, upon conventions (Mulder and Hervey 1980; Hervey 1982, etc.).

Natural indices

Causal and co-occurrence links in the physical world give us reason to anticipate thunder after lightning, to diagnose measles from a particular rash, etc. Lightning and rashes may function as natural indices. No element of convention is needed to explain the connection between signal and information. "Cause may be inferred from effect, effect from cause, or one phenomenon from the other in a pair of co-occurrent phenomena," solely through a knowledge of natural relations (Mulder and Hervey 1980: 179). As soon as there is any evidence of convention the index may no longer be termed natural (Hervey 1982).

d  In figure 1d, there is a completely natural link between the tyre-track and the information "car (has passed this way)" (but see chapter VIII).



Likewise, the photograph has been "caused" by the response of photo-sensitive paper to light emitted and reflected by a car.

Conventional indices

Conventional indices are those which, for their correct interpretation, depend at least to some extent upon conventions, tacit or otherwise.

a car



Words are perhaps the most common wholly conventional indices. There is nothing natural about the relation between figure 1a and "that red vehicle out there", and no amount of knowledge of "how the world works" that would allow us to guess at the message "Mercedes" given signal c. Such correlations must be established by convention¹.

Motivated indices

Motivated indices are neither wholly conventional nor wholly natural. There exists in the relation between indicator and indicated an element of "naturalness" and also an element of conventionality.



Properties of the indicated entity have motivated the choice of indicator (a heraldic lion rampant may call up notions of strength, tradition, royalty, etc.), but, without knowledge of the convention, we should most probably guess that it represents a lion, not a car, let alone a Peugeot.



Figure 1b, on the other hand, certainly has elements of conventionality incorporated into it, but it is *understood* by virtue of the motivation: visual resemblance.

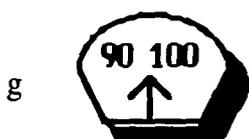
Classification of motivated indices may be made by distinguishing those which are understood by virtue of the motivation (while necessarily permitting a degree of conventionality) from those which are understood by virtue of conventions.

¹ The Mercedes symbol, possibly visually reminiscent of a steering wheel, should perhaps be classified as a motivated index understood by convention.

Where an index is understood by virtue of a resemblance of visual attributes between indicator and indicated the former category may be termed "iconic" (Peirce 1940; Martinet 1980, etc.).

Motivation does not always boil down to visual resemblance. Other types of motivation might include auditory resemblance (the "cuckoo" played by the clarinet in Beethoven's 6th Symphony, for instance); what might be termed "synaesthetic" association of attributes (for example, the advertisement's soft-feeling silk → soft-tasting cigarette); the association of attributes not available to the senses (e.g. strong lion → strong car, or scales → justice); what may be termed "habitual contextual association" (such as  → swimming pool), etc.

Visual resemblance, however, is not only more easily apprehended than any "metonymical" association (a chimpanzee can do it; chapter II, §2), but, as is apparent from the above, (where the indicator is visible) the apprehension of a visual resemblance must *precede* metaphorical association. It is not the habitual contextual association of "swimming pool" with the smudge of pigment which allows us to infer the presence of the former from that of the latter; the association is between "swimming pool" and the entity represented by , that is to say, a person diving.



The same is true of what might be termed "synecdochic" association (see chapter VIII), by which figure 1g may indicate a car, in that it is reminiscent of a *part* of a car. But, while the figure finds an easy correspondence with a fairly common self-contained experiential entity, unless a convention has been established by which, say, Speedo Cars is indicated, we will settle for "speedometer".

2.2.2 Pictorial indices

We have arrived at a classification of visual indices into four categories: wholly conventional indices (figure 1, a and c); wholly natural indices (d and f); indices motivated by a visual resemblance but understood by virtue of convention (e and g (indicating a type of car)); and, finally, indices motivated and understood by virtue of a visual resemblance (figure 1b).

Given that other conditions are met, it may still be a matter of choice as to which class of object is termed "picture". But if there is to be any real correspondence at all between our "picture" and the layperson's "picture", then that class must be the fourth of these. Were we instead to label "picture" the indices understood by virtue of convention, objections would not be difficult to raise. We should need to have learned by rote the convention linking each *repraesentans* to the appropriate *repraesentatum*, and we should not recognize any unfamiliar picture as being "of" anything. But we see pictures of new things all the time – the shape of an angler fish, or the fire damage sustained by York Minster. How may this be, if convention alone ties together picture and pictured? Moreover, some animals (chapter II, §2), and very young children raised with extremely limited exposure to pictures of any sort, can match outline pictures with objects (Hochberg and Brooks 1968).

We seem, however, to have satisfied intuition only to some extent, in that we have excluded photographs.

Photographs, in many ways, constitute a special case. We may accept that, whatever the artifice involved in the set-up, so long as the photograph itself has not been "touched up" or otherwise tampered with, the link between photograph and photographed object remains essentially causal. For this reason, photographs are often excluded from "iconhood" (see, for example, Hervey 1982: 201; Peirce 1940: 106).

The classification of indices above, however, is based upon the manner of construction of the link between picture and pictured, with the unstated assumption that this is paralleled in the understanding of that link. Nevertheless, there may be room for a distinction between construction and understanding, which will find picture and photograph in accord. This is aided by a consideration of the parts played by picturer and intention.

2.2.3 Pictorial intent

As it stands, the definition makes no claim for the necessary participation of a pictorially intent picturer, or, indeed, any other kind of picturer.

Suppose the definition to have included the line:

"... a *repraesentans* intended to convey ..."

This would imply not only a pictorial intent, but also, therefore, an intender. By this account, for all that they may be essentially two-dimensional and convey an awareness of chariots, unless we genuinely suppose God to have been busy with a paintbox, "cloud-pictures" would not qualify. Scratches on a rock caused by glacial deposits and taken to be neolithic man's first attempt at a pictorial bison may well be responded to as a picture but, again – without investing the glacier with a certain animation – the scratches would not constitute a picture.

As to pictorial intent in itself, the "beetle" which seems to appear on a fabric as a result of an accidental spillage of paint would not qualify as a picture; nor indeed the "face" formed by the application of turpentine to clean off the paint. Yet an observer may *understand* as a picture something never intended as such. The chances are that in an art gallery somewhere in the world there hangs a celebrated fabric "Beetle of Fate", or that the contents of an overturned shopping bag have collected a few pennies in recognition of laudable if unorthodox artistic endeavour. And if the beetroot jar spills its juice into a form which – like it or not – *does* bear an extraordinary resemblance to the late Duke of Sutherland, how, one might ask, may it not be a picture?

For this reason, the requirement of intention is omitted. So long as the appropriate relationship holds in the *understanding* of the link, this constitutes a picture – regardless of intention or picturer.

With this in mind, the status of the photograph may be reconsidered. It is probably true that the photograph carries with it a connotation of reality that even the most careful oil painting finds hard to match (Metz 1974; Arnheim 1958, etc.). It is certainly true that the bona fide photograph is a direct result of that which it presents. Nevertheless, I should maintain that this is not how photographs are understood. We do not reconstruct mentally the chain of physical processes involved in order to decipher the photograph – in the way we might investigate the cause of an unfamiliar rash. Photographs, familiar or not, are understood in the same way glacial bisons and beetroot dukes are understood: by virtue of an immediately appreciable visual resemblance (see chapter VII, §6.1).

2.3 *Summary*

Given the above, the definition of "picture" may be re-phrased:

"A picture is a repraesentans in its capacity of conveying, by virtue of a visual resemblance, a repraesentatum; where the repraesentans is an essentially two-dimensional, essentially continuous surface, and the repraesentatum is a real or hypothetical experiential correlate."

While it is tempting to take for granted the implications of the phrase "by virtue of a visual resemblance", it merits inquiry nonetheless.

3 *Seeing*

Firstly, however, we should undertake a brief investigation of the processes involved in ordinary perception.

The literature on this topic is both vast and varied. Neuropsychologists have approached the problem by investigating visual impairments following brain damage; psychophysical studies have sought to observe how different stimulus characteristics affect performance in perceptual tasks; neurophysiologists have examined the responses of single cells in the visual pathway to different images. Computer models of the human visual system have also contributed significantly to the study of visual cognition. The reader is referred to Humphreys and Bruce (1989) for an overview.

Our aim, meanwhile, is not to explain perception, but merely to provide an outline by which we may judge whether explanations for our ability to see and recognize objects and spatial arrangements in the real world translate well into a limited, two-dimensional medium.

3.1 *Light and retina*

Light emitted or reflected by surfaces in the environment is projected on to the retina of the human eye by the lens. Exposure to light brings about a photochemical reaction in the 125,000,000 or so light-sensitive cells of the retina. This reaction generates the neural impulses which carry the visual signal to the brain.

An "optic array", or structured bundle of light rays, converging upon a particular station point (which may, but need not be, an eye) contains information about the structure of the ambient environment – about relative contrast and intensity, but, most importantly, information about the direction of the light source. In a uniform medium like air, light leaving a surface maintains its direction.

Consequently, the direction of the light is identical with the direction of its source, and adjacent elements of an optic array come from adjacent directions. While the conditions of illumination and absolutes of intensity and colour may alter, the structure and relative composition of the optic array remain constant. This gives us some measure of confidence in the stability and predictability of visual information, but goes little of the way towards an explanation of our ability to see "things".

3.2 Perceptual organization and seeing things

What the retina experiences upon reception of an optic array is a pattern of energy – a mosaic of photochemical activity; but what we see is not merely a pattern but, say, a bowl of fruit. The brain must make sense of the retinal image. According to Gestalt psychologists it achieves this primarily using various "principles of organization" (Weintraub and Walker 1968). The most basic of these is "figure and ground", whereby objects are seen to stand out against a background (Rubin 1958). "Good configuration", or the Law of Prägnanz, predicts that observers will organize their perception of the environment as simply as possible. Spontaneous, natural combinations and segregations are perceived through the operation of, for example, "closure", "familiarity" and "good continuation" (Wertheimer 1958). The pitting of these principles against one another occasionally leads to alternation between groupings (the foundation for many optical illusions; for example, Rubin's figure ground vase faces (1958: 201), or Escher's woodcut "Sun and Moon").

The isolation of a stimulus grouping and an analysis of sensory features (angles, curves and colours, for instance) is not, however, sufficient to account for the identification of an entity. Any single object may project a myriad of different images on to the retina according to illumination, distance and angle of observation, and location with regard to other objects. Moreover, different objects may project like images. Were we to organize our world solely in terms of outward appearances, a constant identity for any object would be impossible to establish.

An "ironing out" of variations in stimulation is achieved by matching stimulus patterns with a collection of relatively simple visual stereotypes, or "visual percepts" (Arnheim 1970), also termed "stored representations" (Humphreys and Bruce 1989)¹. It is important to note, however, that such "representations" are *structural descriptions* (ibid.), rather than "internal pictures". Unlike the retina's indiscriminate registration of all observable detail, the brain is selective; only certain structural features are attended to, while others are *imposed*, in the search for an approximately corresponding template – a "categorical shape rather than a mechanically faithful recording of a particular stimulus" (Arnheim 1970: 81). Successful recognition of the object, however, still requires that the matched stimulus pattern be classified as a realization of a particular concept image. Only then may its registration on the retina amount to seeing, say, a ball *as* a ball, and not as some unspecified round shape. Where ambiguity results in the acceptability of several concept images, context (§5.4.4) will help determine the appropriateness of a particular interpretation.

3.3 *Depth perception*

Normal perception recognizes three dimensions. Depth, the third, is apprehended through interpretation of visual and muscular cues. Muscular cues include accommodation of the lens and convergence of the eyes. Of the visual cues the most obvious is the small angle subtended by distant objects, convergence of horizontal lines, and partial overlap, as well as binocular parallax (Leonardo da Vinci 1954). By interpreting that subtension, convergence, etc. as a result of depth, distance information can be extracted. Only some of these cues may be incorporated into a picture to give the illusion of a scene in depth (Weintraub and Walker 1968).

4 *A return to visual resemblance*

With some idea of the processes at work in normal everyday perception, we are now in a position to ask whether the problem of pictorial visual resemblance is a problem at all; whether picture perception simply exploits those same processes, or whether we need to look further.

¹ Although there are important differences between template models and stored representation models of object recognition (see Humphreys and Bruce 1989; Lindsay and Norman 1977), I do not believe such differences to be crucial to the account here.

4.1 Pictures and the same elements of light

The first option to be considered is that:

the elements of light projected by a representans are isomorphic with those projected by the representatum

According to this "point-projection theory" (Gibson 1954) a picture can represent a real object in so far as the light rays from the picture match the light rays from the original. So, given that points of colour and brightness are all that the eye can receive, "a picture that reconstitutes or represents the mosaic of color sensations from an external scene will arouse the same process of perception that the external scene would" (Gibson 1971: 29). The evidence comes from experiments said to demonstrate that it is possible for an observer, under specified conditions, to mistake a representation for the real thing (Gibson 1960), and vice versa (Hochberg 1964).

But what are the specified conditions? Even if the picture is highly naturalistic the giveaways are fairly obvious: if the observers move they will not experience movement parallax; they will not be able to see behind near objects; as they focus upon different parts of the scene they will not experience any straining of the eye muscles. So the observers' field of vision should be restricted to prevent head and eye movement, and the picture should be so carefully lit that muscular depth cues become unhelpful (Goodman 1976). In short, the conditions under which an illusion of reality (or an illusion of picturehood) may take place are so far removed from normal viewing conditions that such an experience in everyday life will be rare.

Further limitations are revealed when the picture concerned is a line drawing, or a painting of a unicorn, since, in the first case, there is no point-by-point correspondence of brightness or colour between the two optic arrays; and, in the second, because there is no second optic array for the first to correspond to (Kennedy 1974). A theory of pictorial perception which holds good only when it so closely approximates normal perception that the two are more or less indistinguishable is not explaining pictorial perception at all.

4.2 Pictures and optic information

In a deceptively naturalistic picture the elements of light presented to the observer may be isomorphic with those projected by the actual scene. In a less

naturalistic picture capable of fooling no-one, we may still, with Gibson, speak of a picture's *functional* fidelity: "the degree to which the variables to which the eye is sensitive are the same in one array as the other" (1960: 223). Thus allowances are made for the greater range of light intensities available in the environment compared even to a photographic slide; and also for the discrepancies in additional information available from the two sources (under a microscope, for instance). But we are still a long way from an explanation that will embrace the caricature.

For Eco, there are two kinds of optic information which we come to understand to be equivalent; that is, we view "as one and the same perceptual result what are in fact two different perceptual results" (1976: 193). So a conjunction of light and film (on a sparkling glass of frothing beer) may not provide the same perceptual structure as the conjunction of two or more different colours on a flat surface (a picture of a sparkling glass of frothing beer), but will provide equivalent optic information.

But any theory of representation based on the optics of our environment is bound to falter before the imaginary and the non-naturalistic. We need instead to look at instances where the repraesentans is not lifelike but is nonetheless perceived as an acceptable index for the repraesentatum.

4.3 *Pictures "look like" what they represent*

the repraesentans is like / is similar to / has something in common with the repraesentatum

The temptation is to see these as basically equivalent statements, but a closer look reveals that this is not necessarily the case.

4.3.1 *Shared properties*

Morris states that a sign is iconic "to the extent to which it itself has the properties of its denotata" (1946, quoted in Eco 1976: 192). An elephant has four legs, floppy ears and a trunk; find four legs, floppy ears and a trunk and there you have your icon. But according to this, a fully iconic sign would *be* its denotatum, and the most lifelike icon of an approaching shark the approaching shark itself (Eco 1976; Martinet 1973).

Peirce recognizes that a representation has "common qualities" with its object, and also that representation is always "in some respect or capacity" (1940: 99) rather than in all respects. While avoiding the absurdity of the extreme implied above, this still does not make explicit the fundamental requirement that an icon, or a picture, must refer to something outside of itself, and that no sharing of properties or qualities may ever amount to identity with the represented object.

Even with such a qualification, there remains the question of what properties the two sharks *do* share. One has a large three-dimensional body, rough grey skin, the capacity for movement, growth, reproduction and so on; the other might have a collection of pigment deposits and a smooth surface, or a small, three-dimensional, empty, plastic body, no capacity for movement, growth, etc. Require, moreover, that a picture be essentially two-dimensional and there remains specifically in common very little – and, at a pinch, everything has *something* in common with everything else; with the result that, in saying that pictures have qualities in common with represented objects, we have said virtually nothing at all.

4.3.2 *Similarity*

Claims that a repraesentans is "similar" to the repraesentatum should fare better since clear formulations of "similarity" do exist, in the notion of geometrical similitude, for example (Eco 1976).

Geometrical similitude is the property of two figures having corresponding angles equal, and all corresponding sides in the same ratio; that is, they are alike in all respects except in size (McLeod 1912). Eco suggests (1976: 195), that this is what Peirce means in maintaining that "a sign may be iconic, that is, may represent its object mainly by its similarity" (1940: 105). Perhaps this is also what is invoked by Langer when she claims that an outline picture shares "a certain *proportion of parts*" with its object (1957: 69). But plane figures cannot correspond to solid figures by similitude; the third dimension is always lost. Thus this is not a satisfactory account of the correspondence between picture and pictured.

5 *An alternative view*

Expressions of the relation between picture and pictured seem applicable only while they remain vague. A characterization of visual resemblance in terms of

"looking like" is unsatisfactory; "sharing properties" does not stand up to scrutiny; "similarity", if honed down, finds severe limitations in application. One source of the problem is in assuming another's term "icon" to be coextensive with the term "picture"¹. Another stumbling block may be in supposing that one simple rule will apply to all types of picture.

5.1 Three dimensions reduced to two

But we are also overlooking Gibson's elementary observation that what the retina receives is never intrinsically three-dimensional; vision deals in optic arrays (§4.1). Rather than compare picture with object, we should compare the light from each. This seems a rather trivial point, since how may we view the object other than at a certain angle and under certain conditions of illumination, etc.? Yet we are forgetting that some of the information contributing to an appreciation of an object's three-dimensionality is not retinal but muscular (§3.3); some is the result of a bifocal coordination of two optic arrays, and some that of a succession of optic arrays. The purely visual information obtainable from a picture is no different in type from that available from a three-dimensional object; its only abnormality is its relative purity. Moving, using both eyes, or focusing differently yields no additional information². Thus the translation of three dimensions to two is not something to which we must adapt in picture perception.

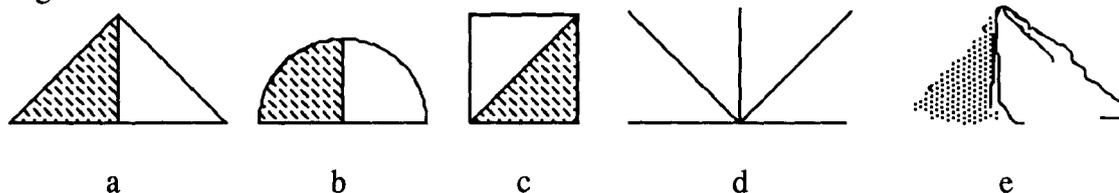
With the questionable validity, then, of non-visual aspects of one's viewing of an object, the explanations offered so far may merit reconsideration. That there be shared properties, for example, is much tighter as a condition once we know that these are restricted to the visual. Similitude too regains its relevance, since, for all that a pyramid may not strictly correspond to a triangle, retinally speaking, the pyramid was only a triangle in the first place. And once confined to the realm of the two-dimensional, other geometrical expressions of correspondence may also come into play; equality of area, for example (McLeod 1912).

¹ Peirce, for example, states: "it is a familiar fact that there are such representations as icons. Every picture (however conventional its method) is essentially a representation of that kind. So is every diagram, even though there be no sensuous resemblance between it and its object, but only an analogy between the relation of the parts of each" (1940: 105); and that "many diagrams resemble their objects not at all in looks; it is only in respect to the relations of their parts that their likeness consists" (1940: 107).

² That moving should yield no additional information is not strictly true of impressionistic painting.

Take figure 2a to be (already, for simplicity's sake) a picture of a pyramid, and suppose figures 2b to 2f to be tentative pictures of 2a itself. Figure 2a corresponds exactly to 2b to 2d, in terms of area (b and c), nodes (b), size of angles (c), and length and orientation of lines (d).

Figure 2



Of course an exact correspondence in terms of all measurables simultaneously would yield a figure indistinguishable from 2a itself. But we should still be left with 2e, which, regardless of omissions and extras, is surely acceptable as a graphic substitute for 2a, and which here, I should maintain, best succeeds in conveying the essentials of 2a.

5.2 *Reduction to essentials*

In other words, we are looking for essentials, or distinctive features, in pictorial objects in precisely the way we look for essentials in non-pictorial objects (§3.2). Pictorial objects may correspond to existing visual percepts and norm images as readily as do non-pictorial. All that is necessary here, as there, is to transcend the variations in stimulation. "Whether or not a particular figure, encountered in daily life or in a picture, is recognized and accepted as human [for example] depends on whether the beholder can see it as a derivative of his norm figure" (Arnheim 1970: 94).

Arnheim's "acceptable derivation from a norm figure" finds an echo of sorts in Gibson's "new theory of pictorial information" (1971), where he claims that "the optic array from a picture and the optic array from a world can provide the same information without providing the same stimulation. Hence, an artist can capture the *information* about something without replicating its *sensations*" (ibid.: 31).

Figure 3



Operating hierarchically, there may then be a level upon which the information available in a photographic transparency and that available in a landscape is equivalent; and a higher-order level upon which viewing a caricature (figure 3) is equivalent to viewing, say, Alfred Hitchcock (but see below).

5.3 Essential differences?

But Arnheim also states that "what is recognized in daily life is not necessarily accepted in pictorial representation also. Pictorial recognition takes its clues from the more limited set of declensions admissible in a particular style of representation rather than from the richer store of experiences available in the same observer for his coping with the physical world" (1970: 94-5).

There is certainly a case for the inadmissibility of something within a style. An outline picture, for example, must ignore all features of its object save the boundary which marks it off from the space outside, or cease to be an outline picture. It is still a perfectly feasible, if not ideal, choice of style within which to represent a landscape (figure 4b).

Figure 4



a



b

But my own view is that the "set of declensions" available in a picture is no more limited; any seeming discrepancy lies only in the relative likelihood of the spectacle in question, and in the relative availability of supplementary information. Figure 4b, for example, would give rise to comparable difficulties in interpretation whether encountered on paper or, albeit improbably, in daily perception. Likewise, while figure 5 provides few clues to its being intended

Figure 5



as a spider emerging from beneath a skirting-board, a similar array, viewed non-pictorially, is no more informative in itself. An encounter with the actual objects, however, may offer supplementary information through successive images, muscular cues, interaction with the object, etc., and through the explicitness of the context (§5.4.4). It is here that the difference lies. In fact the set of declensions available in a picture *in practice* is surely considerably the greater, since it is only on paper that we are ever really likely to meet with sights such as figures 3 and 5 above.

5.4 *Some constraints on acceptability*

A *repraesentans*, then, presents an "acceptable derivation from a norm figure" if an observer accepts it as such. Moreover, a *repraesentans* yields the "same information" as the optic array from an object if the observer feels inclined to extract the same information from it. Such conclusions are not very satisfying, with the basis of equivalence seeming more elusive and intuitive by the minute. It should be emphasized, however, that the information extracted is equivalent *optical* information¹ (Gibson 1971); and that "acceptability" is not an *intellectual* acceptability (see §6.2), but a *visual* acceptability, although some decision-making may be involved in the interpretation of competing organizations (see §5.4.4). If an observer fails to recognize a landscape in figure 4b, I may say, "Look, there's the top of the church", not, "Let this signify the top of a church"; not, that is, referring to, or establishing, a convention (§2.2.1), but merely alerting the viewer to one among a collection of visual possibilities.

What are, then, the essential features, or timeless invariants, of an object?

What, in other words, does the percept underlying acceptability "look like"²? It must be reasonably immune to changes in both size and orientation of stimulus object since the linear size of any retinal image varies with distance, and since

¹ For Gibson, optical information consists of "*invariants*", in the mathematical sense, of the structure of an optic array" (1971: 31). Eco's "equivalent optic information" (§4.2) appeals, as did Gibson's earlier version (1960), to a replication of sensations.

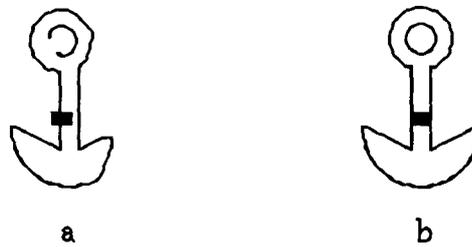
² It should be re-emphasized that a percept, though most easily imagined as an internal picture, is not a visible entity, and cannot be said to "look like" anything (§4.2).

we readily compensate for orientations of representants which do not conform to normal viewing angles. In fact, though we may not succeed in pinpointing a necessary minimum for acceptability, we can, in a number of ways, determine some of the constraints within which it must operate.

5.4.1 *Simplicity*

One means of approach is to provide pictures of objects only very briefly, and require that they be reproduced (Arnheim 1974). Since the original figure must have entered the consciousness via the percept, the reproduction may be assumed to err, if at all, in the direction of the percept, maintaining the essentials of the original. A figure such as 2e above may be reproduced as in 2a; figure 6a as in 6b; each showing, that is, a simplification of detail.

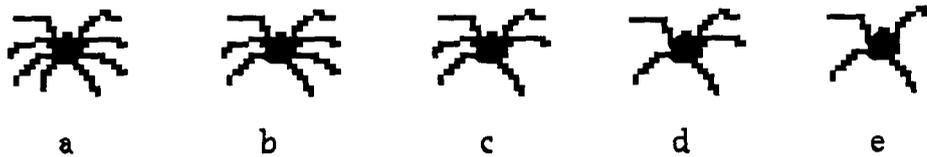
Figure 6



A further attempt at demonstrating the simplicity and resilience of the percept might investigate how the number of elements presented in an acceptable representant may be reduced and varied while still conveying the essential features of the representatum (Eco 1976).

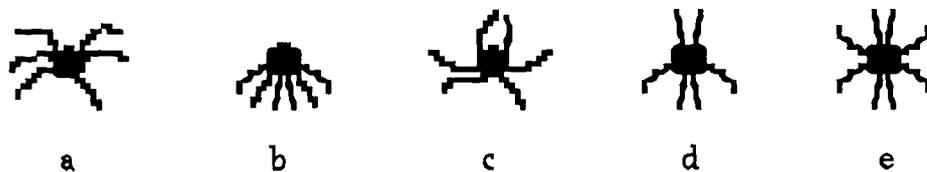
The spider, for example, has a relatively simple, relatively distinctive shape. A fairly naturalistic picture of a spider is not difficult to achieve, since we are not usually aware of a great deal of detail, or of a great variety of projections. What does a spider look like? Small and black with eight legs. Let us suppose initially that a spider-percept must also be small and black with eight legs, and that figure 7a is an acceptable spider representant. The flexibility of the percept may then be considered by observing how simple variations on figure 7a affect its acceptability.

Figure 7



I find even figure 7c an acceptable representation of a spider, although only six legs are represented; figure 7d seems less acceptable; 7e is unacceptable. Were only 7a and 7b acceptable, it might still be concluded that it is not necessary to reproduce all eight legs in order to trigger the spider percept.

Figure 8



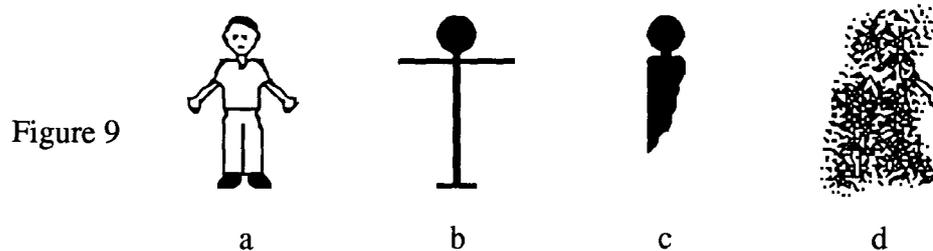
Yet the configuration of the parts (figure 8b seems to me more like an octopus; 8c a ballet-dancing frog (more six-legged percepts?); 8d and 8e alien beings) may also contribute to, or detract from, an apprehension of resemblance.

So, not surprisingly perhaps, the essential features seem not to be describable purely in terms of number of elements.

But the variations attempted are somewhat random, and do not, if we follow Hochberg's outlining of simplicity, necessarily constitute simplifications. Hochberg characterizes the simplicity of a figure in terms of the amount of information necessary to describe it (Hochberg and McAlister 1953, reported in Arnheim 1974). What the anchor figure hints at, and further experiments endorse (Alexander and Carey 1968, for example, reported in Arnheim 1974) is that simplification should entail an enhancement of symmetry, the repetition of similar elements, a tying off of loose ends, a smoothing out of curves, a conversion of oblique angles into right angles ... , in fact, all the reorganizations predicted by the Law of Prägnanz (§3.2). Thus some of the above spider-figures are not actually simplifications at all, since, although fewer elements are presented, the structure has been complicated. The vertical symmetry, for example, is lost in figure 7d, the horizontal symmetry in 8b and 8d, and in 8e we no longer observe the repetition of the angle subtended by the spider's legs.

5.4.2 Strength and ambiguity of percepts

How much simplification a figure can withstand depends upon the strength and potential ambiguity of the percept, both of which are, to a great extent, influenced by context (Wohlwill 1960, reported in Elkind 1969, and see §5.4.4). Figure 7e (above) is surely a simplification of figure 7a but now risks ambiguity, since the human percept may be more strongly suggested. In fact, the human form seems able to tolerate a great deal of simplification and general obfuscation (figure 9). Indeed, so strongly are we attuned to human-ness that it may not be an infrequent experience to glimpse from the corner of an



eye what is supposed human, only to find that some other object of only approximately the same proportions has evoked, momentarily, the human figure percept.

5.4.3 Wholeness

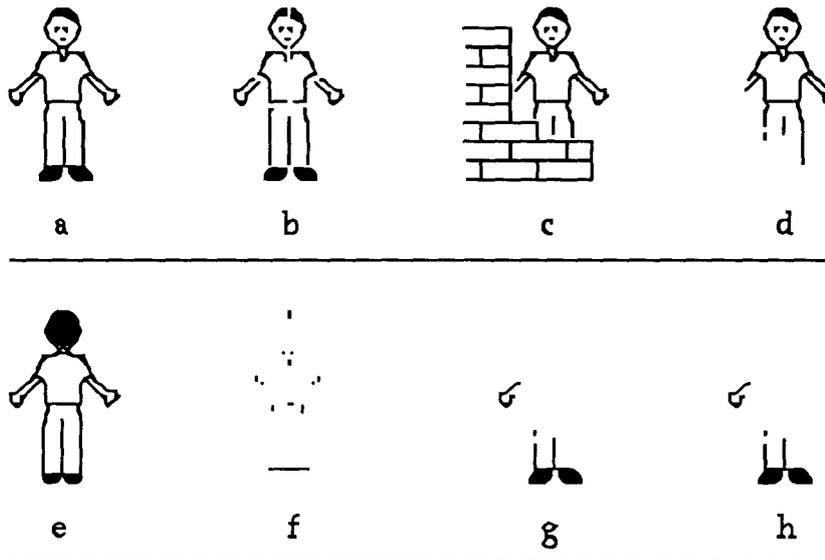
A figure's acceptability is also determined by its relative wholeness, as distinct from the degree of simplification achieved. Figure 9c, for example, remains humanesque despite its incompleteness. Likewise, figure 10d below offers a projection of only the top half of a man, and may not, strictly speaking, represent a whole man. The viewer is intended (and indeed *tends* (Green and Courtis 1969)), however, to go beyond the represented information; that is, to "interpolate" a remainder as appropriate. The petering out of the clearly delineated portion persuades us to take the man's lower half "as read". The incompleteness of figure 10c's man, on the other hand, is "explained" by the presence of an occluding object.

A preliminary distinction may be drawn between the information given¹ and any interpolated remainder. Taken together these constitute what we may term

¹ "The information given" is not intended here as synonymous with "the given", introduced in §7.3 below

provisionally an "interpolated whole". Figures 10b to 10d below may, together with their respective interpolated remainders (represented (redundantly) in figures 10f to 10h) constitute an interpolated whole, equivalent, in each case, to figure 10a, yet in differing ways.

Figure 10



1) The first might be termed "configurative completion": the seeming continuance of the intermediate graphic discontinuities presented in figure 10b (and in figure 10c, between man and wall).

2) The manner by which the man in figure 10c is rendered equivalent to figure 10a may be likened to normal non-representational perception. An object partially obscured from view by the overlapping of a second (opaque) object is understood nevertheless to continue behind the second object.

Correspondingly, represented objects are understood to continue behind represented coverings and even beyond the bounds of the frame, as through a window. The interpolated remainder may be said to stand in a (spatially) "paradigmatic" relationship with the obstruction; if there were no wall, the other half of the man would be visible¹.

Now consider figure 10e. A representans will usually represent only one aspect of a representatum. Again, there is nothing novel or exclusively representational in this; the projective nature of light and the location of human

¹ Such an interpretation depends of course upon the assumption that an occluded whole man is indeed intended.

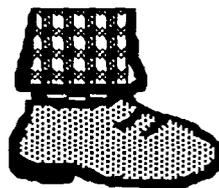
eyes generally prevent us from seeing the back of an object while simultaneously viewing the front. The relationship here between the given and the interpolated is also paradigmatic since presentation of one aspect precludes the presentation of another.

3) In figure 10d there is no represented obstruction to account for the absence of the remainder of the man's legs. "Fade-outs" of this type are common in the graphic arts, especially where illustrations standing alongside text have no frame by which to hypothesize a "window". We may term this type of relationship of given to interpolated "potentially co-visible", since interpolation of a remainder does not necessitate the forgoing of any represented part.

A distinction may be drawn between the potentially co-visible and the configurative interpolations. Whereas the latter may be performed on any non-representational figure, simply by observing the angles and proximities of lines already given, the former may be performed only with reference to an appropriate percept; a desire for symmetry may generate figure 10d's second hand, but only a potentially co-visible interpolation could give him feet.

There is undoubtedly a limit to the power of potentially co-visible completion. In a still from "Dracula Returns", given a ghastly hand protruding from a grave, we may well *infer* its attachment to a ghastly body; but where we meet with a reasonably self-contained visual, conceptual and nameable entity *en route* (see figure 1g above),

Figure 11



representation stops, and a type of "anatomical synecdoche" begins (chapter VIII, §5.1). Consequently, if figure 11 fails to trigger a human figure percept, it may be that the whole-part completion is obstructed by the triggering of a booted-foot percept.

5.4.4 Context

Context has, throughout, a bearing upon the acceptability of a representans. There are four general realms in which contextual information may operate:

Intra-pictorial (a)

The relative size, orientation, colour and schematization of representantes within one picture (§5.4.5) are interdependent. Elements conflicting with one another in terms of degree of realism, for example, result in the positing of a norm, or "verisimilitude level" (Riffaterre 1978), by which other elements are judged (Arnheim 1974). In figure 12 it is the simpler figure which seems out of place.

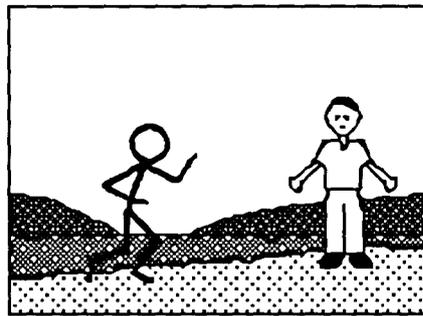


Figure 12

Intra-pictorial (b)

The identity of pictorial objects is, to some extent, determined by that of other representantes in the same picture, but also by the visual nature of the object itself; even in a naturalistic picture a loaf of bread may look suspiciously like a rock. There is potentially greater leeway here than there is in everyday perception (§5.3); if it looks a bit like a man eating a bag of gravel, perhaps it is just that. In figure 13, however, despite the strength of the human percept (figure 9e), the context is such that another



Figure 13

organization wins over. Realistic probability vies with strength of resemblance in the search for a meaningful interpretation (Gregory 1977, Arnheim 1974, Humphreys and Bruce 1989).

Extra-pictorial (a)

Verbal hints and gallery guide-book descriptions dispel much potential ambiguity in the interpretation of a repraesentans (Humphreys and Bruce 1989). Reproductions of an indeterminate figure, rendered on the understanding that a table (and not, say, a sand-glass) was intended, bear a far more compelling resemblance to a table than did the original (Arnheim 1974). Once our apperceptual faculties are pointed in a certain direction, we are, much of the time, happy to be led. Thus the content of other pictures recently viewed provides a short-term "list of possibles".

Extra-pictorial (b)

General knowledge and experience of the world is of a less immediately impressionable nature than the above. Suffice it to say here that the avid bird-watcher, for example, is more readily attuned to the white-backed-woodpecker-percept than is the train-spotter, and that the Freudian determined to see nakedness in everything is working with a particularly individual list of possibles.

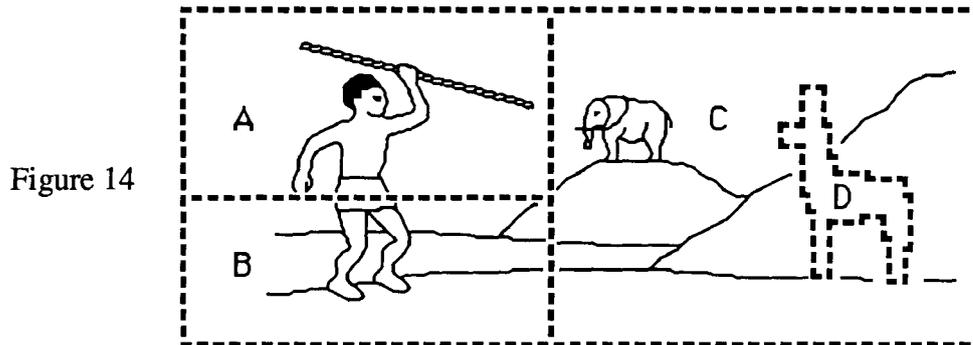
5.4.5 One picture : one pictured?

A notion not explicitly stated, and yet probably unchallenged throughout the above, is that a single picture may represent more than one object. This possibility need arise neither through an ambiguity (figure 9e, for instance, may represent a man or a puff of talcum), nor through an ontological requirement (chapter VI, §4); but merely through the juxtaposition or contiguity of smudges of pigment, each of which, as a repraesentans in its own right, may correspond to a distinct repraesentatum – whether that juxtaposition *represents* juxtaposition or contiguity, or refers to some non-spatial relationship (see §6.2). Part of figure 10c's man, for example, is occluded by a wall; in figure 1b we can pick out wheels, windows and a headlight.

In fact, that a picture may represent more than one object necessitates no explanation beyond that already offered for the representation of a single object.

Suppose I take a pair of scissors to chapter II'S figure 2, chopping it first from the surrounding text, and then into sections as in figure 14 below. Each of the sections A to D fulfils the criteria of picturehood above. If I continue to chop,

there will come a point at which the ambiguity is such that no particular percept is evoked, and no repraesentatum conveyed. Until this point arrives, however, any successively isolated portion of figure 14 may be understood to be a picture. Figure 14 in its entirety may be interpreted similarly, as the (rather peculiar) juxtaposition of four distinct pictures. Or it may be viewed as a single picture composed of distinct "constituent" pictures, the boundaries of which are more likely to be predictable



on the basis of the Laws of Prägnanz (§3.2, and see Kennedy 1974) in isolating (by percept rather than by scissors) a man, an elephant and an antelope (of sorts).

We shall speak, therefore, of "constituent" pictures (or of "constituent repraesentantes", or of elements "in" (a concession to normal usage) a picture); and of a "constituted" picture (or "constituted repraesentans"), where serious ambiguity would otherwise result. In chapter VI (§7), we shall see that a specification – to some extent arbitrary – of the spatial extension of each constituent is a methodological necessity.

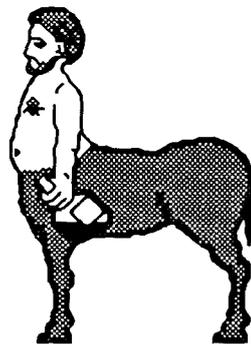
6 Summary

This, then, I maintain, is the basis of pictorial perception. To a great extent it is no different to everyday perception in that it provides information that is, at some level, equivalent to the information available in an actual scene. Rooted in an intuitive and immediate grasp of essential features, and a matching of features with percepts, the success of a picture in representing an object is measurable in terms of its acceptability to a particular observer, and this acceptability will depend upon the relative ambiguity, the observer's flexibility and experience as well as upon the immediate context.

6.1 *Unicorns and angels*

With this in mind, the depiction of dragons, angels, etc. need present nothing of the anomalousness with which it entered the discussion. "The experience obtained by a picture is *as if* one were confronted with a material layout of light-reflecting surfaces but *only as if*" (Gibson 1971: 33). Just as we may compare a mentally perceived (or remembered) image of the physical form of a car with figure 1b above, so may we compare a mentally perceived (or hypothesized) image of the physical form of a centaur with figure 15. The distinctive features of a hypothesized centaur may be derived from

Figure 15



verbal descriptions and from other pictures we have seen. Moreover, the visual components of mythical creature pictures are by no means wholly new to us. We have seen humans and we have seen wings; an angel resembles a human with wings. Alternatively, it may simply be a case of apprehending something we *have* seen before, but on a larger or smaller scale; a serpent is like a big lizard, and a Liliputian is a tiny person.

6.2 *Cross-cultural relativity*

Now that we have a clearer idea of the relationship between pictorial and non-pictorial perception, we are in a better position to assess the extent and significance of the cross-cultural and cross-species relativity first observed in chapter II.

Firstly, even if we accept that all pictorial perceptual processes are normal perceptual processes, success at pictorial object recognition on the part of pictorially deprived viewers is not necessarily to be anticipated. On the contrary, since pictures cannot exploit all components of everyday perception, a picture is *always* ambiguous – even one so basic as figure 1b. It is the lack of any

seriously competing organization which renders it so nearly unambiguous that even the (urban) chimpanzee might consider it a (picture of a) car (chapter II, §2).

Figure 16



But what should we make of the split-represented bird in figure 16 (chapter II's figure 1)? By our account, it may readily represent a two-headed bird; but, if the viewer will accept it as a derivate of a norm bird-figure (§5.2), it may also represent a normal-looking bird, thus licensing precisely the kind of "valid but idiosyncratic" interpretation we have sought to constrain.

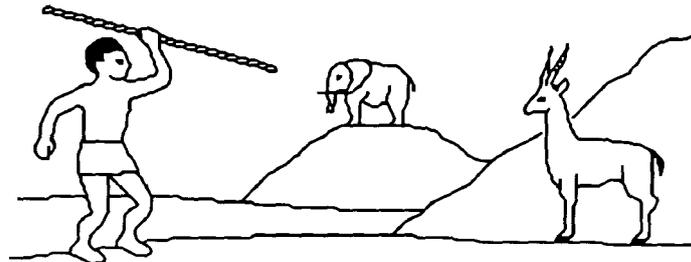
It is time to come clean: frankly, figure 16 does not resemble a normal bird; neither, I should venture, did it resemble a normal bird to the artist of the original upon which figure 16 is based. If the task was to draw the "seen" (and if the seen was a normal bird), figure 16 is not a success, and we might expect the challenged artist to concede not yet having acquired the knack of paring down the invariants of an object to a single projected form. Alternatively, if the task was to draw the (intellectually acceptable (§5.4)) "known", the same confrontation would elicit an indignant denial that the picture was ever intended to *represent* a bird, but, rather, to capture its essence, to *indicate it somehow*, unhampered by superficial restrictions such as visible spatial arrangement and simultaneous availability to the eye, "the importance of communicating ideas [outweighing] the artistic interest" (Boas 1955: 68). Either task, representational or "symbolic" (ibid.: 73), and however successful, requires a "distinct mental attitude" (ibid.: 80), much as the architect, the cartographer and the cartoonist deliberately and conveniently adopt distorted projections (see chapter VII's figure 6), in pursuit of some goal other than merely a reproduction of what would be seen at a given moment¹.

¹ Indeed, it is not insignificant that split-represented figures should often feature on flat but circular surfaces (see §2.1, "essentially two-dimensional"), such as pots and bracelets. It might

The line between the two approaches, which in principle may be clear enough to the artist, is less obvious to the open-minded viewer, since "in most cases symbolic representations are at least in part perspective, either in so far as the general form is maintained, or as parts are shown in perspective form; while perspective elements may contain symbolic elements" (ibid.: 78). When non-Western artists draw a moustache upon a figure's forehead to depict a male Westerner (ibid.), the "symbolicity" may be reasonably unambiguously inferred. In other cases, the viewer may remark only a slight distortion, as in the seemingly twisted feet, or "canonical" eye of Ancient Egyptian figures (Arnheim 1974). Sometimes, however, that the artist has adopted the symbolic approach may not be initially obvious at all. Male genital organs, for instance, drawn on certain human figures by South American Indians should be interpreted as an "emblem of manhood" (Adam 1949: 66), and as far from representation in intent as the symbol "♂" on a bird-identification chart.

As regards pictorial depth perception, there are two points to be made. The first relates to ambiguity even within the perspective tradition, and the second, as above, to the ambiguity of approach.

Figure 17



To the observer who adheres rigidly to perspective cues, figure 17 (chapter II's figure 2), may nevertheless correspond as plausibly to a scene featuring a distant and averagely gigantic elephant, as to one in which a miniature elephant perches only inches from the hunter's lance, the interpreted correspondence promoted or hindered not by exposure to a tradition of perspective drawing but by a "reality-oriented" attitude to pictures. Such an attitude would predispose the viewer to

well be deemed misleading to reproduce the figures on paper, and to assess their lifelikeness, without some attempt to "de-distort" them, or at least to make explicit their provenance.

opt for the normal-sized elephant at a correspondingly normal distance; but this is only one of infinitely many valid interpretations.

Now suppose that in describing figure 17 one of Hudson's informants reports that the pictured man is an elephant-hunter (1960; see chapter II, §5). Hudson would claim that this informant has not responded to the perspective cues provided by (realistic) relative size and by the sketched hillside. Explicitly, at any rate, this is true enough. But the informant may not have approached the picture with perspective in mind. Within a non-representational approach, the figure may be held not to depict part of an event, as witnessed; but, through the juxtaposition alone of hunter and (choice of) hunted, and rather in the manner of the cartoonist's "think-bubbles", or of cinematic montage (Eisenstein 1949), to refer to some non-spatial association of the two (chapter VIII, §7).

6.3 The represented and the given

In the coming chapters, it is such non-spatial associations, and "symbolic" interpretations which I hope to some extent to be able identify in verbal responses to pictures. We shall reject figure 17, therefore, as an acceptable (one-headed-) bird-picture, preferring an interpretation of visual resemblance which confines representation to a single projection, abridged as necessary, plus or minus the odd twisted foot and a metre or two in (represented) spatial terms. It must be said that, as Boas put it, "this method is more realistic than the other only if we claim that the essence of realism is the reproduction of a single momentary visual image" (1955: 72). In fact, for our purposes, concerned as we are with interpretation, as opposed to either artistic skill or intention, it is indeed convenient to claim some such thing; since, armed with a fairly narrow view of representation, we are at least somewhat better prepared to recognize deviations from it.

Our assumption, then, is that the symbolic approach to pictures will manifest itself in interpretation too. Of course, deviations from the represented will often go unobserved; the discrepancy may be neither sufficient, nor sufficiently explicit, to be remarkable. Deviations may also be misconstrued as such; an interpretation of perspective cues which seems awry to the point of being "a-spatial" may be nothing of the sort; achieved, instead, either through the contrivance of a tortuous spatial scenario (as in Ames' "Distorted Room" (Gregory 1977)), or by proposing a highly unrealistic, but nonetheless represented, content. Such caveats notwithstanding, it is hoped that, through

the verbalized identification and interrelation of pictured objects, tendencies to deviate from the represented information may be brought to light.

In an effort to minimize, or at least to contain, this inevitable insecurity, however, I have opted not to attempt to distinguish at one throw the symbolic interpretation from the entire range of representational interpretations – tortuous and unrealistic inclusive; but artificially and by *fiat* to demarcate within that range a narrow area, the boundaries of which are at least reasonably clear. This area, corresponding to a *single representational reading* from among the infinite valid representational alternatives, and termed "*the given*", will constitute a standard against which alternative readings will initially be matched.

Without some such strategy any decision as to the symbolic component of a response will rarely be without qualification in terms of the caveats above, leaving our interest centred upon an area which, while the most crucial, is also the fuzziest. Of course, this strategy merely postpones confrontation with the fuzzy area. The given does, however, provide a means of sifting out other interesting and reasonably distinct approaches within representation itself (the "two-dimensional" approach, for example) which, in the absence of any such standard, would simply be swallowed up as valid representational options. Additionally, the given affords a far greater degree of explicitness than would otherwise be available, and avoids our having to deal at every turn with the possibility of representationally valid miniature elephants, deformed people, and wire outlines suspended in space.

CHAPTER VI

Specificity

1 Introduction

In the previous chapter we examined the basis of pictorial perception, arguing for an interpretation of visual resemblance which confines representation to something closely approximating a single projection; arguing, that is, that pictorial perception differs little from everyday perception other than in the relatively minor contribution of muscular information, in the *consequent* ambiguity, and in the wider range of objects picturable. Where such ambiguity is minimal, recognition of pictured objects is achieved easily by both the untutored child and the adult brought up with little exposure to pictures.

This is not to say that responses to a picture do not tend to differ. On the contrary, they differ markedly; varying not only cross-culturally, but between any two individuals, and even between successive viewings by a single individual. A print bought on the strength of its pleasing colours may, over the years, acquire a highly elaborate interpretation through a gradual awareness of representational alternatives or through the interrelation of its elements on many different levels. Our concern, however, is not with gradual awareness, but with immediate response; and the task before us that of assessing how much of the variety evident is explicable in terms of the approach adopted – symbolic or representational; and how much in terms of representational ambiguity diversely resolved.

In order to address the second of these sub-tasks, and to render the first more manageable, I propose to select, from the infinite valid representational alternatives, a single interpretation: the "given" (chapter V, §6.3); an admittedly egocentric interpretation passing at best for ethnocentric, and generally (though incidentally) consistent with my intention in composing a picture. This interpretation, if not consonant with the reader's own, is at least available for review.

If it is to be operable, the given must be carefully circumscribed in a number of respects. It need not overtly specify that figure 1 represents a dog rather than a giraffe, for instance, since giraffe is *representationally* unacceptable. The given

should, however, distinguish the chosen correlate from the valid representational alternatives – even where plausible examples of the latter are unforthcoming. In opting for "dog", then, we rule out, for example, "Isis hippuris" (a pied coral-like organism which, conveniently, can mature into almost any conceivable shape).

In distinguishing our chosen interpretation from both valid and invalid representational alternatives, we have of course already made explicit its identity. Yet the choice of "dog" (rather than "vertebrate", say) is, as we shall see, somewhat arbitrary (§2); classificatory "obviousness", despite the work of the prototype theorists (§3), remains a variable. For this reason I have found it methodologically necessary to dictate a "norm" (§3.3); a ruling on the identity of the chosen correlate, not only in terms of what it *is*, but also in terms of what it is *called*. Courtesy of this methodological nicety, however, – seemingly an extended exercise in hair-splitting – we are provided with a means by which to compare specificity across a range of responses. In fact, in the course of the coming chapters, we do not exploit the full potential of the norm in this respect. Nevertheless it remains a crucial preliminary to the assessment of any picture response.

The other aspect of the given to be considered in this chapter is the incorporation of a decision as to the spatial extension of any repraesentans (§7). Again there is a certain amount of apparent "self-evidence" to be countered here. Yet even within figure 1 there is choice; and within any more complex configuration (most notably where intuition would persuade (some of) us of to interpolate occluded portions (chapter V, §5.4.3)), that choice is significantly wider. The resolution of this spatial ambiguity necessitates a second methodological preliminary: the "delineation" of a picture. This is again a somewhat arbitrary matter, but one which results in the explicit specification of the unit, or units, to be considered "anatomically basic".

2 *Specificity of repraesentatum*

There is no single "correct" interpretation of a picture. Any particular reading may nevertheless be evaluated as to its representational acceptability. Figure 1, for example, cannot be interpreted as a pictorial representation of "fidelity" (chapter V, §2.1); it cannot, moreover, constitute an acceptable "giraffe-picture" (chapter V, §5). But a particular reading may also be evaluated as to its validity

with respect to the given. Figure 1 *may not*, according to our preferred option, validly correspond to the interpretation "coral".

Figure 1



But of other hypothetical interpretations offered: "object", "animal", "domestic canine", "mammal", "dog", "overweight beagle bitch", "a chihuahua", "Fido the dog next door"; none seems invalid in quite the same way, although "animal" may strike us as rather vague, "overweight beagle bitch" as unnecessarily restrictive, and "Fido the dog next door" as (in most contexts) unjustifiably particular. The question is one of the specificity of the verbalized repraesentatum; it is concerned not with whether a dog or an octopus is represented, but with whether the repraesentatum is labelled "dog" or "animal"; "octopus" or "mollusc".

We shall tackle this problem first (and perhaps perversely, given chapter V, §2.2.3) via the more conscious visual abstractions undertaken by the picturer, before considering any implications this may have for interpretation. In doing so, we shall briefly compare pictorial representation with verbal representation along lines which are, for the most part, merely a condensation of Bhattacharya's own (1984).

2.1 Verbal and pictorial abstractions

"Fido is Mr. Green's overweight, rather bad-tempered beagle who likes chasing a chihuahua called Rex". In representing verbally a particular dog thus, I classify Fido according to the ready-made pigeon-holes provided by language, as an agglomeration of standardized communal attributes: "overweight", "rather bad-tempered", etc. The success of such a representation depends, of course, on a shared understanding of the meanings of terms used. If my interlocutor does not know the meaning of "chihuahua", I may resort to a classification of greater generality ("a breed of dog", for example), or, if "dog" is similarly unenlightening, say, "a kind of pet"; but, although my classification remains valid, as it becomes more general, so is it less informative. An alternative option in explaining "chihuahua" is a move towards the particular, at the extreme of which I may, pointing to the nearest available chihuahua, say, "That is a

chihuahua. Fido likes chasing one like that" (Bhattacharya 1984; Lyons 1977; Quine 1974, etc.).

My *pictorial* representation of Fido presents more of a problem, although the initial strategy is basically the same. It involves an analysis of my perception of Fido into only a selected number of properties, that is, an abstraction; and a synthesis, or recombination, of the selected properties into a construct with which I may represent Fido. But, whereas in the verbal mode the representable properties abstracted may be structural, "relational" ("Mr. Green's"), psychological ("bad-tempered"), or whatever (Bhattacharya 1984), abstraction for pictorial representation is, as we have already observed, restricted to (simultaneously) visible properties.

If I know what a beagle looks like, drawing a picture of one presents no problems we have not already touched upon. Now suppose that I simply wish to draw a dog. The word "dog" applies to every dog, regardless of shape, proportions, breed, etc. Yet, in rendering "dog" pictorially, I am forced to commit myself to some sort of size or general shape. Perhaps, however, a generalized dog-shape is manageable (see Rosch *et al.* 1976). A generalized pet-shape, on the other hand, is significantly less so, necessarily referring as validly (and not in any alternative or figurative sense) to cats, budgerigars and perhaps goldfish and pythons too (but see below). This is a problem we tend to overlook as interpreters, and yet it has not inconsiderable implications for our interpretation of a picture.

Assuming that, for example, "  " at a road entrance is understood conventionally to mean: "No ___ allowed to enter", we should most probably interpret figure 2 as "No dog allowed to enter". We are less likely to consider a second interpretation; that figure 2

Figure 2



forbids entry to overweight beagles, while chihuahuas and wolfhounds may do as they please. The seeming unorthodoxy of this alternative only calls attention to the difficulty picturers would experience should they intend to specify just

that; that is "No overweight beagle allowed to enter"¹. If figure 2 is intended to mean "No pet allowed to enter", the symbolic status of the central dog-figure seems unquestionable; if it refers solely to overweight beagles we have no qualms about calling it a picture. That it should mean "No breed of dog allowed to enter", however, hints at a new and hazy line between picture and symbol.

In everyday life, however, the need for economy and effectiveness in visual signification will entail acceptance of conventions whereby, for instance, an overweight beagle may stand for all breeds of dog. Bhattacharya speaks of classes of objects, the members of which have "identical maps", that is, sets of spatial relationships (1984: 233), a condition failing which "symbolization" is said to occur (cf. chapter V, §6.2). Thus figures 1 and 2, as overweight beagles, are pictures; but, as dogs, symbols, since different breeds of dogs do not have congruent mappings. Bhattacharya distinguishes from iconic representation two types of symbolic visual signification: that of invisible entities, that is, the "culturally symbolic"; and the "classificatory symbolic" (ibid.: 236), where the signified is a class of visible entities characterized by (Wittgenstein's) family resemblance (e.g. "dogs"). Whether a particular figure qualifies as an icon or as a classificatory symbol also depends upon the perceived variation in the class to which it belongs. So, were a road sign to signify "No falcon allowed to enter", probably the only quibbles over its application to merlins as distinct from kestrels would come from ornithologists (see chapter V, §5.4.4, and below).

My own view is that the undisputed (culturally) symbolic status of "  ", the ring border, may confer a parasitic (classificatory) symbolic status on any potentially iconic representation, which gains, thereby, a wider range of application. It may be, therefore, a matter of *context* rather than of intrinsic signifiatory capacity. As to "identical spatial mappings", we saw earlier (chapter V, §4.3.2) that such a severe criterion, while crucial, no doubt, in geometry, has so rare an application in the field of pictures as to offer little explanatory value. We shall return to the "classificatory symbolic" in chapter VIII.

¹ The context (say, at Crufts) may render such an interpretation less unorthodox.

2.2 *The unique correlate*

If there is a limit to the explicit generality of a pictorial representation, there is also a limit to the degree of specificity which may be achieved. Of course, many pictures do indeed have a unique real-world correlate (Van Dyck's "Charles I of England", for example). The problem is, rather, how to convey this uniqueness, and how validly, then, it may be claimed in the process of interpretation.

Suppose I want to draw a picture of the concrete physical, overweight "Fido". The more of Fido's visible features I am able to specify, the narrower the class of possible repraesentata, and the nearer I move towards to specifying Fido uniquely. I may, in principle, eventually so narrow the class that it could contain only one member; that is, Fido¹. This is what was implied above with the caricature of Alfred Hitchcock (chapter V, figure 3).

But only those who *know* Fido and understand the picture to be an acceptable representation of Fido may say "That is a picture of Fido". Uniqueness, even where so strongly suggested by the context that it is barely avoidable (Prieto 1964; Eco 1976; Lyons 1977), may only be asserted, or signified by some extra-pictorial means, such as the written label: "Mr. Green's dog, Fido"², or the (pictorial) knife which *symbolically* identifies St. Bartholomew (Panofsky 1955). This is true of all pictures, from the photograph to the most skilfully sparse caricature. This matter will be taken up again in chapter VII (§6), and in chapter VIII (§7).

2.3 *Implications for interpretation*

It seems clear, then, that there are limits not only to the degree of generality explicitly and unambiguously conveyable in a picture, but likewise limits to the degrees of specificity. This need not imply that no degree of generality or specificity was intended, but that interpreters have, in either case, no *purely pictorial* way of knowing. Neither are interpreters prevented from proposing a

¹ Robinson maintains that this is not possible even in principle; "every analysis of [a particular] into [its] specific characteristics gives a complex that could logically belong to some other particular also" (1950: 97-8).

² Note that uniqueness in verbal representation is likewise handicapped. Speakers must resort to proper symbols ("Mr. Green", etc.), or to pointing, or to unambiguous contextual clues (see chapter IV, §).

certain level of generality or specificity. Indeed, they are forced to opt for some level, whether that of "thing", or that of a unique real-world correlate.

Since we want to be able to account for the "unjustifiability" of the response "that's a lesser Siberian beagle bitch" and for the "vagueness" of "that's a thing", we should establish that a certain level of generality, somewhere between the two, is "normal" and "right". Against this, the relative specificity of any response may be measured. As to where the appropriate level lies, it might be anticipated that it will correspond to "the name of a thing, the one that tells what it 'really' is" (Brown 1958: 17), that is, to a "basic-level category" of the sort described by Rosch *et al.* (1976), Brown (1965), Berlin (1972), etc. By this account, while it would be correct to say that figure 1 represents a mammal, it would somehow be more "natural" to say that figure 1 represents a dog. After a short outline of the notion basic category as presented by its adherents, we examine briefly just how tenable this notion is.

3 Basic-level categories

What Berlin, Brown and Rosch found was that there appears to be a level within a taxonomic hierarchy, which is somehow conceived of as more basic than other levels; and that this basic level corresponds to the "natural discontinuities" in the real world (Rosch *et al.* 1976: 385), and (usually) to the genus-level in Linnaean biological classification (Berlin *et al.* 1973). "Dog", then, is psychologically and intrinsically more basic than either the superordinate category "mammal" or the subordinate "beagle".

Basic objects are (sic) the most inclusive categories:

- 1) at which highly similar sequences of motor movements are used to interact with category members;
- 2) at which a cluster of attributes, believed common to the class named, is listed;
- 3) at which an averaged shape of an object is identifiable as that object;
- 4) at which the objects of a class look very much alike;
- 5) for which a concrete image of the category as a whole can be formed.

Moreover:

- 6) basic level names are the first linguistic labels for objects acquired by the child;
- 7) basic level names are the most commonly used labels for category members (Rosch *et al.* 1976)¹;
- 8) the shortest primary lexemes are found at the basic level (Berlin 1972);
- 9) folk-biological categories often correspond to scientific categories at this level (Berlin *et al.* 1973).

Let us examine characteristic (1) to begin to understand how such a wealth of information might centre upon one level of specificity.

If a parent, in the process of teaching a child, refers to objects by particular names, the reasons may be entirely practical. There is little point, for instance, in telling a child that a certain dog is a beagle, or that a certain knife is a stainless steel carving knife; nothing the child *needs to know* about beagles or stainless steel carving knives is not true of dogs in general and knives in general. Concerned for the safety of a newly-mobile infant, for example, and for the safety of other objects, the parent provides the child with a kind of utilitarian classification (knives are sharp, dogs are patted, etc.), which emphasizes the equivalence of objects in certain selected respects (categorizing them "at [their] level of probable non-linguistic equivalence" (Brown 1965: 319)), and which prescribes appropriate and safe means of interaction with those objects.

Whereas objects at the basic level may have many distinctive actions in common, superordinates have very few ("mammal" is not characterized by patting as "dog" is), and, at subordinate levels, no more distinctive actions emerge ("beagle" and "spaniel" are still characterized by patting) (Hallpike 1979). Thus "dog" is a more useful category than "mammal", since "mammal" possesses few attributes² common to all members of the category; that is, "mammal" has a low "cue validity" (Rosch *et al.* 1976). "Dog" is also a more useful category than "beagle", which also has a low cue validity, since most attributes of "beagle" are also attributes of "dog". Basic-level categories, then, are maximally distinct,

¹ These are by no means all the characterizations of basic-level objects. For example, the basic level is also held to be that at which children first sort objects taxonomically, sorting superordinates complexively.

² "Common attributes" is understood to include distinctive actions (Rosch *et al.* 1976: 386).

since the properties shared by category members are many, while those shared across categories are at a minimum (Lakoff 1987).

Although the literature gives at times the impression that the correspondence of the above is so extraordinary a coincidence that one could not but accept the fundamentality of the categories so designated (see, for example, Lakoff 1987: 34), their interdependence is not, however, in dispute; given any one of them, others follow quite automatically. Imaging capacity (characteristic (5)), for example, will depend upon overall shape (4) (Hallpike 1979), as will identification of averaged shape (5); characteristic (8) will depend upon (7), given Zipf's finding that the length of a word is negatively correlated with its frequency of usage (Zipf 1935, reported in Brown 1965).

In fact, the degree of this interdependence is perhaps not emphasized enough.

Provided that the learning situation hypothesized above is not atypical (see, for example, Brown 1958), it would be surprising if the names first learned by the child did *not* correlate with the levels of generality established as basic through distinctive actions; as it would be surprising if these labels were *not* initially the most commonly used. Given, moreover, that the basic level corresponds to the level of the genus in Linnaean biology, characteristic (9) is no coincidence either. Lakoff points out (1987: 36) that, although organisms may interbreed only at the level of the species, at genus-level organisms may still possess approximately the same overall shape. Genus level in folk taxonomies too depends upon overall shape (Hallpike 1979).

With the realization that possibilities for motor interaction are of course also determined by overall shape, we find that we have come full circle, convinced that there is something unavoidably, intuitively and demonstrably very right about the notion of basic category, and that the basic level is eminently suitable for use as a "true" specificity level, from which our picture responses may deviate.

3.1 Basic categories and any level at all

What is not so frequently emphasized is that the indisputable interdependence of many of the above characteristics will operate at *any* level of generality.

If we accept, for example, that there is a level (any level) both determined by, and learned in association with, distinctive actions and attributes, it is wholly predictable that subjects in tests should list significantly more attributes for a category at that level – wherever it should feature in a taxonomic hierarchy – than at superordinate or subordinate levels (cf. Rosch *et al.* 1976).

But (or indeed *consequently*) basic levels, although the universally psychologically salient categories, must sometimes be abandoned in favour of other levels: "functional" basic-levels (Berlin, reported in Lakoff 1987: 37 (personal communication)), which take into account such factors as cultural underutilization of general human capacities, and specialized training. Thus, on the one hand, the urban individual may possess a functionally basic category "tree", instead of the "true" basic categories "oak", "maple", etc.; and, on the other, the Hanunóo, with ninety-two words for different types of rice, make little use of the basic category "rice".

More seriously still, the true basic level is sometimes shifted downward to accommodate specialized knowledge (the antique furniture dealer's basic category "Chippendale chair", for example (Rosch *et al.* 1976: 432)); and at other times, the lack of correspondence with the true basic level is explained away as the result of "selective ignorance and exaggeration of the attributes and structure of [the] environment" (*ibid.*: 435).

That "the basic category cuts in the world should be those which yield the most information for the least cognitive load" (*ibid.*: 428) seems fair enough. But is there not *bound* to be one level of which this will be true – but the location of which within a taxonomy will vary from object to object, person to person, hobby to hobby, culture to culture, and even situation to situation? Rosch's experiments were throughout calculated to discourage the type of variety which would characterize differently perhaps every member of society. As a final and astonishing throwaway, Rosch stresses that it is not, after all, the content but "the *principle* of category formation that is claimed to be universal" (*ibid.*: 435, my emphasis). This, it seems to me, is quite a different matter.

3.2 Responses and prototypes

It has also been observed that "many natural categories are internally structured into a prototype (clearest cases, best examples) of the category with nonprototype members tending towards an order from better to poorer

examples" (Rosch 1975b: 544). There is therefore a risk that, if a test-picture selected is not prototypical, prototype effects, or "asymmetries within categories", will distort the specificity of responses to it. Figure 1, for example, may well represent a dog, but, if the picture is not perceived ideally to embody dog-ness¹, "dog" will be hindered as a response, in favour of some subordinate; just as a penguin (a "deviant" item (Rosch *et al.* 1976)) is identified as a penguin more readily than it is identified as a bird (Jolicoeur, Gluck, and Kosslyn 1984, reported in Humphreys and Bruce 1989). In fact, the prototype cannot but bolster up the basic category notion, by affording its exponents an all-purpose escape-clause. When given to understand, for example, that dogs are characterized by patting, the natural objection "unless it's a Rottweiler" may be invalidated by the Rottweiler's non-prototypicality.

3.3 Summary and introduction of asserted norm

It would appear that basic-level categories do not provide a suitable standard by which to measure response specificity, since 1) basic levels would have to be established separately for each informant and for each test-picture, and 2) each test-picture would also have to be verified as to its prototypicality.

With the demise of the basic-level category, and in the absence of any more objective alternative, I remain convinced, nonetheless, of the methodological need for a standard.

I therefore propose to *assert by fiat* a standard (no doubt heavily influenced by my own basic categories and prototypes) which I shall term an "asserted specificity norm", notated, for example, *DOG*.

In order to clarify the nature of the specificity norm, some consideration of the ontological status of *repraesentans* and *repraesentatum* is necessary. The notions presented below are, to a certain extent, already implicit above, in the discussions of basic categories, equivalence of visual information, etc. It is time to make them explicit, and, with regret, but in the interests of minimizing ambiguity, to introduce some notational conventions. Further justification for

¹ Figure 1 was in fact intended as (and remains, for me) an unambiguously doggish dog, but consultation with only one other individual already revealed a discrepancy! While I find I am intuitively receptive to the idea of the prototype, it is doubtless as relative as the basic category.

this digression will be found, I hope, in chapter VIII, where it plays an important part in the account of generic and ostensive responses.

4 *Ontological considerations*

The equivalence of visual information, outlined in chapter V, suggests the existence of collections of entities between which a certain degree of difference goes unremarked. Just as the favourite joke may be told repeatedly, without ceasing to be, essentially, the same joke, so the following:



although they obviously do not have the same material identity, are, in a significant way, the *same* repraesentans. Conversely, each (real or hypothetical) hairy thing out there, to which any from among the above may correspond, is, in a sense, the *same* repraesentatum. A description of the constancy underlying any collection of repraesentantes or repraesentata provides us with a definitive "type" against which any individual repraesentans or repraesentatum may be matched.

Consequently, in speaking of pictorial entities, it is essential to be able to distinguish between the collection, or class, and the member; between the type and the "token" (Peirce 1940; Hervey 1979). The token repraesentans I shall notate, for example, "[dog]"; the token repraesentatum "DOG".

4.1 *Class-membership*

I propose, therefore, to speak of the "class of repraesentantes" and the "class of repraesentata", notated, respectively, { [dog] } and { DOG }, for example. Between the two classes exists a relationship of representation. Between the members of each class exists a relationship of equivalence¹.

For Prieto, indication may not occur unless both indicator and indicated entity are recognized as members of respective classes (1966: 18). Indicator and indicated entity are associated with one another, but this relationship must be

¹ Although there will, of course, exist between repraesentans tokens of a single type, for example, a relationship of equivalence *of visual information*, this is not the "equivalence" to which I refer here. It is, rather, an equivalence in capacity to convey; motivated, but not constituted, by equivalence of visual information (see Hervey 1979: 16-17).

mediated by a more regular association between the class to which the indicator belongs and that of which the indicated entity is a member. It is this latter relationship which constitutes indication. Thus the relationship between the repraesentans: [dog] and the repraesentatum DOG is mediated by the relationship between the class of repraesentantes: { [dog] } and the class of repraesentata { DOG }. This requirement should hold even in those cases where to posit a class of repraesentata seems unnecessary (for example, where [dog] refers to FIDO, THE DOG NEXT DOOR (see §2.2 above, and chapter VIII, §7).

Since it is not always clear whether Prieto's indicator and indicated entity are intended as concrete events or as *models* for concrete events, we are left, potentially, with something of an anomaly: an abstract class, the members of which are realizations, or concrete pictorial events (Hervey 1982).

4.2 *Model and realization*

In order to clarify the necessary distinction between model and realization, and explicitly to maintain the set-member relation between a class of equivalent repraesentantes and an individual repraesentans, and that between a class of equivalent repraesentata and an individual repraesentatum, we should interpose another level.

The realized repraesentatum will be termed a "referent" (cf. Hervey 1979: 21), (notated, for example, 'DOG'¹). Where significant ambiguity would otherwise result, "repraesentans" will be qualified "realized repraesentans" (notated, for example, '[dog]'), and "picture": "realized picture"².

¹ When we eventually come to consider picture responses from the data in their entirety, we shall dispense with this notational convention.

² Note that this will entail a slight modification of the definition of "picture" in chapter II above: "a picture-token is a repraesentans in its capacity of conveying, by virtue of a visual resemblance, a repraesentatum; where the repraesentans is *a model for an essentially two-dimensional, essentially continuous surface*, and the repraesentatum is *a model for a real or hypothetical experiential correlate*."

Figure 3 (adapted from Hervey 1982: 210)

	picture-type		
type	{ [dog] } class of repraesentantes	R	{ DOG } class of repraesentata
	picture-token		
token	[dog] repraesentans	R	DOG repraesentatum
	realized picture		
realization	'[dog]' realized repraesentans	R	'DOG' referent

where R is, in each case, the relationship of representation. Referents, in so far as they exist independently of representation, may belong to any number of overlapping classes (Hervey 1979), that is, "classes of *potential* referents", or "reference classes", which we shall notate, for example, {'DOG'}. Mr. Green's (single, flesh and blood) beagle may belong simultaneously to the classes {'BEAGLE'}, {'ANIMAL'}, etc.; and each instance, '[dog]', may evoke in Mr. Green any one of the above.

5 *Asserted norms and vague responses*

The asserted specificity norm *DOG*, then, dictates the boundary of a reference class. Unlike the denotation class of the sign "dog" (cf. Hervey 1979), this class does not include every entity which might validly be called "dog", but only those which retain an acceptable correspondence with the figure in question. The class {'CHIHUAHUA'}, for example, is in total non-overlap with figure 1's *DOG*, whereas its linguistic counterpart would be properly included within a denotation class corresponding to the sign "dog".

Each response is an attempt at circumscribing a class to which the referent belongs. Thus we are dealing with the potential intersection of response reference classes offered (via the realized repraesentatum) with *DOG*. In anticipation of §4.6 below, we shall term the *relevant* response classes of potential referents (counter-intuitively, but much less of a mouthful) "label classes", and any member thereof a "label".

The label class may bear one of the following relations to the norm *DOG*:

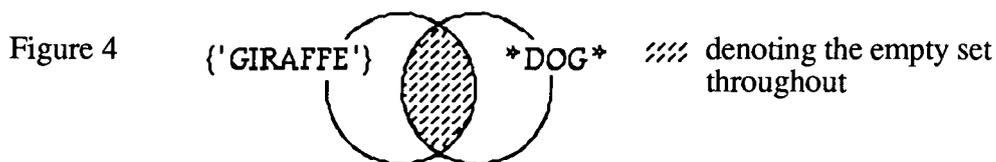
- 1) non-intersection of label class with *DOG*
- 2) proper inclusion of *DOG* within label class
- 3) total overlap of label class with *DOG*
- 4) proper inclusion of label class within *DOG*
- 5) "partial overlap" of label class with *DOG*

The last of these, partial overlap (dealt with in §6 below), serves to introduce some criteria failing which a response classes of potential referents is deemed *irrelevant* (that is, disqualified as a label class). The gist of this, as I hope will become clear, is that certain descriptions of repraesentantes are unjustifiable, given the visual information available.

5.1 Non-intersection of label class with *DOG*

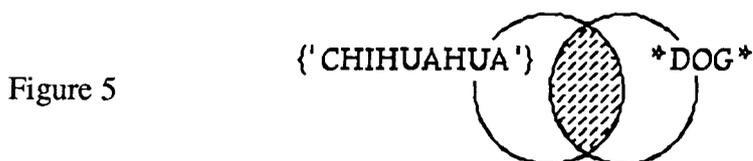
a) 'GIRAFFE'

Provided that informants are using the term "giraffe" in the accepted sense, the ("translated") response to figure 1 'GIRAFFE' is eliminated as a possible representational correlate. The class {'GIRAFFE'} is in total non-overlap with *DOG*.



The possibility that an informant has stipulated a new and idiosyncratic correspondence between {DOG} and the word "giraffe" (Hospers 1967; Robinson 1950), unless made explicit, must be ignored.

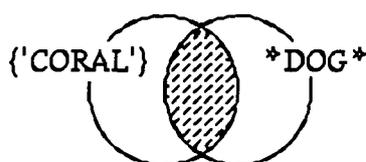
b) 'CHIHUAHUA'



The response 'CHIHUAHUA' is similarly unsuccessful within representation, since nothing which could be represented by figure 1 could acceptably and validly be called "chihuahua". It is only "post-representationally" that figure 1 may signify 'CHIHUAHUA' (see chapter VIII, §6.5).

c) 'CORAL'

Figure 6

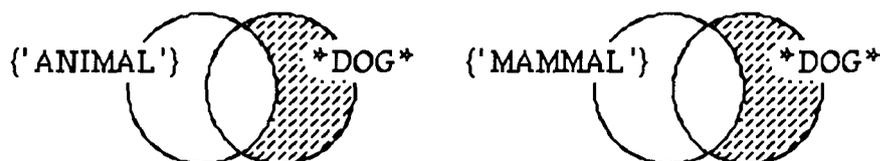


The response 'CORAL' is also unsuccessful – not with respect to the represented information this time, but with respect to the given. As with {'CHIHUAHUA'} and {'GIRAFFE'} above, however, the class {'CORAL'} is in total non-overlap with *DOG*.

5.2 Proper inclusion of *DOG* within label class

'ANIMAL' and 'MAMMAL'

Figure 7



The response 'ANIMAL' is not eliminated by figure 1. But, while all members of *DOG* are also members of {'ANIMAL'}, the converse is not true. *DOG* is properly included in {'ANIMAL'}. The response 'ANIMAL' is thus an approximation in that it generates too wide, or too "vague", a class. The same is true of the response 'MAMMAL'. 'MAMMAL' is, however, less vague than 'ANIMAL' since while every 'MAMMAL' is a member of {'ANIMAL'}, not every 'ANIMAL' is a member of {'MAMMAL'}.

5.3 Total overlap of label class with *DOG*

a) 'DOG'

Not surprisingly, the class {'DOG'} is in total overlap with *DOG*. For such informants as realize 'DOG', figure 1 may be understood to function perfectly well as an all-encompassing dog-picture, or at any rate as prototypical (§3.2) a dog-picture as it is for me.

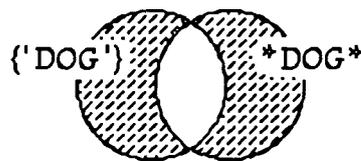


Figure 8

b) 'DOMESTIC CANINE'

The class {'DOMESTIC CANINE'} is also in total overlap with *DOG*.

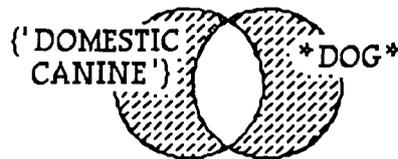


Figure 9

It might well be argued, however, that the informant who responds 'DOMESTIC CANINE' intends the class to embrace any member of the family Canidae which has been domesticated (a jackal trained to fetch the Sunday papers, for example); and that this response constitutes, therefore, a vague approximation (CANINE) qualified by a characterization (see §6, and chapter VII). While this alternative interpretation of the response is perfectly valid, two points persuade me to treat 'DOMESTIC CANINE' here.

Firstly, "domestic canine" is an established English rendering of "Canis familiaris" (Storer 1951: 735); "domestic", in this context, need not denote the property of being "domesticated" (in that sense entailed by the amenable jackal above) (cf. Mulder and Hervey 1980, on "pseudo-composites and pseudo-words"). Thus {'DOMESTIC CANINE'} is relevant as a label class in its own right. Secondly, the methodology requires that a response portion be "accounted for" at the first available opportunity. Since the treatment of labels precedes that of characterizations, treating {'DOMESTIC CANINE'} as a label class also affords the simpler account of the response 'DOMESTIC CANINE'.

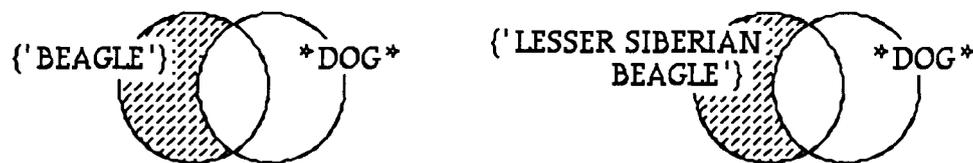
Where there is total overlap of the label class with the norm, a response will be termed "normal".

5.4 Proper inclusion of label class within *DOG*

'BEAGLE' and 'LESSER SIBERIAN BEAGLE'

The classes {'BEAGLE'} and {'LESSER SIBERIAN BEAGLE'} may each be understood to be properly included in *DOG*. That this choice exists depends upon the perceived variation within the class (cf. chapter V, §5.4.4).

Figure 10



In any consideration of specificity we may imagine a point at which disagreement may be attributed to a distinction between the respective knowledges of layperson and specialist. But specialists, no matter what the hobby or profession, will not only conceive of a larger and more discriminating range of potential referents; they will be able to ascertain precisely what visual justification there is for the representation of any particular one of these. Thus, while the layperson will be unaware of the distinctions LESSER SIBERIAN BEAGLE ~ HUNTER'S ARCTIC BEAGLE, the specialist will realize the insufficient evidence for such an interpretation (and even, if we are honest, for the interpretation 'BEAGLE'). Unless some other factor underlies the response (the airing of specialized knowledge, for instance), 'BEAGLE' and 'LESSER SIBERIAN BEAGLE' are unlikely – above all where the picture concerned is rudimentary, and the picturer no expert on dogs. The responses 'BEAGLE' and 'LESSER SIBERIAN BEAGLE', should they be forthcoming, however, are "approximations" in that they generate too "narrow" a class.

6 Partial overlap?

6.1 Biological entities in biological taxonomies

Relations of subordination and superordination are not difficult to establish with the backing of a Linnaean biological taxonomy. Whether the classification is held to express the phylogenetic relationships between the groups, or whether considered only utilitarian, there is nonetheless little disagreement among Western taxonomers as to the way in which the animal kingdom should be classified¹ (Villemée *et al.* 1978); that, for example, beagles are dogs, and dogs mammals; tarantulas spiders and spiders arachnids. Many response reference classes, however, do not fit the taxonomic mould.

A crucial criterion for a taxonomy in Kay's sense is that it should involve partitions, that is, "a division of a set into subsets that places each member of the original set in exactly one of the subsets" (1971: 869). This, and the requirement of strict-inclusion is expressed by Kay's second axiom:

"For any $t_i \in \mathcal{T}$, the set $c(t_i) = \{t_j \mid t_j \in \mathcal{T}, t_i \supset t_j \text{ and there is no } t_k \in \mathcal{T} \text{ such that } t_i \supset t_k \text{ and } t_k \supset t_j\}$ is either null or is a partition of t_i " (ibid.: 881), where $c(t_i)$ stands for the set of all those taxa immediately preceded by the taxon t_i .

Since this classifies an organism "for life", as it were, the features by which its place in the hierarchy is determined must be reasonably stable (Hallpike 1979), and must apply equally to other entities in the extension of the class (Harré 1970a). Perhaps needless to say, obvious structural (or "diagnostic" (Villemée *et al.* 1978)) features have, even since the flowering of genetics, remained high on the list of defining characteristics.

In these respects, a zoological taxonomic category differs from {'BULLY'} and {'PET'}, for example. An individual who refrains from bullying is no longer a

¹ It should be noted, however, that, as Lakoff (1987) observes, genus in Linnaean biology was established in part on bases similar to those described for basic categories above, and that "Linnaean taxonomy is simply the particular folk taxonomy with which Western Europeans are most familiar" (Kay 1971: 867). This does not prevent Rosch from employing biological taxonomies (albeit sparingly) as "independent linguistic evolutionary data" to verify the potential hierarchization of a category, on account of their "official taxonomic legitimacy" (Rosch *et al.* 1976: 388-9). Ironically, zoologists themselves confess that "in some ways the methods used in grouping organisms resemble those which form the logical basis of any system of cataloguing other objects, whether of merchandise in a store or books in a library" (!) (Grove and Newell 1953: 697).

bully, and a dog abandoned on the motorway no longer a pet (see Harré 1970b). Are there not, moreover, degrees of pet- and bully-dom? Structurally, or visibly, too, {'BULLY'} and {'PET'} differ from a zoological taxonomic category. A bully is a bully through habitual *behaviour*, and an animal is a pet through its being loved or "owned", housebroken, fed regularly, etc. None of these is readily representable.

Any classification which does not correspond to a fairly¹ orthodox zoological category, and which depends, moreover, upon non-representable features will be termed a "characterization" either inferred or asserted, as compared with the norm. This is only really partial overlap with *DOG* in the sense that some pets are dogs and some dogs are pets; but, the distinguishing features by which one so classifies an entity are not representationally available in a picture.

6.1.1 Two exceptions

There are two exceptions we shall make to this. My hope is that they will be accepted as *extensions* of, rather than contradictions to, the taxonomy presented above.

The first exception is not strictly in contravention of Kay's first axiom:

"There is a unique $t_1 \in \mathcal{T}$ called the UNIQUE BEGINNER, such that, for any $t_i \in \mathcal{T}$ ($t_i \neq t_1$), $t_1 \supset t_i$ " (Kay 1971: 881) (that is, there is exactly one member of \mathcal{T} which strictly includes every other member),

but "in a taxonomic structure of plants [for example], 'plant' is the unique beginner; it strictly includes every other taxon, such as 'tree', 'oak', 'grass', 'bamboo' etc." (ibid.: 869). Since this does not provide us with the means to classify as "vague" the response to figure 1 'THING', what I propose is simply to extend the more inclusive end of the orthodox hierarchy in order that the "unique beginner" may be constituted by "thing", "stuff", "area", or "entity", or some such².

¹ I am not proposing that characterization treat all responses bar *LARUS ATRICILLA* L., and the like.

² Care must be taken, however. 'THING' is not necessarily a response to an entity conceived of via *representation*, and may refer merely to, say, figure 1 as a patch of pigment upon the paper, without acknowledgement of its doghood.

The second exception concerns "structurally-motivated" gender. Since the sex of an organism does not constitute a partition to be found in any biological taxonomy, consistency would require that we disqualify 'WOMAN' as a valid label, classifying it instead as an "inferred characterization" (chapter VII, §2.2) (and that we accept 'MAN' as though 'NON-GENDER-SPECIFIC HUMAN' were intended). One implication of such a policy is that, while we may be able to distinguish the Caucasoid from the Mongoloid on the basis of visual characteristics, we do not, under any circumstances and on the same basis, distinguish between men and women. This, of course, makes nonsense of the notions of perceived variation and specialized knowledge, each a reworking of "extra-pictorial context (b)" (chapter V, §5.4.4). Few humans, surely, of above a certain age fail to possess this degree of specialized knowledge.

It is important to note, however, that attribution of gender to a *pictorial* human often has less to do with facial hair, hip width, breast protrusion, etc., than it has to do with clothing and hair length (Morris 1978). I shall admit *WOMAN* as a norm (and, consequently, 'WOMAN' as a label) if the "gender signals" (ibid.: 230) seem to me to be structurally overt.

6.2 *Non-biological entities in "non-taxonomic" taxonomies?*

For Rosch, "a taxonomy is a system by which categories are related to another by means of class inclusion. The greater the inclusiveness of a category within a taxonomy, the higher the level of abstraction. Each category within a taxonomy is entirely included within one other category (unless it is the highest level category) but is not exhaustive of that more inclusive category" (Rosch *et al.* 1976: 383).

That partitions do not feature explicitly is a useful omission when it comes to the classification of non-biological entities; thus "chairness" is quite at liberty to shade into "couchness" and the book into the pamphlet. Another consequence of this definition of "taxonomy" is that, without the definitional tampering necessitated in §6.1.1, the classifier may resort to "thing" in the absence of any more likely or less ambiguous-looking superordinate. There is also less emphasis on stability of attribute.

Such a definition might admit 'PIECE OF FURNITURE', 'PIECE OF CUTLERY', and 'TOY', as valid labels – vague approximations on *CHAIR*, *KNIFE* and *DOLL*, respectively. But even 'TOY', say, involves *functional* considerations;

that is, it involves features sufficiently unrepresentable as to disqualify a biological analogue ('PET', for example) from labelhood. 'TOY' is, moreover, by no means exceptional; functional, relational, and "locant" (Robinson 1950) considerations are often at least as important to the identification of non-biological entities as appearance (Hospers 1967; Lyons 1968; Robinson 1950). A toy, essentially, is surely anything *played with* – from a Hamley's spinning-top to a couple of bottle tops and a piece of string. Thus, as far as representable features are concerned, even Rosch's "taxonomy" seems too rigid for our purposes.

This lack of a constant and regulated system of superordination and subordination will be borne in mind. Nevertheless, I shall assert a specificity norm for non-biological entities where necessary. This will be based, so far as is possible, on structural features of the object. Approximations, as above, will be proposed only where superordinates and subordinates seem plausible. Despite my reservations about basic-level categories, I shall make use of Rosch's determination of the potential hierarchization of non-biological entities (Rosch *et al.* 1976). Where the relation of the response reference class to the norm does not constitute one of plausible subordination or superordination, I shall again treat the response as a characterization.

I appreciate the double-standard involved in employing one definition of "taxonomy" for biological entities, and a second for non-biological entities. The adoption of Kay's definition throughout, however, would allow us no means by which to classify as "vague" a response to a [spinning-top]: "That's a thing". Were we, on the other hand, to adopt Rosch's definition throughout, we should be deprived of the advantages of an available scientific classification. Since the distinction in everyday life between biological entities and non-biological entities is fairly clear; and since, in pictorial life, any ambiguity may be side-stepped through the assertion of a specificity norm, I conclude that there is no great harm in this.

Neither definition, however, deals very readily with a response to figure 1 such as 'TAIL'. The solution, only anticipated here, requires that any norm be matched with an explicitly delineated spatial area. It is introduced here in an attempt to close the present chapter with the norm firmly tethered to the representans.

7 Delineation of the basic anatomical unit

It has been taken for granted above, that, in assigning a norm to a particular part of a picture, precisely *which* part that will be is self-evident. This assumption has been eased along by the presentation of fairly simple pictures (such as figure 1) in which figure and ground are easily distinguishable, and potentially confusing discontinuities minimal. Even in such cases, the area to which the norm is intended to correspond should be made explicit; figure 1, for example (reproduced as figure 11a) is delineated as in 11b:

Figure 11

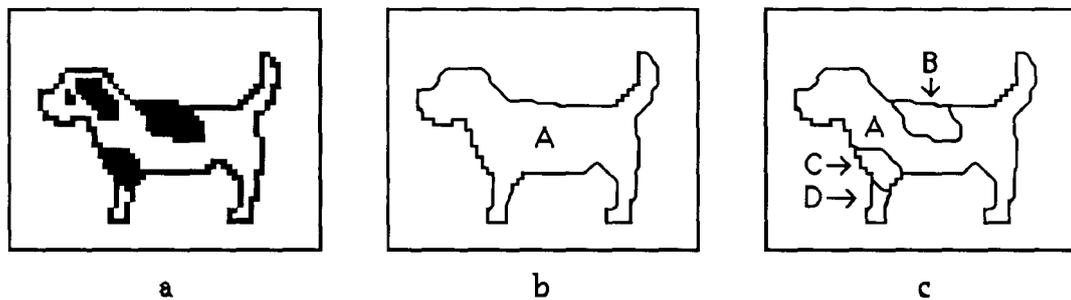
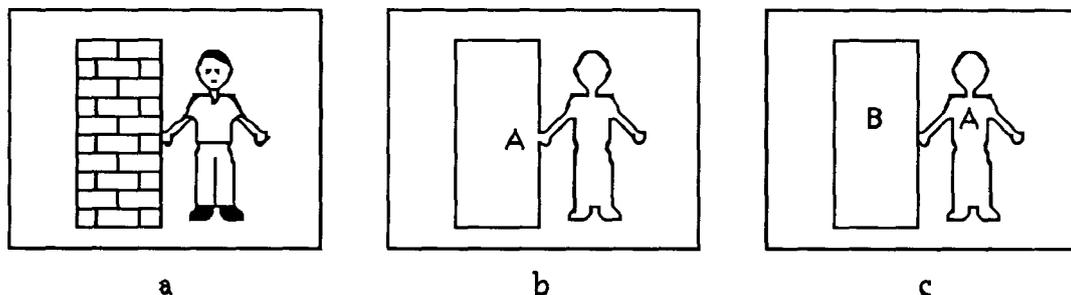


Figure 12a offers a little more scope; yet few people, I should venture, would contest the delineation of units as in figure 12c (rather than as in 12b), where A corresponds to *MAN*, and B to *WALL*.

Figure 12



Of course we may well still register the internal details: [individual bricks], [shirt and trousers], etc.; nevertheless, [man] and [wall] may be assumed to have a certain intuitive precedence. Implicit support for such an assumption is already contained in the above; in the simplicity of perceptual organization predicted by Hochberg, Wertheimer and others, the economy of verbalization

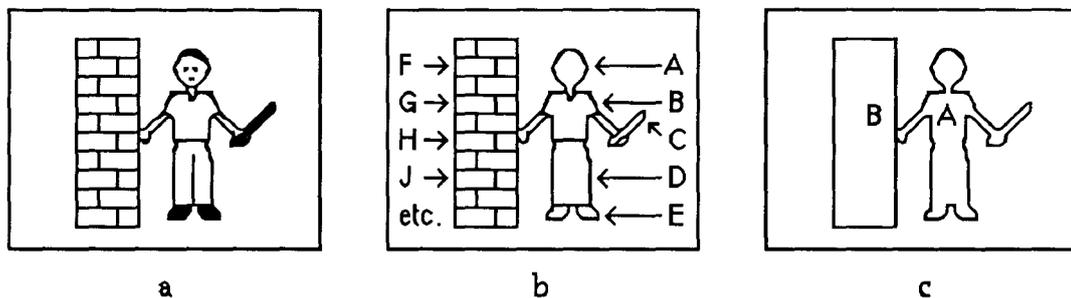
(§2), etc. This is not, however, an attempt to defend the perceptual reality of the "anatomically basic" units delineated; in fact, many of those proposed will be either more extensive or less extensive spatially than the percept might dictate (see chapter VII, §5, and, especially, delineations in Appendix A). Far less is it a preliminary to an investigation of genuine perceptual, rather than representational, tendencies.

The reasons are these:

- 1) to make explicit that area of a picture to which a norm is intended to correspond;
- 2) to make more explicit that one interpretation of the fundamentally ambiguous represented spatial arrangement which *to me* seems self-evident within a traditional, three-dimensional, projective approach; and through comparison with which responses may be judged to contain "two-dimensional" or "non-spatial" associations.

There is, therefore, a strong subjective element to the units proposed, paralleling (in all but delay of acknowledgement) the subjectivity of the specificity norm. The consequent simplification of the accounting procedure, though not at the root of this preliminary, is a by-product not to be scorned. One result, for instance, is a considerable constraint on the number of elements to be dealt with within "specificity". In delineating figure 13a as in 13c, for example, we are spared the necessity of asserting norms *BRICK1*, *BRICK2*, BRICK3*, etc., along with further norms for any other potentially miniscule area an informant may choose to pinpoint (figure 13b).

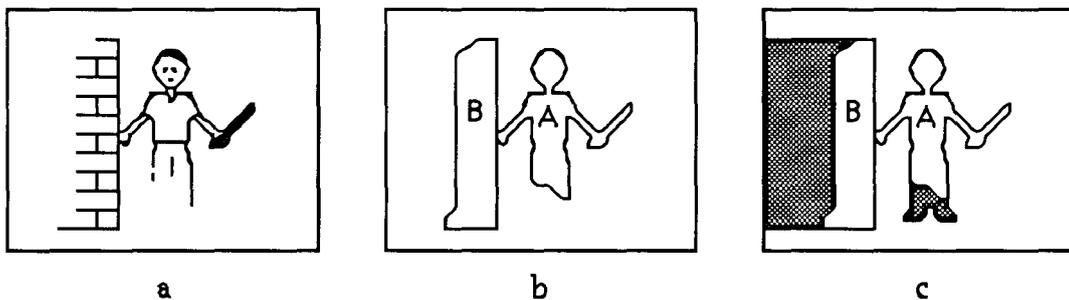
Figure 13



A procedure for dealing with the responses of the 'A BRICK, ANOTHER BRICK, ANOTHER BRICK, ...', or 'TORSO, LEGS, HEAD, ...', type is offered in chapter VII, §5.2.1.

Another result is the opportunity to make explicit those instances where "fade-out" is incorporated. Strictly representationally-speaking, figure 14's [man] has no [feet], but a description specifying a "footless" man (delineating, that is, as in figure 14b) would seem odd within a tradition accustomed to such fade-outs (see chapter V, §5.4.3). The anatomical norm allows us to make explicit the (asserted) limits of any such fade-out, and the extent of the "potentially co-visible" interpolated portion (figure 14b).

Figure 14



In chapter VII, we shall see that a similar procedure makes explicit the spatial extension of partially occluded pictorial objects (§5.1); and that anatomical norms may be manipulated to facilitate the treatment of taxonomically problematic entities (§5.2.2).

8 Summary

In our efforts to make explicit that one interpretation of the represented information to constitute the given, we have seen fit to assert a specificity norm by which to assess the validity and the relative particularization of a verbalized re-presentatum. In the case of a biological entity, the norm will correspond to a fairly orthodox biological category; in the case of a non-biological entity, to a plausible and, where possible, structurally motivated, alternative. In either case, the norm will be assigned to a particular delineated area of the picture concerned. That part of a response to be compared with the specificity of the norm will be termed a "label", and will also correspond to a fairly orthodox biological category or to a plausible and structurally motivated alternative. Residue within a response, once the label has been tackled, will constitute, provisionally, a "characterization".

Thus, in answer to the question "what is represented in figure 1?", we are finally in a position to reply "let it be *DOG*"; to claim 'DOG' and most of its taxonomic approximations *justified* with respect to the given. We are also in a position to claim the label 'ANIMAL' as "given but vague"; 'BEAGLE' as "given but narrow", and so on. Labels, however, do not exhaust a picture's given information. We shall meet up with the remainder of the given in chapter VII, where it will be presented as a particular type of characterization.

CHAPTER VII Characterization

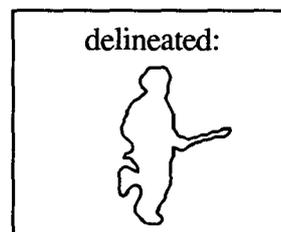
1 Introduction

We now have a plausible but nonetheless arbitrary formulation of both the identity and the taxonomic specificity of a referent: the asserted specificity norm. We are also in a position to assess the relative particularization of a response through the isolation of labels. But the information which may be gleaned from a picture extends well beyond that contained in a label; and it is with the representational residue that this chapter is chiefly concerned.

A number of such remnants have already been encountered in our consideration of "partial overlap" (chapter VI, §6). 'PET', for example, was invalidated as a label through the unrepresentability of its defining features. But in no way would we wish to claim that 'PET', in response to a [dog], is "wrong". While there may indeed be insufficient visual information to guarantee that pethood is in evidence, there may be nothing at all to guarantee that it is *not*. Beyond the core of representation – and yet without transgressing its outer limits – there remains a good deal of interpretative scope. The aim of this chapter is to define those limits and to provide a framework for the assessment of responses falling within the bounded domain. But the aim is also further to circumscribe the given (§5), not all of the boundaries of which are coincident with those of representation.

Of figure 1 (*MAN*), then, MAN (or any taxonomic approximation) is by no means all there is to say. We may care to add that he is TWO-LEGGED, TUBBY, SUITED, FROWNING, WRINKLED, HOLDING A STICK. We may also describe him as an ANGRY, MEAN-MINDED BUSINESSMAN, RUNNING AFTER A PICK-POCKET, etc. In other words, he may be accorded a placement in time and space, he may experience emotion, and he may possess the capacity for thought, action and change.

Figure 1



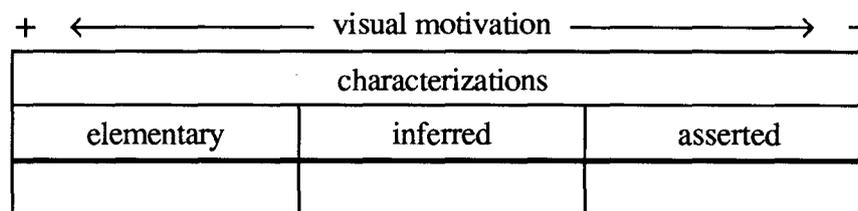
These descriptions, invalid as labels, constitute (provisionally) "characterizations". Characterizations are, however, of relatively distinct types; while none of them is "*counter-indicated*" by (that is, *inconsistent* with) the visual information available, some may *more* reasonably be said to be represented than others. The relativity of this "reasonableness" derives from the assorted characterizations' progressively more (visually) tenuous relationship with the represented information.

1.1 Relative reasonableness

The response 'SUITED', for example, affords the viewer no interpretative choice whatever (beyond that resulting from the picture's fundamental ambiguity). That is to say, SUITED is *fully* motivated, thus qualifying as an "elementary characterization" (§2.1 below). A response may, by contrast, appear to have brought into play not only that likely degree of cognitive involvement described in chapter II, but also a certain amount of reasoned inference (BUSINESSMAN), or gratuitous imaginative input (RUNNING AFTER A PICK-POCKET). Such descriptions, so long as they are not counter-indicated by the visual information available, will be termed (provisionally) "true characterizations" (§2.2 to §2.4), either "inferred" or "asserted" as appropriate.

Thus my assumption is that, ambiguity notwithstanding, there is an upper limit to the amount of information which may reasonably be said to be represented. Beyond this limit, as the purely visual motivation is weaker, so an inversely greater interpretative input is presupposed, in terms of either the exercise of creative imagination, or the recourse to a convention. In this respect, the array of characterizations, from "elementary" (§2.1) (or rather, as we shall see, from "formal" (§2.5)) through to "asserted" (§2.3), is somewhat analogous to the typology of indices (chapter V, §2.2.1), with its interchange of naturalness and conventionality, mediated by various degrees of motivation.

Figure 2



1.2 Relational characterization

A second dimension in the classification of characterizations is presented in figure 3's vertical series; that is, *complexity*, "non-relational" being the simpler of the two types featured. Such a classification may be held to bear a similarity to a typology of semiotic systems. As we have seen, a great many (to some extent arbitrarily) distinct elements may feature as parts of a single picture (chapter V, §5.4.5; chapter VI, §7), and thus their plurality may allow of numerous meaningful interweavings of those elements in the search for a more holistic reading. The interpretation of any such picture which neither interrelates (§3 below) nor integrates (§4) the constituent elements treats that picture as though pictorial representation, as a communicative genre, is a "simple semiotic system" (Hervey 1982; Mulder and Hervey 1980); or, equivalently, as though each constituent picture is a distinct *constituted* picture (chapter V, §5.4.5). However extensively characterized *non- relationally*, each individual element is, in this event, a "sentence" (ibid.).

Figure 3

	+ ← visual motivation → -		
	characterizations		
	elementary	inferred	asserted
non-relational			
relational			

Looking forward to figure 8 below, for instance, the characterizations TWO-LEGGED, ANGRY, and RUNNING are non-relational in that no second represented element is *explicitly* brought into play. But as soon as one represented element is ANGRIER THAN, or ANGRY AT, WATCHING, or STRIKING, BEHIND or even just WITH, a second represented¹ element, that characterization will be termed "relational".

¹ I have chosen to treat as "relational" only those characterizations which relate *represented* elements, and which relate them *explicitly*; thus invalidating, with respect to figure 2A, the descriptions HE'S THINKING ABOUT HIS WIFE, and HE'S A FATHER. I believe that much of interest could be derived from the inclusion of the former within the scope of relational characterization. Nevertheless, as a well-meaning step in the direction of simplicity, this type of description will constitute a non-relational characterization. In the second example, since 2A and 2B are not explicitly placed in a relationship of paternity (as they would be in THE SHORT MAN IS THE TALL MAN'S FATHER), this description is also non-relational. The alternative would be to treat as relational every characterization the definition of which incorporates some sense of relation (AGGRESSOR, FARMER, PERUVIAN, etc.). This I am not prepared to do since, given that labels are already accounted for, the residue would be negligible.

1.3 Summary

These, then, are the two general dimensions along which responses to pictures will be classified: the extent of visual motivation and the degree of complexity.

In the course of the present chapter, a number of further distinctions will be introduced: "static" and "temporal" characterizations (differentiating responses on the basis of interpreted motion) (§2.4); and "interrelated" and "integrated" complexity (§3 and §4). All these distinctions are, to some extent, refinements; the former pair along the horizontal dimension; the latter set along the vertical. Additionally, it will be observed that a fully motivated, *non-representational* type of characterization ("formal description" (§2.5)) should preface figure 3's columns, as in figure 4 below. In essence, however, the scheme which will ultimately result is roughly the following¹:

Figure 4

	+ ← visual motivation → -		
	formal descriptions	labels, and elementary characterizations	inferred and asserted characterizations
non-relational	1	2	3
relational	4	5	6

distinguishing six very general types of description in verbal response to a picture:

- 1) *formal non-relational descriptions* (see §2.5);
- 2) those confined to represented information, without relating constituent elements; that is, *labels* (chapter III) and *elementary non-relational characterizations* (§2.1);
- 3) those which offer justifiable "deviations" from the represented information, without relating constituent elements; that is, *true non-relational characterizations* (§2.2 to §2.4);
- 4) *formal relational descriptions* (see §3);
- 5) those confined to represented information, while relating constituent elements; that is, *elementary relational characterizations* (§3 and §4);

¹ Note that the numerals here refer only to the catalogue beneath figure 4, and should not be confused with the numerals used to score responses in chapter VI.

- 6) those which offer justifiable "deviations" from the represented information, and which relate constituent elements; that is, *true relational characterizations* (§3 and §4).

None of these characterizations is inconsistent with the visual information available. Where a description is counter-indicated by the represented information, we shall look to "n-ary" signification (chapter VIII) for an explanation¹.

2 *Non-relational characterizations*

2.1 *Elementary characterizations*

Elementary characterizations are represented. There is full visual motivation for the characterization of figure 1 WEARING A SUIT – we only have to look. Likewise, that the man is FROWNING; everyone is able to distinguish a frown from a smile (Morris 1978, Knapp and Hall 1992, Ekman and Friesen 1969). Further elementary characterizations might include ON ONE LEG², DOUBLE-CHINNED, HOLDING A STICK and GREY-TEMPLED. That HOLDING A STICK and WEARING A SUIT should be non-relational is a consequence of figure 1's delineation, [stick] and [suit] being spatially included within the basic unit. The response 'UGLY' is also elementary, even while a second viewer may counter 'HANDSOME'. These, though perhaps better classified as "evaluative" characterizations, may be assumed to be as obvious to respective respondents as that the man is frowning.

With the above qualification, then, elementary characterizations seem to be purely "descriptive" in that they tell us something about how the *repraesentatum* looks³. When we come to examine responses in their entirety, rather than in isolated segments, another, rather less informative, type of elementary characterization emerges. It is exemplified by the (again isolated) segments 'THIS', 'THE', 'IT', 'ONE', 'THERE IS A', etc. These, in so far as they merely *locate* the

¹ In §5 we shall see that "given" should be substituted for "represented" in the outline above; and that this entails a modification of the foregoing as follows: where a description is counter-justified by the *given* we shall look first to *representational alternatives* for an explanation; *failing that*, we shall look to n-ary signification.

² In fact "*on one leg*" is not, strictly speaking, elementary. We should perhaps describe the posture "with left leg bent at the knee such that the lower leg forms an angle of approximately 65° with the upper leg; and with the lower part of the right leg ... ", For the sake of brevity, however, we shall stick with "on one leg".

³"How the *repraesentatum* looks" is bound to have an uncomfortable feel to it. It is distinguished from "how the smudge of pigment looks" in §2.5 below. The question of how – or indeed *whether* – it can be distinguished from "how the *repraesentans* looks" is addressed in §6.

repraesentatum, identifying it only as an object occupying space, a perceptually discrete body, will be termed "corporeal" elementary characterizations. We may anticipate their being numerous in any lengthy response, and that their frequency will be heavily language-dependent.

2.2 *Inferred characterizations*

Figure 1's man, like it or not then, is FROWNING. That we should go so far as to say that he is ANGRY is an *inference* based upon the represented frown. It relies on the assumption that when people feel angry they behave pretty much alike; that is, there is a regular association of "basic emotions" (happiness, sadness, anger, surprise, fear and disgust) with a limited number of facial expressions (Morris 1978; Knapp and Hall 1992; Ekman and Friesen 1969). Likewise the less transient 'MEAN-MINDED'. A number of studies indicate that a physiognomy-personality correlation does indeed exist – not only in stereotypical association (thick eyebrows → choleric temperament, etc.), but also in fact; depressed people do look depressed, and forty years of constant and overt cheerfulness cannot but impress themselves upon a person's facial features (Fridlund, Ekman and Oster 1987, reported in Knapp and Hall 1992). Nevertheless, despite the plausibility of an occasional match, since there is no necessary congruence, the response 'MEAN-MINDED' is inferred. 'BUSINESSMAN' is also inferred. The man may not be a businessman, but (especially in rural Peru, where suits are fairly thin on the ground), the assumption is not an unreasonable one. Had the man been pictured at a desk, pen poised over the quarterly projections, and lapel badge visibly reading "Mr. Green, Accounts Manager", the characterization BUSINESSMAN would be considerably more plausible, but still an inference, for all that.

Inferred characterization is based, therefore, upon the regular (but not necessary) co-occurrence of some elementary feature (explicitly described or otherwise) with a second feature: an *interpretation* of the first, neither directly represented nor even, unambiguously, representable (cf. partial overlap, chapter VI, §6). Thus the interpreter may be said to have taken a small but significant step away from the represented information. In ways denied to elementary characterization, inferred characterization always offers *choice*, albeit restricted choice. Figure 1 could represent a POLITICIAN – but not a SMILING POLITICIAN WEARING SHORTS AND A T-SHIRT.

2.3 Asserted characterizations

Asserted characterizations are those descriptions which may not be inferred from, but which are not counter-indicated by, the represented information. There are, however, a number of caveats with respect to this category. Assertions should not be confused with what might be termed "culture-specific inferences" (see Ekman and Friesen 1969). Consider responses to an imagined [human figure]: 'THINKS SOMEONE'S WIFE IS BEING UNFAITHFUL TO HER HUSBAND', 'IS A MEMBER OF

Figure 5



THE UNIVERSITY OF TEXAS', and 'AWARE OF THE IMMEDIATE PRESENCE OF EVIL'.

On the face of it, each seems highly gratuitous. But suppose closer inspection to reveal that one hand of the depicted figure forms the "vertical horn" (figure 5). This gesture is used to indicate "cuckold" in parts of Europe and South America, as an of solidarity within the University of Texas,

and to ward off the evil eye worldwide (Knapp and Hall 1992; Morris 1978). None of the above interpretations need, therefore, be any more than an inference¹.

Even the content of speech may be inferred if a viewer is sufficiently well versed in, for example, "pious gesticulation" (Baxandall 1988); that is, the exaggerated poses of fifteenth and sixteenth century itinerant preachers, adopted to overcome language barriers, codified in instruction manuals:

- "[3] And whan thou spekyst of any heuenly or godly thynges to loke vp and pointe towards the skye with thy finger.
 [4] And whan thou spekest of any gentilnes, myldeness, or humylyte, to ley thy handes vpon thy breste" (Mirror of the World, ca. 1527, cit. in Baxandall 1988: 65).

and enshrined in the art of the period.

These examples serve to alert us to the possibility of culture-specific inference, and to dissuade us from hasty assumptions of an interpretation's being wholly without foundation.

¹ Note that the response 'CUCKOLD' to figure 5 *itself* would be counter-indicated within representation, subsequently classified within n-ary signification (cf. Hjelmslev's "metasemiotic" (1961)).

Returning finally to figure 1, asserted characterizations which, I should maintain, stand the test include 'FIFTY-FIVE YEAR-OLD', 'DEAF', 'IN LOVE', and 'PONDERING ON THE MERITS OF VIOLENCE', 'MR GREEN' (but see chapter VIII, §7); and, with certain reservations (see §2.4.3 below), any description of an event imagined to have occurred before, or about to occur after, the picture's time-context, such as 'HAS JUST BEEN ROBBED'. Each of these is ultimately attributable, surely, only to a certain imaginative input; and it is just such excursions into asserted characterization, with their assumption of creative control over represented characters, which mark the romancer from the diagnostician and the witness.

2.4 Movement

With the possible exception of SPEKYNGE OF HEUENLY THYNGES, none of the examples so far accounted for incorporates movement. Reference to movement in response to both representational and non-representational figures was, in the heyday of the projective test (chapter II), considered a clear indicator of creativity (Barron 1969; Bell 1948; Adcock and Ritchie 1958), whether that creativity was subsequently qualified as, for example, egocentric wish-fulfilment in the manic, or rudimentary fantasy in the feeble-minded (Bell 1948: 123-4). The briefest of skimmings through the data themselves, moreover, reveals a clear tendency on the part of some informants to offer frozen, movement-free interpretations, in which represented characters are JUST THERE, or WATCHING other represented characters. It seems, therefore, that a differentiation of responses on the basis of incorporation or non-incorporation of movement may be an interesting and perhaps useful distinction to make. This section attempts to locate interpreted movement within the framework proposed, asking first whether, under any circumstances, movement may qualify as an elementary characterization.

2.4.1 Elementary motion?

Let us begin by considering the response 'RUNNING'. What is represented in figure 1 is a man ON ONE LEG, perhaps ON TIPTOE, admittedly an awkward position to maintain for any length of time. To conclude that the man is RUNNING, however, necessitates the hypothesizing of other unrepresented postures: the before and after, as it were. This insufficiency on the part of the represented information qualifies RUNNING as an inference at the very least.

Indeed, the representation of "impossible" postures, such as that of a person seemingly suspended in mid-air, perhaps with an unattached shadow beneath,

renders movement more plausible as an inference and more likely as an interpretation, but no less an inference (see Panofsky on the "hovering" Infant Jesus in Roger van der Weyden's "The Vision of the Three Magi" (1955: 59)). An impression of speed may be conveyed by a represented stirring up of dust particles (Leonardo da Vinci 1954: 251). The cartoonist's "speed clouds" and "impact markers" are, it seems to me, a schematic update of just such a strategy. "Shudder lines" in cartoons too, often reinforced by a written "statement of intent": *SHAKE!!*, and the like, may be tracings of a character's previous positions. As an extreme, they may verge on a quasi-cubist (or indeed quasi-palaeolithic (Prudhommeau 1990)) approach in their simultaneous representation of non-simultaneous postures:

Figure 6



(adapted from *The Beano*, 26/9/1992)

Since such devices will seem incongruous in any more naturalistic picture (cf. chapter V, §5.4.4), the painter may resort to a subtler, but related, means of expressing motion: the "natural-looking unnatural posture". Arnheim (1974) cites an informal experiment by Salomon Reinach which indicates that the postures best conveying motion are often those which may not (through anatomical unfeasibility), or simply do not (through impracticality and awkwardness), occur in reality. Such postures are absent from any series of photographs of the movement concerned, but constitute a "composite posture" (*ibid.*; see also Gombrich 1989). Delacroix's "Liberty Guiding the People", for example, shows the goddess striding forth, standard aloft, amidst a hazardous array of upturned bayonets, whilst looking over her shoulder to urge on the masses. Were she human and non-pictorial, she would as likely set about her leading thus, as Reinach's horses gallop with both pairs of legs simultaneously outstretched.

Arnheim concludes that "Consequently, the immobile image is not momentary, but outside the dimension of time. It can combine different phases of an event in the same image without committing an absurdity" (1974: 424). I disagree only with

the implied relation between these two sentences. The unnatural composite posture succeeds in conveying an impression of movement not because "real time" is not an issue, but because the unnatural posture is perceived (however erroneously) to be natural. I do, however, agree that it is not possible to *represent* motion in a picture. As we have seen, though, it is not difficult to imply motion, nor, correspondingly, for it to be inferred (Carello, Rosenblum and Groszofsky 1986).

2.4.2 *Temporal ~ static inference*

Even so, ANGRY and RUNNING may strike us as inferences of different kinds. If we divest the former of its underlying represented information (FROWNING), we are left with a rather nebulous residue which co-occurs with FROWNING, but is unrepresentable; if we perform the same operation on the latter, the residue *is* representable, but may not co-occur (within the representational approach we have adopted). In order to capture this potentially significant contrast I have seen fit to differentiate "static" and "temporal" inferences.

The term "temporal" is perhaps misleading since "real time" is not at the root of the distinction between the temporal inference RUNNING and the static inference ANGRY; anger occurs in time too. Neither is the difference one of "length of time involved", even though it might, in practice, be possible to be angry for a millisecond or for a year, whereas to run for either duration is not feasible. Anger could, moreover, result in many postures:

"An angry figure should be represented seizing someone by the hair and twisting his head down to the ground, with one knee on his ribs, and with the right arm and fist raised high up; let him have his hair dishevelled, his eyebrows low and knit together, his teeth clenched, the two corners of his mouth arched, and the neck which is all swollen and extended as he bends over the foe, should be full of furrows" (Leonardo da Vinci 1954: 247-8).

Anger needs, however, only one: the FROWN. RUNNING, on the other hand, is not a single posture; it is a series of different postures, constituting what might be called a "temporal set", no single member of which (on paper or in reality) is sufficient to constitute RUNNING. Imagine a length of film, each frame of which is indistinguishable from figure 1. After two hours of such a film, viewers might still be receptive to the idea that the man is ANGRY, BREATHING, WAITING, STARING, and BALANCING; but to convince them that RUNNING is occurring, the frames must differ appreciably from one other.

Within temporally inferred visual justification, then, are subsumed many movements of which the represented posture constitutes a part. As with static inferred characterization, there is choice; the man in figure 1 may as validly be said to HOP. Some movements, however, may not be inferred, even from a likely-looking posture. It is to these we now turn.

2.4.3 *Temporal assertion*

Temporal assertions require that the characterization refer to a temporal set of which the represented posture is a member, but that it contain, in addition, an element of "gratuitousness", not inferable from the given. The examples offered in §2.3 above do not qualify; they are *static* assertions. Assertions which do qualify include our initial RUNNING AFTER A PICK-POCKET, and actions which themselves presuppose some previous action; for example, RUNNING AGAIN, in which a like event, unwitnessable within a single picture, is imagined to have occurred; and ESCAPING, in which a complementary event, "being imprisoned" perhaps, is envisaged.

In these cases, the temporal assertion may be viewed as the combination of static assertion and temporal inference since the gratuitous element is a *static* gratuitousness (RUNNING AGAIN and ESCAPING may be rephrased respectively: HE RAN AND CEASED TO RUN (static assertion): HE IS RUNNING (temporal inference); HE WAS PREVENTED FROM RUNNING (static assertion): HE IS RUNNING (temporal inference)). Although there may be a case for maintaining that in other examples (VANISHING, being, in fact, the only one which comes to mind) the temporal element is itself asserted, I have opted not to complicate the framework further. Moreover, since the vast majority of temporal assertions are of the first type, and since even the extremes of temporal assertion seem less tenuously linked to the represented information than those of static assertion (alone) (§2.3), their relative positions as regards visual motivation are as presented in figure 7 below.

2.5 *Non-representational description*

Responses may refer to the configuration of marks on the paper and not to any represented character; they may refer, that is, to the formal attributes of a two-dimensional array perceived non-representationally. Figure 1 may be described as SMALL, BLACK AND WHITE, THERE, etc. Evidence of representational interpretation will automatically reclassify such descriptions as elementary characterizations.

2.6 Summary

We have arrived at a six-fold classification of non-relational characterizations:

Figure 7

		← visual motivation →			
formal	elementary	inferred		asserted	
		static	temporal	temporal	static
SMALL	FROWNING	ANGRY	RUNNING	ESCAPING	DEAF

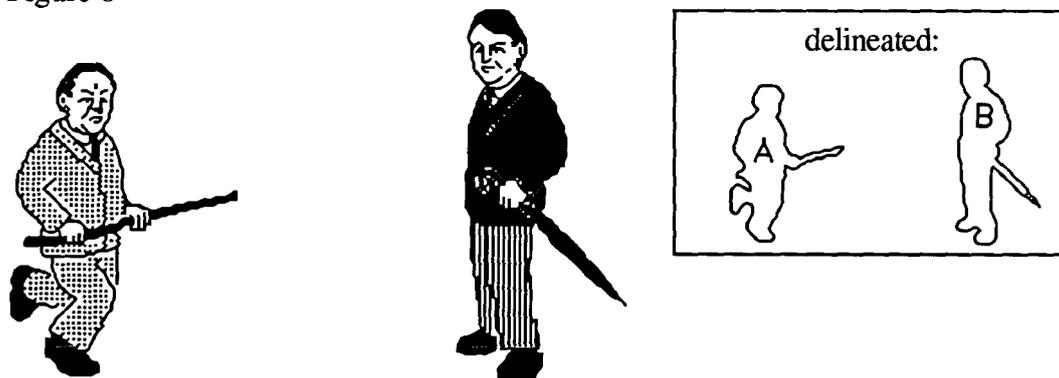
It should be noted that any particular response is assessed not only in itself (RUNNING, for instance, may never be elementary), but also with respect to the picture concerned; ESCAPING, for example, is indeed an assertion with respect to figure 1, but we may readily imagine a picture with respect to which it would be an inference.

Now let us add the second dimension.

3 Interrelational characterizations

All the characterizations examined above are "non-relational". Our framework so far does not of course permit them to be otherwise, since figure 1, as delineated, presents only a single representans. Turning to figure 8, in which two distinct elements are delineated (*MAN* and *MAN*),

Figure 8



integration and interrelation become interpretative options; options which need not, however, be taken up. The characterizations of MAN^A, 'ANGRY', 'MEAN-

MINDED', 'IN LOVE', 'RUNNING AFTER A PICK-POCKET', etc., are still non-relational since MAN^B's participation is not explicitly called for. Once MAN^B's participation *is* required, whether as the object of MAN^A's anger, the target of MAN^A's stick, or simply as a co-constituent of the picture, the characterization is relational. I repeat here that relational characterizations should be explicit (§1.2), and may only involve represented elements. Since the classification of relational characterization at this stage attempts to parallel that proposed for non-relational characterization, above all with reference to the degree of visual motivation, the points to be made need not be laboured a second time.

- 1) Relational characterizations may be elementary; for example, MAN^B 'IS TALLER', 'THINNER', and 'LESS WRINKLED THAN', MAN^A. That is, they may consist in the comparison of attributes which non-relationally would be considered elementary (TALL, THIN, WRINKLED). They may also consist in a limited number of "inference-neutral" (WITH), and more obviously spatial (BEHIND, BESIDE, etc.), relations; and in the recognition of certain relative physical postures (FACING EACH OTHER).
- 2) Relational characterizations may be static inferences; for example, MAN^B 'IS YOUNGER AND HEALTHIER THAN', or 'WATCHING' MAN^A. Once again, we should be alert to the possibility of culture-specific inferences.
- 3) Relational characterizations may be temporal inferences; for example, MAN^B 'IS SWISHING AN UMBRELLA AT', or 'TALKING TO', MAN^A. Although the postures necessary for the latter need differ only slightly, a temporal remainder is required nonetheless.
- 4) Relational characterizations may be static assertions; for example, MAN^B 'IS THE SON OF' MAN^A; MAN^B 'TOLERATES', 'FEARS', 'STRUCK', 'IS ABOUT TO STRIKE ' MAN^A.
- 5) Relational characterizations may be temporal assertions; for example, MAN^B is 'PERSISTENT IN CHASING' MAN^A. The characterization 'GIVING BACK', though inappropriate here, is also a temporal assertion. It is, I am convinced, practically impossible to judge the intended direction of many reversible pictured transactions (see, for example, François de Troy's "Truth Unmasking (or is it masking?) Envy"). Since we are not concerned with any intended direction, and since one direction is as inferrable as

another, either may be an inference. It is the presupposition of sequentiality contained in "giving back" which renders it an assertion.

- 6) Relational characterizations may be *formal*. As in §2.5 above, formal non-representational comparisons, not properly termed "characterizations" are also possible; for example, SMALLER and GREYER. With these are included the fairly basic BESIDE, THERE TOO, and even ABOVE, although the latter will depend upon the orientation of the paper. As with non-relational characterization, if these formal descriptions are accompanied by clear hints of representation, they are reclassified as elementary characterizations.

Obviously the interrelations considered above are comparatively straightforward in that, whether "relata" refers to re-presentata or to delineated units, there are, in each case, only two of them. It is not difficult to see how matters may be complicated; either by the introduction of further delineated units, or by the *reintroduction* of one of the relata. A strategy we might propose for dealing with such responses as 'MAN^A IS ABOUT TO CHASTISE MAN^B FOR MAN^B'S ATTEMPT TO WREST FROM MAN^A HIS (MAN^A's) SEAT ON THE BOARD OF DIRECTORS', would take little account of either "anaphora" or "embedding", and would focus instead, simply upon the *number of delineated units involved*; in this case: two.

4 Integration

All the relations considered above maintain the integrity of the individual constituent picture. MAN^A may be JABBING HIS STICK AT MAN^B; he may be a JEALOUS RIVAL, a FATHER, or an ENRAGED EMPLOYER, with respect to MAN^B; but in none of these instances does the characterization overstep the boundaries of either delineated unit; MAN^A does not cease to be, however deviantly, in a one to one correspondence with the basic unit A. We shall term the type of relational response described in §3 an "interrelation".

Where a response portion corresponds to an anatomical unit which (spatially) *includes* two or more of those deemed basic, we shall speak of "integration". "Integrated" responses to figure 8 include 'COUPLE', 'MEN', 'PAIR', 'RIVALS' and even 'THE JONES FAMILY'.

4.1 *Singular and plural integrations?*

It might be supposed that there are clearly two types of integration in evidence here; 'COUPLE', 'PAIR' and 'FAMILY' being of one type; 'MEN' and 'RIVALS' another. The distinction between them might be formulated in terms of "singular" versus "plural", or "collective" versus "distributive", integrations. On the face of it, this seems a potentially significant contrast. The "singular integration" might be said to be more complex than the "plural integration", in so far as the former offers a new and intrinsically different unitary whole the import of which transcends the import of the integrated parts.

I do not believe, however, that such a distinction may reasonably be upheld – the idiosyncrasies of "countability" in the English language alone (see Lyons 1968) should suffice to inhibit the attempt. Of course we may choose to disregard the relative consistency with which countability is encoded in a particular language. Instead we might concentrate upon the singularity or plurality of the individual response portion, perhaps incorporating in corroboration some notion of the "recoverability" of the integrated elements. Since MEN, for example, is pluralized, the respective integrities of MAN^A and MAN^B are still in evidence. FAMILY, on the other hand, is singular, and with its singularity comes the impossibility of recovering the integrated elements' original identities, other than in a purely intensional manner. Although this distinction has a certain plausibility, a closer examination reveals problems.

Imagine a picture in which a [man], a [suitcase], a [guitar], a [birdcage] and a [golf-bag] are delineated as distinct constituent repraesentantes. The following responses are offered:

'MAN WITH HIS PROPERTY'
 'MAN WITH HIS PARAPHERNALIA'
 'MAN WITH HIS EFFECTS'
 'MAN WITH HIS POSSESSIONS'
 'MAN WITH HIS THINGS'
 'MAN WITH HIS CHATTELS'
 'MAN WITH HIS BELONGINGS'

We might classify the portions 'PROPERTY' and perhaps 'PARAPHERNALIA' ('PARAPHERNALIUM'?) as singular integrations, which may be said to achieve a somewhat higher order of complexity than the plural integrations 'EFFECTS', 'POSSESSIONS', 'THINGS', 'CHATTELS', and 'BELONGINGS'. But in the course of our attempting to recover the integrated elements underlying 'POSSESSIONS',

EFFECTS', etc., it becomes apparent that (unlike MEN = MAN^A + MAN^B above) only some of the presumably "corresponding" singular referents could possibly have been the conceptual ingredients used to construct the plural. 'POSSESSION' and (at a pinch) 'CHATTEL' may pass the test; while 'EFFECT', 'BELONGING', and 'THING' do not. Thus the plural integration may *also* offer a new and intrinsically different unitary whole the import of which transcends the import of the integrated parts.

Yet we have omitted the most important point: with the possible exception of 'THINGS', these responses are practically synonymous with one another; each succeeds in integrating all the various bits of baggage, and there is certainly insufficient difference in import – even without the picture concerned – to merit their being differentiated in terms of visual motivation. Thus classification on the basis of singularity or plurality may entail classification purely on the basis of etymological or realizational accident, and it seems counter-intuitive that this should be understood to influence complexity. Consequently, 'COUPLE', 'PAIR', 'MEN', 'FAMILY' and 'RIVALS' are all subsumed within a single level: that of integration.

4.2 Integrated characterizations

The distinction between integrations on the basis of "transcendent" or "non-transcendent" import, however, seems a valid one, and if there is a sense in which this is felt to have been sacrificed on the basis of a single set of examples, this need not be so. Integration constitutes a level of analysis, and, like the two preceding levels, possesses a horizontal dimension as well as occupying a place on the vertical dimension of complexity (see figure 9).

MEN belongs within "integrated labels" while 'RIVALS' and 'FAMILY', for instance, should be located within "inferred and asserted characterization". It is the increase in imaginative input, necessarily complementing a decrease in visual motivation, which accounts for any "transcendent" import imputed to 'RIVALS' and 'FAMILY' above.

Ranking 'MEN' as a label alongside 'MAN', 'DOG' and 'LARUS ATRICILLA L.' does, however, call for some comment, since Linnaean taxonomies and the like have neither room nor use for plural suffixes, infixes, etc. Yet I do not think it would be entirely misleading to view the label as a conceptual analogue of Lyons' "semi-mass" noun (1968: 282). An observer might be said to register, through the

perception of shape alone, a certain quantity of, say, elephantine matter. The difference between 'ELEPHANT' ("safari" plural) and 'ELEPHANTS' (plural) is that only the latter, courtesy of the suffix -S, makes it explicit that the substance occurs in at least two perceptually distinct portions (cf. Quine 1971, 1974).

It should be noted that the provision of examples within this section has been to some extent misleading in its exclusion of less obvious, but equally valid, integrations, for example:

'THEY' and 'TWO'	in the absence of evidence of representation: formal integrated description
'THEY' and 'TWO'	in the presence of evidence of representation: elementary integrated characterization
'PEOPLE'	label
'CARRYING STICKS'	elementary integrated characterization
'ARE WATCHING EACH OTHER'	static inferred integrated characterization
'USED TO BE GOOD FRIENDS'	static asserted integrated characterization
'SWISHING STICKS'	temporal inferred integrated characterization
'JONES FAMILY'	static asserted integrated characterization

and that the options available to the viewer within representation may be summarized as follows:

Figure 9

	+ ← visual motivation → -
	formal descriptions labels, and elementary characterizations inferred and asserted characterizations
non-relational	
integrated	
interrelated	

5 *The given revisited*

At the beginning of this chapter, *MAN* was proposed as the norm for figure 1. Though I hesitate to offer 'FISH EATING PEAR, PARTIALLY OBSCURED BY PIECE OF SEAWEED' as an alternative representational correlate, the fact remains that MAN is only one of an infinite number of possibilities – however unlikely, unprecedented and unnameable those alternatives may appear to be. Since §1, however, we have throughout seemingly abandoned the given in favour of the represented, as though

the assertion of *MAN* resolved all representational ambiguity. Nevertheless it should be apparent that ambiguity does not cease with the label, and that it is a *particular* interpretation of the represented information which underlies many of the characterizations described above.

For example, only by perceiving that mouth-like line on the man's face *as* a [mouth] may we describe him as FROWNING; only from a [frown] may we reasonably *infer* that he is ANGRY. The characterization INJURED would come as something of a surprise; and since there appears to be no elementary feature from which INJURED might be inferred, we should accord INJURED the status of "static asserted characterization". Were we instead to have seen that same line as a [rather nasty facial scar], SCARRED would become a valid "alternative elementary characterization". INJURED, then – its gratuitousness in this case undermined – should be re-classified as an *inferred* characterization (and ANGRY perhaps as *asserted*). Thus, ostensibly dealing with represented information, we seem once again to have been dealing with a particular interpretation of that information: the given.

Although the scar-alternative may seem altogether too far-fetched to warrant a reintroduction of the given at this point, further examples reveal ambiguity of a more conspicuous nature.

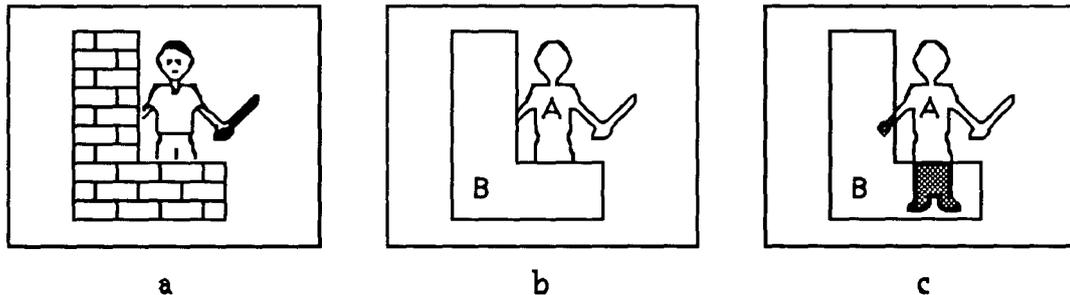
5.1 Ambiguity and occlusion

Take figure 10a. How should we cope with a response 'THIS MAN HAS NO LEGS'? It was observed in chapter V (§5.4.3) that the percept can withstand a certain amount of impoverishment of detail and represented occlusion, and that viewers tend (within limits) to interpolate an occluded "remainder". Yet this respondent would seem to have a point; 10a could indeed represent a man shorn off at the thigh. Here is a clear case of representational ambiguity at an *elementary* level.

The inclusion of *occluded* portions *within* the spatial extension of a basic anatomical unit allows us a means of resolving this representational ambiguity. This in turn affords a systematic account of the characteristically "two-dimensional" response in the test data, of which 'THIS MAN HAS NO LEGS' is an unexceptional (albeit hypothetical) example. Typically, these responses do not attest to the registration of represented occlusion; regularly containing references to FOOT-LESS, HAND-LESS, and OTHERWISE CURTAILED, figures. That is, informants respond as though the limits of the anatomical unit were delineated as in

figure 10b; the interpretation I prefer anticipating interpolation of a remainder as in figure 10c:

Figure 10



my preference in this respect, moreover, being another aspect of the given.

There is still room for ambiguity, of course; and a wholly explicit formulation ought, rather like a set of encephalograms, to incorporate slice-by-slice overhead views, side views, and perhaps also some indication of scale. Nevertheless, where a picture seems to me to incorporate neither occlusion of one delineated unit by another, nor "fade-out" (chapter VI, §7), I shall go only so far as to specify that the *repraesentatum* "has no structural abnormalities"; thus invalidating, within the given, the possibility that figure 1's left hand protrudes from his stomach, or that he possesses three legs, the third of which is obscured by the other two. Should we be alerted to an unforeseen ambiguity in the course of the accounting, a more explicit formulation of the given will be undertaken.

5.2 *Ambiguity and delineation*

To maintain that a picture incorporates no occlusion of one delineated unit by another, however, is entirely, and circularly, dependent upon the (given) delineation itself. Classification of a response as relational or non-relational is likewise wholly at the mercy of this operation. With respect to figure 1 again, 'HOLDING A STICK', for example, is only non-relational because the [stick] is included within the anatomical unit A. Had the [man] and the [stick] been delineated separately, 'HOLDING A STICK' would have been an interrelation, and 'STICK' (alone) a non-relational response.

On the basis of the original delineation, however, the response 'STICK' presents something of a problem. The solution necessitates the introduction of a further level of analysis: "fragmentation".

5.2.1 Fragmentation

Responses which focus upon (spatially) smaller units than that deemed basic, with, moreover, no overt indication of their being *integrated* into the basic unit, will be said to be "fragmented".

Figure 11

	formal	labels	elementary	inferred and asserted
fragmented				
non-relational				
integrated				
interrelated				

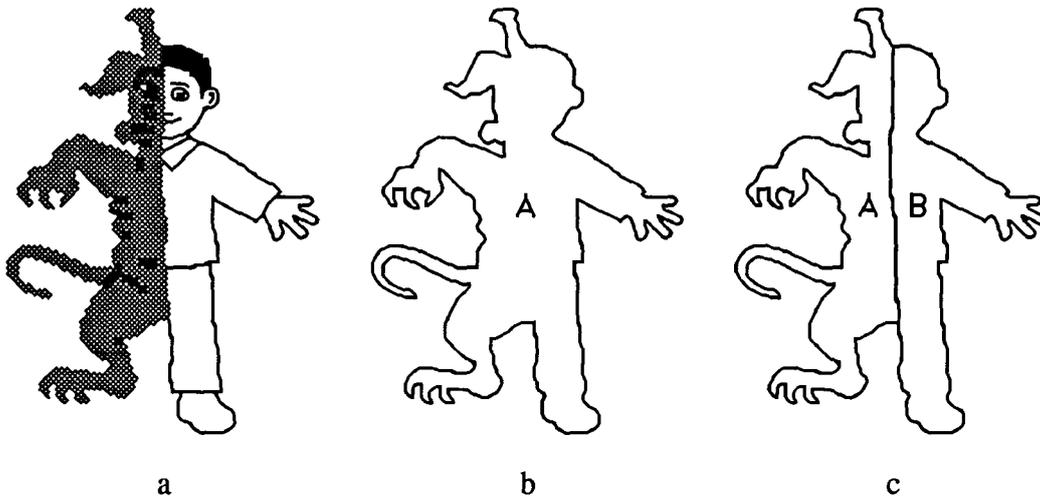
The responses to figure 8: 'SOME RATHER SMART TROUSERS, A STICK, A TIE, ...', and 'TORSO, LEGS, HEAD, ...', for example, are fragmented responses (cf. chapter V, §7's response 'A BRICK, ANOTHER BRICK, ...'). Where a response *does* also feature the unit itself, that response is not fragmented but non-relational; for example, the responses 'A MAN WITH A STICK' (elementary), or 'HE'S VERY PROUD OF HIS SMART TROUSERS' (asserted).

So long as the delineations are effected in a reasonably consistent (e.g. consistently intuitive) fashion, the subjectivity involved is no cause for concern. In some cases, however, it is convenient to opt for a *counter-intuitive* delineation.

5.2.2 Chimera-anatomy

The acknowledged subjectivity of the basic anatomical unit renders less problematic than might be anticipated the "anatomy" of those entities for which, so far as I am aware, there is no known precedent, real or traditionally fictional. Figure 12a (a re-working of Picture 22c, reproduced in Appendix A), for example, shows the rather unlikely combination of man and beast, joined – or so I shall assert – vertically down the middle (figure 12c).

Figure 12

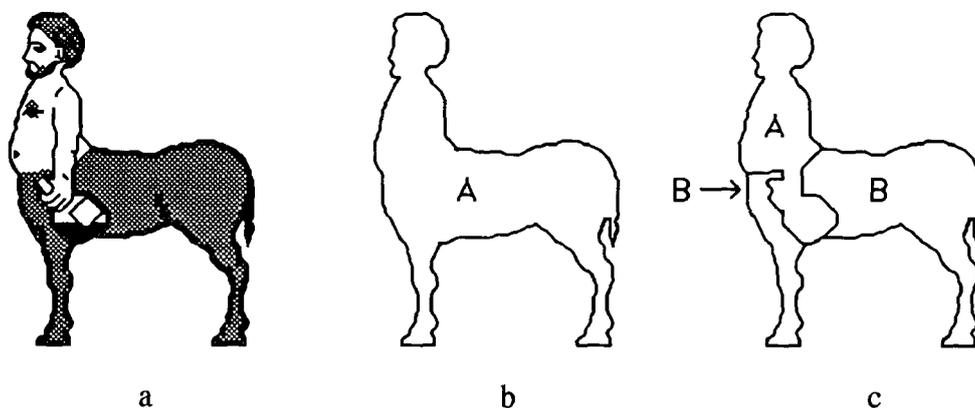


Since its redrawing into anatomical units may be performed purely visually, mechanically; certainly *wordlessly*, this is easily achieved. I may readily delineate the unit as in figure 12b. The difficulties consist, rather, in *labelling* the entity, and in specifying its taxonomic credentials.

Common or garden mythical beasts earn themselves names through their sporadic appearances if not in the street at least in legend. "Satyr", for instance, refers to (roughly) half a goat/half a man; "centaur", to (even more roughly) half a horse/half a man. But no name springs to mind for the entity composed of half a man/half a padlock which features in the Peruvian government's Poster 5 (Appendix C); and, though one might imagine the Minotaur to look something like figure 12a, 'MINOTAUR' is surely not a reasonable response to expect in rural Peru.

Centaur and satyr do, however, provide the solution to the chimera problem.

Figure 13



Were we to delineate figure 13a as in figure 13b, and subsequently to assert the norm *CENTAUR*, the response 'HALF A MAN/HALF A HORSE' would constitute a

fragmentation. Fragmentation, however, is only the inverse of integration. By asserting, rather, *MAN* and *HORSE* as norms for figure 13c's units A and B respectively, 'CENTAUR' becomes an *integration*, fully on a par with 'PROPERTY', 'CROWD' and 'MEN' in §4 above, in terms of its correspondence to more than one basic unit.

5.3 Summary

We have attempted in the course of this chapter to provide a framework for the classification of responses to pictures in terms of their visual motivation and complexity. In §5 above, we acknowledged that ambiguity within the represented persists beyond the label level, and that the subjectivity involved in resolving that ambiguity has repercussions for the status of a response in terms of both visual motivation and complexity. In order to distinguish (1) those response portions bearing an unacceptable correspondence with the *represented* information (that is, under any conceivable representational reading, and at any representational level of analysis) from (2) those which, while not inconsistent with the visual information available, bear an unacceptable correspondence with the *given*, we shall term the former: "counter-indicated" interpretations; and the latter "counter-justified" interpretations.

The six general response types listed in §1.3 merit repetition with the appropriate modification:

- 1) those which provide no evidence of a representational interpretation, and which do not relate constituent elements; that is, *formal non-relational descriptions*;
- 2) those confined to the given, without relating constituent elements; that is, *labels and elementary non-relational characterizations*;
- 3) those which offer justifiable¹ deviations from the given, without relating constituent elements; that is, *true non-relational characterizations*;
- 4) those which, while relating constituent elements, provide no evidence of a representational interpretation; that is, *formal relational descriptions*;
- 5) those confined to the given, while relating constituent elements; that is, *elementary relational characterizations*;
- 6) those which offer justifiable deviations from the given, and which relate constituent elements; that is, *true relational characterizations*.

¹ Note that "justifiable" has now acquired a more specific sense than §1.3.

With the incorporation of a few numerical mnemonics, figure 11 now provides us with the bones of a "score-sheet" (figure 15) with which to begin the task of rating, in terms of their deviation and their complexity, verbal responses to pictures.

Figure 15

	0 formal	1 labels	2 elementary	3 inferred and asserted
0 fragmented	00	01	02	03
1 non-relational	10	11	12	13
2 integrated	20	21	22	23
3 interrelated	30		32	33

6 *The limits of representation*

But we are a long way from any of the communicative potential of the picture envisaged in chapter I. Given the following pictures:

- a) [a man with a structurally abnormal eye];
- b) [a uniformed man, his foot poised near woman];
- c) [a bearded man laying hands on a man with a crutch];

we can account for the responses:

- 1) 'THE MAN WITHOUT THE SAFETY VISOR HAS AN EYE INJURY';
- 2) 'A POLICEMAN IS KICKING A WOMAN';
- 3) 'A BEARDED MAN IS HEALING A CRIPPLE';

but we have, as yet, no way of accounting for the following:

- 4) 'WEAR YOUR SAFETY VISOR AND AVOID EYE INJURIES';
- 5) 'POLICEMEN KICK WOMEN';
- 6) 'CHRIST HEALS THE SICK'.

The question is whether our ability to deal only with the first set is simply a consequence of the inadequacy of the framework adopted; or whether it points to a deficiency within representation itself.

I shall argue briefly for the latter, although it brings seriously into question the status of the picture as a medium of communication.

6.1 *Repraesentatum or repraesentans?*

A fundamental criterion for communication is the non-identity of signifier and signified (see, for example, Mulder and Hervey 1980; Martinet 1980; Eco 1976). As facets of a picture, we proposed, on the one hand, a realized repraesentans – paper, celluloid, or whatever; and, on the other, a real or hypothetical experiential correlate (chapter V, §2.1). This seems straightforward enough. Nevertheless, it is still not clear that the criterion of non-identity is satisfactorily fulfilled in the picture, and that signifier and signified are sufficiently distinct to be termed separate entities (Martinet 1973; Hervey 1982).

In film, to begin with a somewhat peripheral example, this confusion is particularly marked (Monaco 1981). The tendency of film-goers is to become so involved in the spectacle, psychologically speaking, that they treat the image on the screen not as a representation of reality, but as a *presentation* of an illusory reality¹ (Hervey 1982; Eisenstein 1949; Bazin 1967; Arnheim 1958). It is this which leads Hervey to speak of a film's "subject-matter" (1982: 234), rather than its "signified" (cf. Metz 1974; Monaco 1981)², and to liken film perception to direct visual perception (Hervey 1982: 242). That is to say, because we are prepared to accept the filmic image as *real*, it loses, to a great extent, its signifiatory capacity.

In chapter II, the perception of non-photographic pictures was also likened to direct visual perception. True, they lack the photographic image's "quality of credibility" (Bazin 1967; Metz 1974); the stylized [man] is rarely mistaken for a *real* man. But, by our account, since the [man] possesses sufficient essential visual features to evoke a particular percept, visually speaking, it *is* a man nonetheless. The reduction in realism, therefore, seems not necessarily to have entailed an increase in signifiatory capacity.

Here, we come face to face with the possibility that in naming and describing the "referent", all we are really doing is naming and describing the realized

¹ Although there are many ways in which film may differ from reality (jump-cutting, slow motion, dissolves, etc.), and although a film's claim to "art" may depend upon such filmic effects (Arnheim 1958), for the viewer, the illusion persists.

² It should be noted, however, that for film theorists the sense of "signified" is not infrequently that of Barthesian "signification", rather than that of Saussurean "signified" (see, for instance, Metz 1974: 98, footnote).

repraesentans; that is, face to face with the possibility that the repraesentans *is* the repraesentatum, and that it "indicates" only its own identity. The triviality of such "indication" (Mulder and Hervey 1980; Hervey 1982) ought to disqualify the picture from the status of index.

Hervey's criticisms, though levelled at film, are, through our espousal of the equivalence of optical information, also levelled at us:

"If we call the relationship between what is projected on the screen and the portrayed subject-matter a relationship of 'signification', we are only one small step away from saying that the relationship between a real action perceived by the senses and a real action conceived by the mind is also a relationship of 'signification'. In view of diegesis, the psychological basis of 'interpreting' what is projected on the screen is virtually the same as that of interpreting the events that really happen around us. There is nothing 'sign-like' in this interpretation – consequently 'signification', 'signifier' and 'signified' (concepts specifically designed to make sense only in the context of 'signs') are wholly inept when applied in the context of films" (Hervey 1982: 238-9).

The photographic still (a valid picture (chapter V, §2.2.3)), however, seems to escape this censure by treading a middle path. It is not sufficiently realistic as to present an illusory reality; while not sufficiently *unrealistic* as to lose touch with reality. A photograph of Sophia Loren, moreover, is an entity entirely and unambiguously distinct from Sophia Loren herself. Even if the photographed individual is unknown to us, it seems reasonable to suppose that such an individual exists. It is presumably on this basis that photographs are admissible as evidence in a court of law. Here, at any rate, is a picture which *refers*; a picture which *denotes*.

6.2 Pictorial reference?

Goodman, for one, would seem to think so.

"A picture that represents [...] an object refers to and, more particularly, *denotes* it. Denotation is the core of representation" (Goodman 1976: 5). A picture of the Duke of Wellington, for example, represents the Duke of Wellington (*ibid.*: 28); a picture "of" Pickwick, on the other hand, does not represent Pickwick since there is no Pickwick to represent (*ibid.*: 21). The ontologically ambiguous use of "of" in both cases – a quirk of the English language – leads Goodman to substitute for "picture of Pickwick": "Pickwick-representing-picture", and to contrast this with "picture *of* the Duke of Wellington"; the latter picture denotes the Duke of Wellington (*ibid.*: 28); the former denotes nothing (*ibid.*: 23)¹; all that "Pickwick-

¹ That is to say, the denotation class is empty.

representing-picture" specifies is what *kind* of picture it is (ibid.: 22). "A picture must denote a man to represent him, but need not denote anything to be a man-representation" (ibid.: 25).

Obviously the distinction Goodman has in mind bears comparison with the distinction between sense and reference (see, for example, Lyons 1977). A picture may have sense, but it need not have reference. I can distinguish between an angel-picture and a unicorn-picture, just as I can distinguish between the sense of "unicorn" and that of "angel", without either's denoting anything (Lyons 1977: 199).

Goodman's distinction, then, between pictures which denote and pictures which do not denote is based upon the existence, or non-existence, of the entity concerned¹. This need not, however, pertain only to fictions. He continues: "where we cannot determine whether a picture denotes anything or not, we can only proceed as if it did not – that is, confine ourselves to considering what kind of picture it is. Thus cases of indeterminate denotation are treated in the same way as cases of null denotation" (Goodman 1976: 26). So a picture "of" a man, in the event of our entertaining doubts as to that man's concrete existence, is only a man-representing-picture – for all that men can be shown to exist.

Here we arrive at the crux of the matter. Pictures, it seems to me, may only *ever* constitute x-representing-pictures, since we can *never* know, by any *purely pictorial* means, who or what, *in specific individual terms*, a picture is of.

Let us ask how this might be otherwise. For a picture to *denote*², it should constitute a kind of pictorial "referring expression": an expression which will "correctly identify for the hearer the individual in question: the referent" (Lyons 1977: 177). In the verbal realm, individuals are usually identified by means of singular definite referring expressions (typically proper names ("Arthur Wellesley (1st Duke of Wellington)")), definite noun-phrases ("the man") and personal pronouns ("you", "I", etc.); and by means of indefinite specific referring expressions ("a man"; that is, a specific but unidentified man) (Lyons 1977). The function these share with elements such as "here", "over there", "now", "yesterday", etc., is that of "deixis": "the location and identification of persons,

¹ Compare Hervey's treatment of entities which are "not candidates for reality" such as Pickwick (1979, after Harré 1970a). "Fictional' entities are valid denotata, provided that there is no logical absurdity implied by admitting them to the status of hypothetical entity" (Hervey 1979: 31).

² At this point in Goodman's text "denoting" and "referring to" are synonymous (1976: 5, note 3). They appear, moreover, to be consistent with Lyons' "referring" in what follows.

objects, events, processes and activities being talked about, or referred to, in relation to the spatiotemporal context created and sustained by the act of utterance and the participation in it, typically, of a single speaker and at least one addressee" (Lyons 1977: 637).

A picture, I should like to claim, is, by contrast, *inherently non-referring* in that it lacks any recourse to deixis. There is no pictorial equivalent to "Arthur Wellesley (1st Duke of Wellington)" (cf. chapter VI, §2.2)¹. There is no pictorial equivalent to "here", "that man over there", "two days ago", "you", "I", etc. Indeed, even if the latter *were* available pictorially, so atypically is there any specific context-of-(pictorial)-utterance², that they would rarely be of use. Indeed we can only assume Goodman's picture of the Duke of Wellington to have been labelled "The Duke of Wellington"; its status otherwise being surely only that of man-wearing-a-large-medal-representing-picture.

In short, there is nothing purely pictorial which might enable a viewer to pick out the actual referent from the class of potential referents. The most definite of these means of referring a picture may achieve is indefinite *non-specific* reference ("a man"; that is, "some man or other" (Lyons 1977)). This, however, smacks again of Goodman's x-representing-picture, a type of reference Lyons is obviously reluctant to term "reference" at all (cf. 1977: 178, 187, and 188).

Still one might counter that the photograph refers indefinitely but *specifically*. This, however, is only possible through a consideration of its mode of *production*, rather than its mode of interpretation; that is, as a natural index, not as a picture. It will be remembered, moreover, that the causal nature of the photographic process is precisely that aspect of the photograph's being disregarded in order to justify its picturehood (chapter V, §2.2.3). The indefinite specific reference achieved by the photograph, then, is not *pictorial* reference.

In fact there is one further type of reference a picture might achieve: "generic" reference. We shall postpone a discussion of this until chapter V.

¹ The supposed "pictorial" proper names we shall consider in chapter V signify *extra-pictorially* – even so seemingly literal or direct a signification as CHIEF WEARS-THE-FEATHER rendered by a man-wearing-a-feather-representing-picture (Gelb 1952: 40).

² Of course, I may draw a cruel caricature in the margin of my lecture notes, and show it to my neighbour, with a nudge and a significant glance towards the person on the dais. I should hazard, however, that such a situation is exceptional.

As a means of communication, then, representation is curiously detached and uninformative. For a picture to have anything general, or anything specific, to say, it must transcend not only the boundaries of the given; nor even the boundaries determined by the inferrable and the assertable; it must, as it were, *transcend itself*.

CHAPTER VIII

Beyond Representation

1 Introduction

Chapter VII was concerned with the variety of interpretation within representation. This chapter attempts a classification of those instances where an interpretation offered is counter-indicated by the given, and cannot be explained in terms of a valid representational alternative.

The response to figure 1c: 'FOX', for instance, is counter-indicated. 1c is not a picture of a fox. Neither 'COURAGE' nor 'PEUGEOT', moreover, in response to figure 1d, is accounted for within representation; 'PEUGEOT' through counter-indication, and 'COURAGE' through its failure ever to qualify as a representational option.

There is a sense, however, in which we would not wish to deny that there is, in each of the above, some connection, or conceptual link, between picture and response. Indeed, the response is unlikely to be wholly arbitrary (cf. chapter II), and thus its rationality may to some extent be "retraced". The limits to retraceability are consequent on practical feasibility (see §5.2, for example); and on the questionable validity of the assumption that the encoder's route in effecting any such link will be mirrored in the process of interpretation. These pitfalls notwithstanding, it is the aim of this chapter to provide a framework for the classification of types of conceptual link in an effort to account for responses such as those above.

The first point to be made is that, with few exceptions, the significations we are concerned with do not substitute for representation; they function *via* representation (§2). We examine next the possibility of achieving a classificatory framework through a second application of the typology of indices (§3). The necessarily looser structure which results leads us to a modification which incorporates a fundamental distinction adopted from the rhetoric of "le groupe μ " (Dubois *et al.* 1970): the distinction between modes of analysis " Π ", and " Σ " (§4). This adoption, not, in retrospect, wholly alien to the discussion so far, facilitates a classification of visual equivalents to figurative tropes; tailored to integrate visual motivation as a fundamental factor.

First, then, a look to see how signification functions *via*, rather than as an alternative to, representation.

2 Signification: alternative or successor?

Communication, we recall, comes about through a correlation between x and y , where x indicates, or acts in the capacity of conveying, y (chapter V, §2).

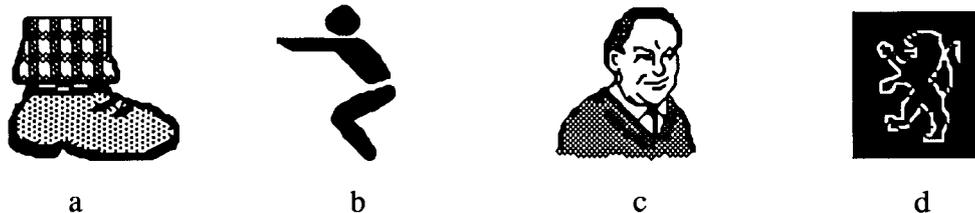
We arrived at a classification of visual indices into four categories:

- 1) wholly conventional indices;
- 2) wholly natural indices;
- 3) indices understood by virtue of a visual resemblance;
- 4) motivated indices understood by virtue of convention

The third category was that adopted in our definition of "picture".

In the course of the discussion, figure 1b, for example, was disqualified as a picture of a swimming pool (chapter V, §2.2.1), although it is indeed SWIMMING POOL which is

Figure 1



customarily signified. We opted instead for the pictorial interpretation PERSON DIVING. We also rejected figure 1a (chapter V's figure 11) as a picture of a person, figure 1c as a picture of a fox, and figure 1d as that of a (Peugeot) car. We did not, however, deny any one its status as a picture; but pointed, rather, to the failure of each to signify, solely through a visual resemblance, the supposed representatum. To keep in mind the distinction between representation and (potential) further signification, let us, for convenience, notate any such supposed, or counter-indicated, representatum "SWIMMING POOL b", for example.

A repraesentans such as figure 1b may ultimately rely upon knowledge of a convention for the construal of its particular meaning. But it is not entirely conventional; there is, courtesy of the repraesentatum, a degree of "guessability" absent from a (context-independent) encounter with a wholly unfamiliar word. Thus, viewers who in ignorance hazard the significations TAP-DANCING CLASS^b, or NO SEATS AVAILABLE^b, would be wrong; yet, in a way, "less wrong" than those who propose FREE RANGE EGGS^b, or DOUBLE-DECKER BUSES USE REAR ENTRANCE^b.

Indeed, if there exists a genuine picture, the intended (further) signification of which is entirely unrelated to its repraesentatum, I have yet to unearth one (but see §3.4). This is not altogether surprising. On the one hand, the encoder who bypasses the invaluable mnemonic quality inhibits the potential efficiency of an index; counter-productive, surely, in any user-friendly communicative process. On the other, even where no link is intended (the implausible but possible  → SKATING PROHIBITED^b, for example), one is almost inevitably forged in interpretation, however innocuous the repraesentans, and however mysterious and bizarre any resultant metaphor. In the absence of a very well ingrained "fossilization" of meaning (§ 3.3 below), such significations do not constitute an *alternative* to representation; they *presuppose* representation. Thus the significations:

[booted foot] → (WHOLE) PERSON^b,
 [person diving] → SWIMMING POOL^b,
 [sly man] → FOX^b,
 and [heraldic lion rampant] → (PEUGEOT) CAR^b

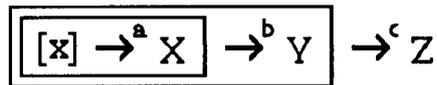
are mediated, respectively, by the repraesentata BOOTED-FOOT, PERSON DIVING, SLY MAN, and HERALDIC LION RAMPANT. Yet it is neither the repraesentans [person diving] nor the repraesentatum PERSON DIVING which signifies SWIMMING POOL^b; the representation [person diving] → PERSON DIVING, *in its entirety*, functions as a "secondary indicator":

[person diving] →^a PERSON DIVING →^b SWIMMING POOL^b

Secondary signification, therefore, builds upon representation:

[x] →^a X →^b Y

"tertiary" signification upon secondary (cf. Barthes 1982; Hjelmslev 1961):



"n-ary" signification upon "n⁻¹-ary". Henceforth I shall use the term "n-ary" for any signifiatory stage following upon representation. Each stage presupposes the former to some extent in that the output of one operation continues the process as the input for the next.

3 A characterization of "→ b "

The arrow "→ a " stands for the relationship of representation. The arrow "→ b ", unconstrained by representational criteria, affords a far greater degree of freedom both in encoding and in interpretation. There are, however, recognizably different brands of freedom. With a view to distinguishing between types of conceptual link, a *reapplication* of the criteria outlined in our typology of indices (chapter V, §2) yields a classification of n-ary indices of sorts:

Figure 2

"primary" indices	understood by virtue of		n-ary indices
wholly natural	natural / causal links		
motivated	motivation	visual resemblance	natural
		other	motivated
	convention		conventional
wholly conventional	convention		

Such a classification is by no means satisfactory in itself, capable of distinguishing only the most general types of conceptual link. Nevertheless, it provides us with a point of departure.

3.1 N-ary natural indices

To illustrate the second application of the criteria outlined in chapter II, let us reconsider another failed picture-candidate with a seemingly straightforward secondary signification: figure 3d (chapter V's figure 1d).

Figure 3d was, in chapter V (§2.2), classed as a natural index, since no element of convention, it was claimed, was needed to explain the connection between signal and information. A re-examination of figure 3d, however, reveals it to be only a *picture* of a natural index; [tyre track] may not signify, by representation alone, CAR (HAS PASSED THIS WAY)^b, or even WHEEL^b – merely TYRE TRACK. Subsequent treatment of [tyre track] → TYRE TRACK as, itself, *indicator*, rather than (representational) *indication*, however, yields what may be termed an "n-ary natural index".

[tyre track] → TYRE TRACK → CAR^b

We might classify similarly figure 3's remaining components:

Figure 3



where the representation [lightning] → LIGHTNING signifies THUNDER^b; [cloud] → CLOUD signifies RAIN^b, and so on. The arrow "→^b", however, is still not adequately characterized since the relationship between the *representation* [lightning] → LIGHTNING, and THUNDER^b is manifestly not one of cause to effect.

3.1.1 Problems with n-ary natural indices

Precedence and constant conjunction do not constitute an adequate definition of "cause"; day does not cause night (nor vice versa), and, whereas excessive sunbathing may cause skin cancer, it does not always cause skin cancer. If x appears to be in constant conjunction with y, whether or not x may be considered

the cause of *y* will depend upon *x*'s status as a necessary, or as a sufficient, condition for the occurrence of *y*. The passing of an equine is a sufficient (although not a necessary) condition for the imprints of which figure 3b is a representation. Cloud, on the other hand, is a necessary condition for rain; if there is rain, cloud is also present. But the presence of cloud does not guarantee that of rain. Other conditions, such as a certain barometric pressure, a certain wind speed, the fact of gravity, etc. (conditions which we might not normally term causes), are also necessary. Where all of these are present, rain invariably follows. Together, then, they constitute sufficient condition for the presence of rain, that is, the cause of rain (Hospers 1967, after John Stuart Mill).

In daily life, however, we tend to restrict our attribution of cause to one condition; either because it is that which immediately precedes the event in question (the cause of rain on a particular occasion is more likely to be understood to be a drop in the wind speed than the fact of gravity); or that which constitutes a divergence from the backdrop of normality (the cause of my stomach upset is taken to be the rancidity of the beefburger, not my carnivorousness); or that which is perceived to play the major part in bringing about the event in question (for the Hopi, there is a relation of cause and effect between the Thunderbird and thunder (Adam 1949)) (Hospers 1967; Harré 1970a; Quine 1974).

Thus the attribution of cause is problematic in even the most straightforward of examples. This combination of indeterminacy and idiosyncrasy, however, is not confined to the *n*-ary natural index; the classification of an entity as a (primary) natural index is *also* subject to experience, belief system, and the priorities of the moment. Reservations such as the above, therefore, ought not to deny the *n*-ary natural index a place in our classification of *n*-ary indices. Nevertheless, the question of its specific location within that framework seems unresolved. The problem concerns not the relationship between the concrete phenomena underlying the *repraesentatum* and the *n*-ary signified, but that between the representation and the *n*-ary signified themselves.

That is, while the relationship understood to hold between a concrete physical instance of lightning and a corresponding concrete physical instance of thunder is one of cause and effect (or of co-occurrence), that between the representation 3a and the signification THUNDER^b implies no genuine causality, although the two are closely associated. Thus, in *n*-ary signification, the link ceases to have that "automatic" quality which would lay the true natural index open, at least in principle, to scientific investigation. Once we admit that we are no longer dealing

with natural phenomena themselves, but with representations and conceptions of natural phenomena, the link between LIGHTNING and THUNDER^b is no more *natural* than that between CUP and SAUCER^b, or between PERSON DIVING and SWIMMING POOL^b; the link between ☹ and EQUINE^b no more natural than that between ☹ and LUCK^b. To maintain as much would be to hold that cause and effect in nature is mirrored by cause and effect in thought.

In fact, we need not claim that figure 3c *causes* rain, and 3a thunder; or that figure 3d was caused by a tyre, and 3b by a passing equine. Nor need we claim that, for example, THUNDER is caused by LIGHTNING (each a single real or hypothetical experiential correlate); but simply that the relationship *understood to hold* between a concrete physical instance of lightning and a corresponding concrete physical instance of thunder is one of cause and effect (or of co-occurrence). The line of thought, then, undertaken upon exposure to figure 3a, may be one which (without implying any genuine causality) selects from lightning's domain that phenomenon with which it is (without perceptible integrity) most closely associated, namely, thunder:

[lightning] → LIGHTNING → THUNDER^b

In conclusion, although classification of a picture as, even potentially, an n-ary natural index necessitates a clearer definition of "cause" than I am able to provide, this problem is no more insurmountable than it is within a classification of primary indices. Nevertheless, there are reasons for doubting whether a natural indexical relation, posited between a representation and a secondary signified (each thoroughly divorced from the empirical investigability of the concrete phenomena), warrants, within a classification of n-ary indices, that singularity of position it merited first time around. While we should like to maintain the "cause and effect" pigeonhole, it is perhaps better subsumed within "n-ary motivated indices", as an "n-ary motivated index, understood by knowledge of a natural relation", or as the rather anticlimactic "picture of a natural index".

Figure 2's framework, therefore, must be revised; i.e.

Figure 4

not:	
"primary"	n-ary indices
pictures	natural
	motivated
	conventional

but:		
"primary"	n-ary indices	
pictures	motivated	natural
		other
	conventional	

3.2 N-ary (wholly) conventional indices

An n-ary wholly conventional index is a representation which, treated as an indicator, conveys its indicated wholly by virtue of convention. For reasons already touched upon above, examples are not readily forthcoming.

For the Langley cryptographer, however, whose rather primitive code-machine churns out the following:

"                ",

much may depend upon the arbitrariness (or "unguessability") of the alphabetic correspondences.

Even so, to interceptors prepared to engage in a little trial and error, the message may be distinctly transparent. If the middle segment is decoded "THE" (an inevitable hypothesis, eventually?), subsequent insertion of the known letters into the remainder yields: "TExx THE xxExxxExT". In such a milieu, "PRESIDENT" is not an unlikely candidate for the third segment. Finally, since there exists no sensible English alternative for the remainder, the interceptors may come up with "TELL THE PRESIDENT"; and they would be right.

This guessability, however, stems from hypotheses as to what the message *might mean*; not from any connection between picture and letter. It involves a number of assumptions: that the message is in English; that there is a one to one correspondence between picture and letter; that the grammar and orthography are orthodox; that, given the source of the message, a certain topic is probable, etc; all of which have, in this case, proved correct. Such assumptions constitute, therefore, a fairly restrictive, though conjectured, *context*, divorced from which – say, upon encountering a single component index: "  " – the best guess our

interceptors might manage is that the signification probably has little to do with PAIR OF SPECTACLES.

Once assured of the validity of the analysis, the interceptor may remark that "  " is, perhaps coincidentally, a little like an upside-down "T"; that "lorry" () begins with an "L"; that "E" is for "egg" and a tortoise () lays eggs, and so on. Nevertheless, while any such *aide-mémoire* may assist in learning what is in fact Apple Macintosh's "Cairo" font, there appears to be no consistent key to, or *motivation for*, the relationship between picture and alphabetic letter; this relationship is wholly conventional. Preceded as it is, however, by representation, that relationship is *n-arily* wholly conventional¹.

In fact, the *n-ary* wholly conventional index will be of little further concern to us since the conceptual link cannot, by definition, be retraced unless the (necessarily pre-established) code is known to the retracer. It does not provide an explanation for the wholly random guess, however arbitrary; although the two share a lack of motivation, the wholly random guess is not conventional.

3.3 *N-ary motivated indices understood by convention*

If we accept that any two entities will have something in common, that is not to say that we must, other than in the rather exceptional cases above, forgo convention in the secondary index. On the contrary, even where there exists what may be a fairly self-evident conceptual link (as with PERSON DIVING → SWIMMING POOL) this need not prevent that link's being *understood* by virtue of convention. The Highway Code, for example, contains many such indices, sufficiently obviously motivated to jog the memory of the seasonal driver, but not sufficiently explicit, as representations, to convey their particular meaning.

But it is not confined to indices with highly codified conventions. All kinds of visual cliché, from the ubiquitous [dove] for PEACE ^b, and [skull and crossbones] for DEATH ^b or DANGER ^b, to the cinematic tropes [wilting flowers] for LOST MAIDENHOOD ^b and [falling calendar pages] for THE PASSING OF TIME ^b (Monaco 1981) fall within the category "n-ary motivated indices understood by

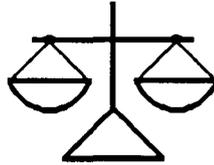
¹ It should be noted that individuals who attain complete "fluency" in such an alphabet may cease to register the initially pictorial nature of the index; registering,

that is:  → E rather than:  → TORTOISE → E^b .

Only then, and only as regards those individuals, might the component indices be classified as (primarily) conventional, rather than representational.

convention"¹. What these relatively fossilized significations have in common is that an n-ary signified, JUSTICE^b, for example, may be indicated without any thought for what it and a set of scales have in common (Brooke-Rose 1958).

Figure 5



This is not to say that representation plays no part in the process; on the contrary:

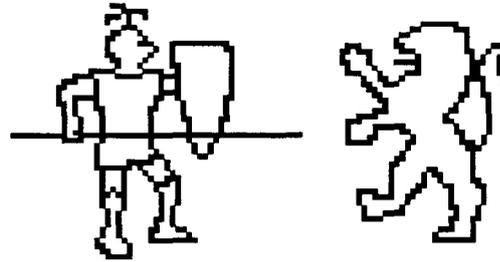


merely that the motivation underlying the n-ary link – perhaps a shared feature: "fair decision following objective consideration of relative values" – need not be pondered anew at each exposure to figure 5. The link is much more immediate; that is, the motivated secondary index understood by convention *short-circuits* the process of conceptual linking (Dyer 1982; Vestergaard and Schröder 1985; Johns 1984), inhibiting the imagination and the free-play of association, except, of course, where a viewer has no prior knowledge of the relevant convention.

The context in which any such index occurs may favour an imaginative interpretation over a conventional one. If the index features in a B&B guide, or on a road sign, the chances are that a viewer will opt for the conventional signification. These indices are, however, primarily, pictures. Thus in other, less formalized, contexts they may surrender their conventional n-ary interpretation in favour of a representational reading. Alternatively, a conventional motivated secondary index may confer something of its symbolism on to other elements within the same picture (cf. chapter VI, §2.1). Figure 6, for example, may be interpreted 'A KNIGHT FIGHTING OFF A LION', or 'PEUGEOT MEETS WITH OPPOSITION'. A third possibility, 'A KNIGHT FIGHTING OFF A PEUGEOT' (in which the [knight] is interpreted representationally, the [heraldic lion rampant] n-arily), has a curious incongruity worthy of note.

¹ "Cliché", I should venture, is only an expression of the relatively tacit nature of the convention concerned.

Figure 6



A measure of an n-ary signification's conventionalization might be its persistent and successful functioning in the absence of any immediately relevant context, and its failure to sustain alternative interpretations in a variety of different contexts. These two conditions fulfilled, however, the index should never be termed "representational" in the first place.

3.3.1 Summary

There are a number of important and related points to be made on the basis of the discussion above. First: it is of no consequence whether the motivation for the link between representation and n-ary signified in the examples considered here involves common attributes, or common contextual association, or whatever. What matters is that they are all *understood* by virtue of convention. They will all be subsumed, therefore, within a single category: "n-ary motivated indices understood by virtue of convention".

Second: we should be alert to the possibility that a convention may be ultimately responsible for a seemingly non-conventional n-ary link. So far as is feasible, moreover, we should verse ourselves in the repertoire of likely candidates. This caveat parallels that of chapter VII (§2.3) with respect to culture-specific inferred characterization.

Finally, in maintaining that a motivation-dependent reconstruction of the n-ary link may be inappropriate to these instances, we realize the counter-productivity of using n-ary motivated indices understood by convention to bring to light the processes involved in imaginative responses. It is true that we can reconstruct a motivation for the link between [scales] → SCALES and JUSTICE^b. The claim that this is not a process ordinarily undertaken, however, runs the risk of undermining the role of motivation in any n-ary motivated index *understood* by virtue of the motivation. Somewhat perversely, however, I shall continue occasionally to employ n-ary motivated indices understood by convention ([lion] → LION signifying COURAGE^b, for example) to clarify the nature of a *non-conventional* n-

ary link (say, [moose] → MOOSE signifying HYPOCRISY^b), simply in order not to clutter questions of rationality with questions of plausibility. In such cases, the conventionality should be understood, purely for the purposes of explication, to have been abstracted.

3.4 Summary of n-ary typology of indices

Although chapter V's typology of (primary) indices translates well enough on to an n-ary level, it provides only a very crude framework for the classification of n-ary indices:

Figure 7

"primary"	n-ary indices	
pictures	motivated	natural
		other
		conventional
	conventional	

Natural n-ary indices, visual clichés, and the elusive wholly conventional picture are readily dealt with. Residual n-ary significations, however, must all be subsumed within "other"; indeed, the majority of the examples with which we began this chapter belong in this category. Yet what do [foot] → FOOT signifying PERSON^b and [man] → MAN signifying FOX^b, for instance, have in common other than their exclusion from both natural and conventional motivated categories? If we wish to differentiate them, a new strategy is in order.

4 A rhetorical approach

In the language of rhetoric, distinguishing between types of n-ary link in

[foot] → FOOT → PERSON^b and [man] → MAN → FOX^b

presents little problem; the first is clearly a synecdochic relationship of part to whole; the second a metaphorical relationship.

Traditionally, metaphor is "the application of a strange term either transferred from the genus and applied to the species or from the species and applied to the genus, or from one species to another or else by analogy" (Aristotle 1927: 81), where

"application of a strange term" is understood as the application of a term to an object or action to which it is not literally or conventionally applicable (Black 1962). Metaphors, in fact, seem to resist strict logical analysis (Levin 1977). Mr. Green, I may claim, is a fox. He is not really a fox, of course; he is a man. Metaphor consists in "saying one thing and meaning another" (Riffaterre 1978). Already there are promising hints of a parallel with counter-indication.

Indeed, many of the visual clichés categorized above as n-ary motivated indices understood by convention are commonly couched in rhetorical terms; a [crown] is a "metonymic sign" for SOVEREIGNTY ^b (Fiske and Hartley 1978); a [head] a metonym for IDEAS ^b (Johns 1984); a [foot] a synecdoche for a MAN ^b (Dyer 1982); a [pince-nez] a synecdoche for SURGEON ^b (Eisenstein 1949); a [tiger] a metaphor for ESSO PETROL ^b (Vestergaard and Schröder 1985), etc. "Metaphorical representation", claims Johns, is a "viable strategy for visually communicating abstract information" (1984: 291). A rhetorical approach provides, moreover, a vocabulary with which to deal with some of the remaining types of n-ary signification. The disadvantage, however, is that this may seem something of a change of tack.

In fact, semiotic and rhetorical approaches to n-ary pictorial signification are by no means incommensurable. What I propose is to begin by adopting a fundamental dichotomy from the vocabulary of the rhetoricians: the distinction between two modes of analysis: " Σ " and " Π " (Dubois *et al.* 1970); and to incorporate these into the framework as follows:

Figure 8

"primary"	n-ary indices		
pictures	motivated	Π	[part]-WHOLE ^b (natural)
			[whole]-PART ^b
		Σ	[subordinate]-SUPERORDINATE ^b
			[superordinate]-SUBORDINATE ^b
	conventional		
conventional			

in which §3.1's n-ary natural index features as only one type of signification beginning "[part]–WHOLE b". The incorporation of Π and Σ (and "©", introduced in §7.5 below) into the scheme above by no means accounts for all residual types of counter-indication, but is an improvement on what we have so far. With the adoption of this dichotomy is abandoned finally any prospect of the tidy n-ary mirroring of the typology of primary indices originally envisaged. There are, however, the following compensations: a more illuminating range of accountable eventualities; and a not altogether untidy n-ary mirroring of both "specificity" (chapter III) and representation's vertical dimension: complexity (chapter VII, figure 3). That is to say, a metaphorical excursion affords an alternative viewpoint from which to assess the remaining types of n-ary signification recognized. Nevertheless, the visual tropes cited bear redefinition in terms of the framework already proposed.

Of Aristotle's four types of metaphor, the first and second constitute what is commonly called "synecdoche" (Brooke-Rose 1958), and it is with synecdoche that we shall be mainly concerned.

4.1 Modes Σ and Π

Any object may be described in terms of the parts of which it is composed (for Sapir (1977), the "anatomical mode"; for Dubois *et al.* 1970, "mode Π "). Bones, skin, internal organs, tail, legs, etc. are parts of a dog. The same object may also be described in terms of what Sapir calls its "class-membership" (but see below), or the "taxonomic mode" (for Dubois, "mode Σ "). Beagles, spaniels and chihuahuas are types of dog. The same object can be considered with regard to either set of relations. One or other of these modes is fundamental to any synecdochic process; the two terms involved are always hierarchically organized as regards one another, in a relation of either superordinate to subordinate, or part to whole. In either type of hierarchy, the term given will be more "general" or more "particular" than the term it replaces (Levin 1977).

Two types of synecdoche are possible within either mode: "particularizing" and "generalizing" (Levin 1977, Dubois *et al.* 1970, Sapir 1977). There is considerable risk of confusion here since Dubois *et al.* establish their terms "particularizing synecdoche" and "generalizing synecdoche" from the point of view of the *encoding* of the trope, whereas we are concerned, rather, with interpretation – that is, with *decoding*. Thus, where Dubois' poet (or picturer) particularizes, the reader (or viewer) must generalize; where the poet generalizes, the reader must particularize.

If we employ Dubois' terminology there will persist in the course of the discussion an incongruity which cannot but be unhelpful. To reverse the terms, however, using "particularizing" where Dubois uses "generalizing" and vice versa, seems little better. Since the distinction is not unimportant to the classificatory framework ultimately adopted, the potential for ambiguity should be checked at the outset. Consequently, where the direction of the operation is relevant, I propose to use the following inelegant mnemonics (columns 1 to 4) which I hope will function satisfactorily from either standpoint:

Dubois	Sapir	1	2	3	4
SpΠ	anatomical particularizing	'part' – WHOLE ^b		[part] – WHOLE ^b	
SgΠ	anatomical generalizing	'whole' – PART ^b		[whole] – PART ^b	
SpΣ	taxonomic particularizing	'sub' – SUPER ^b		[sub] – SUPER ^b	
SgΣ	taxonomic generalizing	'super' – SUB ^b		[super] – SUB ^b	

"sub" abbreviating "subordinate", and "super" "superordinate"; columns 1 and 2 referring to verbal tropes; columns 3 and 4 to visual tropes; columns 1 and 3 referring to the realized term, whether verbal (1) or pictorial (3); columns 2 and 4 referring to the underlying signification, intended by the encoder, understood by the interpreter, or both. Thus [part]–WHOLE^b, for example, refers to the processes involved in both encoding and decoding; that is both:

WHOLE^b → PART → [part] and: [part] → PART → WHOLE^b

5 Anatomical synecdoche

5.1 Verbal anatomical synecdoche

a) 'part'–WHOLE^b

For example, "I've six mouths to feed" substitutes for I'VE SIX BODIES TO FEED. Instances of 'part'–WHOLE^b ("anatomical particularizing" synecdoche; "SpΠ") are in abundance. Nevertheless, there are restrictions; not just any part will serve to evoke the whole. The chosen part must be distinctive; "legs" does not adequately differentiate animal bodies and other objects – say, tables. The chosen part must also emphasize aspects of the whole relevant to the context. In "six mouths to feed", "mouths" is involved in the eating process in a way that "ears" is not (Sapir 1977).

b) 'whole'–PART ^b

For example, "You've ruined the whole meal" substitutes for YOU'VE RUINED THE CROÛTONS. The generalization in 'whole'–PART ^b ("anatomical generalizing" synecdoche; "Sg II") must be of such a degree that it is notable, or else go unremarked. So long as croûtons are considered a rather ornate and barely nutritious part of a meal, anatomical synecdoche is indeed in evidence; but, where an entire meal is to consist of, say, croûtons and ketchup, the degree of generalization achieved in encoding will not be sufficiently remarkable to the hearer that it is apparent as a trope.

The two terms involved in any visual anatomical synecdochic process also stand to each other in a relation of part to whole. As with its verbal parallel, two types of anatomical synecdoche result, one of which, however, is already accounted for within representation.

5.2. *Visual anatomical synecdoche [part]–WHOLE ^b*

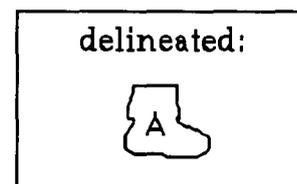
[part]–WHOLE ^b ("anatomical particularizing" synecdoche; "Sp II") accounts for the conceptual link between [foot] → FOOT (figure 9) and (WHOLE) PERSON ^b, and between [speedometer] → SPEEDOMETER (chapter II's figure 1g) and CAR ^b.



The constraints seen to operate within the equivalent verbal synecdoche will still be applicable; that is, the chosen part should be distinctive ([front seat] would not readily convey CAR ^b), and should emphasize aspects of the whole relevant to the context. Seeming exceptions to this last may occur as euphemisms if the whole to be conveyed is at all taboo (see §5.4. below).

Provided that the spatial extension of the repraesentans is made explicit, [part]–WHOLE ^b may be brought into line with chapter VII's characterization framework. Let A, in this example, correspond to *FOOT*.

Figure 9



The response 'PERSON' transcends the boundaries of the delineated unit. In this respect, [part]–WHOLE^b synecdoche may be likened to integration (chapter IV, §4). Integration, however, required that the response portion correspond to an anatomical unit (spatially) including two or more of those deemed basic. In [part]–WHOLE^b synecdoche no second delineated unit constitutes the spatial extension (in this particular example, of course, there *is* no second delineated unit); [part]–WHOLE^b synecdoche *integrates* represented and unrepresented elements. This "plural" is to be distinguished (in principle) from a generic "plural" (§7).

Thus [part]–WHOLE^b will be said to constitute "n-ary integration". As with representational integration – though possibly at odds with many accounts of anatomical synecdoche (Kennedy 1982, for example) – the extension of the delineated unit need not be a contiguous extension, either on the paper or in reality (compare chapter IV's treatment of 'POSSESSIONS' (§4.1) and 'SATYR' (§5.2.2) above). All that is relevant, for our purposes, is that a response portion should transcend the boundaries of the delineated unit; to encompass, in (primary) integration, additional represented elements; in n-ary integration, additional unrepresented elements. Thus the response to figure 9 'FEET' may also be considered an instance of [part]–WHOLE^b (but see §7 below on the "generic" account of 'FEET'). In this sense the terms "part" and "whole" might be better rendered "less extensive" and "more extensive".

5.3 *Dispensing with [whole]–PART^b*

The second type of anatomical synecdoche consists in the picturer's substitution of whole for part, and, ideally, in the viewer's corresponding inversion of the substitution. It is likely that [whole]–PART^b is less frequently encoded than [part]–WHOLE^b, for the simple reason that a whole (or even a front projection of a whole) is often less readily depicted than a part. As with its verbal parallel, however, we may speak of [whole]–PART^b wherever the spatial extension of the represented unit includes that for which it potentially substitutes. Into Bugs Bunny's think-bubble, for example, as he imagines the financial reward of some likely ruse, pops a vast pile of money; while the potential remuneration, realistically envisaged, may be only a couple of small coins in the foreground. The encoding of [whole]–PART^b synecdoche may constitute, therefore, a type of visual exaggeration, appropriate to cartoons, and which may acquire, under the right circumstances, the highly persuasive quality to be found in the visual repertoire of the propagandist. A potential lack of clarity – namely, that it is not always apparent that only a part is

intended – may become a distinct advantage. In figure 10, a swastika-sleeved hand grasps what may be recognized as mainland Britain, "anchored" (Vestergaard and

Figure 10



Schrøder 1985) by the text, say, "Nazis parachute into East Anglia!" Here (disregarding the metaphorical grasping by the ungainly hand), [mainland Britain] substitutes for [East Anglia], while carrying with it a sense of "what if ... ". Note that text is required in order to inform the viewer of the synecdoche, even as the figure evokes possible consequences.

[Britain] → BRITAIN → EAST ANGLIA^b

Indeed, ambiguity will always accompany this visual trope, since representation of the whole necessarily entails simultaneous representation of the part; a [foot] spatially includes a [heel]; a [£1000] a [£1]. For this reason, the response to figure 10, 'EAST ANGLIA' would not have been counter-indicated in the first place. This is not to say that this type of synecdoche may *not* have been incorporated into a picture; nor that its reverse may not have been achieved in interpretation. Confirmation of the occurrence of the latter – by no means impossible – would, however, require a degree of further questioning not undertaken with respect to the data for this study.

In conclusion, [foot] → FOOT signifying HEEL^b, may be said to constitute a valid instance of "n-ary fragmentation". To a hearer, however, the verbal response 'HEEL^b', is indistinguishable from [foot] → HEEL, verbalized as 'HEEL' (hence the sparsely dotted box in figure 11 below). For practical reasons alone, then, the single [whole]–PART^b synecdoche will not be considered further here; responses evidencing something of the sort being already dealt with as "(representationally) fragmented" responses (chapter VII, §5.2.1).

Figure 11

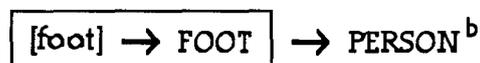
mode Π	representation	n-ary signification
fragmentation	HEEL	HEEL ^b
integrity	FOOT	
integration	FEET	PERSON ^b

If synecdoche extended only to material "anatomy", as described above, we might have dispensed with the tropic digression; [whole]–PART^b being treated as "fragmentation"; and [part]–WHOLE^b simply inserted into the framework of n-ary indices as a separate category. In fact, under Sapir's account of what remains of synecdoche (see §6), there still seems little need, since, with the same accounting provisos, relevant response portions are already dealt with within "specificity" (chapter VI). The virtues of this particular trope, however, become apparent in the "double anatomical synecdoche".

5.4 Double anatomical synecdoche

"Double anatomical synecdoche" is simply the succession of one anatomical synecdoche by another. Having effected PERSON^b via [foot] → FOOT ([part]–WHOLE^b), for example, an informant may leave it at that. Alternatively, PERSON^b may be subjected to a further synecdoche; [whole]–PART^b, or even a second [part]–WHOLE^b; in principle, any synecdoche may follow any other. In practice, however, it is the complementary, or reverse, pairs which afford the most accountable, and the most rhetorically orthodox (see Dubois *et al.* 1970: 108), n-ary significations.

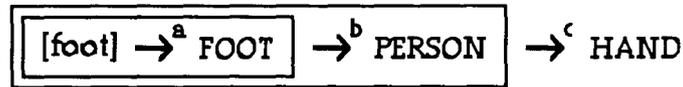
For example, [part]–WHOLE^b synecdoche accounted for the conceptual link between [foot] → FOOT (figure 9) and (WHOLE) PERSON^b:



The same could be said of [hand] (in figure 10 above, for instance):

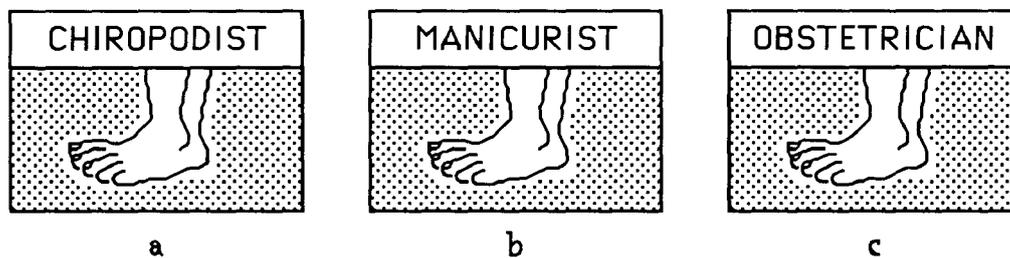


With a *reversal* of the latter, these may occur in succession:



"b" being [part]–WHOLE^b; "c" being [whole]–PART^b; that is, an integration followed by an "n-ary fragmentation" Admittedly, this is not very interesting; if the desired signification is HAND (figure 12b), why not simply draw a [hand]? Fair enough. But if the desired signification is taboo in any way (figure 12c), the double anatomical synecdoche affords a euphemistic (if in itself offensive) alternative.

Figure 12



Even so, the double anatomical synecdoche seems limited in application. It should be remembered, however, that we envisaged above an interpretation of "whole" and "part" rather more cavalier than normal usage might dictate. It should also be remembered that the single synecdoche [part]–WHOLE^b is said to constitute "n-ary integration"; and that, in integration, whether representational or n-ary, the extension of the delineated unit need not be a contiguous extension, either on the paper or in reality. With these points in mind, the scope of double anatomical synecdoche is considerably broadened (perhaps to the extent that the distinction between anatomical and taxonomic reconstructions begins to cloud).

6 Taxonomic synecdoche

The second type of synecdoche is "taxonomic" synecdoche (Sapir 1977), or "mode Σ " (Dubois *et al.* 1970), the signifiatory potential of which is heavily dependent upon what (again) is meant by "taxonomy".

6.1 Verbal taxonomic synecdoche

Wielded in the verbal realm, "taxonomic" synecdoche Σ accounts for those instances in which a superordinate term is used for a subordinate or vice versa.

Thus it may again be generalizing or particularizing, in that the term actually employed by the encoder will be more general or more particular than the term for which it substitutes.

a) 'sub'–SUPER ^b ("taxonomic particularizing" synecoché; "Sp Σ ")

For example, "He ate his artichoke and clam chowder Véronique" substitutes for HE ATE HIS SOUP. The significance of 'sub'–SUPER ^b will usually depend on the context. At a cookery convention, the discrimination above may be highly relevant, whereas, in other contexts, the use of such a trope may imply, say, "specialized knowledge" (think of James Bond, the connoisseur).

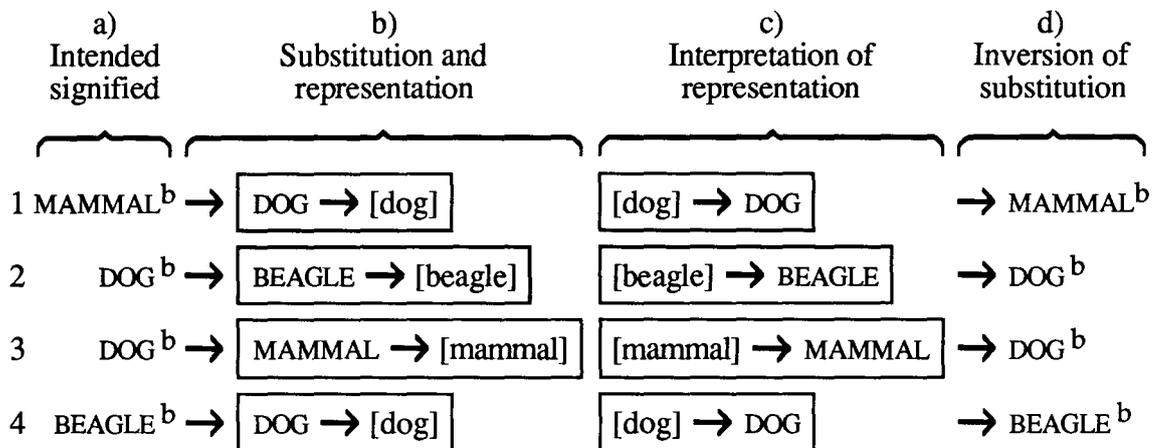
b) 'super'–SUB ^b ("taxonomic generalizing" synecoché; "Sg Σ ")

For example, "What's in this stuff?" substitutes for WHAT'S IN THIS GOULASH? If the encoder's generalization is not sufficiently vague (stew ~ goulash), the terms will function as little more than synonyms.

6.2 *Visual strictly taxonomic synecoché*

Following Sapir's understanding of "taxonomic" synecoché, it might well be argued that we should disregard this as a viable visual trope, since those response portions for which it accounts are already treated within "specificity" (chapter VI). Mirroring the verbal trope, visual "taxonomic" synecoché should be at the heart of the following four scenarios (1 and 2 being cases of [sub]–SUPER ^b; 3 and 4, cases of [super]–SUB ^b):

Figure 13



Let us suppose that, in each case, I set out to signify a certain entity (a), but, feeling rhetorical, I opt for a visual trope, and commit the substituted entity to paper (b). You interpret each representation precisely as I have rendered it (c). Suspecting a trope, however, you invert the substitution (d), thus successfully echoing my intended signified (a) in your response.

It will be immediately apparent that again we encounter peculiarly visual objections, inapplicable to verbal "taxonomic" synecdoche above. For instance, in case 1, since mammals do not all look alike, I am forced to draw a member of a particular shape-identified sub-class (chapter VI, §2.1); that is, to some extent, [sub]–SUPER^b is *compulsory*. But, even if my [dog] actively discourages specification through the use of silhouettes, extreme stylizations, etc., without the intervention of a culturally symbolic prohibitive ring border (chapter VI, §1.1), or some such device, you are given no indication that any trope was ever intended. Corresponding problems, which need not be spelt out, appertain to the rest.

Such limitations are, of course, not limitations merely on the feasibility of my drawing either [mammal] or [prototypical dog]; nor only on that of my arousing in you the awareness of any substitution; nor even on that of my subsequently *confirming* that you are indeed aware that there was a substitution ('DOG^b', in a verbal response, sounding much like 'DOG'); they are *fundamental* limitations stemming from the simple fact that a dog *is* a mammal; that is, {'DOG'} is properly included in {'MAMMAL'} (chapter VI, §5.2). Consequently, a dog's mammalhood cannot be abstracted *visually* from [dog] in the way in which a [tail] may be erased from a pencilled sketch, or in the way a verbal statement ("Beware of the

vertebrate!", for instance) may remain non-committal (see Bhattacharya 1984). The visual medium is not amenable.

Figure 14

mode Π	representation	n-ary signification
[sub]-SUPER	ANIMAL	ANIMAL ^b
normal	DOG	
[super]-SUB	BEAGLE	BEAGLE ^b

That is to say, neither n-ary signification is very useful. Consistent with our account of the specificity of a verbalized repraesentatum; the response to:  (*DOG*), 'MAMMAL' – potentially, but (for the most part) unknowably, a [sub]-SUPER^b synecdoche – will simply continue to be considered an approximation in that it describes a class of referents wider than the specificity norm. The response 'BEAGLE', potentially a [super]-SUB^b synecdoche, will be deemed a narrow approximation with reference to the specificity norm. We shall, however, find a use for the strictly taxonomic [super]-SUB^b as the second operation in a double synecdoche (§6.5 below).

Yet, as things stand, taxonomic synecdoche is not a useful notion. On the one hand, the significations for which it accounts are already treated within "specificity", while, on the other, we are no nearer to explaining the n-ary link yielding COURAGE^b, SLYNESS^b, HYPOCRISY^b, etc. With a closer look at the "taxonomy" involved, however, we find that further options become available.

6.3 Taxonomic and "non-taxonomic" [sub]-SUPER^b

Figure 15a pictures the head and shoulders of a man; his narrowed eyes, arched eyebrows, crooked smile, etc. enough, I hope, to persuade you of an inferrable devious turn of mind. The man's being 'SLY', not in itself directly representable, constitutes a static inferred characterization (chapter IV).

Figure 15



'COURAGEOUS', likewise, may be inferred from a fairly unremarkable [armoured figure; fist to chest; impassive expression in the face of untold terrors, etc.], or, more conventionally, from a [lion]. 'SLYNESS' and 'COURAGE' themselves, however (divorced from a response portion such as 'THIS PERSON IS SHOWING GREAT COURAGE') are neither directly representable, nor (even indirectly) inferrable from a representation. Their invisibility, moreover, ensures that they pass through the representational methodological procedures without "qualification" at any stage. Yet despite our dismissal of a picture's capacity to *represent* invisible entities (chapter V, §2.1), 'SLYNESS' and 'COURAGE' both retain a valid and "traceable" relationship with the picture. It is to this relationship we now turn.

6.3.1 Extending "taxonomic" (sideways)

For Sapir, SLYNESS and COURAGE would be subsumed within *anatomical* synecdoche as above; constituting, that is, albeit counter-intuitively, valid *parts* of SLY MAN and LION respectively. In fact, Sapir (in the wake of Dubois *et al.* 1970) claims of *anatomical* synecdoche that a restriction of "part" to detachable visible portions "implies an exaggerated visual bias that distorts completely what we really conceive any object to be" (1977: 17). SLYNESS, according to Sapir, is as much a part of a SLY MAN as croûtons are a part of a meal.

That, as I read it, is not what Dubois *et al.* intend at all. Sapir has, I believe, construed "taxonomic" along the lines of our own label classification above (chapter V, §6); that is, based upon a Linnaean biological taxonomy, or some non-biological equivalent. Admittedly, Dubois' examples tend not explicitly to discourage such an interpretation; hence Sapir's preoccupation with "specificity" as discussed above, and his subsequent classification of "courage" as an *anatomical* part of a lion (1977: 17). A zoological hierarchy, is, for Dubois, however, only one of an indefinite number of classificatory systems within which an entity may be located (1970: 99). 'SLY MAN' may be a member of many classes; not only the strictly taxonomic label classes (chapter III) {'MAMMAL'}, {'PRIMATE'}, and

{'MAN'}, for example; but also the reference class {'SLY ENTITY'¹} (cf. "partial overlap", chapter V, §6); 'LION' a member of {'CARNIVORE'}, {'LION'}, and perhaps {'COURAGEOUS ENTITY'} (see below).

Inclusion within any reference class may be said to assign to each member a corresponding feature; a badge of membership, if you like. Membership of {'CARNIVORE'} and {'MAMMAL'}, for instance, will confer upon 'LION' the features "is a member of the class {'CARNIVORE'}", and "is a member of the class {'MAMMAL'}", which we may abbreviate "#carnivore" and "#mammal" respectively. 'LION' will possess, therefore, as many such features as there are reference classes of which it is a member². The result is a kind of portfolio of features, which, for 'LION', might run along the lines of #carnivore, #5-digit front feet, #tawny yellow, #courageous, #young-suckling, #animal, #air-breathing, #mammal, #vertebrate, #warm-blooded, etc. (although the latter six, being implied by #carnivore, may be considered redundant³).

Thus by disregarding, or conceptually "surpressing", those features which distinguish 'LION' from any other 'MAMMAL' (#carnivore; #5-digit front feet; #tawny yellow; #courageous, etc.(but see §6.3.2 below)), [lion] → LION may, in principle, signal the superordinate MAMMAL^b; that is LION may be (n-arily) *generalized* to MAMMAL^b. MAMMAL^b continues, therefore, as a perfectly valid instance of taxonomic generalizing synecdoche (if only its verbal realization were apparent to a hearer). Alternatively, by *adding* to the catalogue above the feature #Indian, [lion] → LION may signal the Asiatic sub-species INDIAN LION^b; that is LION may, with the corresponding accounting provisos, be (n-arily) *particularized* to INDIAN LION^b. This much is already implicit in §6.2 above.

But the signification:

[lion] → LION → COURAGE^b

is also a valid instance of taxonomic generalizing synecdoche, achieved this time by suppressing all features of 'LION' bar one: #courageous; and by realizing the result verbally as best we can: 'COURAGE^b'.

¹ Though I think {"SLY ENTITY"} will serve, I see no reason not to invoke a taxonomic version of Sapir's own (anatomical) justification above; and to render the class of which SLY MAN is a member: {'SLYNESS'}. "Entity" implies a degree of corporeality I believe is unnecessary.

² Compare Hervey's "class attributes" (1979: 37); noting, however, that these are properties of a class of denotata, established via common properties of its members.

³ Compare Hervey, for whom *non-redundant* class attributes are those which result from cases of *direct* proper inclusion result of one denotation class within another (1979: 41).

Figure 16

mode II	representation	n-ary signification
[sub]-SUPER	MAMMAL	COURAGE ^b
normal	LION	
[super]-SUB	INDIAN LION	INDIAN LION ^b

'COURAGE' (as a realization of the reference class each member of which possesses the sole feature "#courageous") *may*, therefore, in a sense, be said to be a *part* of '(COURAGEOUS) LION'. The part, however, is not anatomical. Indeed, 'COURAGE' is only a part of '(COURAGEOUS) LION' in that the corresponding feature #courageous is a part of the portfolio of membership badges¹.

6.3.2 Characterization of [sub]-SUPER^b

Although MAMMAL^b, SLYNESS^b and COURAGE^b are alike in their being instances of [sub]-SUPER^b taxonomic synecdoche, they may be said to differ in important respects. #mammal is implied by 'LION' in that {'LION'} is properly included within {'MAMMAL'}; #sly, however, is not implied by 'MAN'; #courageous may or may not be implied by 'LION'. That is to say, #mammal, #sly, and #courageous seem to be different *types* of features; #mammal, we may claim, is an essential feature of 'LION', whereas #courageous is not. We shall consider briefly the possibility of differentiating #mammal and #courageous on this basis, before proposing an alternative solution.

Establishing a characteristic as essential is by no means an easy task. One might begin by asking whether the essential characteristics of a biological organism, for example, are not just those features which assigned it to a particular taxon in the first place. It was claimed (chapter V, §6.1) that these features, should be both stable and applicable to all members of the extension. Some stable and universally

¹ A certain amount of licence has been taken with Dubois *et al.*'s "décomposition sur le mode Σ ". This licence has two facets. Firstly, their "décomposition" is into "sèmes", or "unités minimales de sens" (1970: 94); that is, into sense *components* (cf. Katz's "semantic markers" (1966: 154)). The feature "is a member of the class {'MAMMAL'}", however, temporarily and conveniently obscured by the abbreviated form "#mammal", is not a component of meaning but a *property* of the referent (a "part" only in the sense of part of an ensemble of properties). The second point is that, whereas for Katz, "#mammal" (or rather "(mammal)") refers to a component of the sense of the English word "lion" (Katz 1966: 154-6), for Dubois *et al.*, the "sème" is a component of word or concept ("chaque mot ou concept peut être en principe le croisement d'autant de séries [endocentriques] qu'il contient de sèmes" (1970: 101 (my emphasis))). In both cases, however, the sense component is relatively "linguistically tied", with the result that "décomposition sur le mode Σ " might be viewed as "semantic synecdoche".

applicable characteristics may seem nevertheless non-essential. Even if all lions are courageous, this may just happen to be the case. #courageous may be not an essential attribute but a "matter of contingent fact" (Lyons 1977: 195), or "universally accompanying characteristic" (Hospers 1967; see also Dahl 1975).

Courage, however, is easily abandoned. Nevertheless, if we apply this criterion to a lion's seemingly essential quorum of features, say, #a canine set of teeth, #four legs, #fur, #live young-bearing capacity, etc., we find that they readily suffer a courage-like fate. A three-legged, vegetarian lion, bereft of teeth and fur, and no longer able to have cubs, is surely still a lion. If so, then none of these is defining. Even "sortal" characteristics (Levin 1977), such as #mammal, lose their essentiality if, as is advised, we are receptive to the *possible* as well as to the actual (Dahl 1975) – say, the lion born of a chicken, and which, upon close inspection, turns out to be an automaton. A less open-minded, though more practical, approach would dismiss the logically possible, in favour of the known, typical, normal (Lyons 1977; Robinson 1950), and thus (ominously) "prototypical" (chapter V, §3.2) lion. If this seems sensible, it also spells ruin for the defining characteristic, since prototypes, like basic categories, are relative to each individual (chapter V, §3.1). To a rural Peruvian, the mammal-hood of "whale" and the pet-hood of "guinea pig" may be as far removed from the imaginable as that a donkey should lay an egg.

A classification of [sub]–SUPER^b significations according to the essentiality of the feature, then, is not feasible, since, on the one hand, if the prototypical is not evoked, the essential readily shades into the universally accompanying; and if, on the other hand, the prototypical *is* evoked, the validity of any characteristic becomes relative to the individual informant.

An alternative approach which affords a more operable distinction between #mammal and #courage hinges upon the double life of 'LION'. The first of these lives is as a referent (that is, a realized repraesentatum); the second is as a potential referent (that is, existing independently of representation as a member of a class of potential referents) (chapter V, §4.2). Only with regard to its second role is the essentiality of #courageous, #mammal, #air-breathing, etc. an issue. With regard to its first, however, the features to be considered essential are already quite well circumscribed – answering the question "what makes 'LION' an acceptable representational correlate?", rather than "what makes 'LION' a lion?". They are dependent, therefore, not upon what lions do or do not tend to do, but on the information available in the repraesentans. The only essential features of 'LION' in

'[lion]' → 'LION' are that it should (a) function as the repraesentatum in a relationship of representation; and (b) acknowledge that the repraesentans does look like a lion. Feature (b), indeed, is that encapsulated in the notion of "label" (chapter V, §5). Thus the only features available to 'LION' *as a label* are #mammal, #carnivore, #animal, etc. (that is, those marking membership of relevant strictly taxonomic zoological superordinate (and subordinate) classes), along with (trivially) #lion itself. Any further features are classified (as *characterizations*) not on the basis of their essentiality to lions in general, but on that of their visual motivation with respect to the repraesentans concerned. With respect to figure 13a, 'AIR-BREATHING', for example, is an inferred characterization (that is, a non-essential feature) (chapter VII, §2.2), even while #air-breathing may be essential to any underlying beast.

What this means is that we may in principle pinpoint the source of a [sub]–SUPER^b n-ary signification in terms of its visual motivation. The source of 'COURAGE^b' is not 'LION', since 'LION' possesses, *as a label*, no features other than #mammal, #carnivore, #animal, etc. That is to say, there *is* no feature of 'LION', #courageous, which could possibly be isolated through the suppression of all other features. For a feature #courageous, and, consequently, a superordinate class {'COURAGEOUS ENTITY'}, to become available, the (primary) *true characterization* 'COURAGEOUS' is presupposed¹. Likewise, the response 'HAIRINESS' requires that the elementary characterization 'HAIRY' already have been achieved. In the process of accounting, however, we may anticipate that it will rarely be possible to ascertain informally the source of such a trope.

Figure 17

	labels	elementary	inferred and asserted
representation	LION	HAIRY	COURAGEOUS
n-ary [sub]-SUPER ^b	ANIMAL ^b	HAIRINESS ^b	COURAGE ^b

¹ In fact, COURAGE^b, as an n-ary signification of [lion] → LION, should be classed as a motivated n-ary index understood by convention. The process involved in the reconstruction of the [sub]-SUPER^b link, however, may be evoked in the explanation of other, non-conventional, n-ary significations.

6.4 [super]–SUB ^b

The remaining taxonomic synecdoche is [super]–SUB ^b. In instances of interpretative [super]–SUB ^b, the reference class representationally selected is subsequently particularized through the adjunction of a feature (or features) of the type described above; to circumscribe an n-ary reference class properly included within the primary reference class.

Looking back at figure 11, however, this trope (cases 3 and 4) smacks again of inoperability. Shape-related encoding difficulties combine with verbalization-related accounting difficulties to dissuade us from an n-ary reconstruction, say:

$$\boxed{[\text{dog}] \rightarrow \text{DOG}} \rightarrow \text{BEAGLE}^b$$

(of , *DOG*) in favour of the representational "narrow approximation" on the norm:

$$[\text{beagle}] \rightarrow \text{BEAGLE}$$

Other interpretative particularizations (the non-strictly taxonomic 'BLACK AND WHITE DOG', say), also potentially n-ary in principle, are far more readily dealt with as characterizations (chapter VII).

Like [sub]–SUPER ^b, however, there is more to [super]–SUB ^b than meets the eye. It is the trope responsible for a particular type of *unique reference*; the treatment of which we shall postpone until §7 below. But the n-ary contribution of [super]–SUB ^b also becomes apparent in the "double taxonomic synecdoche".

6.5 Double "taxonomic" synecdoche

Paralleling the operation of double anatomical synecdoche above (and the question of accounting feasibility), we shall confine initial discussion of double "taxonomic" synecdoche to only one series: that in which a [sub]–SUPER ^b is followed by a [super]–SUB ^b.

To facilitate the reconstruction of the n-ary link, we shall again exploit the plausibility of the n-ary indices understood by convention, most particularly the venerable Esso tiger. As in §3.3 above, however, it should be noted that, although

the extended rationale may be "metaphorical", the conceptual short-circuit involved in such cases excludes Esso tigers and the like from double synecdoche proper.

The *verbal* double taxonomic synecdoche of course is not uncommon. The advertisement urges that you "put a tiger in your tank", but the behaviour recommended involves not tigers but Esso petrol. "The old fox sold my shares before the crash", but my thanks go not to a fox but to my canny stockbroker, Mr. Green.

Neither of these tropes can be explained in terms of a single synecdoche. The coupled terms in respective pairs, however, have something in common. In the case of the pair, "tiger" and "petrol", for instance, (the referent underlying) each term is reducible, via a "taxonomic" synecdoche, to STRENGTH (Vestergaard and Schrøder 1985). In respect of this particular feature, Esso petrol and tigers are alike. Following Dubois *et al.* (1970: 118), the relationship may be rendered:

Figure 18



the intersection being "partie commune à la mosaïque de leurs sèmes" (*ibid.*: 107). Thus to achieve STRENGTH, given TIGER, interpreters must effect a generalizing "taxonomic" synecdoche. Successfully to construe ESSO PETROL, however, they must subsequently perform the *reverse* trope: a *particularizing* "taxonomic" synecdoche.

This particular trope is readily translated into the visual realm. Given that:

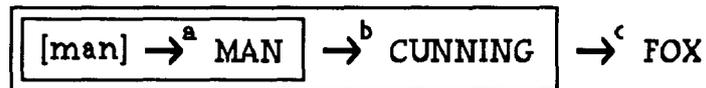
[tiger] → TIGER → STRENGTH^b

and: [Esso petrol] → ESSO PETROL → STRENGTH^b

are plausible instances of [sub]–SUPER^b, the former's prefacing a *reversal* of the latter results in the trope:

[tiger] →^a TIGER →^b STRENGTH →^c ESSO PETROL

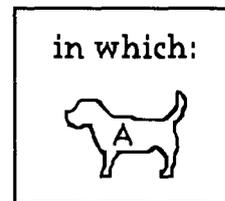
" → b " being, that is, a [sub]–SUPER b synecdoche; " → c " a [super]–SUB b synecdoche. Here again 'TIGER' is first generalized to 'STRENGTH b' (characterized as necessary to allow the desired feature to become available (§6.3.2 above)); 'STRENGTH b' is subsequently particularized to 'ESSO PETROL c'. Similarly, since 'MAN' (characterized 'CUNNING') and 'FOX' have in common the feature #cunning, these may also participate as relata in the double synecdoche:



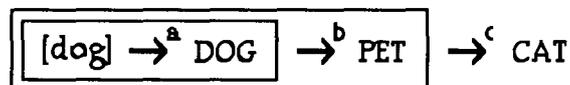
" → b " being again a [sub]–SUPER b; " → c " a [super]–SUB b.

Equally valid, though somewhat less evocative, are double synecdoches involving only strictly taxonomic features. Let unit A - *DOG*.

Figure 19



Supposing a representational referent, 'DOG' and a feature, #mammal, just as 'TIGER' was generalized to 'STRENGTH b', 'DOG' may be generalized to 'MAMMAL b'; just as 'STRENGTH b' was particularized to 'ESSO PETROL c', 'MAMMAL b' may be subsequently particularized to, say, 'PERSON c' – "No person allowed to enter". A more orthodox interpretation of figure 19, which nevertheless presupposes a characterization, would be the signification 'CAT c' via a feature #pet; people, or at any rate most people, being unaffected by the prohibition.



Bhattacharya's "classificatory symbol" (chapter VI, §2.1) may thus be redefined as a double synecdoche [sub]–SUPER b + [super]–SUB b; a more specific norm *BEAGLE*, moreover, allowing as an n-ary signification the representationally counter-indicated CHIHUAHUA b via #dog (chapter VI, §5.1).

7 Unique reference

The signification of a unique particular is necessarily an n-ary, rather than a representational, concern. Whether photographic or schematic, no realized repraesentans can direct the viewer to a *specific* realized repraesentatum through pictorial means alone (chapter VI, §2.2; chapter VII, §6.2). That said, there were claims in chapter III that unique correlates are not ruled out as *interpretative* options (§2.3); and hints in chapter VII (§2.3) that they might be dealt with *within* representation ('MR. GREEN').

Before reckoning with this discrepancy, however, it should be noted that *any* repraesentans conveys (at each interpretative instance) a unique repraesentatum which in turn corresponds to a unique referent. This is not the point at issue. The question is, rather, whether:

- 1) the referent is unique in the sense that the reference class to which it *ultimately* belongs is understood to contain only a single member;
- 2) the referent is *definite* in the sense that its verbalization by an informant conveys not only the intended singularity of the member, but also its identity (see chapter VII, §6);
- 3) the corresponding reference class can reasonably be claimed to have existed *prior* to the signficatory instance concerned (see §7.2 below)?
- 4) that referent is *non-conventionally* specified (see §7.1 below)

Let us term any referent which fulfils each of these criteria a "singular" referent. A singular referent, then, will be a definite, individual substance (Lyons 1977); a particular spatially locatable and temporally enduring material thing (Harré 1970a), present as a single Gestalt if present at all (Quine 1974). A definite individual *fictional* object, however, may also qualify. This supplement invites criticism (Goodman 1976, for example; but see also Harré 1970a; Hervey 1979). Nevertheless, since in chapter V (§6.1) a claim was made for the inclusion of the fictional and the mythological within the realms of the picturable, there seems little justification for their exclusion from the n-ary signifiable.

Other referents, however, also unique in their way, may be isolated by their fulfilment of only some of the criteria above. On the basis of *which* criteria these are, five types of unique referent are distinguished.

- a) that which is understood by virtue of a convention (§7.1); perhaps fulfilling (1), (2) and (3), but failing to fulfil (4);
- b) a "quasi-unique" referent: that achieved through "dubbing" (§7.1); fulfilling only (1), (2), and (4), and not considered an n-ary matter;
- c) that achieved through "ostension" (§); fulfilling only (2), (3) and (4), and requiring the introduction of "©", the class-member operator;
- d) specific indefinite reference; fulfilling only (1), (3), and (4);
- e) specific definite reference; or the "singular" referent; fulfilling all four of the criteria.

7.1 The unique conventional referent

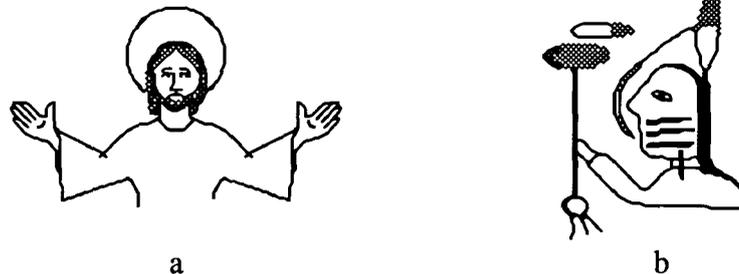
Unique conventional referents fulfil each of the criteria (1) to (3) above. Since the n-ary link is ultimately conventional, however, these will be subsumed within the category of "motivated n-ary index understood by convention" (§3.3 above).

A [lion], for example, cannot represent a MAN; and although we know little about the physical appearance of the writer of the second gospel, we know that Mark was a man. {'MAN'} is commensurable with *LION* only *superordinately* (at the level of {'MAMMAL'}, say). The response to a [lion]: 'MARK, THE EVANGELIST', however, may be explained by the convention, instanced in the sculpture of Romanesque churches, whereby a [winged lion] is used to signify SAINT MARK.

[winged lion] → WINGED LION → SAINT MARK^b

Christ, on the other hand, was (structurally-speaking, and in his earthly incarnation) a man; the norm for figure 17a is *MAN*. The Oglala chief Wears-The Feather was also a man; and the norm for figure 17b too is *MAN*.

Figure 17



(figure 17b adapted from the North American Indian "Oglala Roster" of c.1886, reproduced in Gelb 1952: 38)

Thus there is little representationally to gainsay the responses to figures 17a and 17b 'CHRIST' and 'CHIEF WEARS-THE-FEATHER' respectively – other than our conviction that unique reference is not possible within representation. 'CHRIST' and 'CHIEF WEARS-THE-FEATHER' would appear, then, in comparison to 'SAINT MARK', to be significations of a different kind; less dependent upon convention since there is, in each case, a healthy cluster of motivating visual features, and, correspondingly, less work for the convention to do.

This difference may appear to be further enhanced by a conviction that we *know* what Christ looks like. Here is a snippet from an eye-witness account – a letter from Lentulus, Governor of Judea, to the Roman Senate:

"A man of average or moderate height, and very distinguished. [] His hair is the colour of a ripe hazel-nut. It falls straight almost to the level of his ears [] In front his hair is parted into two, with the parting in the centre in the Nazarene manner. His forehead is wide, smooth and serene, and his face is without wrinkles or any marks. [] His nose and mouth are faultless. His beard is thick and like a young man's first beard, of the same colour as his hair; it is not particularly long and is parted in the middle [] He is broad in the chest and upstanding; his hands and arms are fine. [] He is the most beautiful among the children of men." (*Zardino de Oration* (Venice, 1494), quoted in Baxandall 1988: 57).

Although the letter is a forgery, and Lentulus himself a fiction (*ibid.*), this description conforms well to (and has perhaps even played some part in perpetuating) the essentials of a [Christ], not only in Western art, but also in that of Peru, whether colonial or contemporary, academic or popular, urban or rural (Macera 1979). Yet any number of individuals will fit this description. If figure 17a's posture and clothing are altered, and the halo removed, all that remains is a bearded man.

'SAINT MARK', 'CHIEF WEARS-THE-FEATHER', and even 'CHRIST' too, all necessitate, ultimately, a convention; and this alone is sufficient to classify the three as n-ary motivated indices understood by convention.

The conventional signalling of a unique referent is a phenomenon by no means confined to Western Christian and classical traditions. For the Maori, a particular represented tattoo-pattern identifies a specific ancestor (Adam 1949); red feathers indicate the Tahitian god Oro (Barrow 1979); the Mixtec king Eight-Deer Tiger-Claw's name is "represented visually" (Bhattacharya 1984: 227); a [bearded horseman] may signify not only Santiago (St. James the Greater) but also the ancient Andean deity Wiraqocha (Macera 1979) (see also Wittkower 1977; Hall 1974; Beigbeder 1989; Gelb 1952; Bowden 1992, etc.).

7.2 Dubbing

"Dubbing" does not pinpoint a bona fide unique referent through its failure to fulfil criterion (3): that the reference class can reasonably be claimed to have existed *prior* to the significatory instance concerned. Of course, all reference classes exist independently of signification (chapter V, §4.2), but some reference classes may be said to fulfil this criterion only *in retrospect*. Thus, a response to figure 15a, 'SEÑOR ARTHUSIUS QUATSCH', *creates* a reference class the existence of which is *subsequently* independent of signification. The informant is assumed to have selected a referent (say, 'MAN') corresponding to the repraesentans ([man]); and, in the interests of narrative colour alone, to have accorded that referent a name ('SEÑOR ARTHUSIUS QUATSCH') (cf. "nonce symbols" (Mulder and Hervey 1980)); thus creating a stipulative reference class {'SEÑOR ARTHUSIUS QUATSCH'}. Perhaps a particular individual is intended; perhaps, alternatively, this is a whimsical stock response to certain types of entity¹. In either event, the onus is on the accounter to determine the (temporal) priority of the reference class in question, and the plurality of its members. Failing this, the accounter hypothesizes a subtext which claims, for example, "this represents a dog, let's call him Fido", just as a children's story book may begin by (non-representationally) anchoring a picture "This is Bob. He lives on a farm".

For example, Picture 21a (reproduced in Appendix A) is a [dog]. Though no less basic than chapter V's figure 1, it is possibly a little more South American in its mongrelism. Informant 12's response was 'TIFÚN'. Here is an instance of my not being, in any of the senses above, acquainted with any singular referent concerned. Although attempts were made to remedy this, since my search for a real or a fictional singular Tifún has been in vain, the response portion 'TIFUN' is classified as a static asserted characterization (chapter VII, §2.3). Thus an inability to trace a singular referent forces us to assume not only that the informant does not know Fido, but that there is no prior {'FIDO'} to know. Should new information – such as second informant's responding 'TIFUN' to the same picture – come to light, this classification may be revised.

Indeed the signification of a unique referent presupposes an acquaintance with that referent. In principle, this acquaintance may be direct or indirect, visual or non-visual. But *whose* acquaintance with the referent is presupposed – the interpreter's

¹ The ubiquitous hypothetical Fido being a case in point.

or the accounters'? Ideally, of course, it is the interpreter's acquaintance which is paramount; as a methodological necessity, however, it cannot but depend *entirely* on the accounters' (co-) acquaintance. This has its disadvantages. While every effort should be made to track down the signified individual concerned (cf. chapter VII, §2.3, and §3.3 of the present chapter), we should resign ourselves to the possibility that unique referents intended, and (from the informant's point of view) unambiguously signalled, will slip through the net.

7.3 Specific definite reference

That type of unique referent fulfilling all four criteria is specific definite reference (see chapter VII, §6).

Picture 9 (a collage, reproduced in Appendix A) includes a photograph of what I take to be Adolf Hitler. Informant 44's response includes the following:

El señor del – de la República de Alemania. Hitler! Ya, ya! Adolf Hitler – eso es
This is the man from – from Germany. Hitler! Yes! Adolf Hitler – that's the one (Inf. 44; Pic. 9)

'ADOLF HITLER' fulfils all the criteria (1) to (4) above; there is no doubt that a singular referent is intended. Even this photograph, of course, cannot *inform* the viewer of the identity of the referent. Here at last, however, is a case where the informant, seemingly, does not *need* to be informed of the identity, because he already knows.

Under these circumstances, a case might be made for a third extension to Kay's taxonomy (chapter VI, §6.1.1): the "unique label", thus admitting {'ADOLF HITLER'} as a valid label class. If I can recognize a dog, for instance, by its shape; if, moreover, being an ornithologist, I can recognize a lesser spotted woodpecker by its shape; why, then, may I not also, being of a certain age and background, recognize Adolf Hitler by his shape? This, however, does not specifically address the uniqueness of Adolf Hitler. "Recognizing Adolf Hitler by his shape" might be better expressed "recognizing *an* Adolf Hitler by *its* shape"; in acknowledgement of the plurality of the members of the class {'ENTITIES THE (PROJECTED) SHAPE OF HITLER'}; which class includes any entity, two- or three-dimensional, which visually resembles Adolf Hitler (Reich chancellor, 1933). To claim that this picture corresponds solely to the latter – even where the context seems to guarantee uniqueness (in a frame from Riefenstahl's film documentary "Triumph des Willens", say) – is not simply a choice from amongst valid alternatives; it is a denial of the validity of those alternatives.

The counter-intuitive element which will perhaps inevitably accompany this classification may perhaps be weakened by reference, yet again, to the causal nature of the photographic process.

But singularity does not require photographic causality. So far as we are concerned, there is little to distinguish the 'ADOLF HITLER' singular response from any non-photographic singular response – even one evoked by the most highly stylized of line drawings (cf. chapter V's figure 3 (Alfred Hitchcock):

Kaytaq runa huch'uy Rolando kayqa'

And this chap is little Rolando, this is (Inf. 32; Pic. 22a (also a fairly basic [man]), little Rolando being his son)

or, *erroneously* – so it would seem – from a photograph.

Picture 3 (reproduced in Appendix A) is a photograph cut from a Peruvian magazine. Against the backdrop of a snow-covered mountainside are (the upper halves of) three people, one of whom appears to be a ginger-haired man. This man is variously described as a TOURIST (Informant 50); a GRINGO (North American or European) (Informant 34); a STUDENT (Informants 26 and 43), etc.

Here, however, are the beginnings of three other responses:

Usted?

Is it you? (Inf. 1; Pic. 3)

Es usted lo que es eso?

Is this one you? (Inf. 13; Pic. 3)

Kaypichu kashanki qanqa manachu?

Is this you here or not? (Inf. 18; Pic. 3)

That is to say, three informants ask me whether the photograph is of me. It is not even a good likeness – *I should say*. Yet had these informants encountered Picture 3 in my absence, the chances are that I should have seemed as unambiguously signalled as Adolf Hitler was to both Informant 44 *and* me. Thus the only difference between these responses to Picture 3 and Informant 44's response to Picture 9 is that, faced with the latter, *I* should opt for *the same* singular referent. To those who know Adolf Hitler well enough successfully to distinguish him from Charlie Chaplin (in "The Great Dictator") and Alec Guinness (in "Hitler: the Last Ten Days"), there may appear to be a clear distinction.

7.4 *Specific indefinite reference*

Through its failure to fulfil criterion (2) above, specific indefinite reference is sharply distinguished in principle from specific definite reference above – if not so easily in practice (Lyons 1977). In the anticipation of serious accounting difficulties, then, we might abandon this type of unique reference. Yet when we come to examine the test responses we shall see that specific indefinite reference is to some extent recognizable when the response is provided in the form of a question.

7.5 *Ostension (minus the pointing)*

The final type of unique referent is that achieved by *ostension*. Traditionally, ostension requires the pointing of a finger, or some other demonstrative act (Quine 1974; Hospers 1967; Robinson 1950; Harré 1970a, etc.). Given fulfilment of criterion (2) above (that is, as to the identity of the referent), however, here we dispense with the necessity for pointing. What remains is the crucial *non-fulfilment* of criterion (1); and, with it, the requirement that the ostended referent be an *exemplification*. Thus, although, on the one hand, there should be no doubt as to the referent's *specific and definite* signification, it is intended *only* as an exemplification.

Confronted with Picture 13 (reproduced in Appendix A), for instance, Informant 3's response began with the following:

El hombre – por ejemplo nosotros, díganos – por ejemplo eso yo soy, no?
The man – for example, let's say us, – for example, say I'm him, ok?

In this particular response, the hypotheticality of the link is undeniable; it is quite clear that Informant 3 does not believe the picture to be directed explicitly and solely at himself. Unlike the Hitler response above, this response neither pretends, nor intends, to signal a subordinate class; quite explicitly it selects a *single* member which acts on behalf of the whole class, without in any way exhausting, or losing sight of, its relationship with that class. Thus the arrow cannot in this instance be said to stand for a relationship of superordinate to subordinate; members are not subsets. Rather, the relationship is one of *class to member*¹ – or rather: [class]→MEMBER b.

¹ A relationship Sapir confuses with that of superordinate to subordinate (see above, §4.1).

This is a relationship we are so far in no position to account for. Yet it is crucial to the advertising industry. As viewers, we do not, on the whole, mistake people in adverts for ourselves. Nevertheless, we are urged to "see ourselves" as we could be, our lives enhanced by the workings of a patent wrinkle cream, or whatever. An Armed Forces recruitment poster, for example, complete with [soldier stomping through the undergrowth with a sense of achievement and a machine-gun], persuades me to "identify" with that soldier, in the sense of "execute a particularizing trope (of some sort) with myself as the n-ary signified".

[soldier] → SOLDIER → ME^b

That I should presume to select myself from a reference class to which, strictly speaking, I do not belong, may even be held to create a tension resolved only by my enlisting.

This relationship may only be interpreted as a "syndochical" relationship by further tampering with the notion of "part". Instead, I propose to introduce into §4's framework a third analytic mode: mode "©" (for want of a better mnemonic): a class-member operator.

In fact Informant 3 is the only informant to make use of this type of signification. Nonetheless it is the *reverse* trope: *member to class*, which provides the most acceptable (or, let us say, the least *unacceptable*) account of the *generic response*.

8 *Generic reference*

As with [whole] → PART^b and [superordinate] → SUBORDINATE^b synecdoches, the class-member relation can operate in either direction; that is, not only may [class] → MEMBER^b, but also [member] → CLASS^b.

It is what lies behind responses such as the following:

Reloj – lo que marca hora
A clock – that which tells the time (Inf. 2; Pic. 8)

(chapter IV, §5) and it achieves what is commonly termed "generic reference", in that it does not refer to some indefinite non-specific "clock" but to a *class* (Lyons 1977; Chafe 1970), or *species* (Allwood *et al.* 1993). Similarly, a response such as:

Clocks tell the time

refers to no specific clock but to all (reasonably prototypical) clocks. This "plural" generic is to be distinguished in principle from the ("non-contiguous") n-ary integration. Imagine a picture of a castle, and that pictured in front of it there crouches a uniformed soldier who beckons, as it were, off-stage left. A response 'SOLDIERS ARE ATTACKING' is unambiguously n-arily integrated; SOLDIERS ATTACK may hint at a "plural" generic (see Chafe 1970 on the role of the verb); while SOLDIERS ATTACK CASTLES makes the generic plural explicit. .

Generic expressions are often grouped into "nomic", or law-like, statements, and accidental generalizations, according to whether the attributes predicated are essential or non-essential (Dahl 1975; Lyons 1977). Let us assume, however, that the truth-value of the proposition is not our concern, and that the imaginative or erroneous generic statement is as generic as any other (see Chafe 1970). A response DOGS FLY will fall within the same category as the response DOGS CHASE CATS, or DOGS HAVE FOUR LEGS (unlike our treatment of metaphor above, §6.3.2). All of these, moreover, will fall within the same category as THE DOG FLIES, A DOG CHASES CATS and A DOG HAS FOUR LEGS.

A problem presents itself here; that is: should generic reference not belong within representation? Eco, for example, would appear to think so; since a '[horse]' "can correspond to a statement of the type /all horses have four legs and such visual properties .../" (Eco 1976: 216); and it is certainly Barthes' implication, where a certain type of picture "practises what we might call a certain philosophy of the object, i.e. reflects on its being, produces at once an inventory and a definition" (1982: 218). I think, however, that with an interpretation of the generic as [member] → CLASS b, we need only appeal to visual resemblance. While we may know what any number of individual dogs look like, the *class* of all possible dogs is not like an angel – a potentially visible entity; it is an entity to which the phrase "visual resemblance" is inapplicable.

Nevertheless, we claimed in chapter VI (§4.1) that the relationship of representation exists, *in any case*, between a *class* of repraesentantes and a *class* of repraesentata. The generic class, however, is perhaps best viewed as a *power set*; that is, a set of sets, or a class of classes. Under this interpretation the class of repraesentata, {DOG}, say, may be considered a *member* of the n-arily and generically signalled "{ {DOG} }".

9 Summary table of n-ary signification

The introduction of ostension and generic reference between them necessitates a final modification of figure 8 as follows:

Figure 18

"primary"	n-ary indices		
pictures	motivated	Π	[part]-WHOLE ^b (natural)
			[whole]-PART ^b
		Σ	[subordinate]-SUPERORDINATE ^b
			[superordinate]-SUBORDINATE ^b
		©	[member]-CLASS ^b
			[class]-MEMBER ^b
		conventional	
	conventional		

in which the double synecdoche, whether taxonomic or anatomical, is understood to succeed the appropriate component trope. The results of the second application of the typology of indices are, to a certain extent, still visible.

The possible variations on this framework are probably infinite. Although it is far from capable of describing a set of responses exhaustively, it is quite large enough. Moreover, the further our reconstructions wander from the representational level, the more arbitrary we inevitably become in accounting. Like chapter VII's final figure 15, figure 18 above may provide the bones of a score-sheet.

CHAPTER IX

Conclusion

This study has attempted to provide the beginnings of a framework for the assessment of verbalized responses to pictures. It was inspired by the interpretations of some fairly unelaborate pictures made by a number of individuals in a remote part of Peru.

The realization of the necessity for such a framework came about gradually. Chapter I describes the events which first led me in this direction: an interest in musical instruments; a picture of a musical instrument; an interest in pictures; a variety in interpretations I found surprising; a curiosity about the *reasons* for that variety.

There followed a short chapter which reviewed an assortment of picture tests. These tests brought to light further differences in the ways pictures are perceived, as well as offering some potential reasons *why* perceptions might differ. But chapter II also raised the problem of the conventionality of the picture. We were unable to come to any firm conclusion on this point, and postponed until chapter V further discussion of the extent to which pictorial perception is culturally mediated.

In chapter III we examined more closely the cultural context in which the picture test was administered, asking what cultural factors there were which might conceivably affect interpretations, and in terms of which any differences in informants' picture responses might be explained. We settled upon the degree of integration within Peruvian mainstream society, rated in terms of mobility, level of schooling, and degree of proficiency in Spanish, together with two five-point attitudinal indicators of traditional and non-traditional orientation. Informants were assigned ranks with respect to each of the above. Chapter IV attempted a matching of these rankings with some aspects of informants' responses to Appendix A's pictures.

The trends in the responses, such as they were, seemed to suggest that individuals who interact relatively little in a Spanish-speaking, fast-moving, modern milieu, and who have little or no formal education, interpret pictures in a manner which is, on the whole, less complex than that of more integrated

individuals. Explicitly, at any rate, the former seemed to pay less attention to pictorial context, and to incorporate movement to a lesser extent than did the more integrated informants.

The method and the results suffered, however, from so many inadequacies – not least my *own* inattention to context – that little weight can be accorded these findings. We closed chapter IV with a brief consideration of how situational factors might affect both the form and the content of informants' responses.

In addition to these deficiencies we found that our presentation had, throughout, been severely hampered for want of any systematic basis to the categorizations we made. It was in order to fulfil this role that the theoretical framework which follows was conceived.

Chapter V began this task by offering a tentative definition of "picture" and locating it within a typology of indices, before returning to the question of the cross-cultural relativity of pictorial perception begun in chapter II. An examination of the notion of "visual resemblance" led us to the conclusion that pictorial perception and normal perception differ only in the relative contributions of muscular information and in the *consequent* relative ambiguity of the stimulus. Such was the picture's ambiguity in fact, that it seemed wholly inadvisable to appeal to a single "correct" interpretation for use as a standard by which other interpretations might be judged. Instead we needed to *stipulate* a standard, yielded on the basis of three, somewhat arbitrary, decisions: a decision as to *which* of the valid representational alternatives we should back; a decision as to *where* should lie its represented spatial boundaries; and finally a decision as to what it should be *called*. We next acknowledged that none of these decisions, nor even together with their valid alternatives, exhausted the visual information available; and that there was still plenty more to say in response to any picture. There followed a classification of types of response in terms of their deviation from (our chosen interpretation of) the available information, and their complexity in integrating and interrelating (our stipulated) pictorial units.

The picture's capacity to refer, taken for granted in chapter V, was brought seriously into question at the end of chapter VII with the realization that pictures rarely have recourse to the type of deixis by which they might refer specifically and definitely. For a picture to convey this kind of information, its interpreter must transcend the level of representation to reach a post-representational, or n-ary, level upon which a new range of signifiatory options becomes available.

A second application of chapter V's typology of indices provided an initial structuring of those options, subsequently elaborated throughout the course of chapter VIII.

Such a framework as this would have relevance for the practice of pictorial communication. In principle, it might predict the type of picture most likely to succeed in conveying its message in a particular environment; though its usefulness in this respect might only approach a degree of "clinical usefulness". In principle, it might have implications for the legal profession, whose inability to distinguish, legally, between the "true", the "false" and the "deliberately misleading" in visual advertisements (or, as recently, on a Kellogg's cereal packet) is currently gaining attention (Zakia 1986). It *might* predict, moreover, the efficacy of some of the pictures in Appendix C.

These are all contemporary Latin American posters found fixed to walls in Chile, Puno and on Amantani itself.

Taking Poster 3, for example, it seems quite likely, on the basis of chapter IV's findings, that an n-ary conventional signified would be forthcoming given [rose] → ROSE. Whether that n-ary signified is LOVE^b, LIFE^b or whatever, it also seems likely that this interpretation would be achieved with little regard for the [rose]'s position between the [hands], and thus with little chance to consider how such a juxtaposition might affect the meaning. In Poster 2's case we might be reasonably confident that there will be no problem recognizing PEACE^b, CHRIST^b, and PERU^{a-c?}; – but reasonably *unconfident* of the likelihood of any fully coherent, contextually meaningful interpretation such as LET THERE BE PEACE IN PERUⁿ, or CHRIST DIED ON THE CROSS SO THAT PERUVIANS MIGHT COME BY HIS PEACEⁿ, or IF PERUVIANS DO NOT EMBRACE CHRISTIANITY, THEN PEACE WILL BE FORFEITⁿ, or any other of the plethora of associations this poster might call forth.

Extending a comparison initially only as far as nineteenth century Tasmania, the intended interpretation of chapter I's figure 1 seems a lot to have asked; the operations required are far more extended and more complex than those evidently achieved in any of the Peruvian test responses. The reader will not be surprised to learn that, if the Tasmanians understood the poster, they did not heed it.

Yet this is a type of picture still regularly put into service today, when words are not fast enough, or not big enough, or when the target audience is by and large illiterate. Hudson (1967) tells us how common (and how commonly misunderstood) was the "BEFORE ... AFTER ..." safety poster in 1960s South Africa; Ogilvy, if not a grandfather, then at least a father, of modern advertising, tells us that this same type of advertisement "[makes] its point better than any words" (1987: 137); Douglas, an "educational photographer" tells us of an Indian "IF ..., IF NOT ..." family planning poster, that "even when the language [the written Hindi] cannot be understood, the illustrations [...] speak for themselves" (1982: 157).

Ogilvy and Douglas, moreover, along with the consulted organizations mentioned in chapter I, are all in wholehearted agreement in their support of the *Keep It Simple* doctrine. The aid organization CORPUNO (who produced Picture 2 and Poster 6) agree; the Chilean Alianza Cristiana y Misionera (who produced Poster 7) agree; the magazine *Hojas Escritas* (who turned Villanueva's painting into a poster (Picture 19)) agree. What they evidently do not agree upon is *what "simple" means*.

It is this, the circumscription of the (*meaningful*) simple, towards which one might profitably work. The first job, however, would be to ratify the categories proposed – not in terms of the degree of their correspondence with accepted semiotic models, but in terms of a *developmental* paradigm – whether that paradigm be the classic Piagetian version or some more specific alternative. For example, no justification was offered above for the framework's ordering of the integrated and interrelated levels of complexity. One might appeal to notions of "articulation", or "diverse determination", say; but, as it stands, the structure is ultimately developmentally arbitrary. There are, however, hints in Elkind (1969) on how a developmentally standard "pictorial grammar of usage" might begin.

Were such a thing ever to be made available, its home should not be the bookshelf of the lay viewer, for whom pictures will probably continue always to seem fundamentally unmysterious; rather, it should go to the makers of the posters with the aim of *maximizing what little specific communicative potential there is*.

Finally, I think that none of the above really required a trip to Peru; and that posters such as the Pictorial Proclamation would stand little more chance of being understood in Edinburgh High Street than chapter I's figure 1 did in

nineteenth century Tasmania. But it is the high degree of literacy in this country, for instance, which (after all) relieves the picture of a great deal of communicative work. Even a couple of written words can do wonders for the picture's power to mean (Poster 8). Indeed hasty judgements as to what is, and what is not, self-evident may often already have had the benefit of a small but absolutely crucial textual anchorage.

While there is still plenty for pictures to do, it would surely be no bad thing to know just how much they *can*, and whether there is any chance at all that they *will*.

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Appendix A The Test-Pictures

The following thirty-seven pictures are photographs of those displayed to informants and upon which informants' scores are based.

- 1) Each picture is accompanied by a delineation of the units deemed anatomically basic.
- 2) Although the occluded portions, "fade-out" and continuations beyond the frame indicated in crayon here are neither wholly consistently rendered nor by any means exhaustive, it would require only time and (much) more paper to achieve this.

In their essentials, the pictures are reproduced here as they were displayed to informants. Note, however, that:

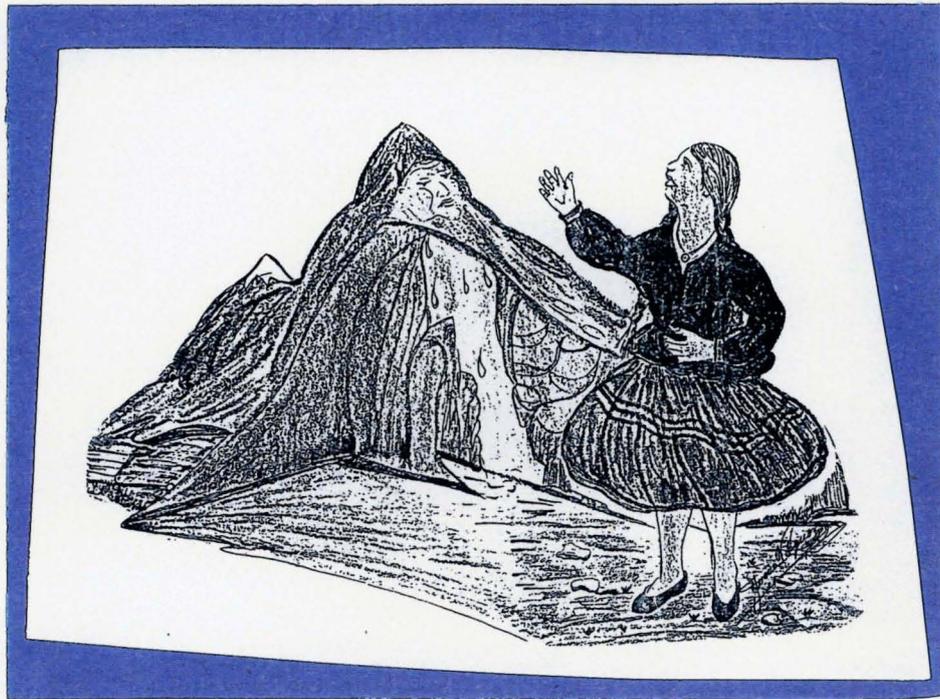
- 1) with the exception of Pictures 4, 8 and 11, the pictures used are bigger than their reproductions;
- 2) all the pictures used are less yellow and less murky than their reproductions;
- 2) Picture 2 was displayed without the accompanying text;
- 3) the borders of Pictures 16, and 20a to 25c have been trimmed slightly;

Where I have not drawn the pictures myself, their sources are as follows:

- Picture 1 was taken from the title page of a book of Aymara poems
Picture 2 is the leaflet produced by CORPUNO to advertise the hand-operated pump illustrated
Pictures 3, 9, and 10 are collages photographs cut from Peruvian magazines;
Picture 4 appeared in the Puno review *Hojas Escritas*, under the title: "*Visión Sistemática*";
Picture 8 was cut from a Peruvian magazine;
Picture 11 was cut from the Jehovah's Witnesses' pamphlet described in the introduction, and was originally accompanied by the words "El día viene";

and that:

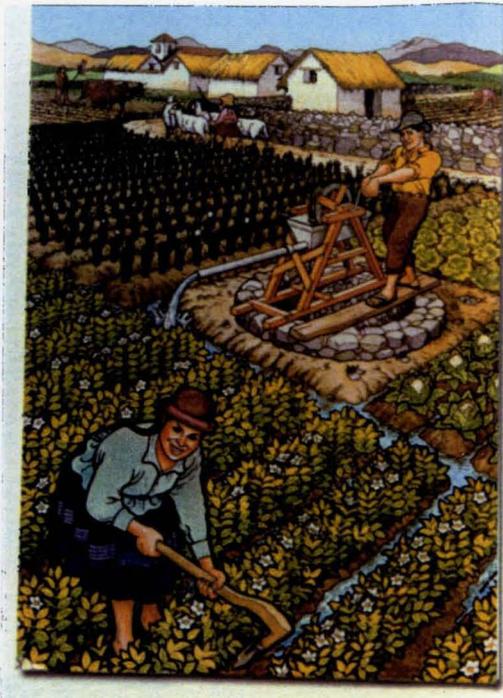
- Picture 18 is a version of Poster 4 (in Appendix C). Poster 4's schematic outline of Bolivia was replaced in Picture 18 with a (rather more schematic) outline of Peru;
Picture 19 is a version of a painting by Leoncio Villanueva, adopted by the Asociación Pro Derechos Humano - Peru; another poster, and accompanied by the words: "y cuándo estaremos con los demás, al borde de una mañana eterna, desayunados todos". (My [bread], incidentally, is probably more *unambiguously* bread than the [bread] of the original on which Picture 19 is based.)



Picture 1*

**BOMBA
MANUAL
DE SOGA**

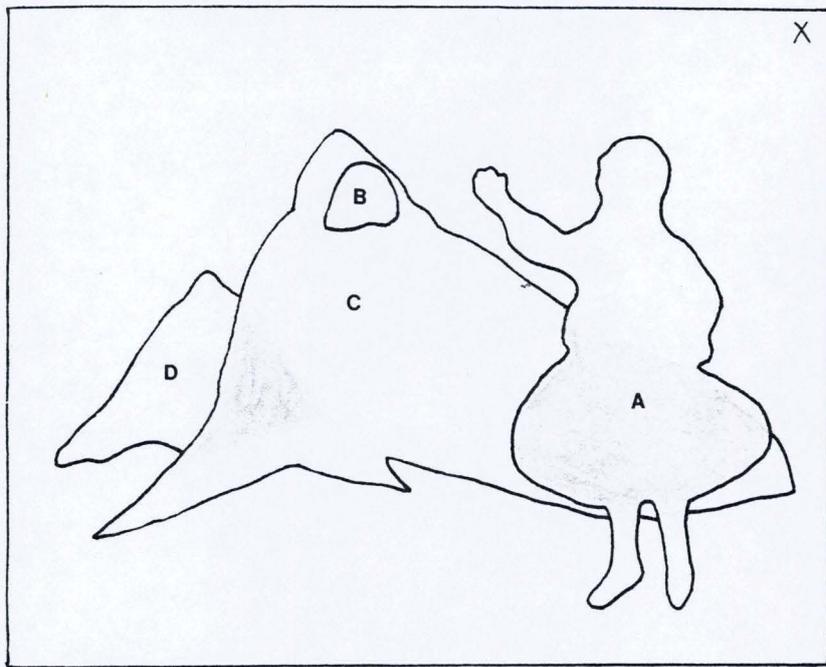
- BAJO COSTO
- AGUA TODO EL AÑO
- MEJORES COSECHAS



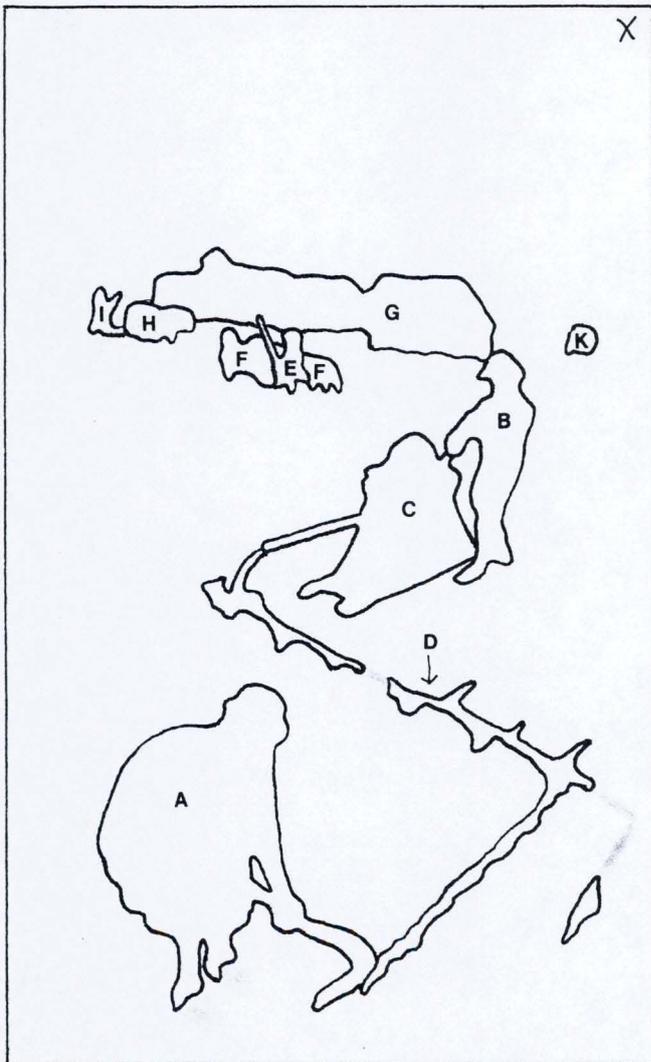
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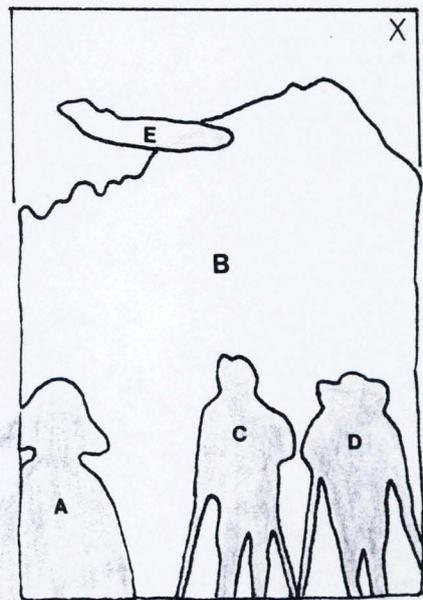
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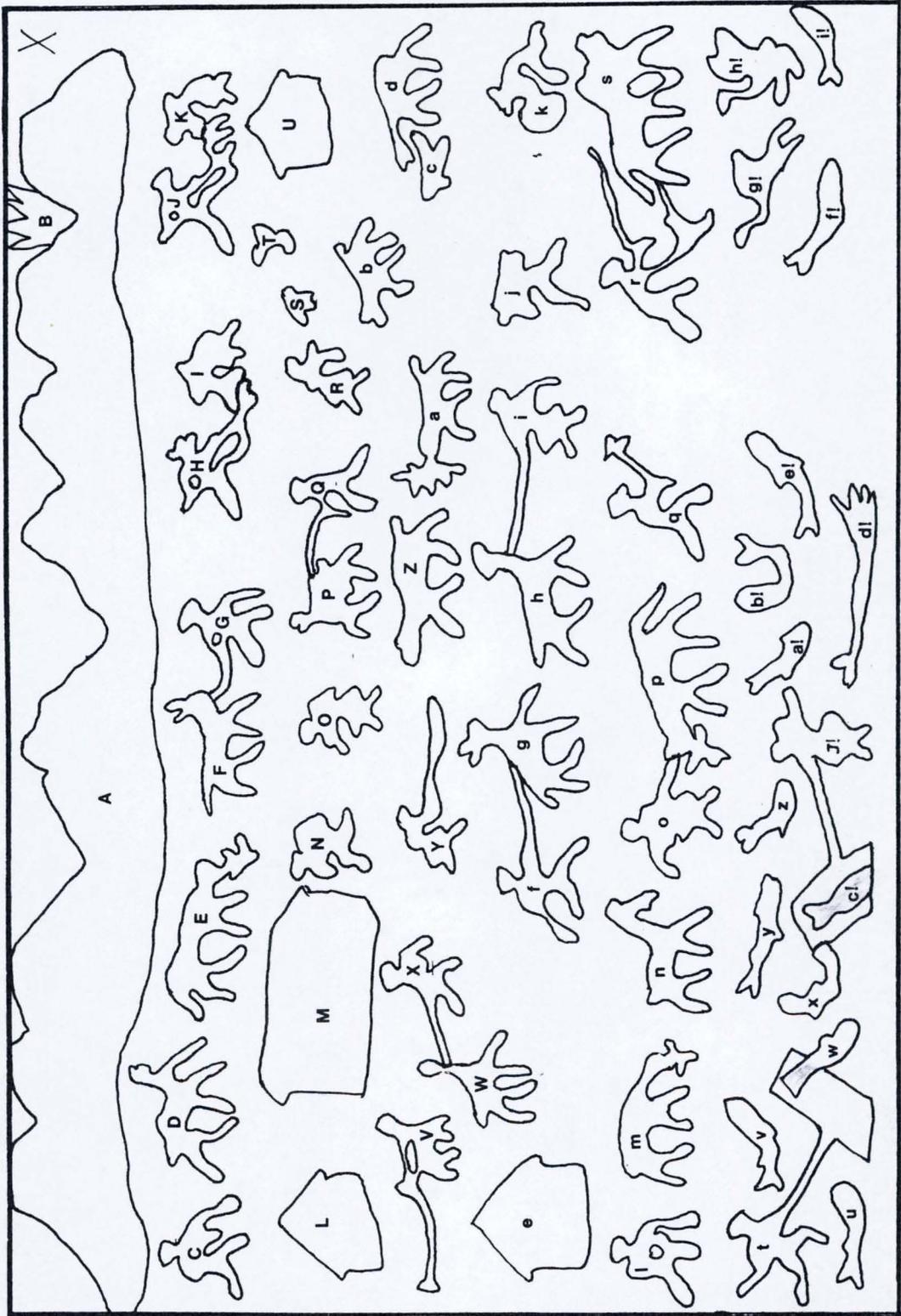


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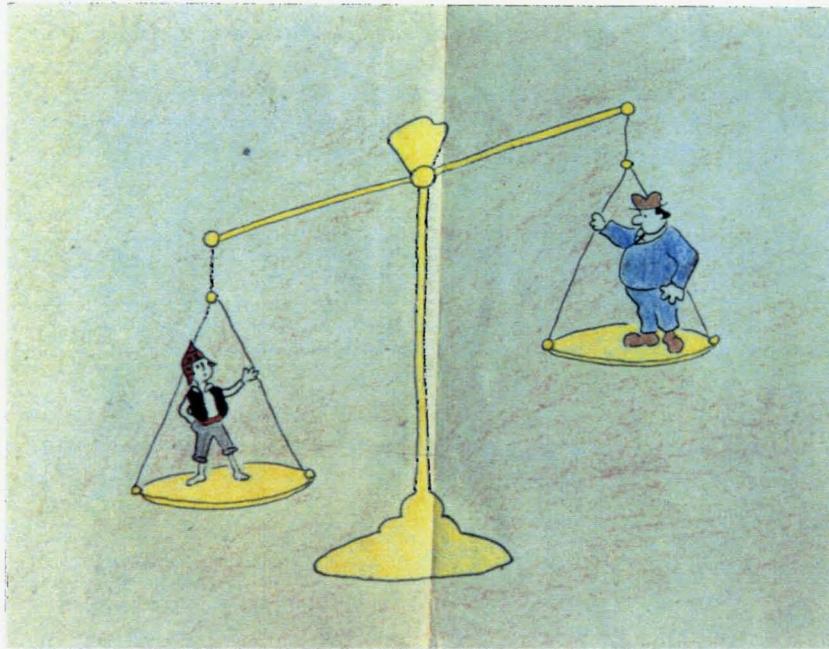




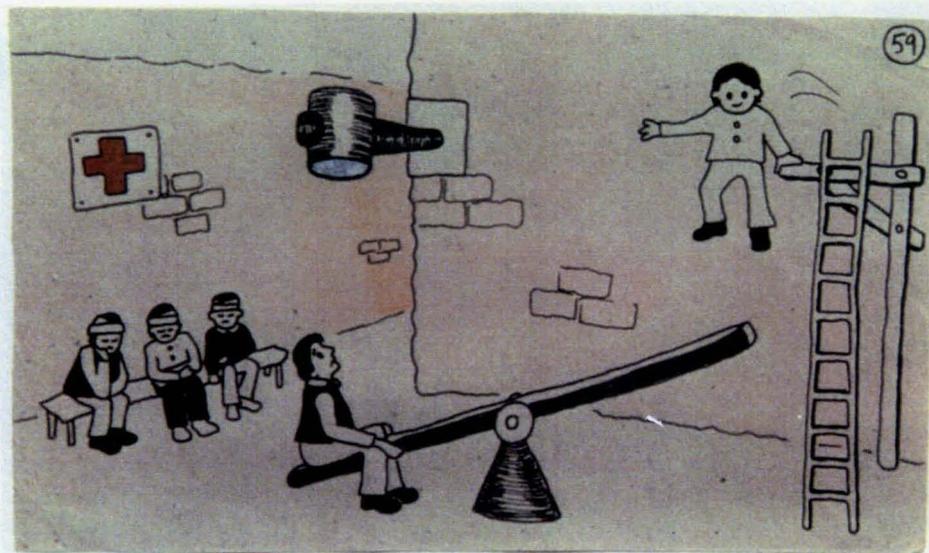
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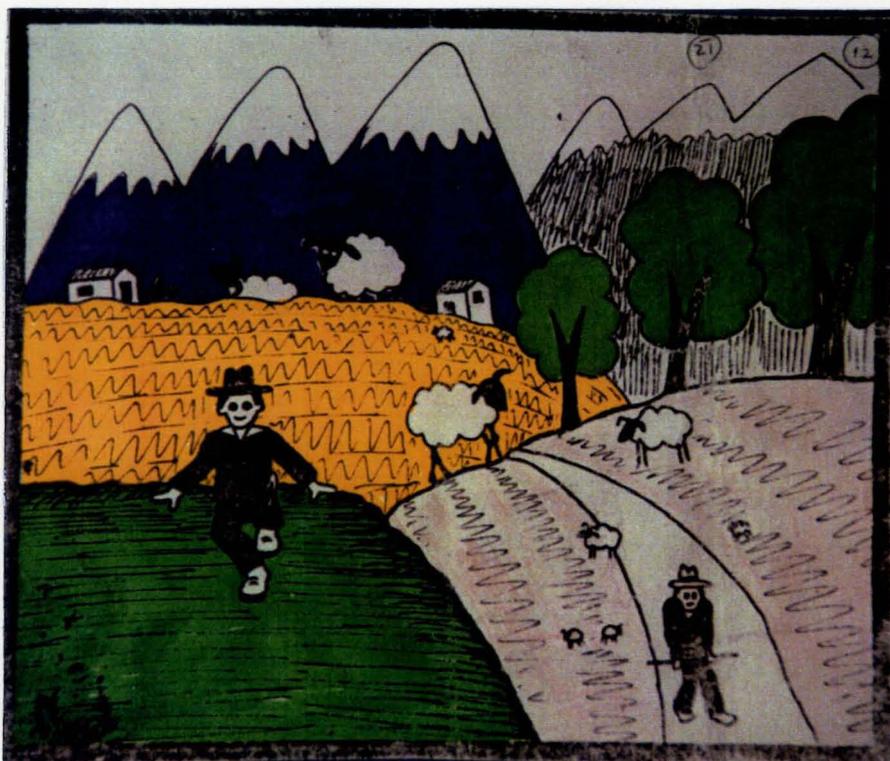
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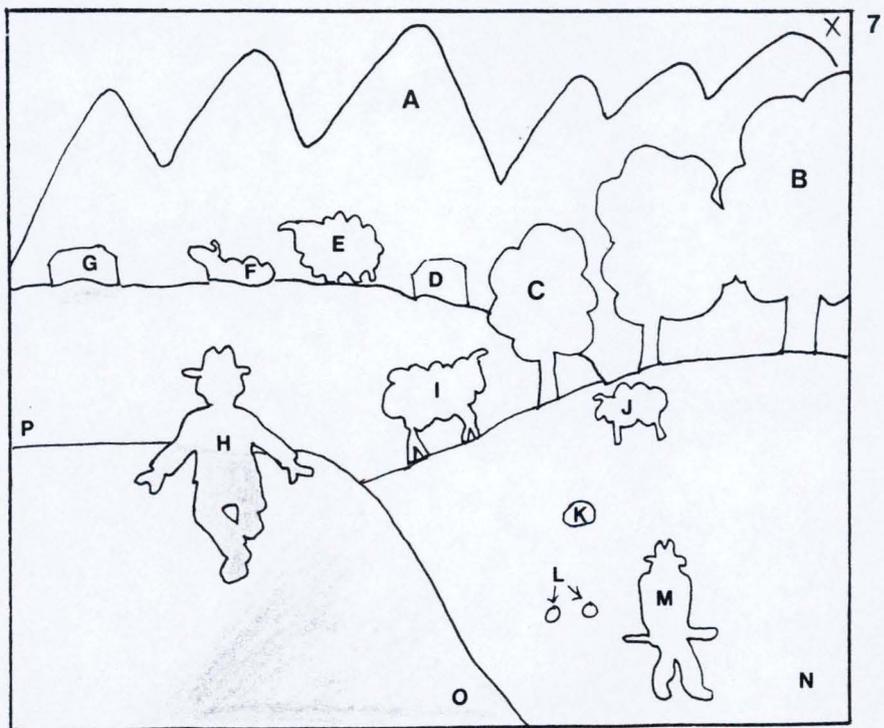
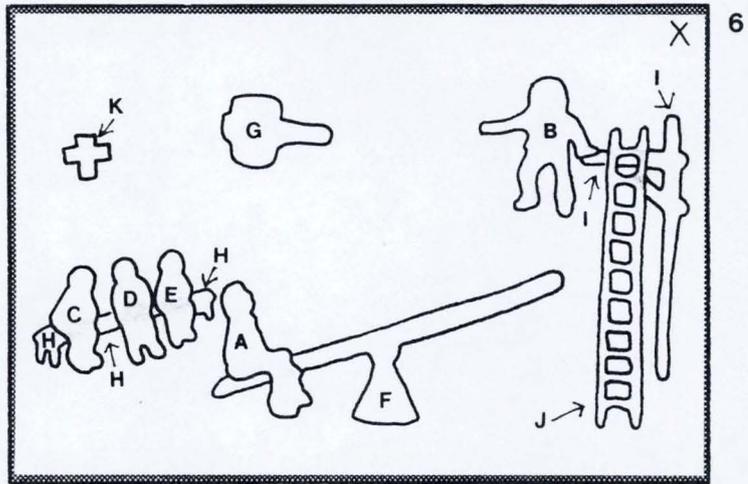
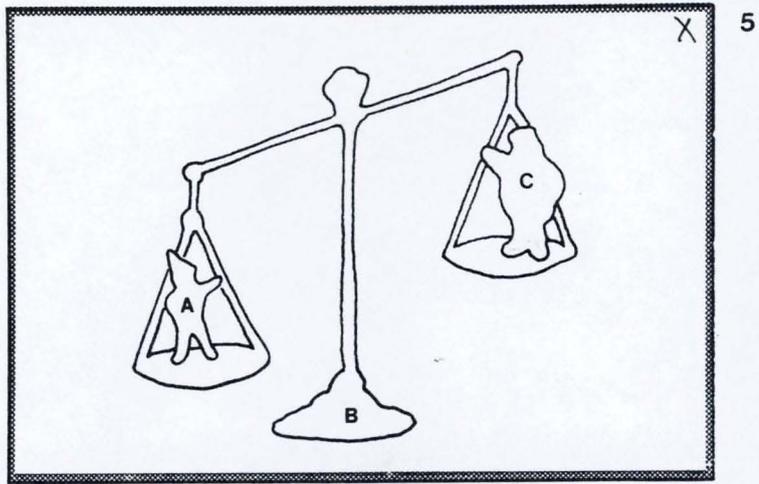


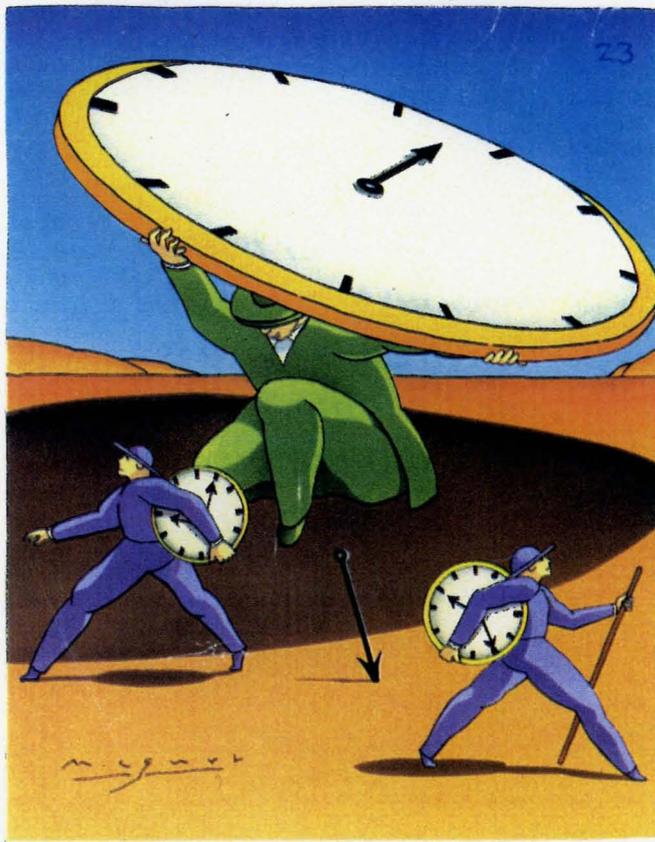
Picture 6*



Picture 7*







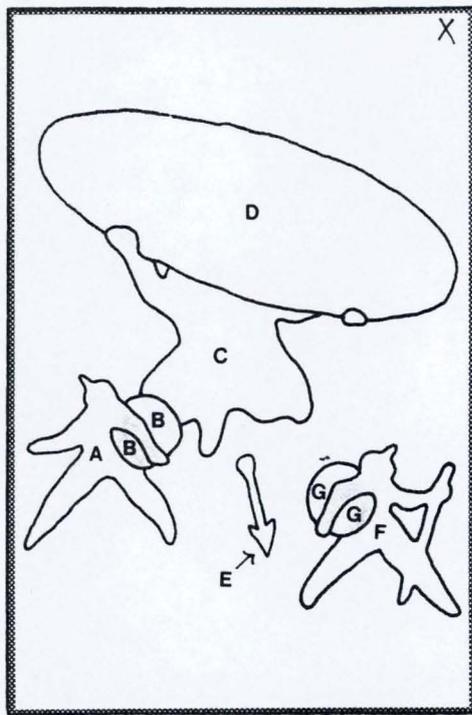
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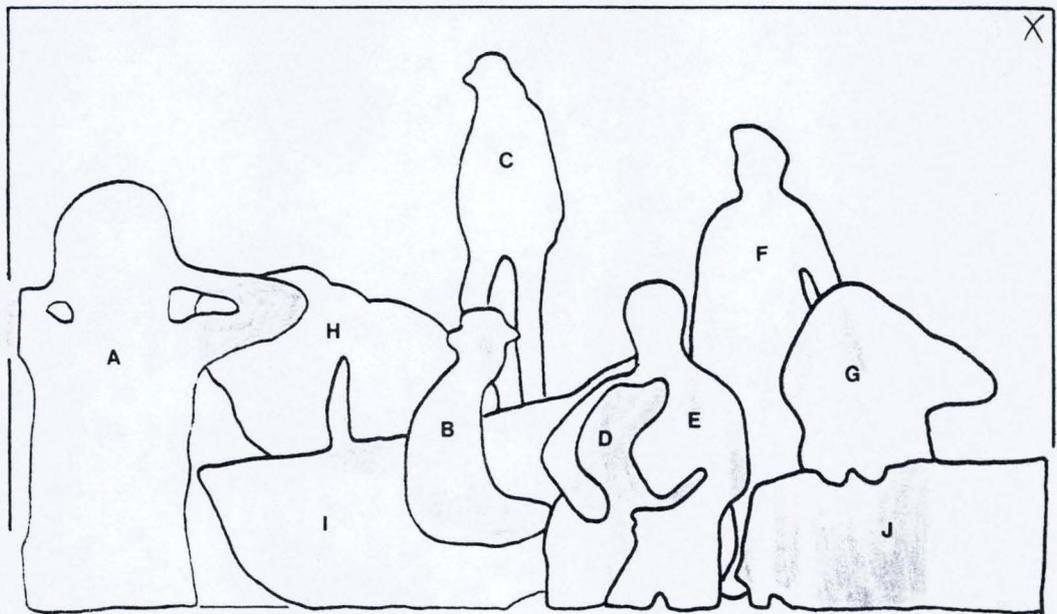
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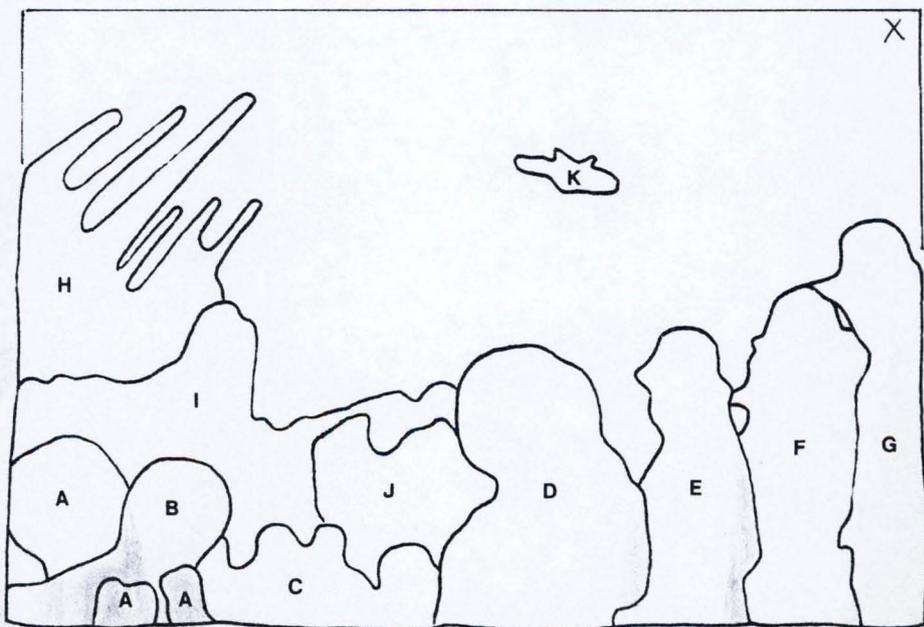
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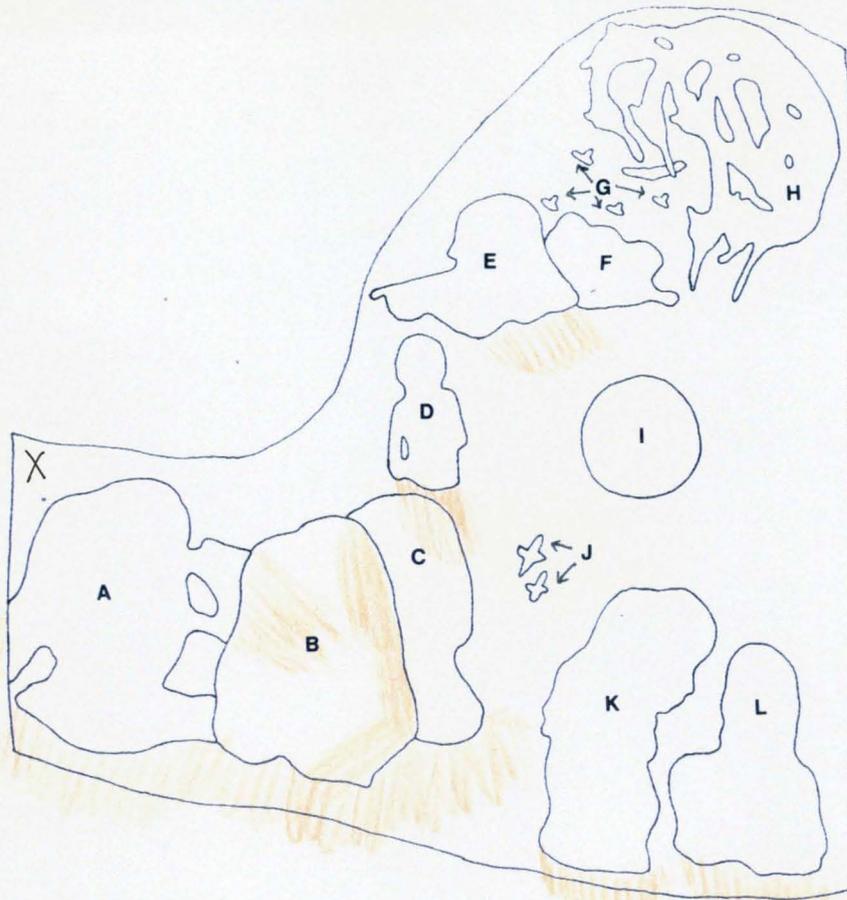
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9



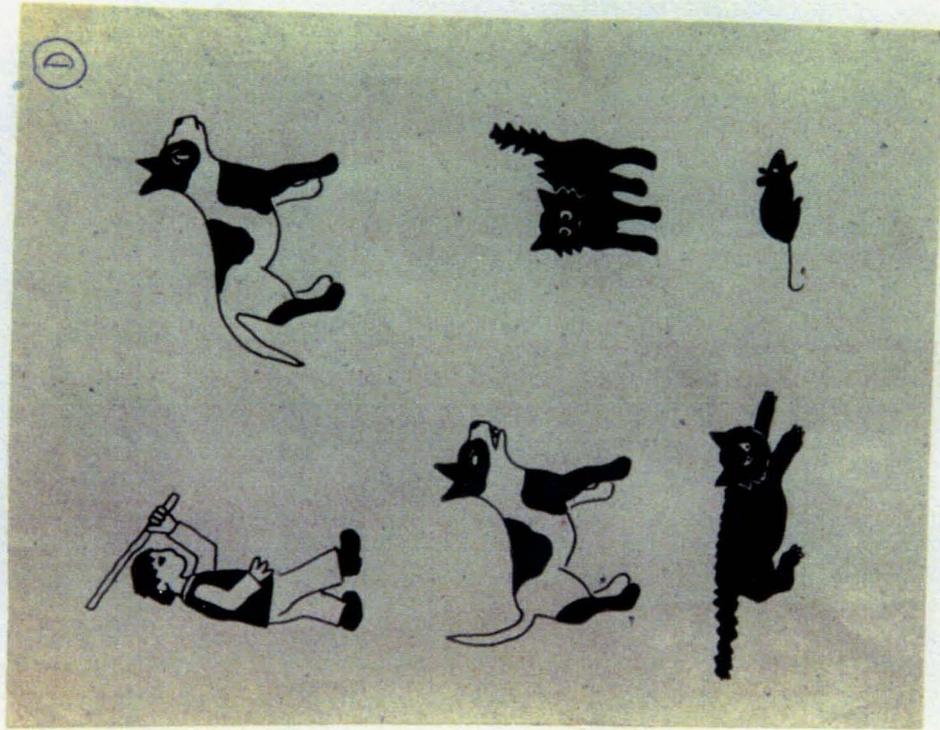
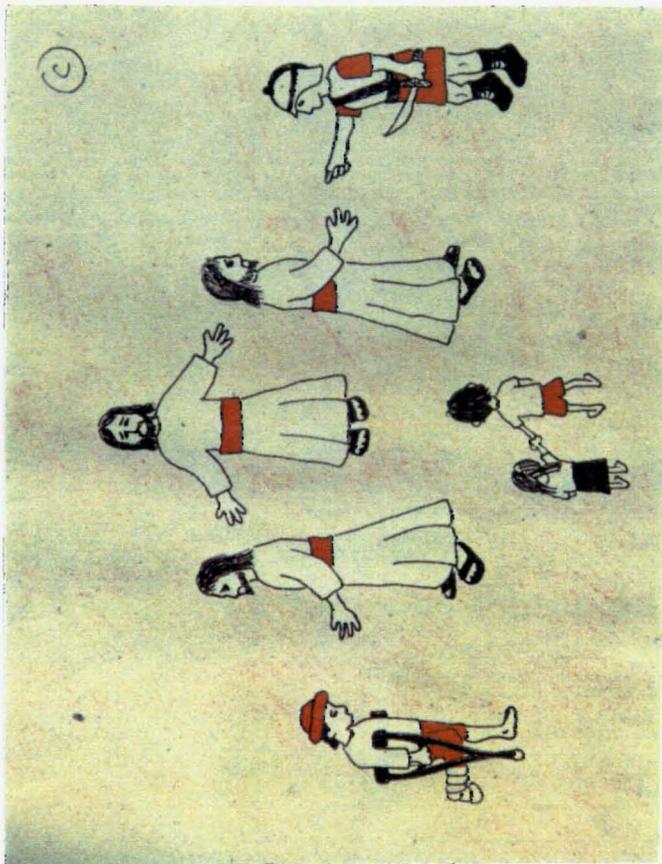
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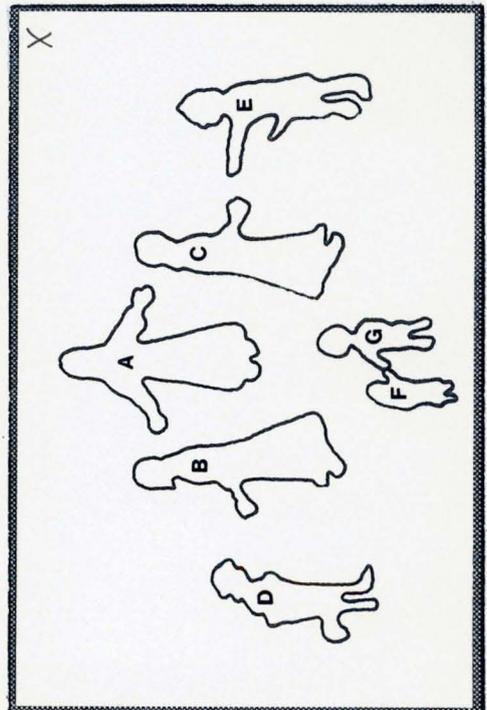
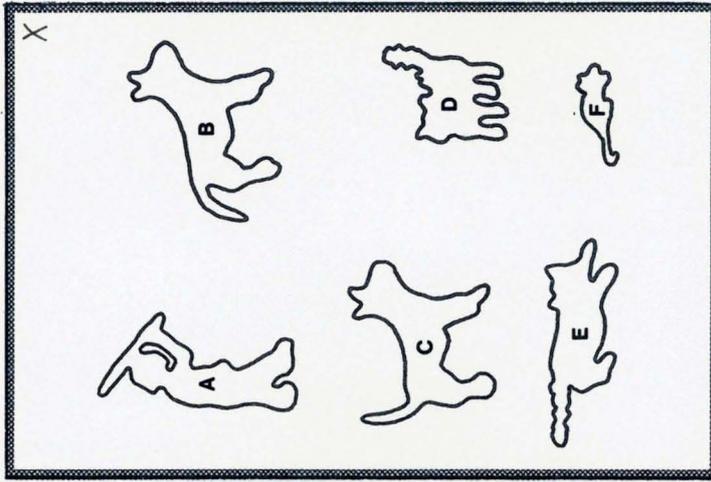
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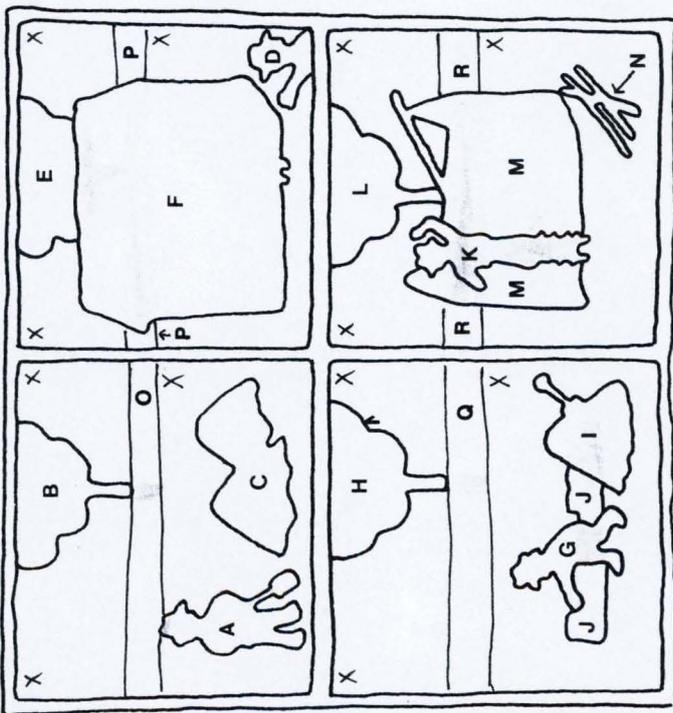


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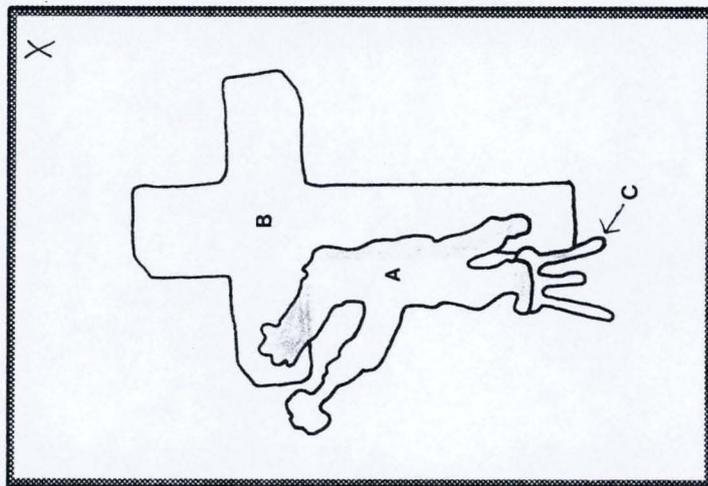


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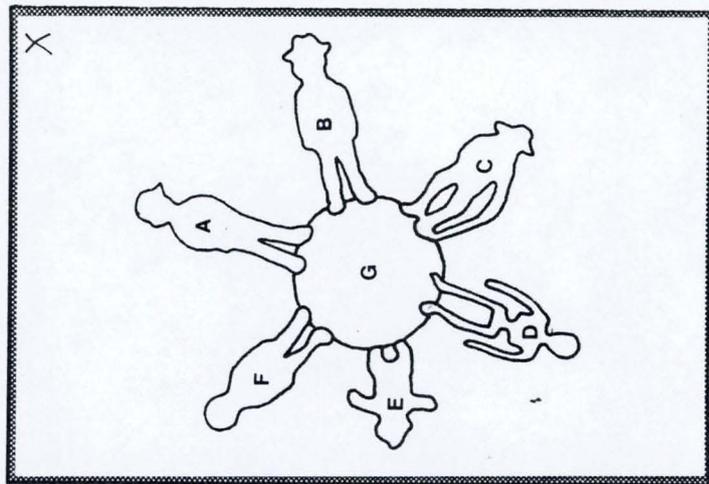




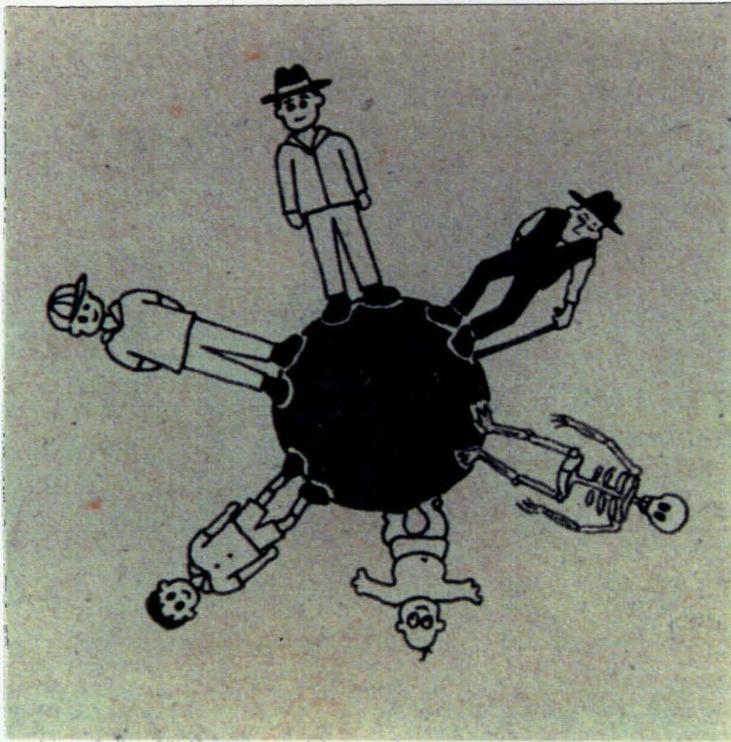
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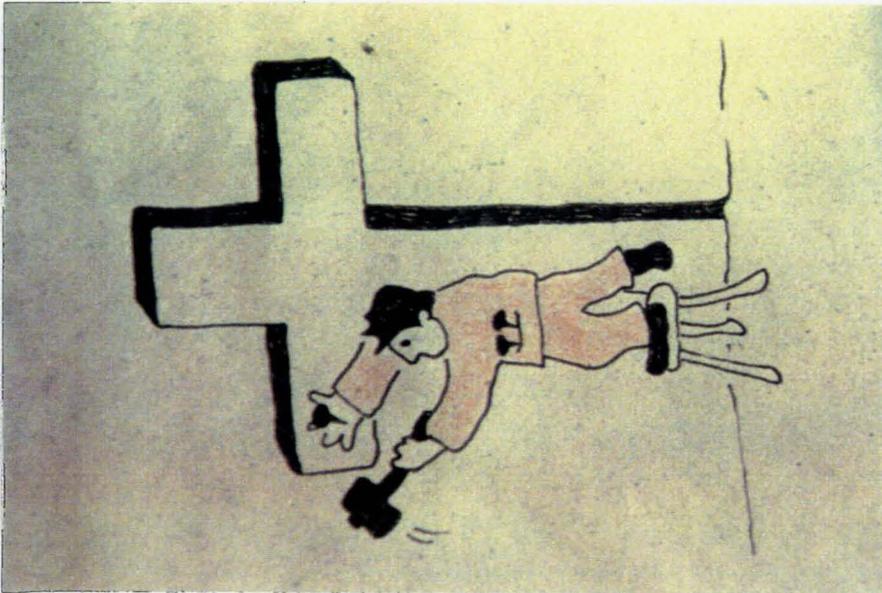
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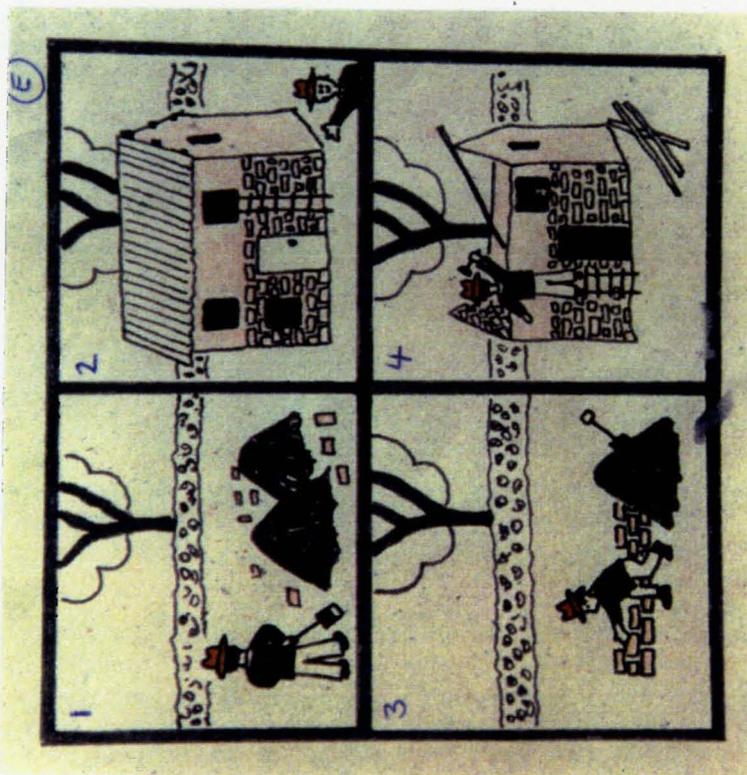
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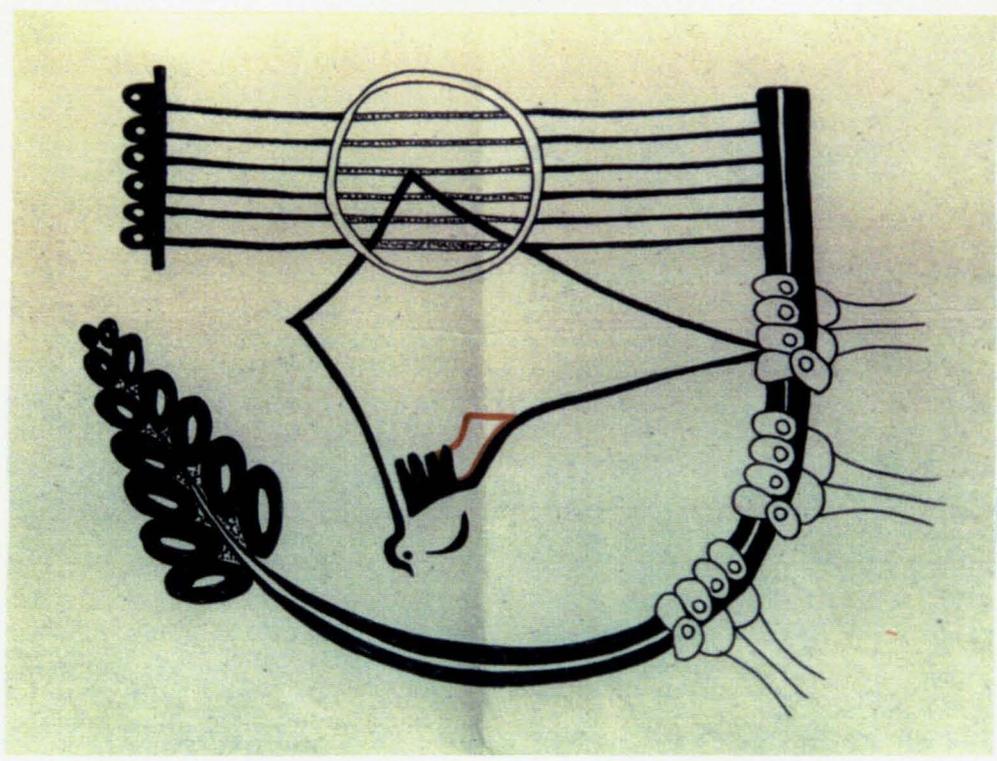
Picture 15*



Picture 14*



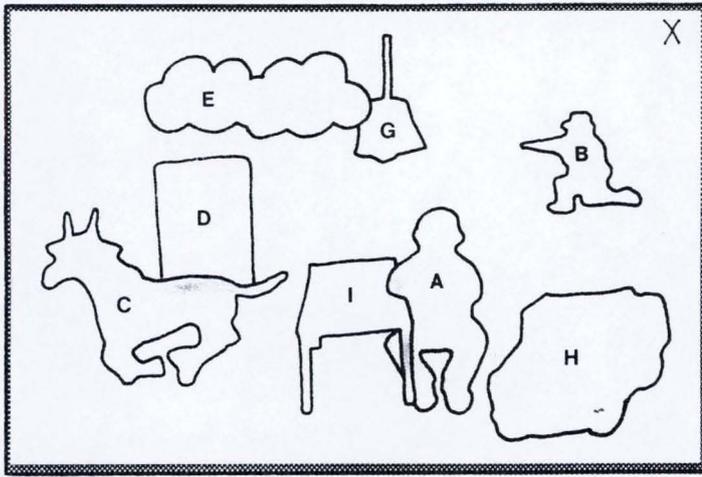
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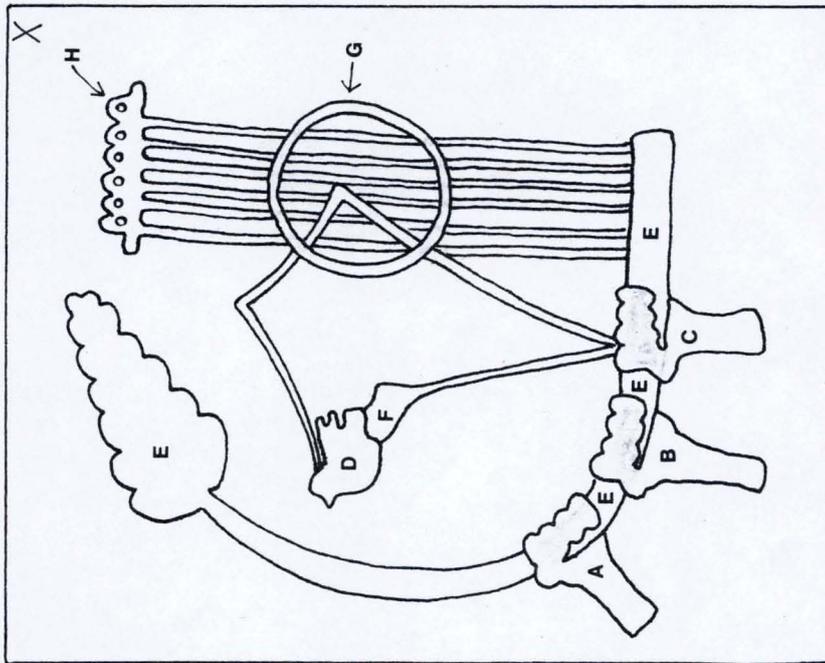
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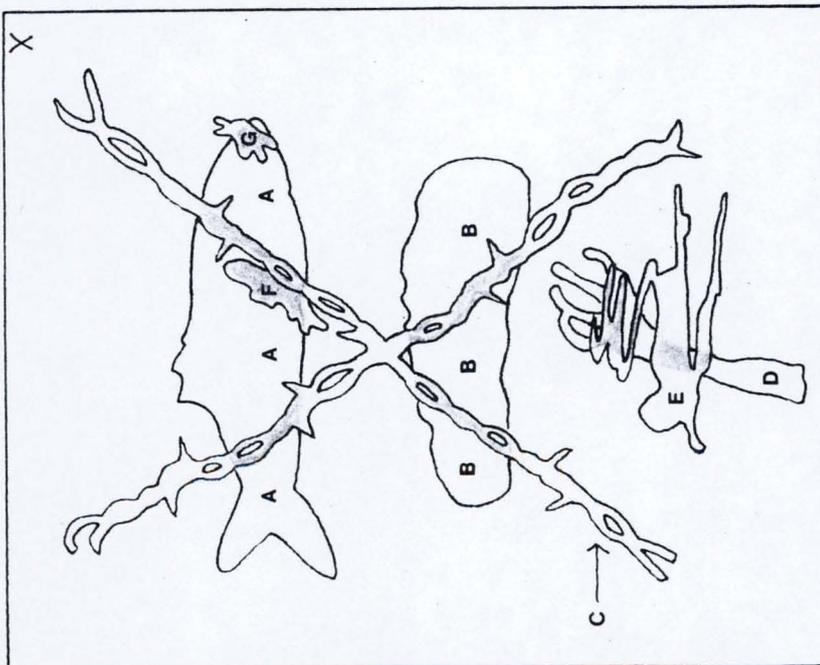
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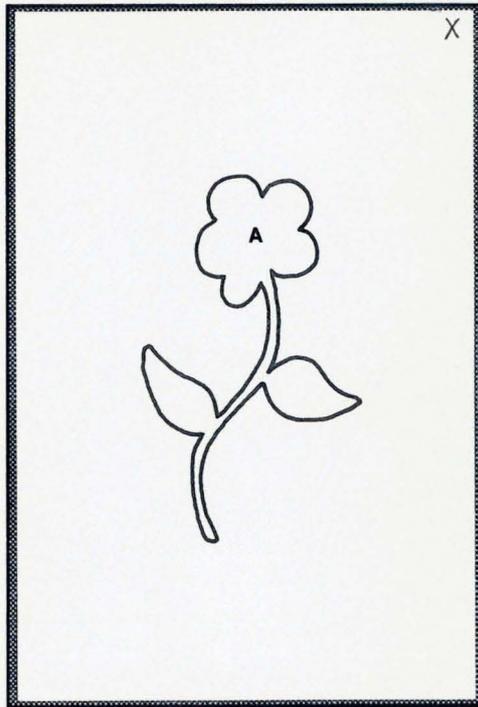
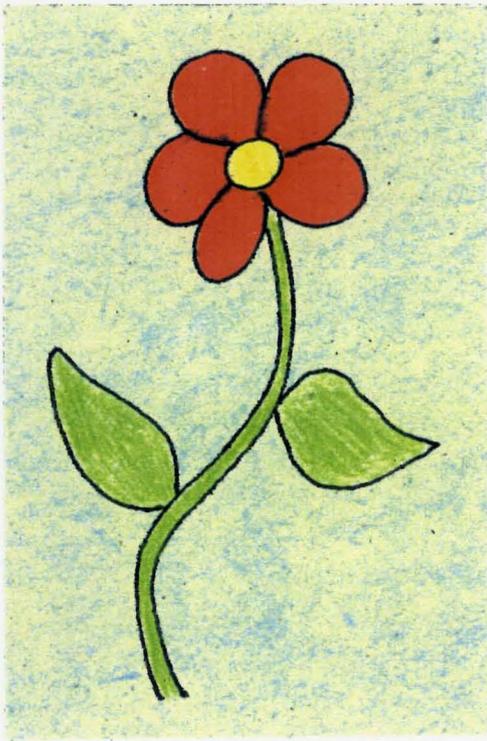
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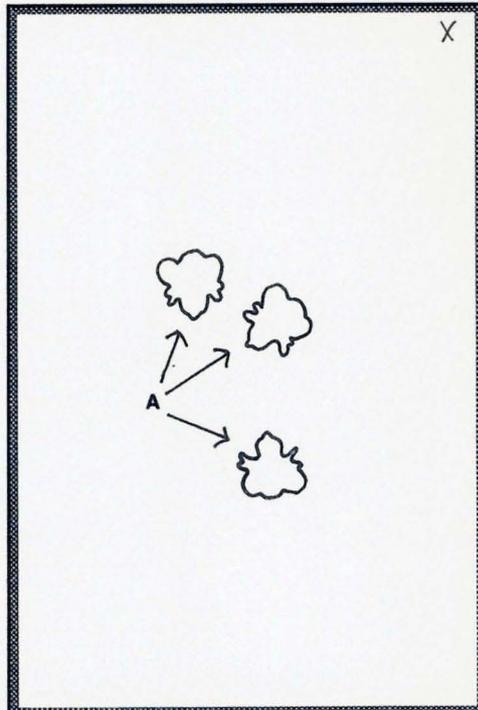
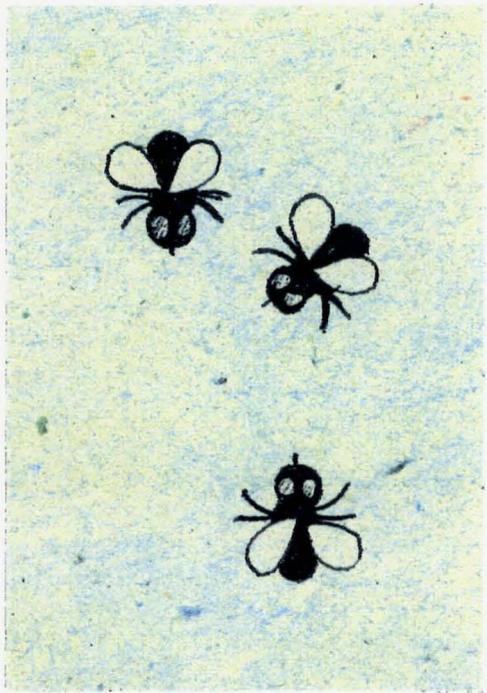
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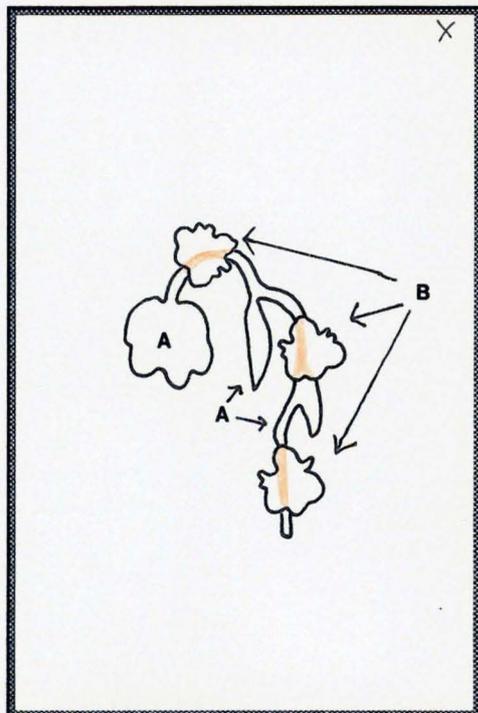
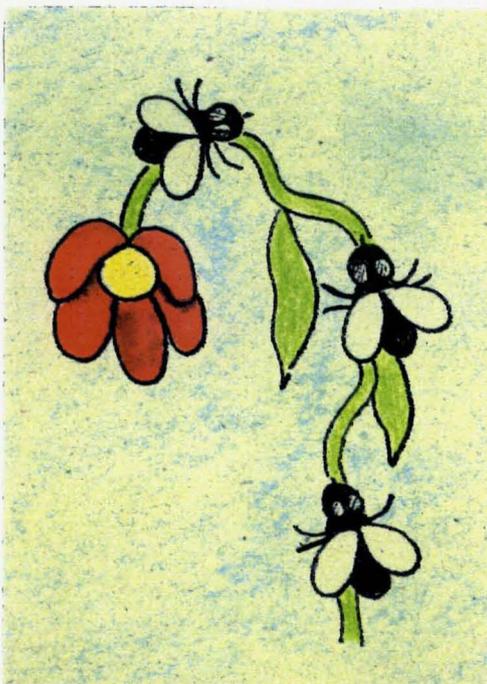
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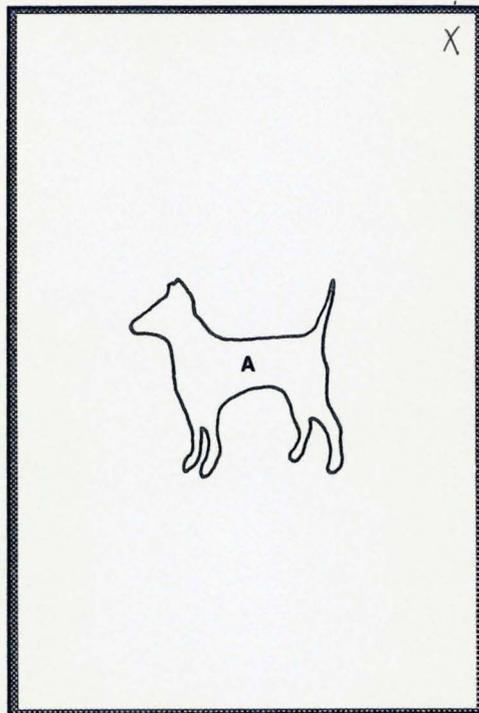
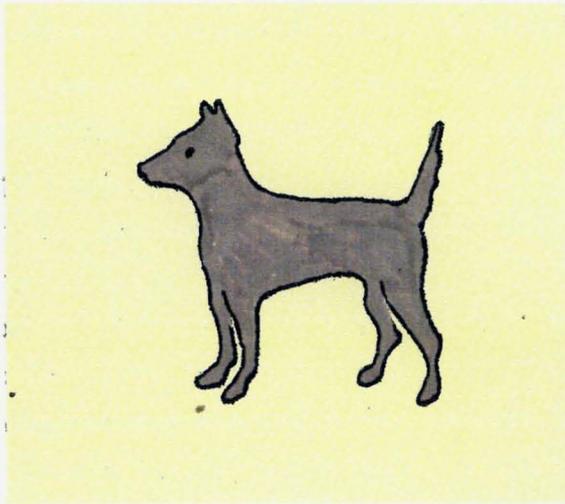
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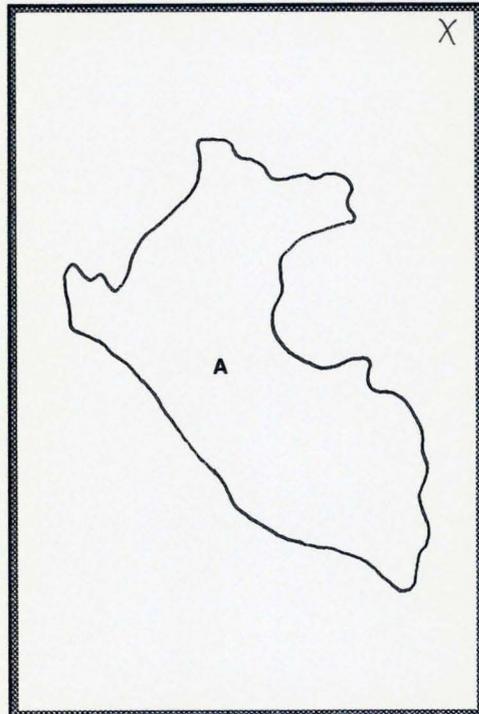
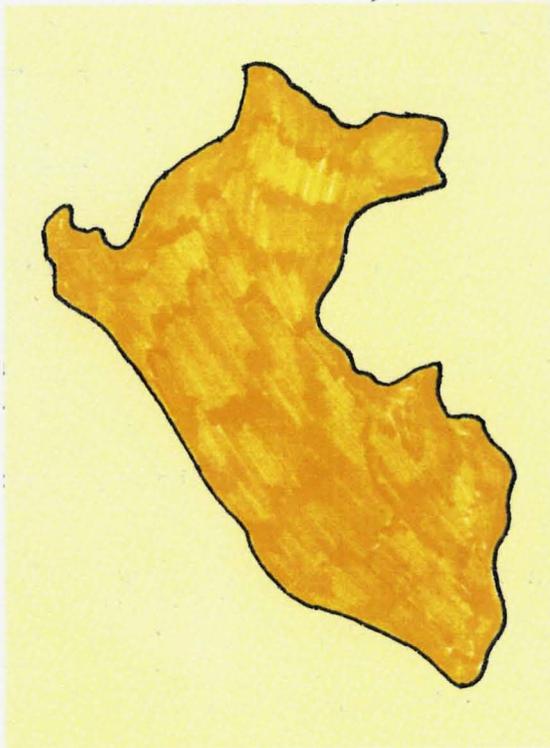
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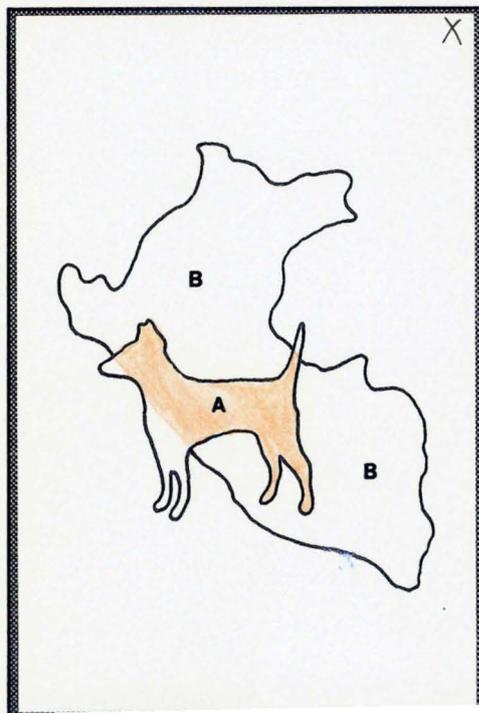
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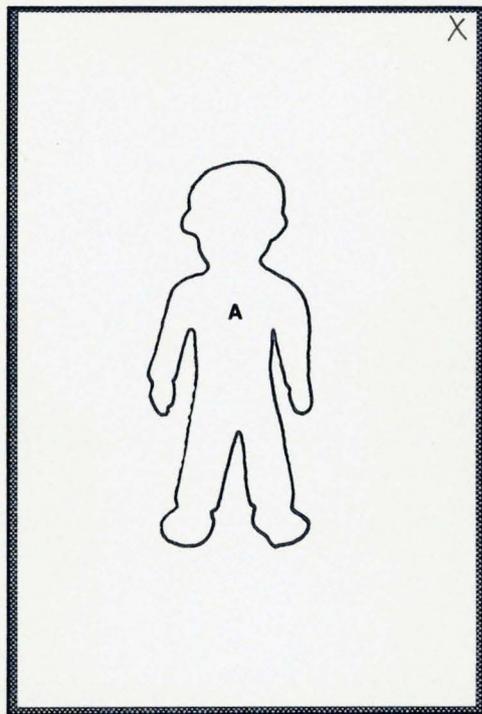
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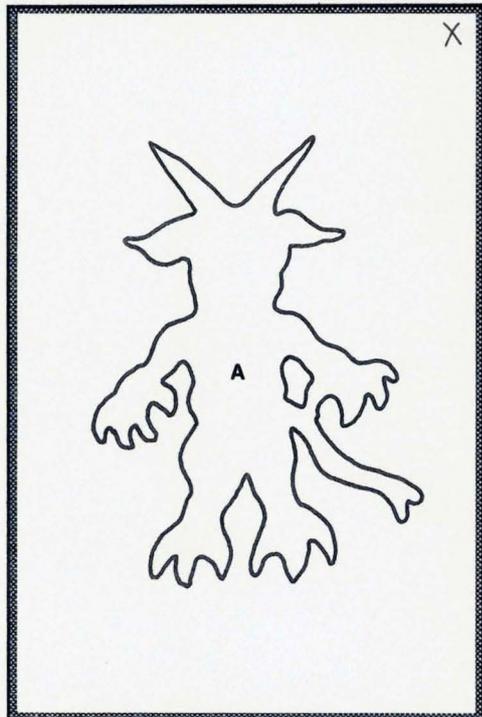
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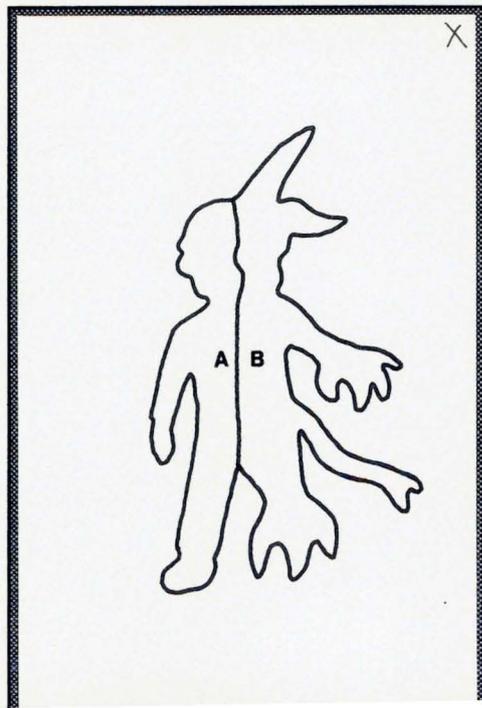
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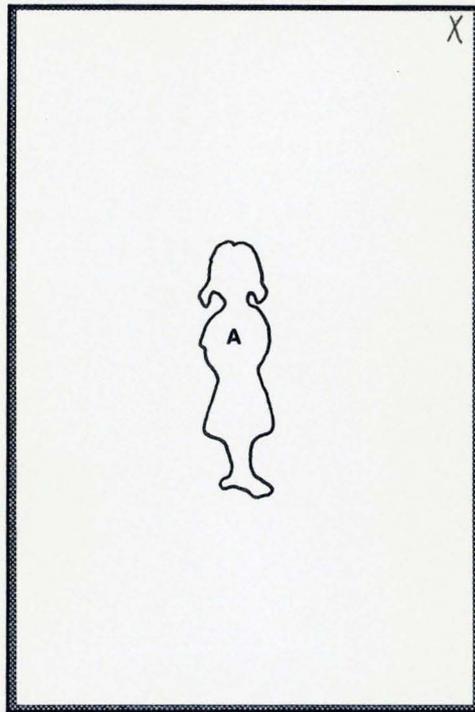
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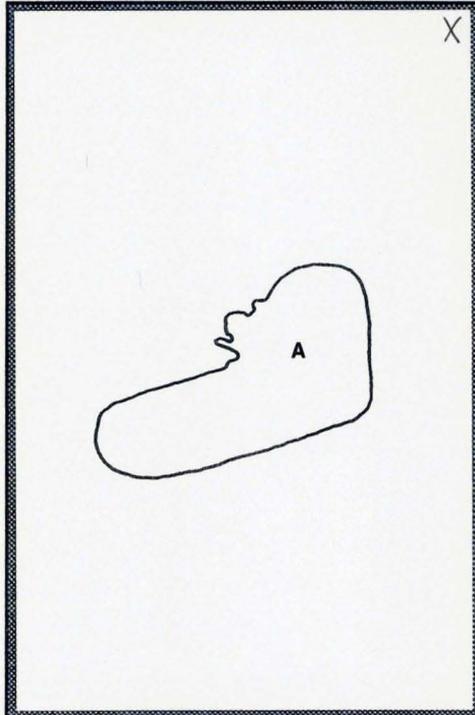
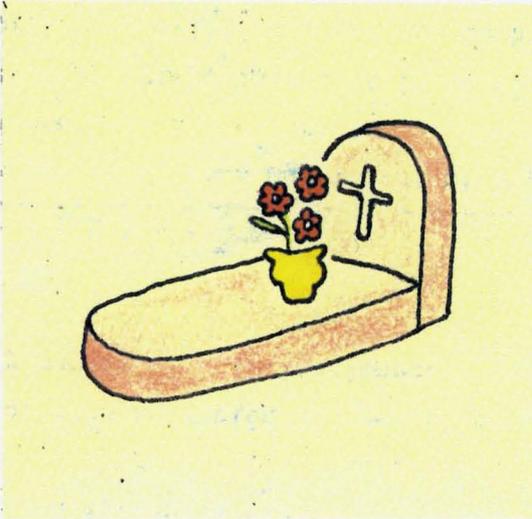
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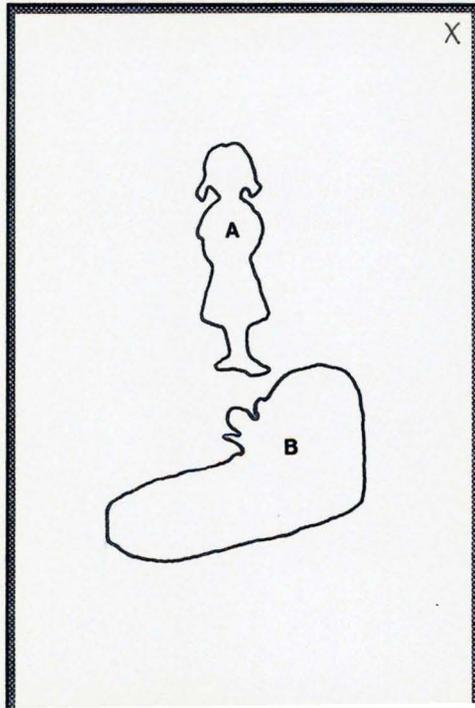
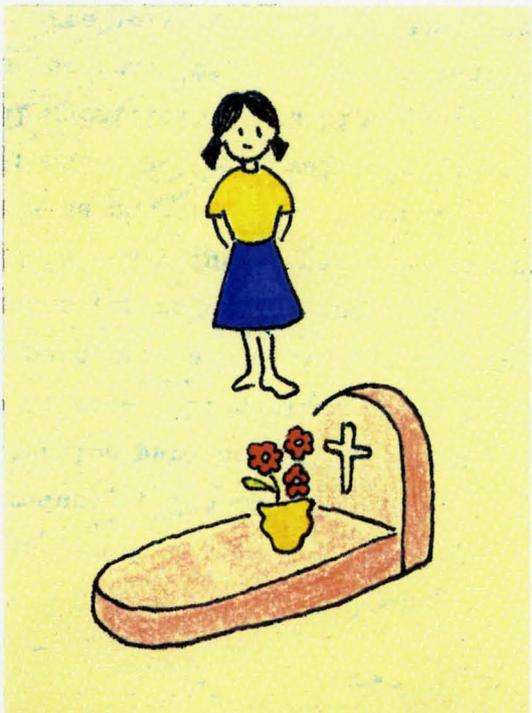
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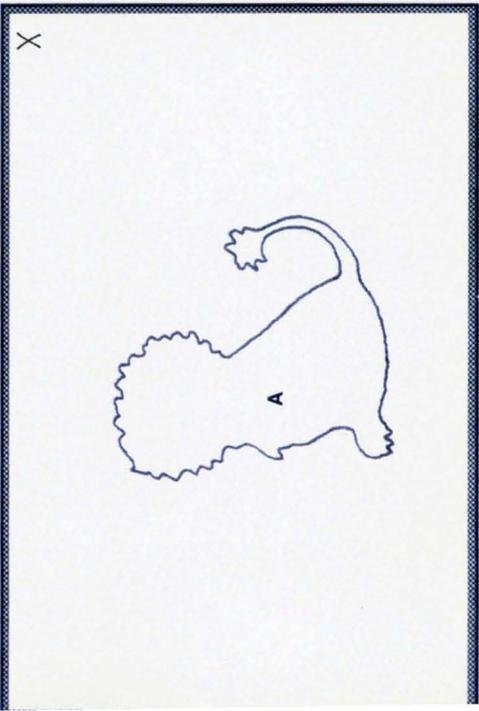
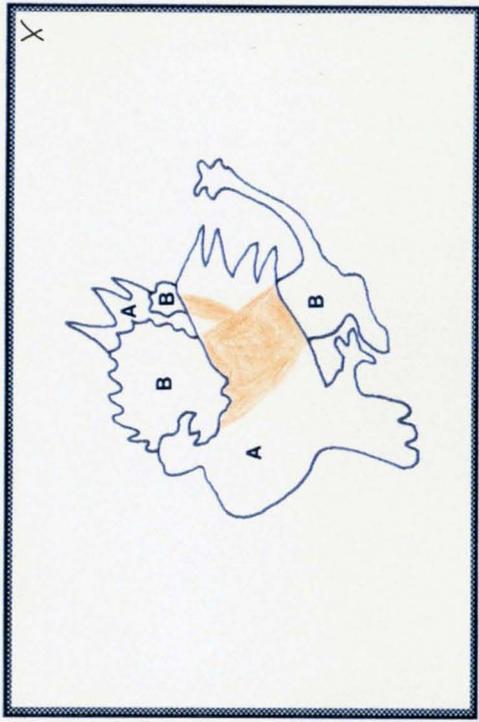
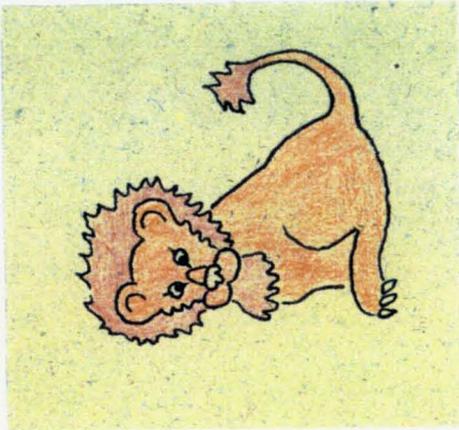
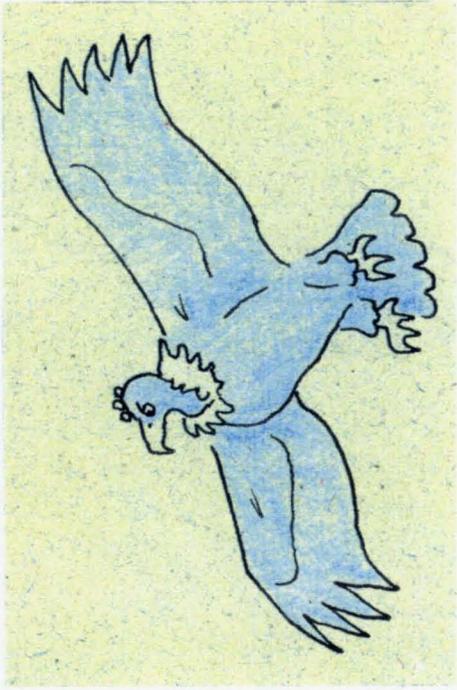
Picture 23a



Picture 23b



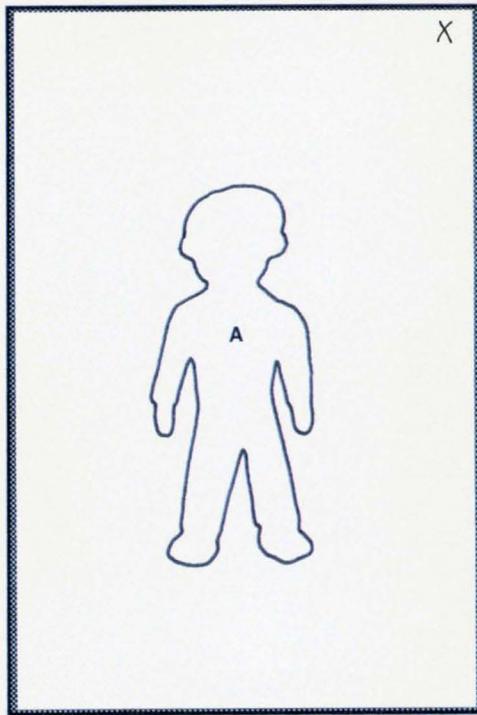
Picture 23c



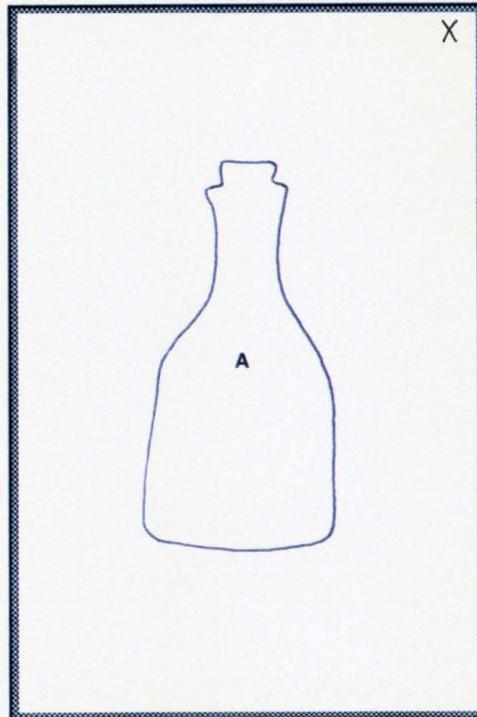
Picture 24c

Picture 24b

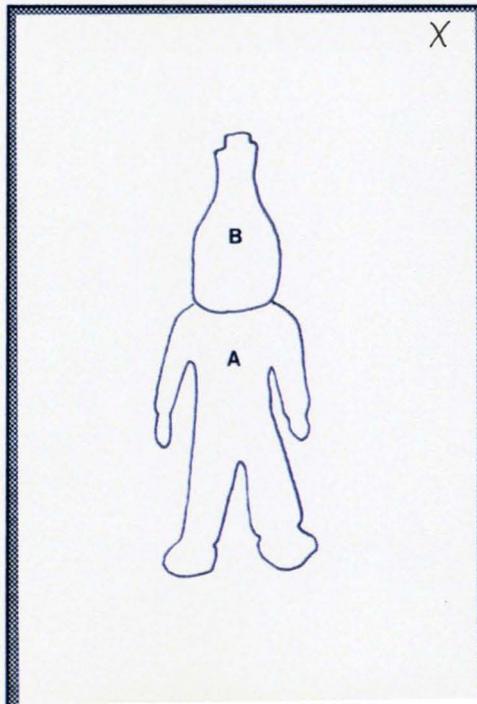
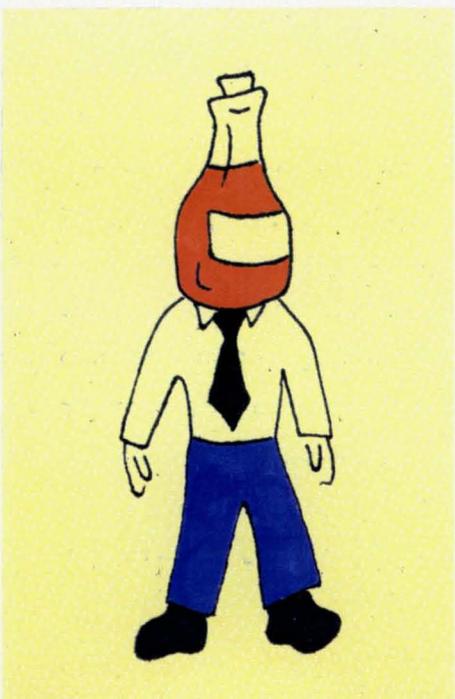
Picture 24a



Picture 25a



Picture 25b



Picture 25c

Picture 1

A: *WOMAN*
B: *FACE*
X: *GROUND*

C: *HILL*
D: *HILL*

Picture 2

A: *WOMAN*
B: *MAN*
C: *STRUCTURE*
D: *STUFF*
X: *GROUND*

E: *PERSON*
F: *SHEEP*
G: *BUILDINGS*
H: *SHEEP*
I: *PERSON*
K: *PERSON*

Picture 3

A: *MAN*
B: *MOUNTAIN*
C: *MAN*

D: *WOMAN*
E: *AEROPLANE*
X: *GROUND*

Picture 4

A: *MOUNTAINS*	a: *PIG*	a!: *FISH*
B: *FACE*	b: *PIG*	b!: *FISH*
C: *MAN*	c: *LAMA*	c!: *FISH*
D: *LAMA*	d: *LAMA*	d!: *THING*
E: *COW*	e: *BUILDING*	e!: *FISH*
F: *DONKEY*	f: *MAN*	f!: *FISH*
G: *MAN*	g: *LAMA*	g!: *BIRD*
H: *MAN*	h: *LAMA*	h!: *BIRD*
I: *WOMAN*	i: *WOMAN*	i!: *FISH*
J: *MAN*	j: *MAN*	J!: *WOMAN*
K: *WOMAN*	k: *MAN*	X: *GROUND*
L: *BUILDING*	l: *MAN*	
M: *BUILDING*	m: *LAMA*	
N: *MAN*	n: *LAMA*	
O: *WOMAN*	o: *WOMAN*	
P: *LAMA*	p: *COW*	
Q: *MAN*	q: *MAN*	
R: *WOMAN*	r: *MAN*	
S: *BIRD*	s: *COWS*	
T: *BIRD*	t: *MAN*	
U: *BUILDING*	u: *FISH*	
V: *LAMA*	v: *FISH*	
W: *LAMA*	w: *FISH*	
X: *MAN*	x: *FISH*	
Y: *WOMAN*	y: *FISH*	
Z: *PIG*	z: *FISH*	

Picture 5

A: *MAN*
X: *GROUND*

B: *SCALES*

C: *MAN*

Picture 6

A:	*MAN*	F:	*STRUCTURE*	K:	*CROSS*
B:	*MAN*	G:	*HAMMER*	X:	*GROUND*
C:	*MAN*	H:	*STRUCTURE*		
D:	*MAN*	I:	*STRUCTURE*		
E:	*MAN*	J:	*LADDER*		

Picture 7

A:	*MOUNTAINS*	G:	*BUILDING*	M:	*MAN*
B:	*TREES*	H:	*MAN*	N:	*HILL*
C:	*TREE*	I:	*SHEEP*	O:	*HILL*
D:	*BUILDING*	J:	*SHEEP*	P:	*HILL*
E:	*SHEEP*	K:	*SHEEP*		
F:	*SHEEP*	L:	*ANIMALS*	X:	*GROUND*

Picture 8

X:	*GROUND*				
A:	*MAN*	C:	*MAN*	E:	*ARROW*
B:	*CLOCK*	D:	*CLOCK*	F:	*MAN*
				G:	*CLOCK*

Picture 9

X:	*GROUND*				
A:	*WOMAN*	D:	*DOG*	H:	*STRUCTURE*
B:	*MAN*	E:	*MAN*	I:	*BOAT*
C:	*PERSON*	F:	*MAN*	J:	*TABLE*
		G:	*WOMAN*		

Picture 10

X:	*GROUND*				
A:	*WOMAN*	E:	*CHILD*	I:	*PEOPLE*
B:	*PERSON*	F:	*WOMAN*	J:	*THINGS*
C:	*CHILDREN*	G:	*MAN*	K:	*HELICOPTER*
D:	*WOMAN*	H:	*STRUCTURE*		

Picture 11

X:	*GROUND*				
A:	*MAN*	E:	*MAN*	I:	*SPHERE*
B:	*WOMAN*	F:	*CLOUD*	J:	*STRUCTURES*
C:	*MAN*	G:	*AEROPLANES*	K:	*WOMAN*
D:	*BOY*	H:	*ANIMAL*	L:	*WOMAN*

Picture 12

A:	*MAN*	D:	*MAN*	G:	*PERSON*
B:	*MAN*	E:	*PERSON*	X:	*GROUND*
C:	*MAN*	F:	*PERSON*		

Picture 13

X:	*GROUND*				
A:	*MAN*	C:	*DOG*	E:	*CAT*
B:	*DOG*	D:	*CAT*	F:	*MOUSE*

Picture 14

X:	*GROUND*				
A:	*MAN*	G:	*MAN*	M:	*BUILDING*
B:	*TREE*	H:	*TREE*	N:	*STICKS*
C:	*STUFF*	I:	*STUFF*	O:	*WALL*
D:	*MAN*	J:	*WALL*	P:	*WALL*
E:	*TREE*	K:	*MAN*	Q:	*WALL*
F:	*BUILDING*	L:	*TREE*	R:	*WALL*

Picture 15

X:	*GROUND*				
A:	*MAN*	B:	*CROSS*	C:	*STOOL*

Picture 16

X:	*GROUND*				
A:	*PERSON*	C:	*MAN*	E:	*PERSON*
B:	*MAN*	D:	*SKELETON*	F:	*PERSON*

Picture 17

A:	*MAN*	D:	*DOOR*	H:	*VEHICLE*
B:	*MAN*	E:	*CLOUD*	I:	*TABLE*
C:	*EQUINE*	G:	*BELL*	X:	*GROUND*

Picture 18

A:	*HAND*	D:	*BIRD*	G:	*CIRCLE*
B:	*HAND*	E:	*PLANT*	H:	*STRUCTURE*
C:	*HAND*	F:	*STRUCTURE*	X:	*GROUND*

Picture 19

A:	*FISH*	D:	*HAND*	G:	*STUFF*
B:	*STUFF*	E:	*STUFF*	X:	*GROUND*
C:	*WIRE	F:	*STUFF*		

Picture 20

Picture 20a A: *FLOWER*

Picture 20b A: *FLIES*

Picture 20c A: *FLOWER* B: *FLIES* X: *GROUND*

Picture 21

Picture 21a A: *DOG*

Picture 21b A: *AREA*

Picture 21c A: *DOG* B: *AREA* X: *GROUND*

Picture 22

Picture 22a A: *MAN*

Picture 22b A: *ANIMAL*

Picture 22c A: *MAN* B: *ANIMAL* X: *GROUND*

Picture 23

Picture 23a A: *GIRL*

Picture 23b B: *GRAVE*

Picture 23c A: *GIRL* B: *GRAVE* X: *GROUND*

Picture 24

Picture 24a A: *LION*

Picture 24b A: *CONDOR*

Picture 24c A: *CONDOR* B: *LION* X: *GROUND*

Picture 25

Picture 25a A: *MAN*

Picture 25b A: *BOTTLE*

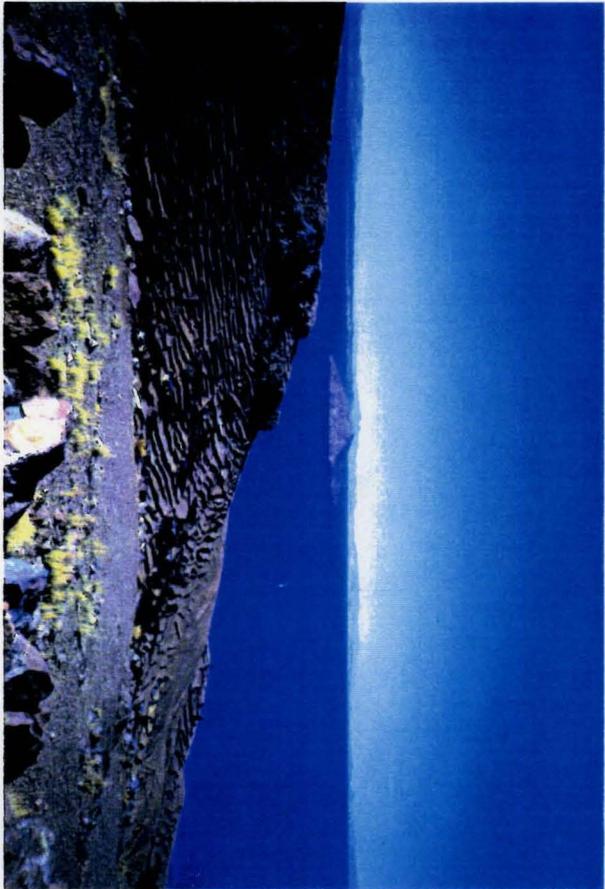
Picture 25c A: *MAN* B: *BOTTLE* X: *GROUND*

Appendix B
The Visual Environment (i)

Photographs 1 to 4 show views of Amantaní including the interior of the new *wawawasi*, or playschool.

Photographs 5 to 8 show views of Puno .

Photograph 1



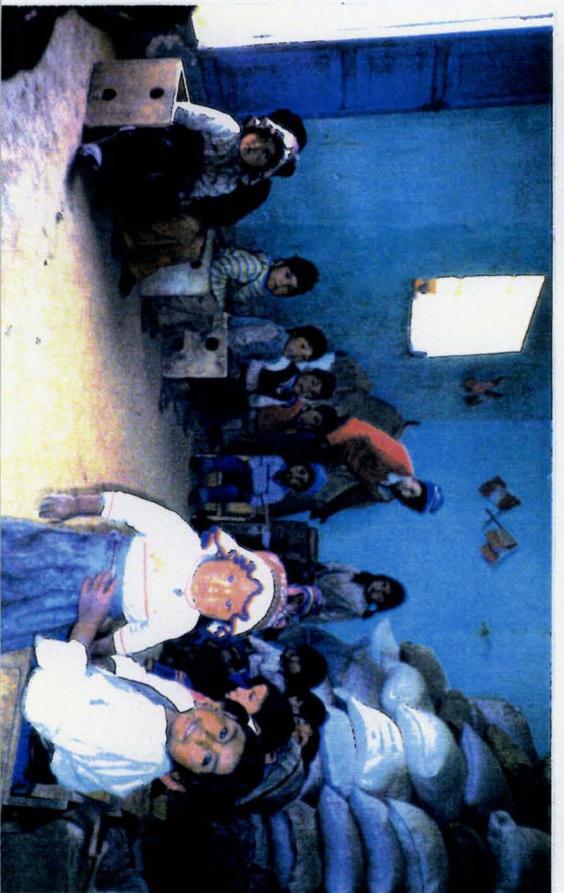
Photograph 2



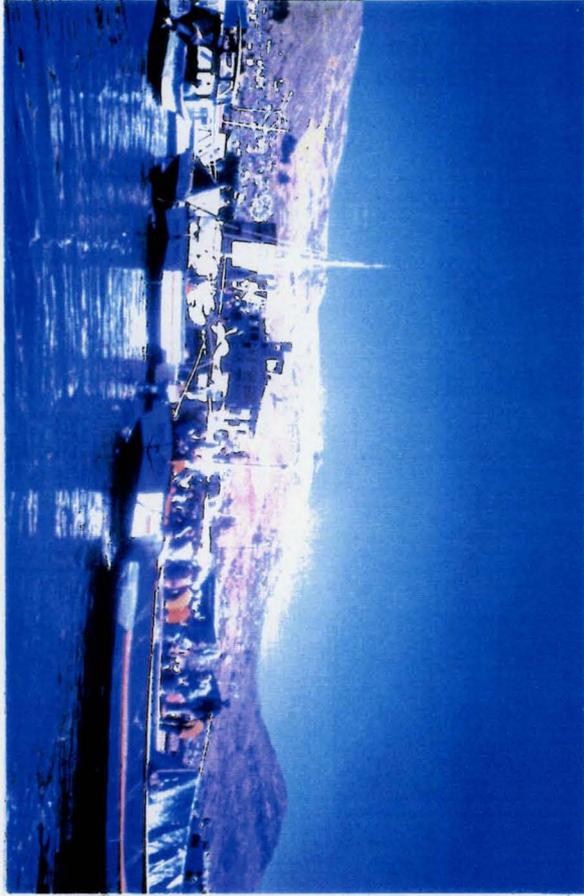
Photograph 3



Photograph 4



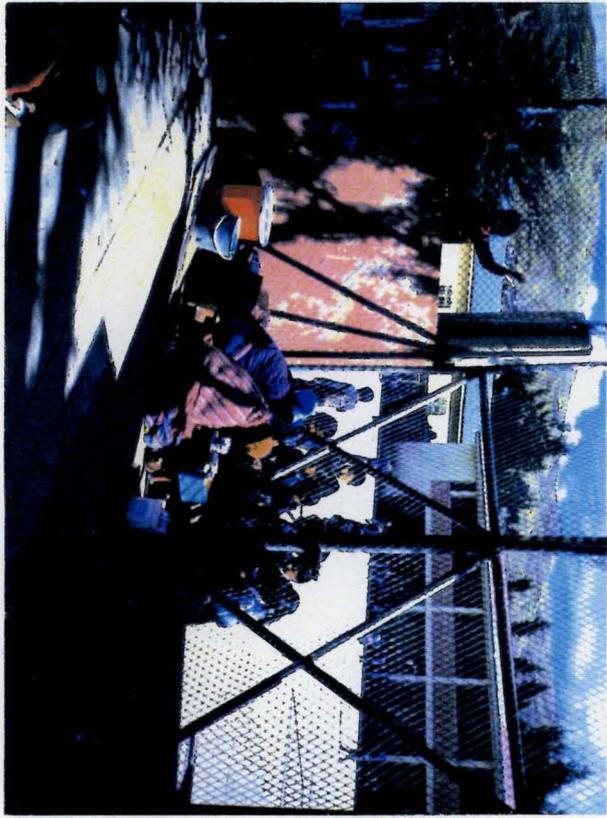
Photograph 5



Photograph 6



Photograph 7



Photograph 8

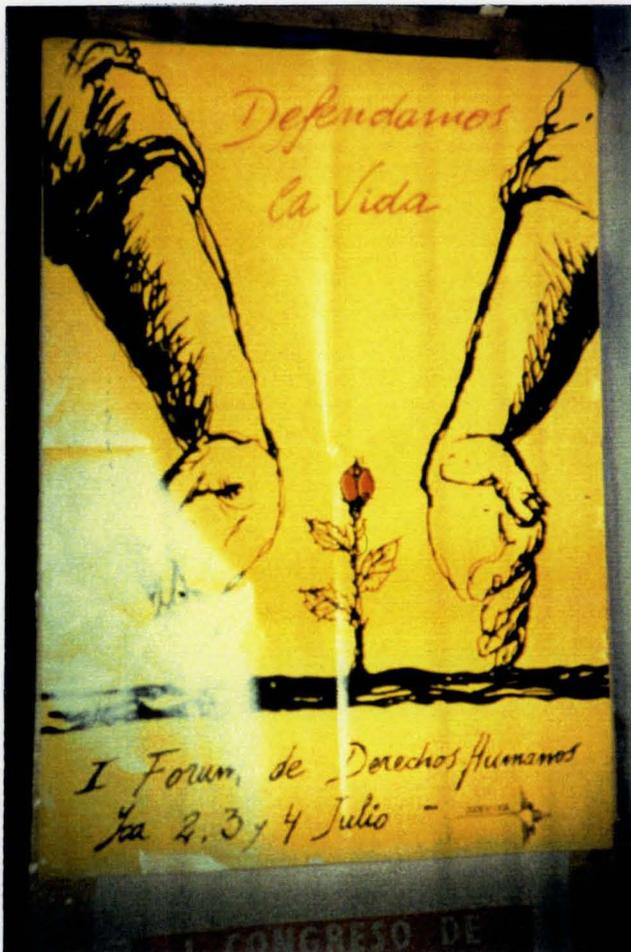


Appendix C
The Visual Environment (ii)

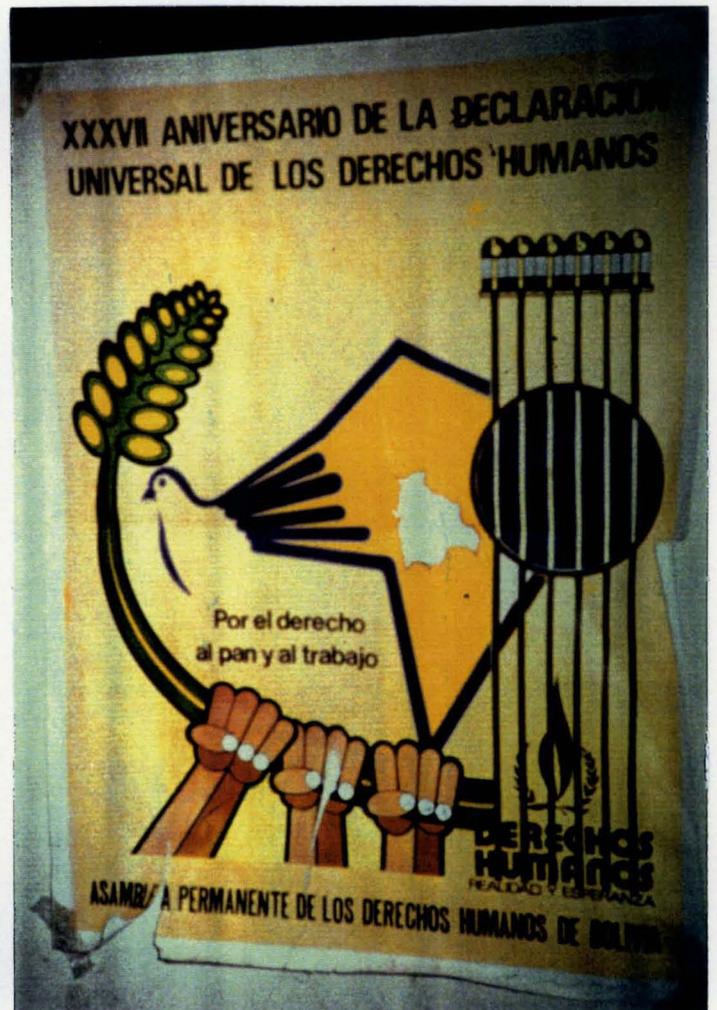
Posters 1 to 4 were photographed in Amantani's community hall;
Poster 5 and 6 in Puno;
Posters 7 and 8 near Temuco in southern Chile.

Poster 2

Poster 1



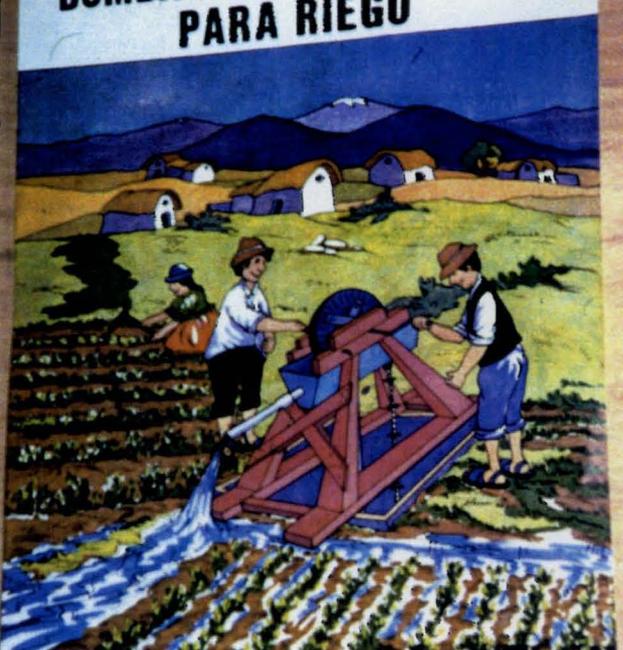
Poster 3



Poster 4

Poster 6

BOMBA MANUAL DE SOGA PARA RIEGO



Para mayor información sobre la adquisición de la BOMBA DE SOGA, diríjase al

CENTRO DE ASESORIA PARA BOMBEO DE AGUA
Calle Bolognesi 165, Puno
Teléfono No. 789

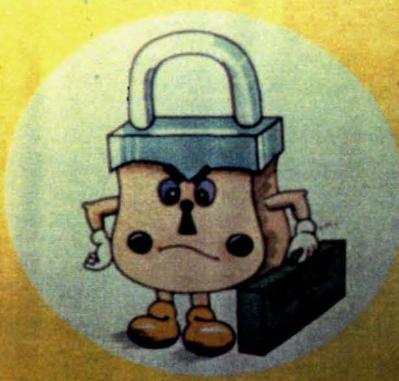
Convenio: Perú - República Federal de Alemania
CORPUNO - CONCYTEC - G.T.Z.

VENTAJAS

- Económico
- Durable
- Un caudal alto (hasta 150 lts. por minuto)
- Manejable por una o dos personas
- Transportable
- Fácil de instalar
- Mantenimiento simple y de bajo costo
- Bombeo de agua hasta 6 metros de profundidad

Poster 5

ENTREGUE FACTURA SI NO...



TODA PERSONA QUE VENDE UN BIEN O PRESTA UN SERVICIO ESTA OBLIGADA A ENTREGAR FACTURA O COMPROBANTE DE PAGO, SIN REQUERIMIENTO DEL COMPRADOR.

Ministerio de Economía, Finanzas y Comercio
Dirección General de Contribuciones
Banco de Incentivos y Recaudación de Impuestos

Poster 7

ES TIEMPO DE CRECER




ALIANZA CRISTIANA Y MISIONERA

Poster 8

¡AYUDATE!



POR FAVOR NO BEBAS

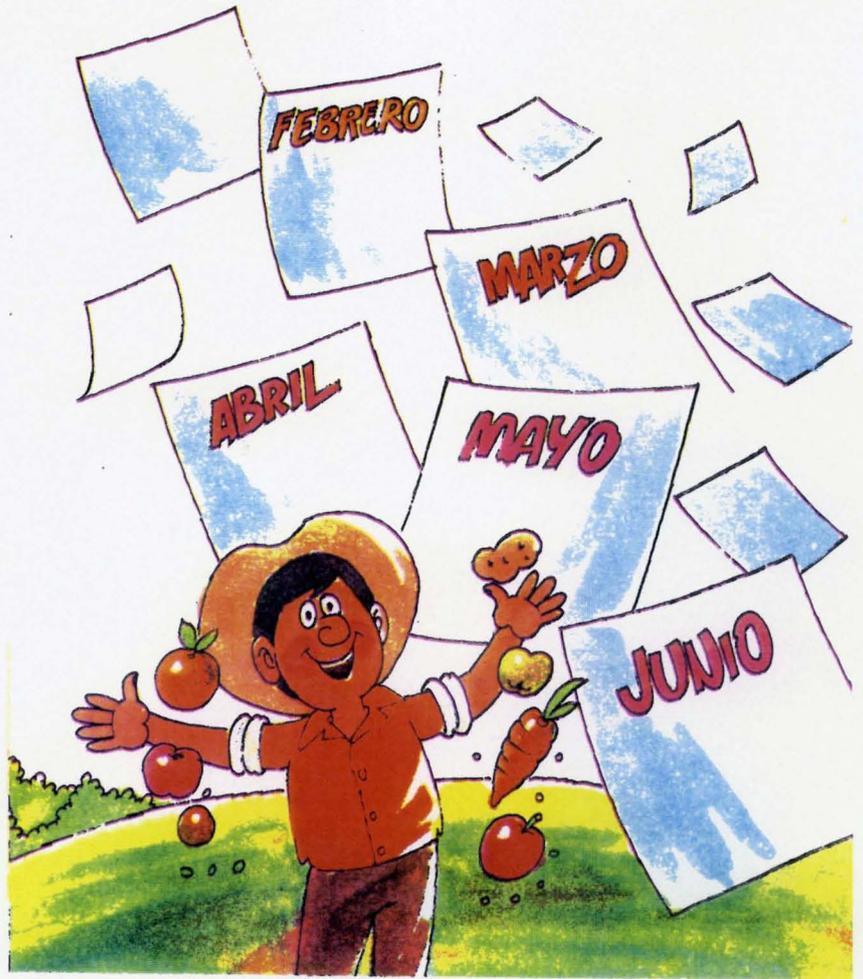
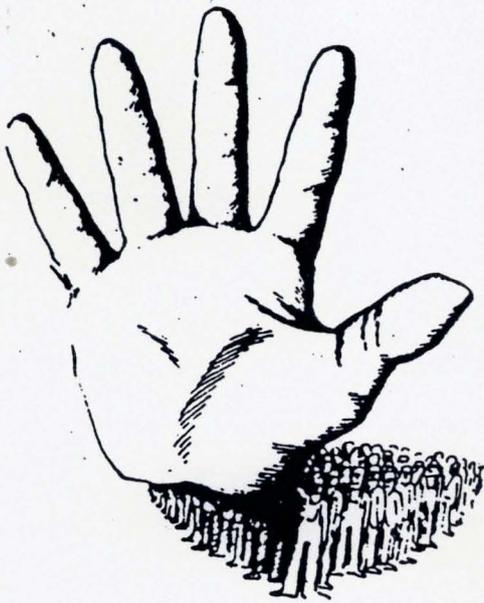
CAMPAÑA CONTRA EL ALCOHOLISMO. POLICLINICO METODISTA.

ALEJANDRO SLESIAN
8º AÑO C. METODISTA
1º PREMIO

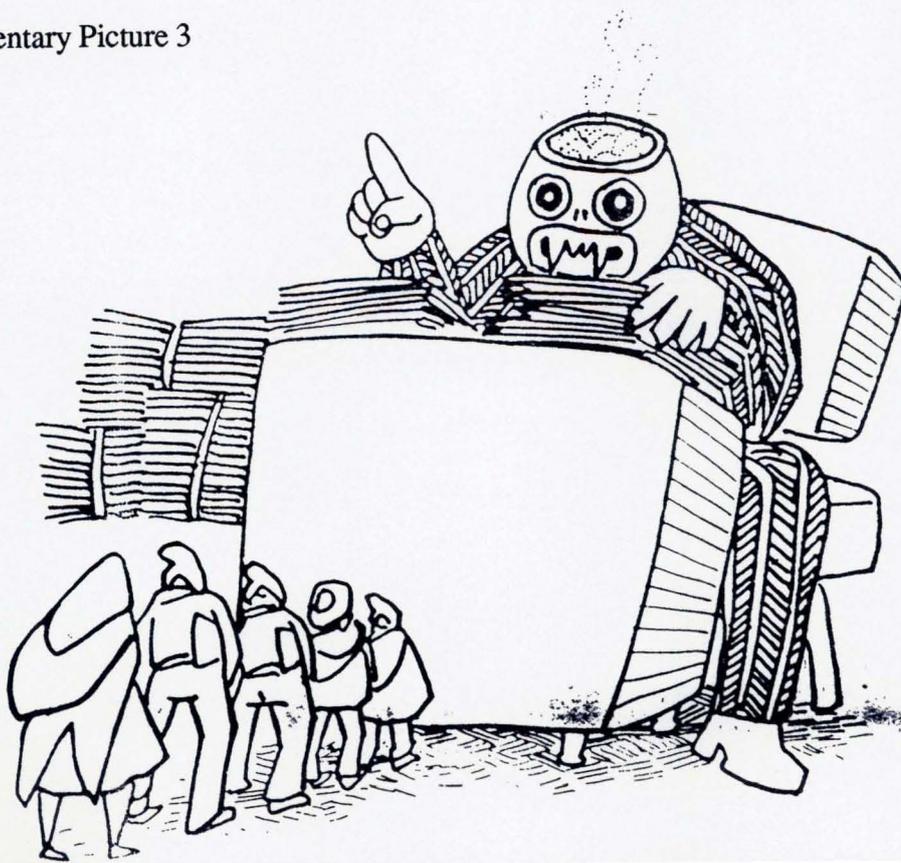
Appendix D
Supplementary Pictures

S I TU QUIERES QUE TU CAMPO
PRODUZCA TODO EL AÑO,
HAZ COMO DON FLORENTIN.

Supplementary Picture 1



Supplementary Picture 3



Appendix A

The Test-Pictures

The following thirty-seven pictures are photographs of those displayed to informants and upon which informants' scores are based.

- 1) Each picture is accompanied by a delineation of the units deemed anatomically basic.
- 2) Although the occluded portions, "fade-out" and continuations beyond the frame indicated in crayon here are neither wholly consistently rendered nor by any means exhaustive, it would require only time and (much) more paper to achieve this.

In their essentials, the pictures are reproduced here as they were displayed to informants. Note, however, that:

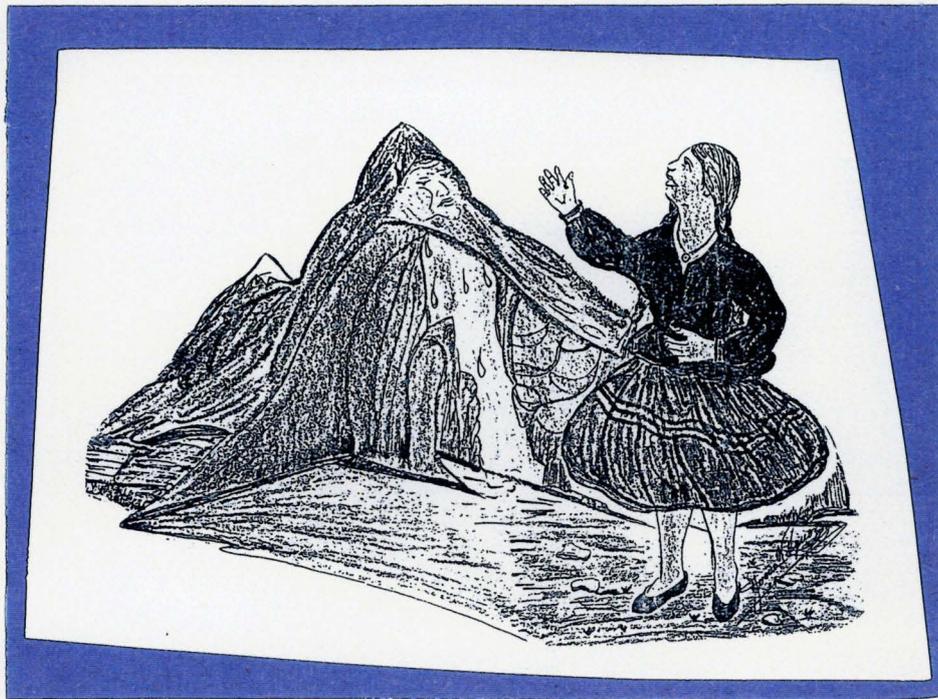
- 1) with the exception of Pictures 4, 8 and 11, the pictures used are bigger than their reproductions;
- 2) all the pictures used are less yellow and less murky than their reproductions;
- 2) Picture 2 was displayed without the accompanying text;
- 3) the borders of Pictures 16, and 20a to 25c have been trimmed slightly;

Where I have not drawn the pictures myself, their sources are as follows:

- Picture 1 was taken from the title page of a book of Aymara poems
Picture 2 is the leaflet produced by CORPUNO to advertise the hand-operated pump illustrated
Pictures 3, 9, and 10 are collages photographs cut from Peruvian magazines;
Picture 4 appeared in the Puno review *Hojas Escritas*, under the title: "*Visión Sistemática*";
Picture 8 was cut from a Peruvian magazine;
Picture 11 was cut from the Jehovah's Witnesses' pamphlet described in the introduction, and was originally accompanied by the words "El día viene";

and that:

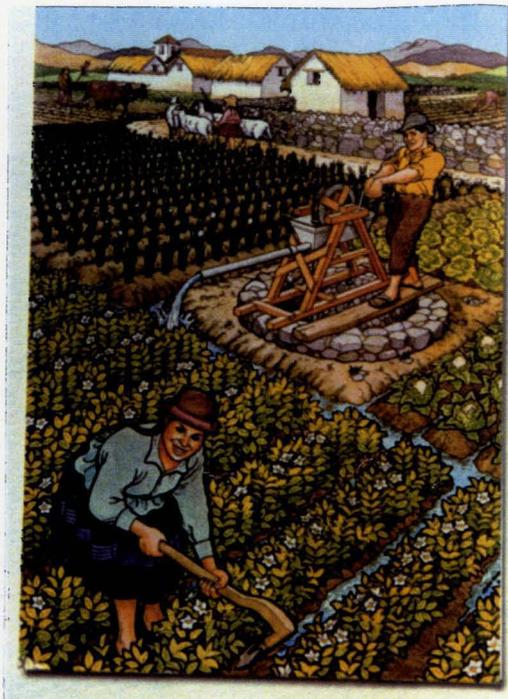
- Picture 18 is a version of Poster 4 (in Appendix C). Poster 4's schematic outline of Bolivia was replaced in Picture 18 with a (rather more schematic) outline of Peru;
Picture 19 is a version of a painting by Leoncio Villanueva, adopted by the Asociación Pro Derechos Humano - Peru; another poster, and accompanied by the words: "y cuándo estaremos con los demás, al borde de una mañana eterna, desayunados todos". (My [bread], incidentally, is probably more *unambiguously* bread than the [bread] of the original on which Picture 19 is based.)



Picture 1*

**BOMBA
MANUAL
DE SOGA**

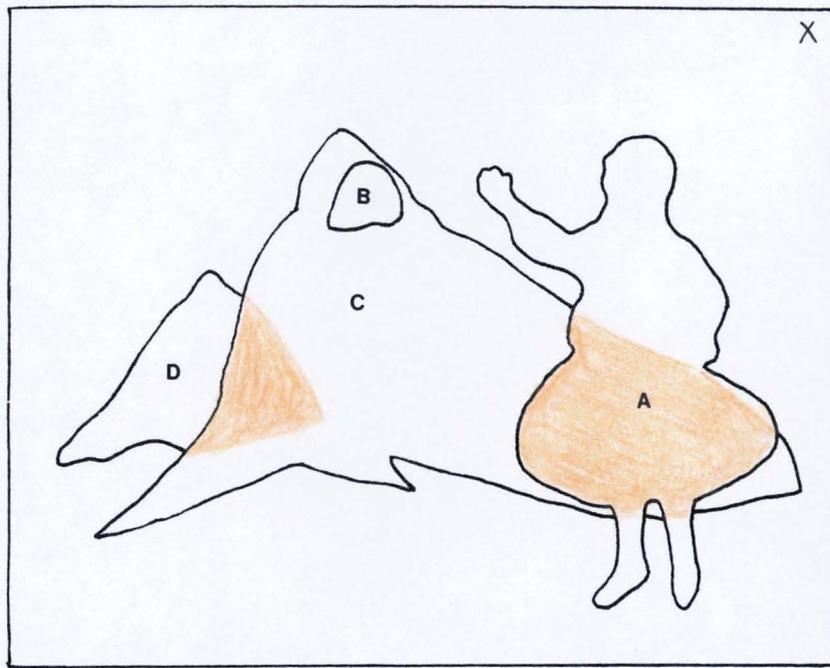
- BAJO COSTO
- AGUA TODO EL AÑO
- MEJORES COSECHAS



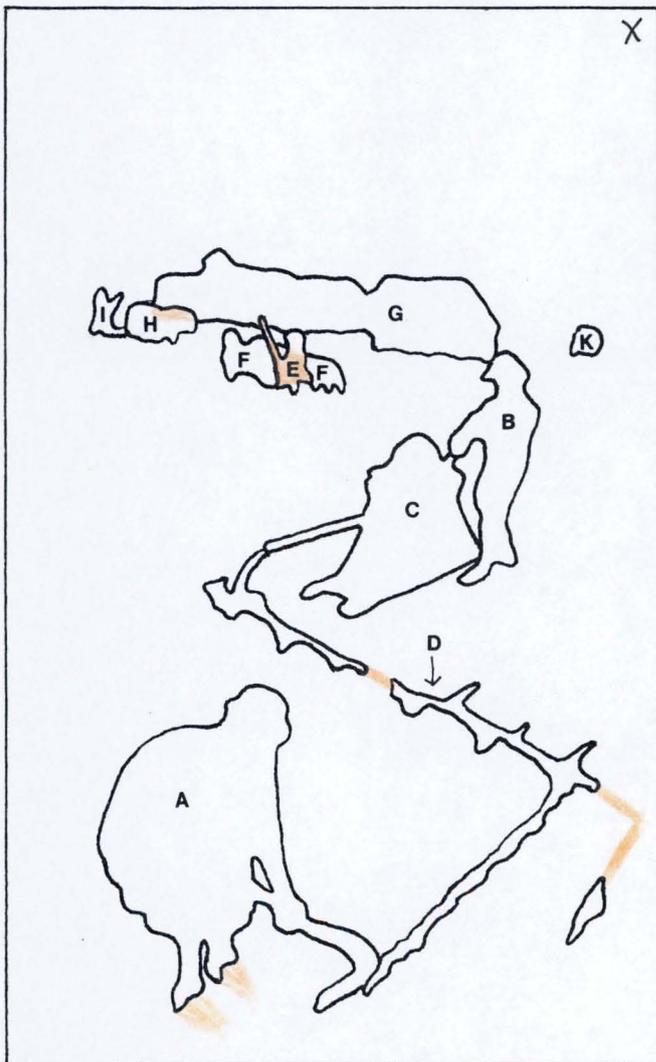
Picture 2*



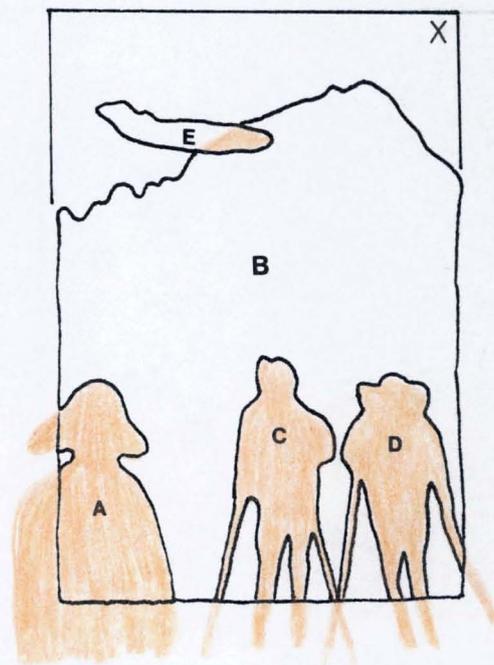
Picture 3*



1

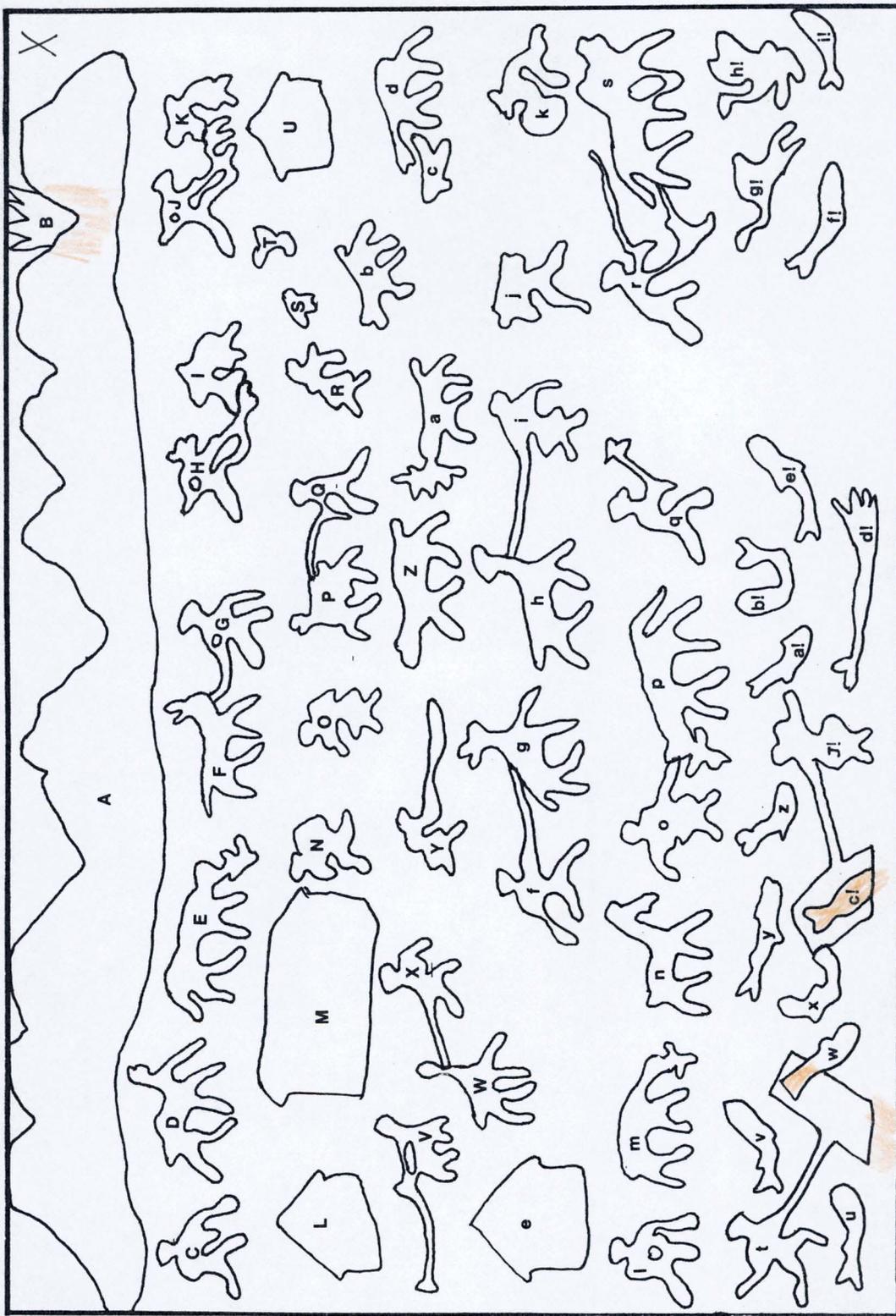


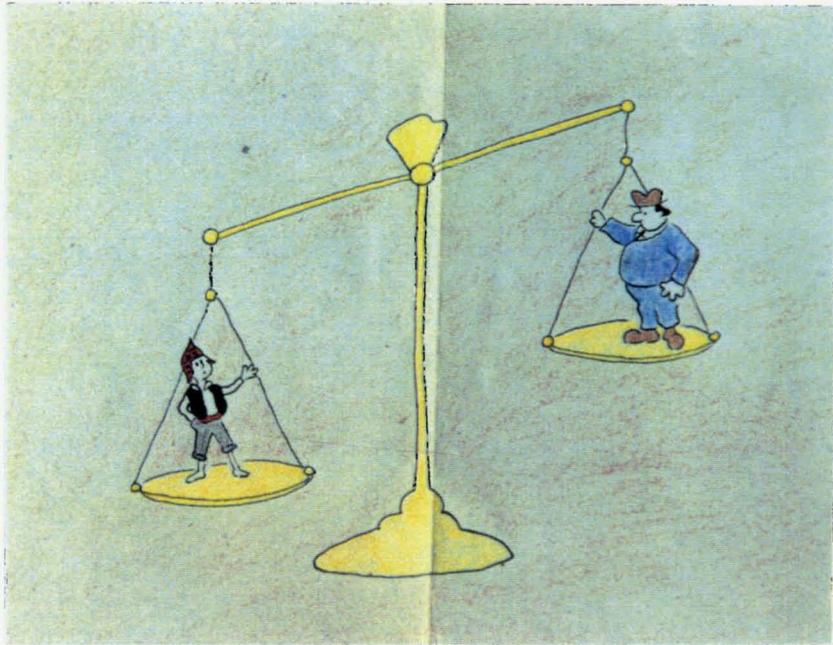
2



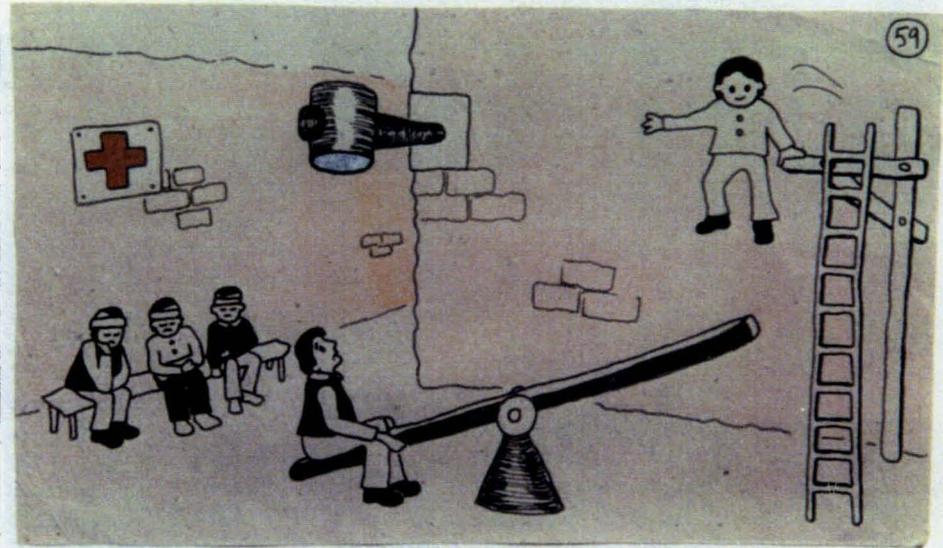


Picture 4*





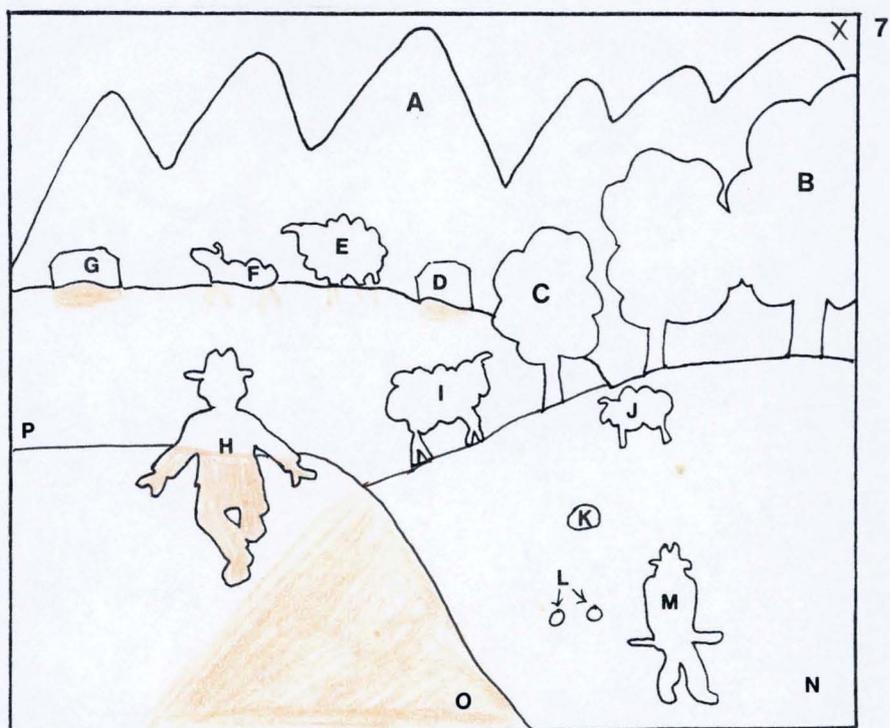
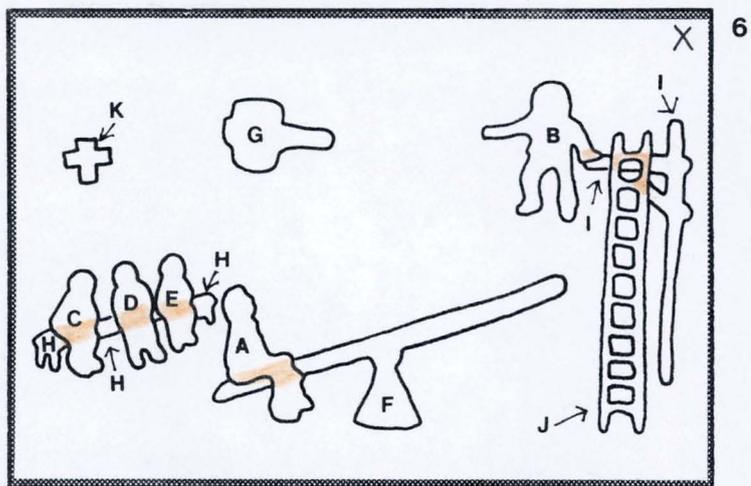
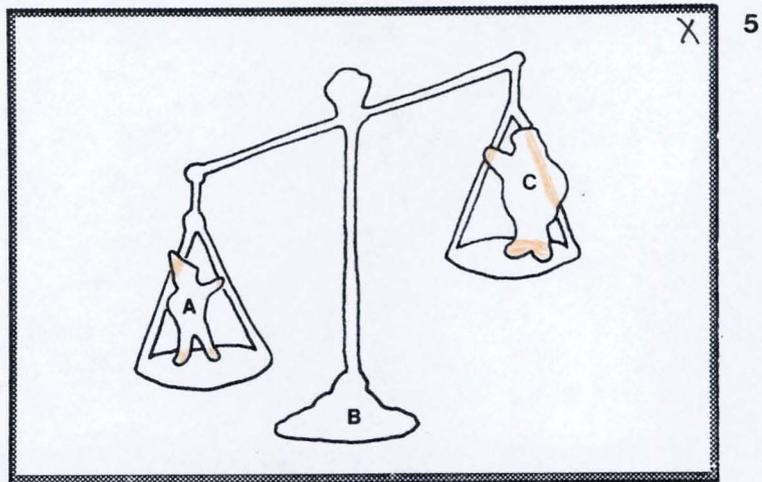
Picture 5*

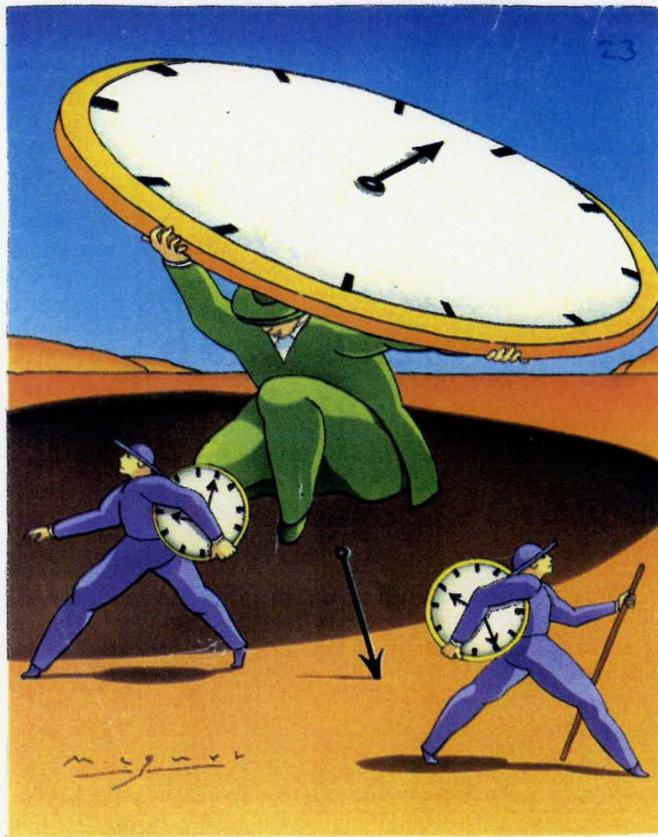


Picture 6*



Picture 7*





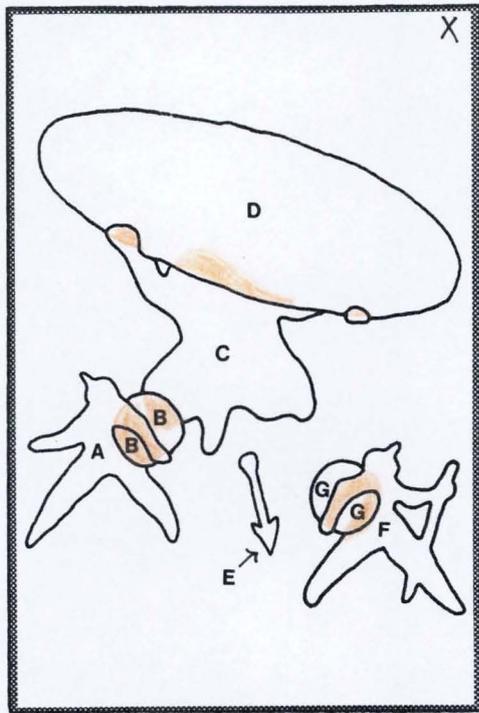
Picture 8*



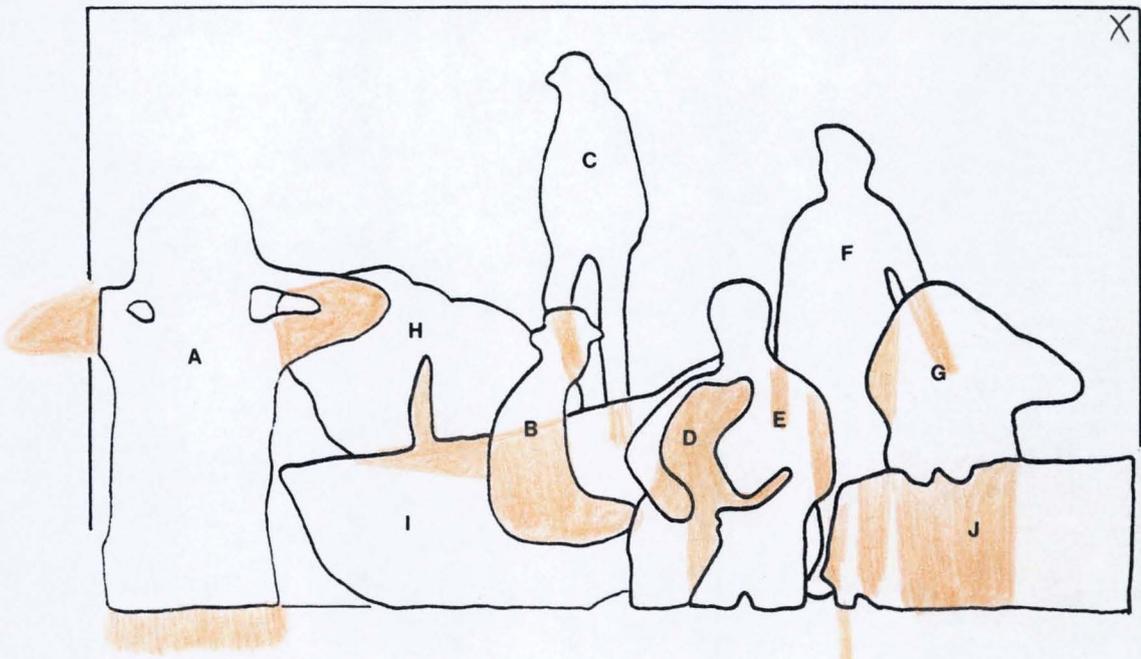
Picture 9*



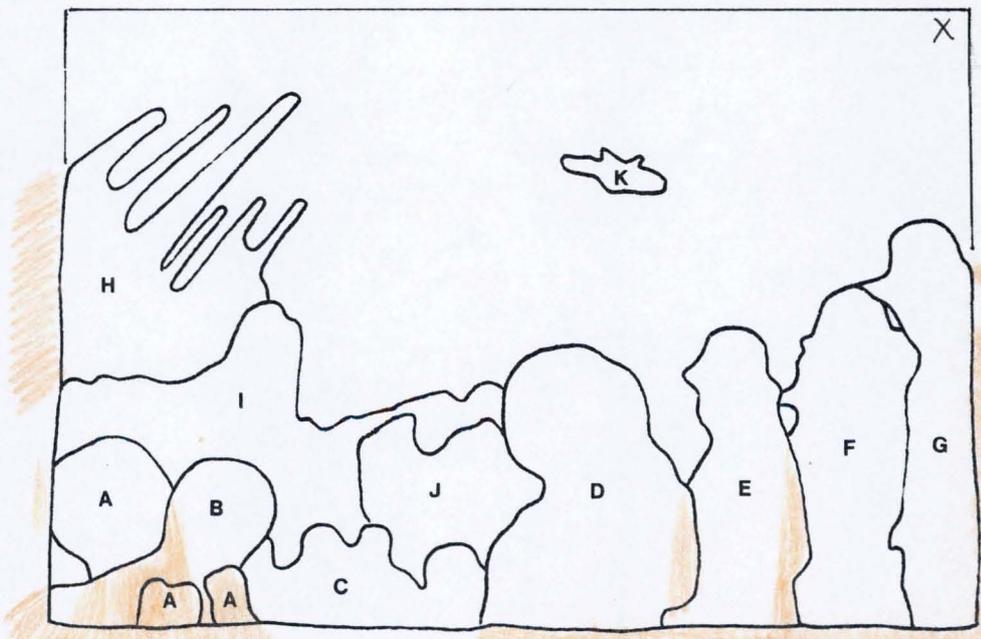
Picture 10*



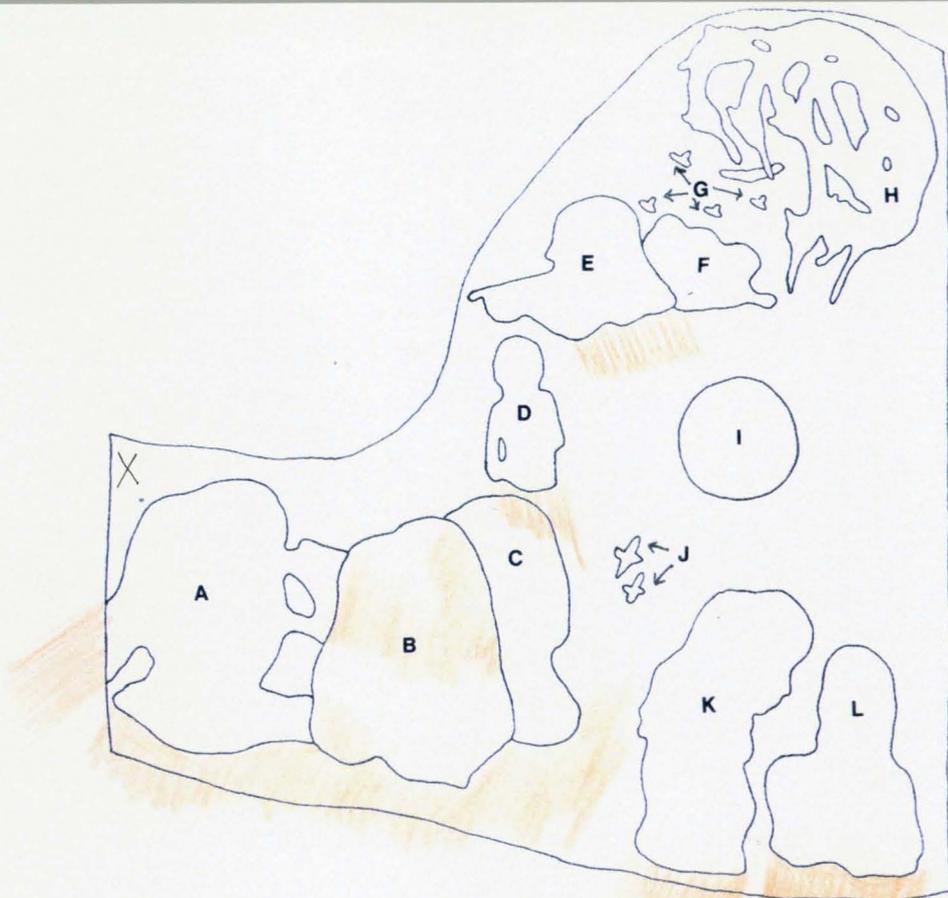
8



9



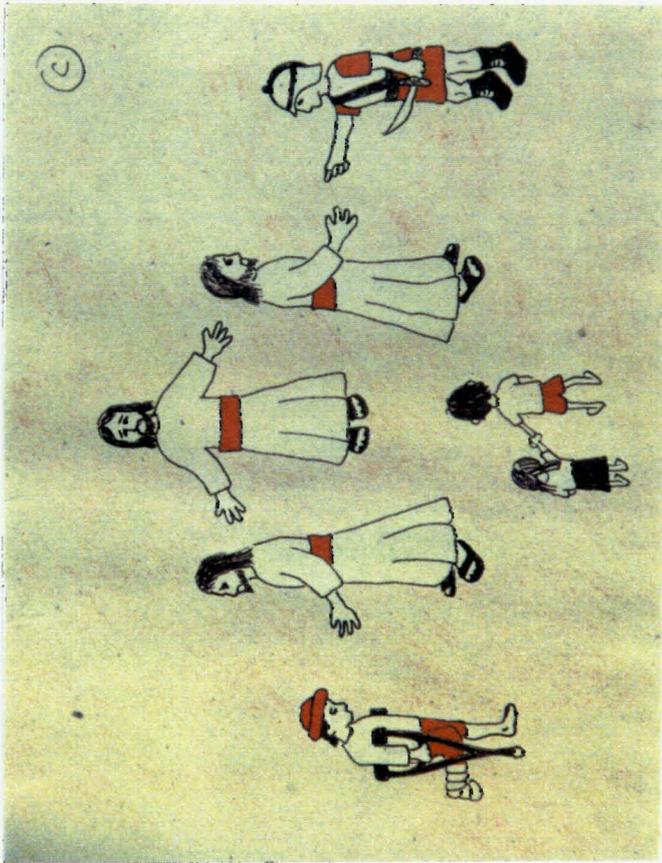
10



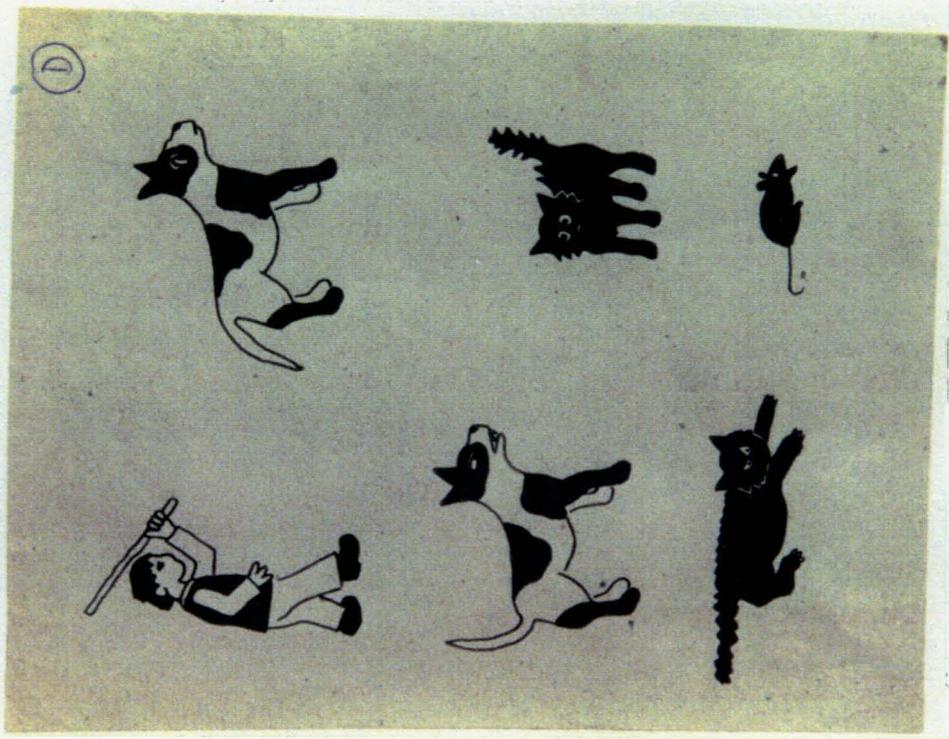
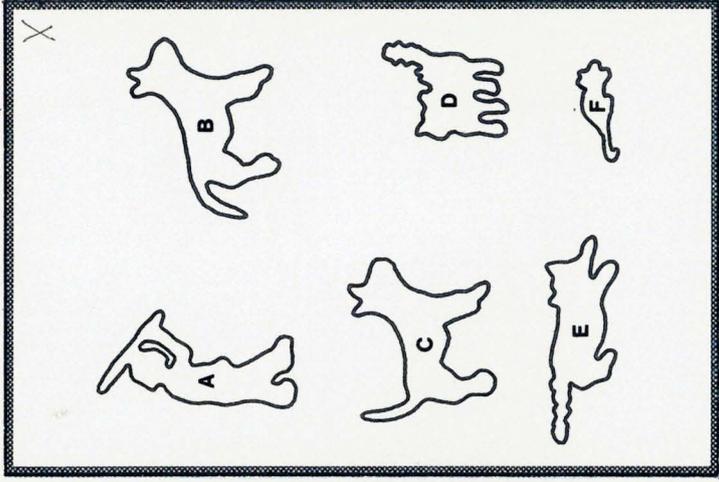
Picture 11



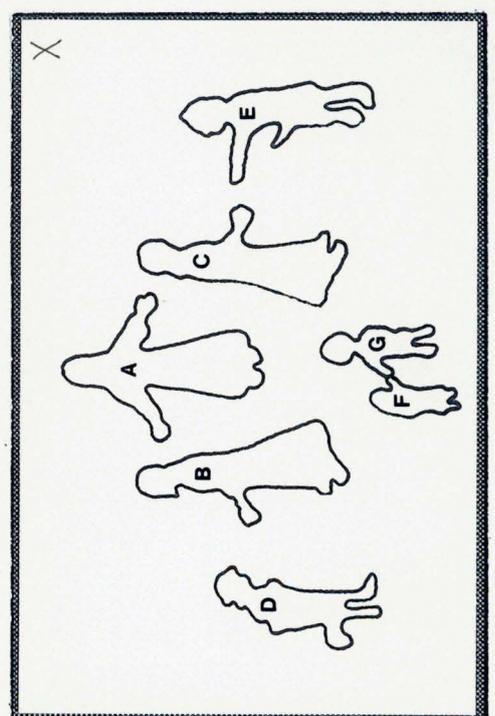
Picture 12

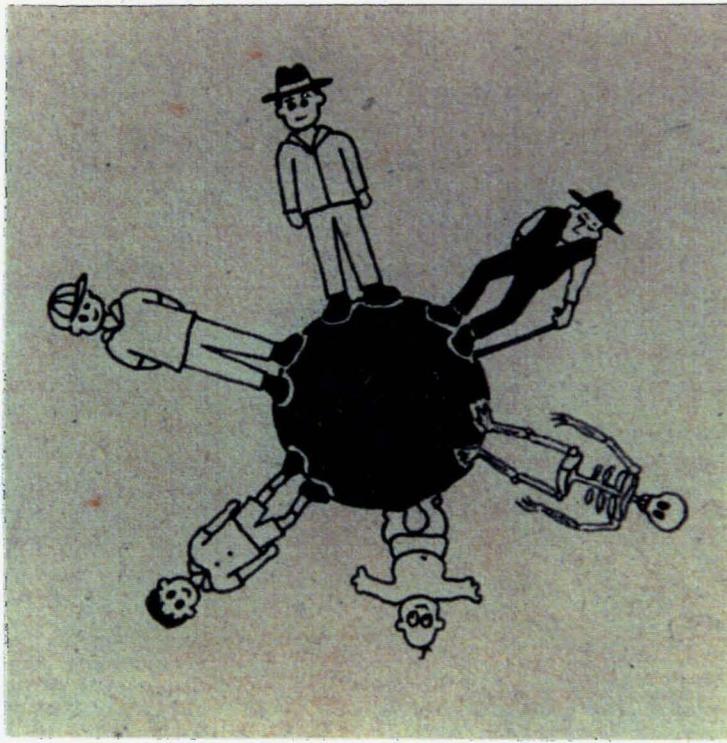


(C)

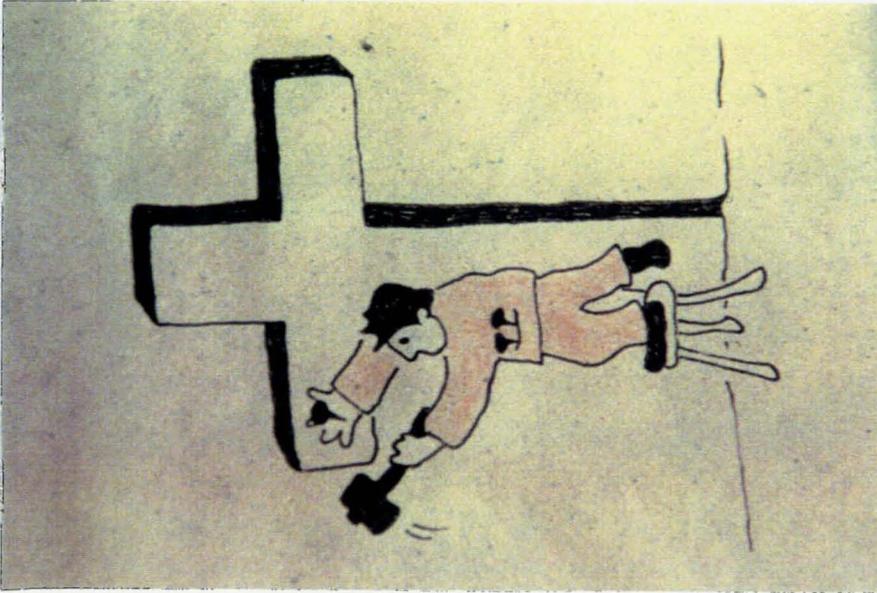


Picture 13

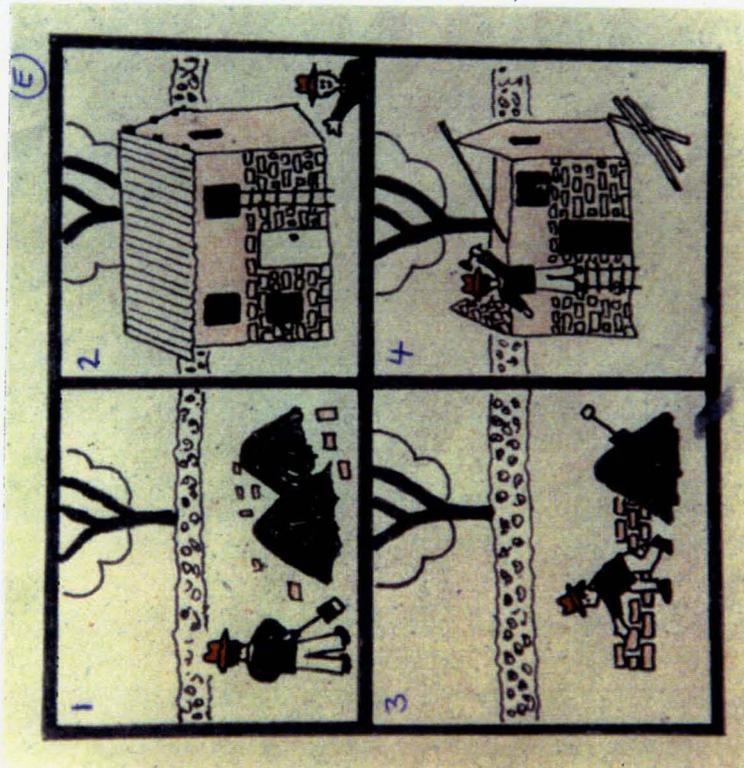




Picture 16*



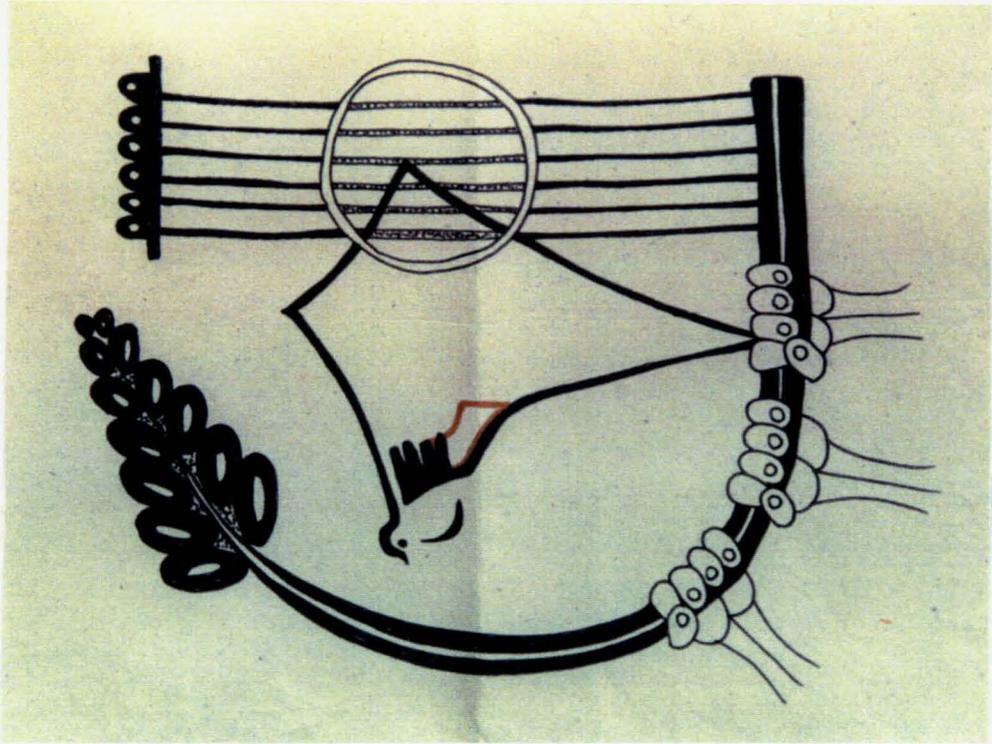
Picture 15*



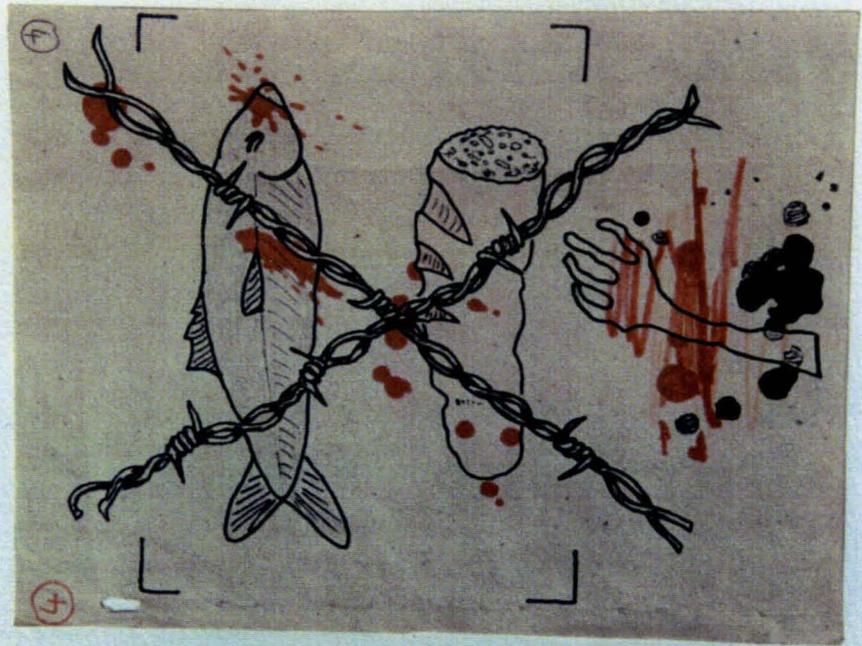
Picture 14*



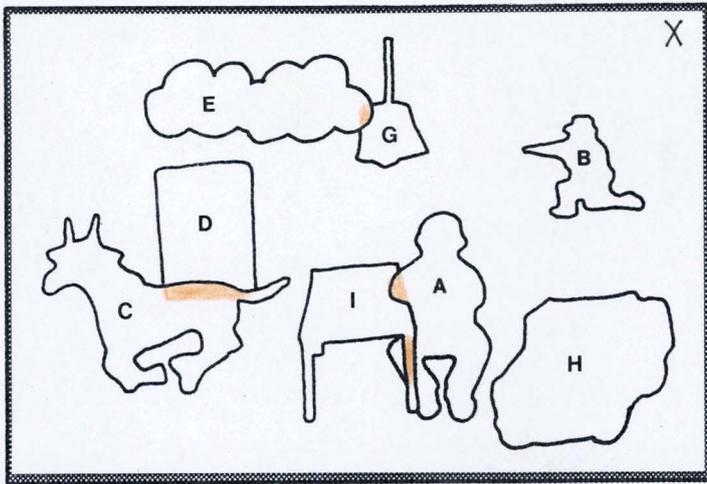
Picture 17*



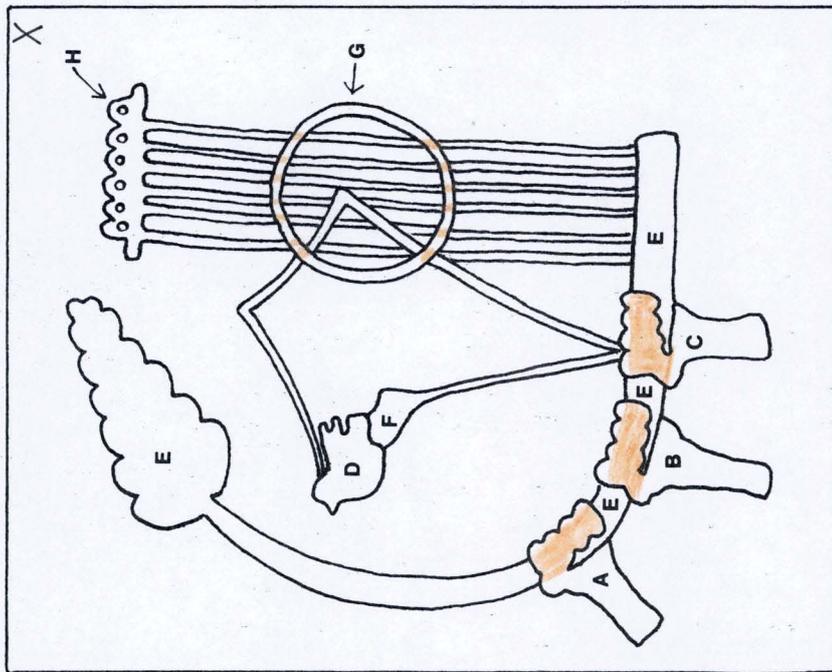
Picture 18*



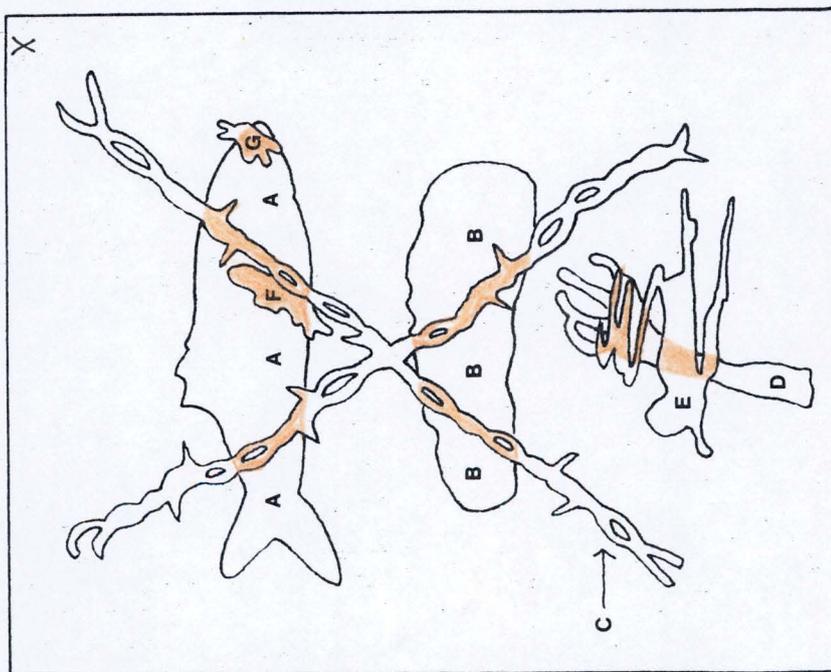
Picture 19*



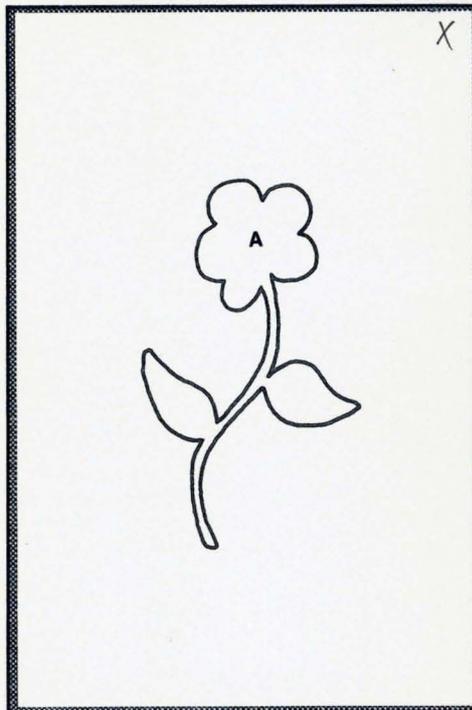
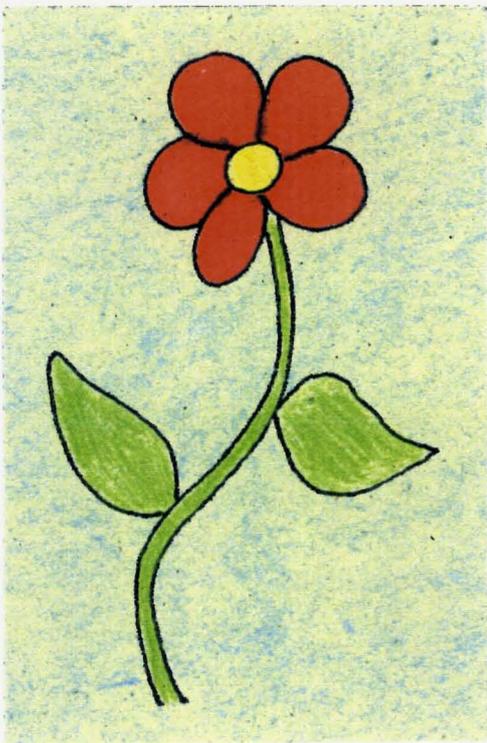
17



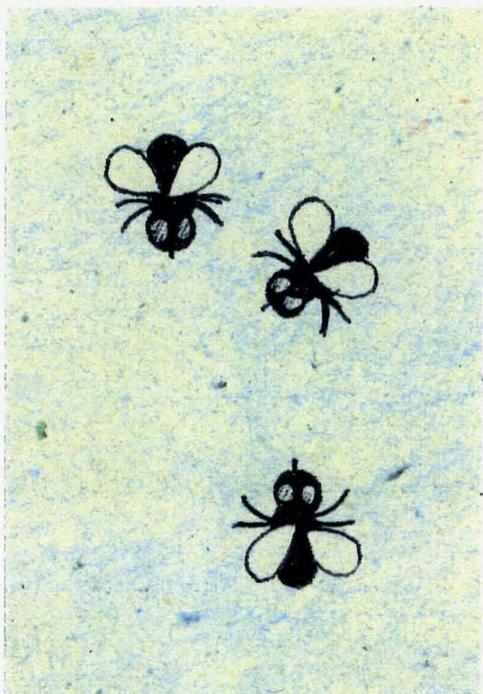
18



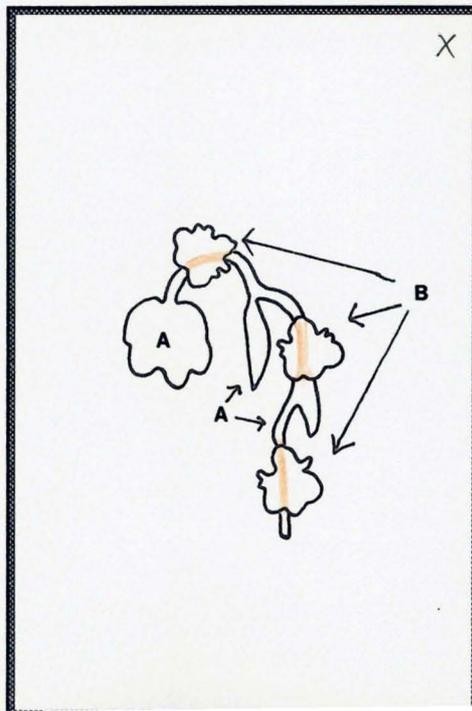
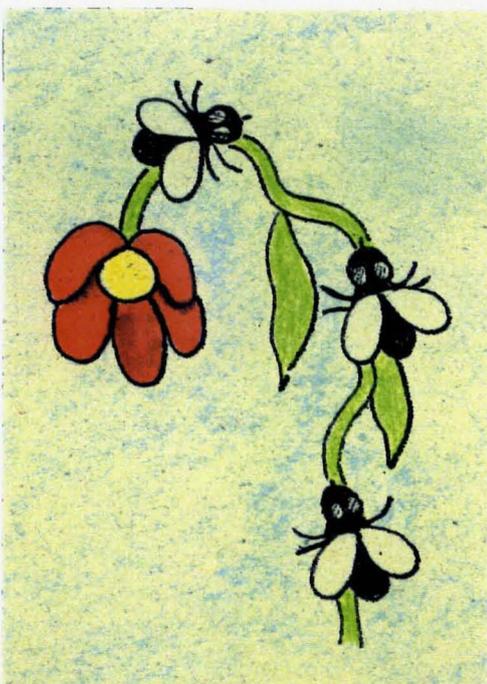
19



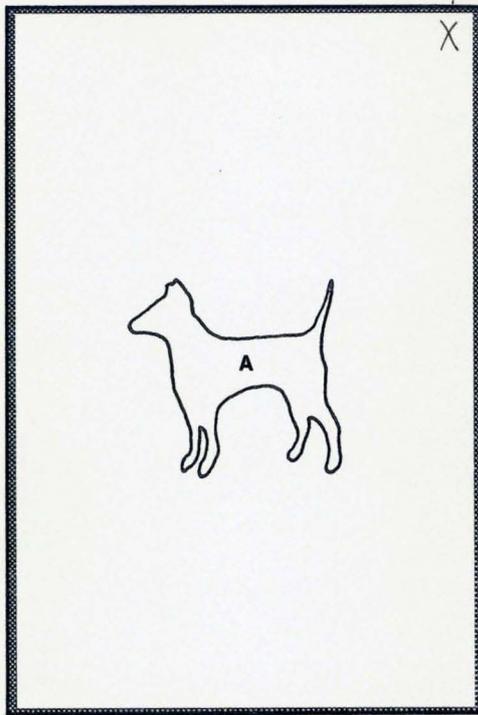
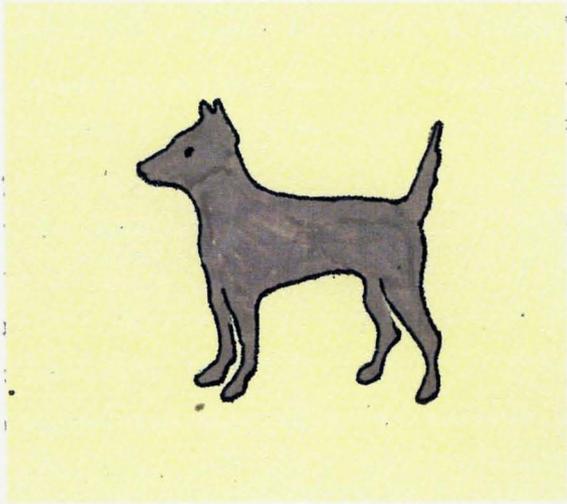
Picture 20a



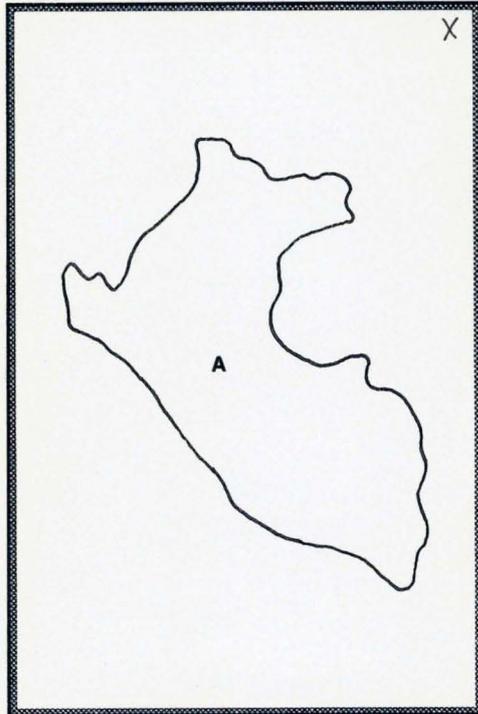
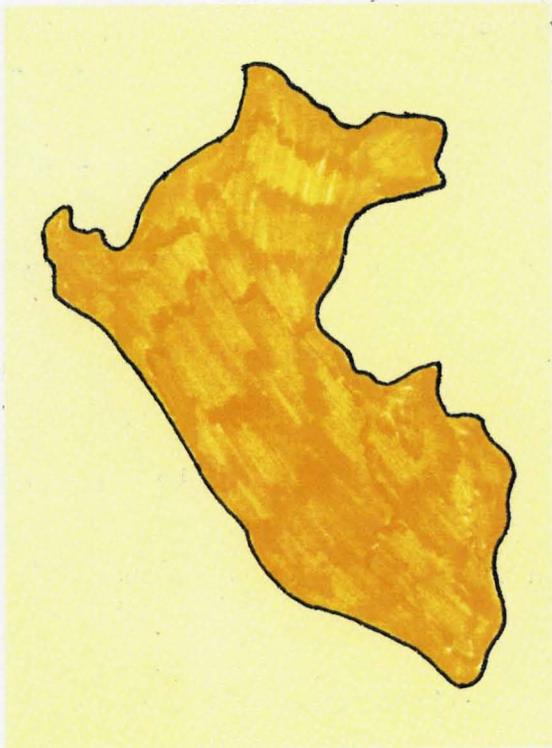
Picture 20b



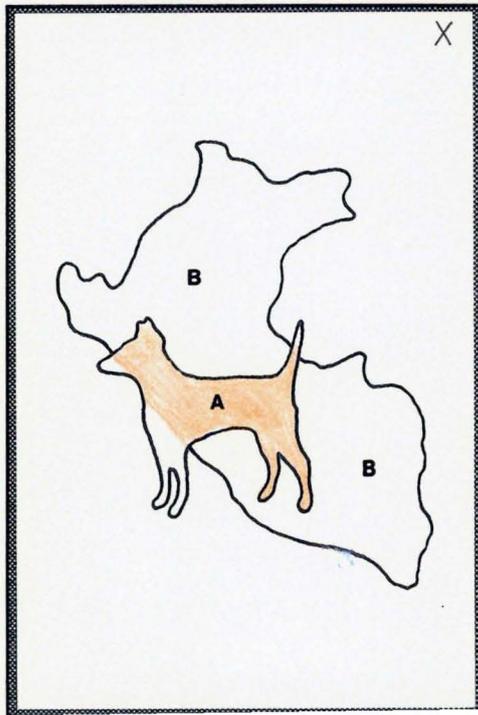
Picture 20c



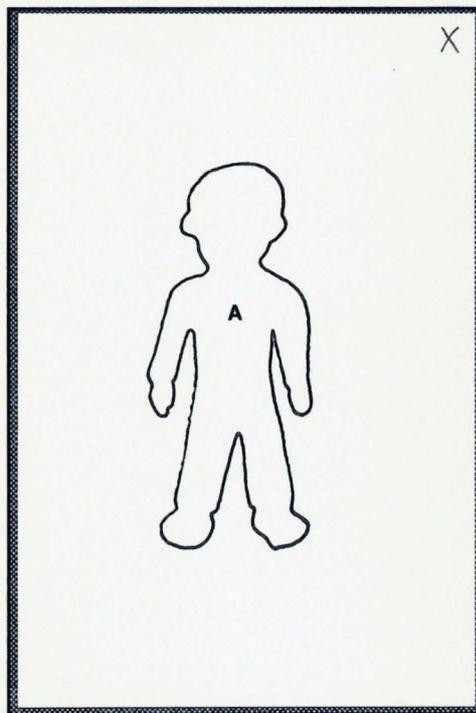
Picture 21a



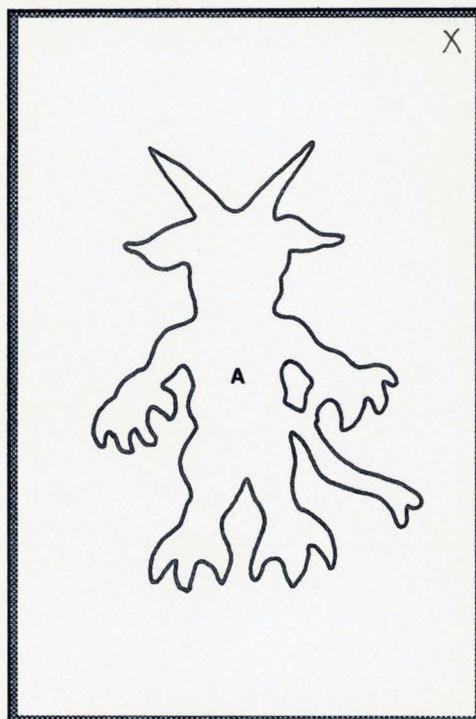
Picture 21b



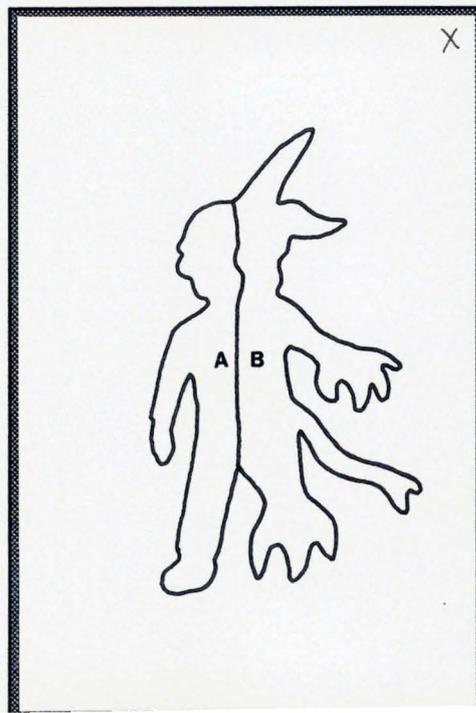
Picture 21c



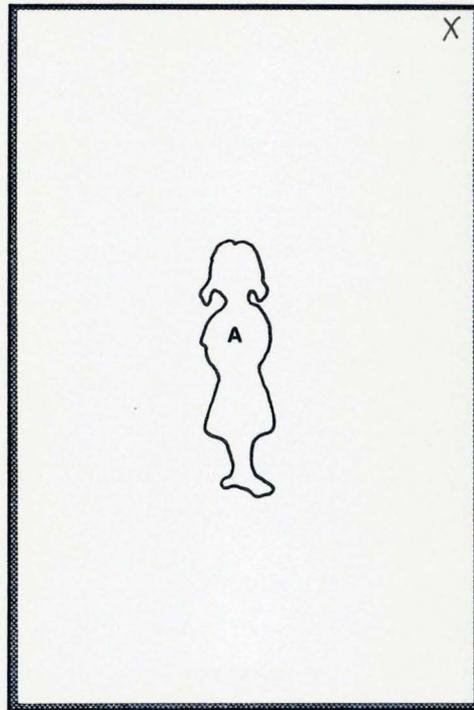
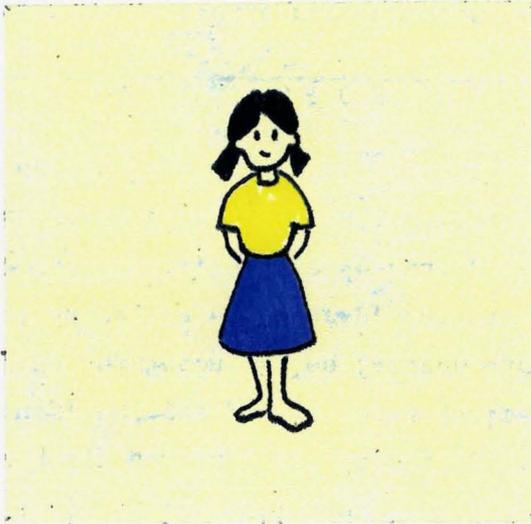
Picture 22a



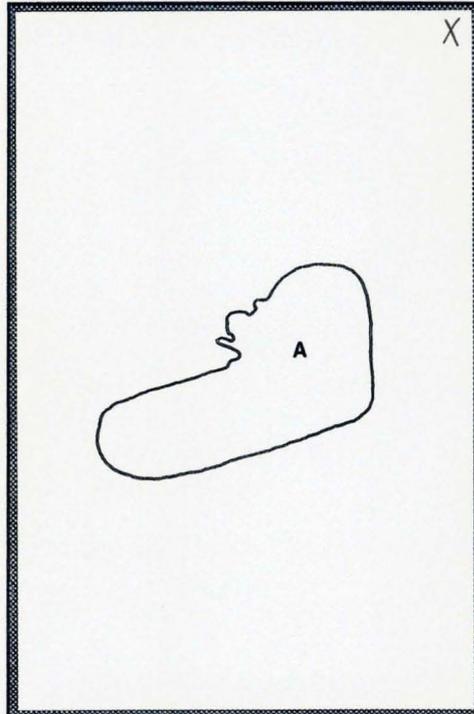
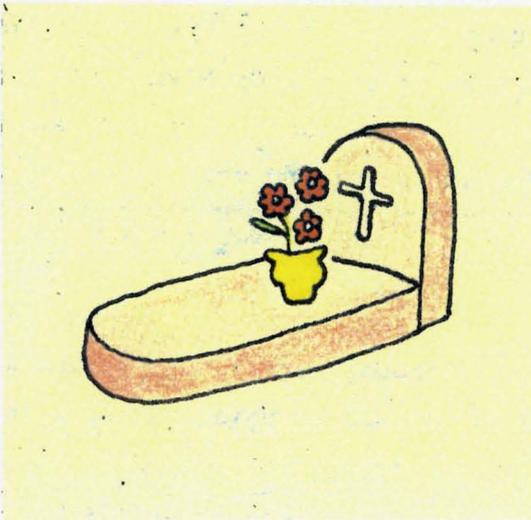
Picture 22b



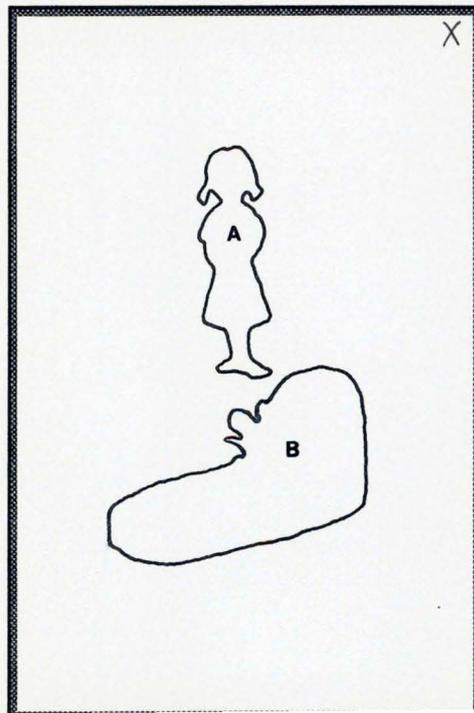
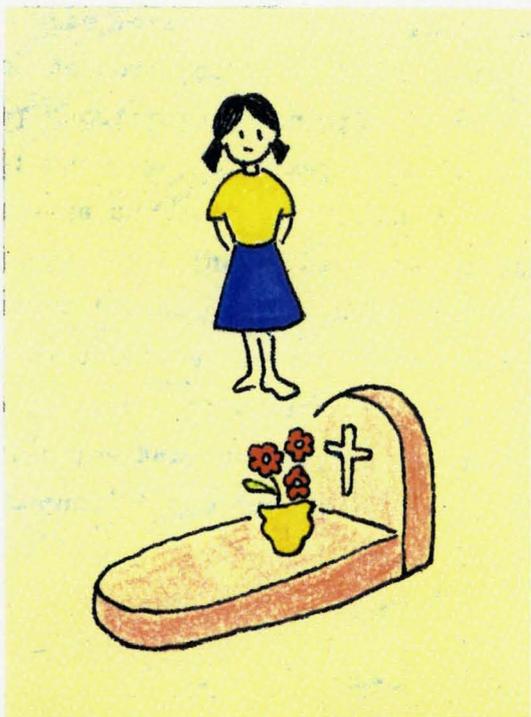
Picture 22c



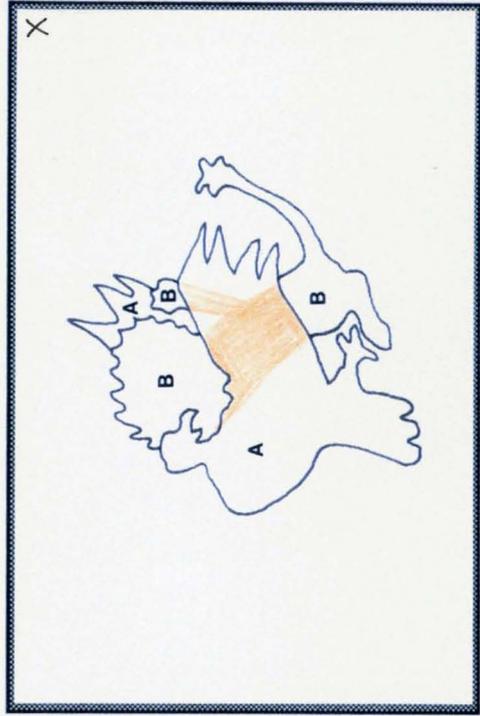
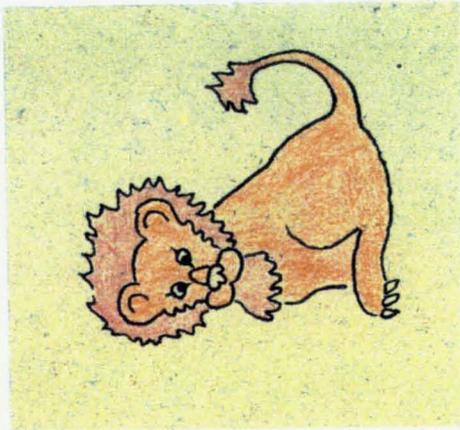
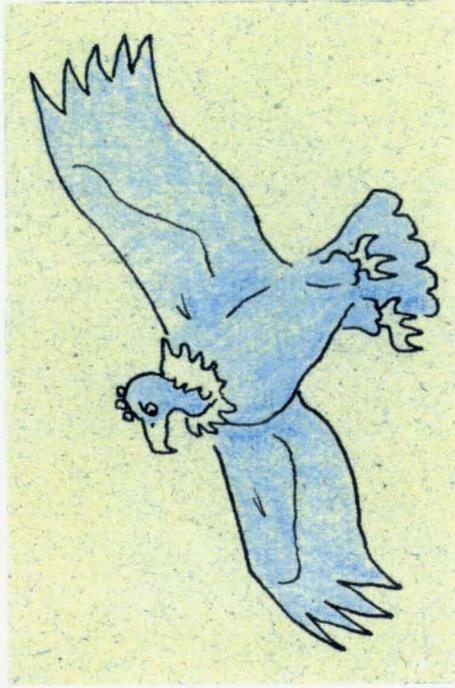
Picture 23a



Picture 23b



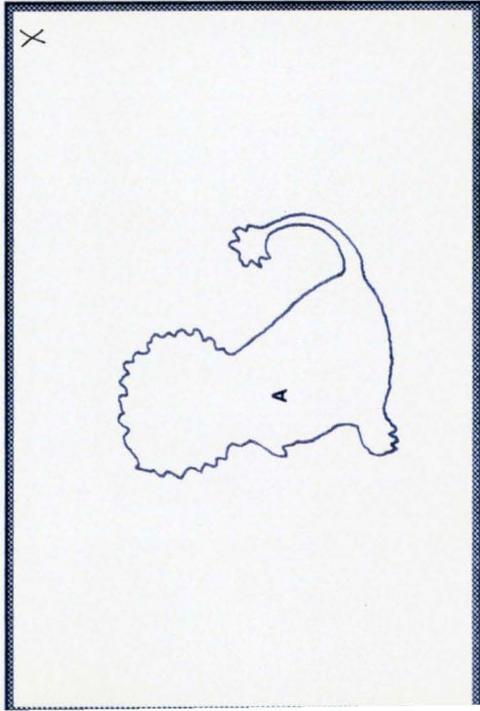
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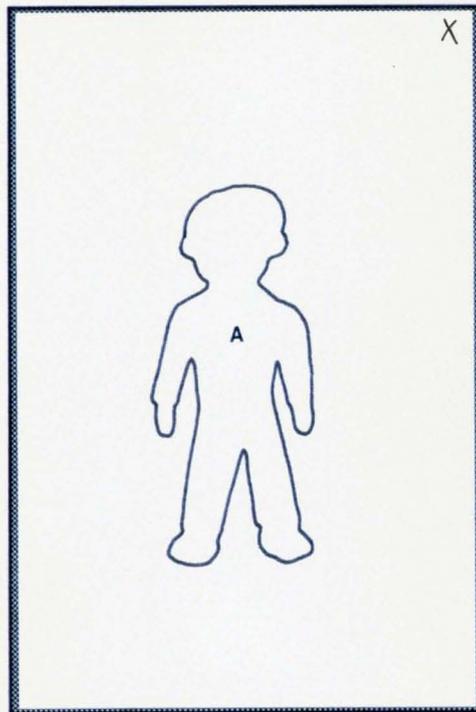
Picture 24c



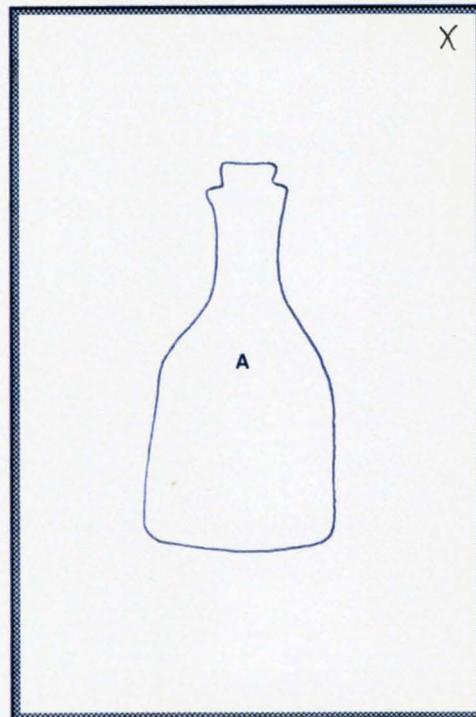
Picture 24b



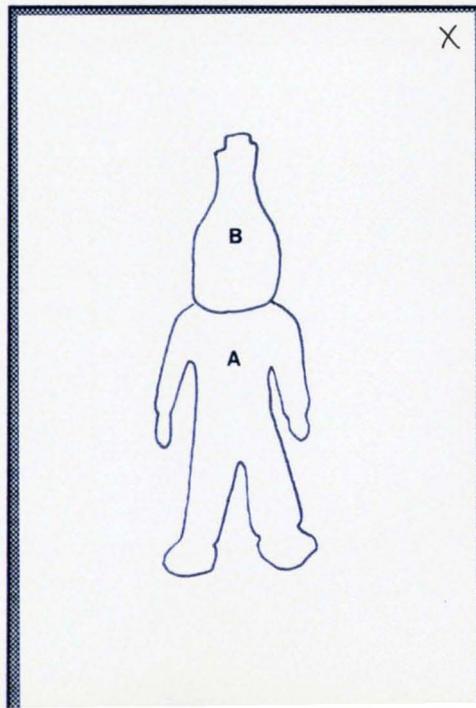
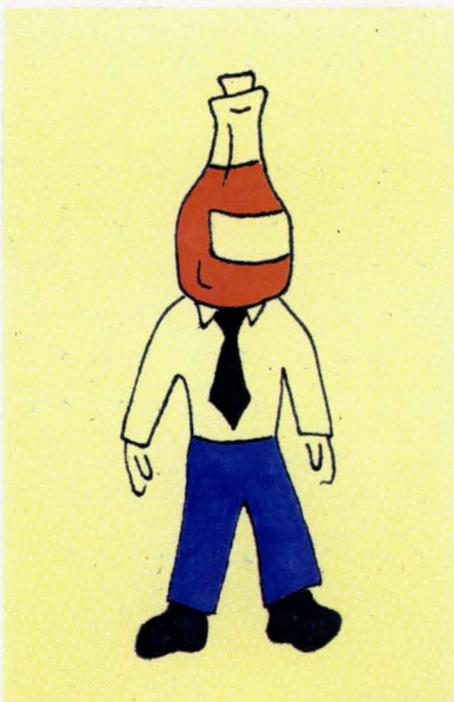
Picture 24a



Picture 25a



Picture 25b



Picture 25c

Picture 1

A: *WOMAN* C: *HILL*
B: *FACE* D: *HILL*

X: *GROUND*

Picture 2

A: *WOMAN* E: *PERSON*
B: *MAN* F: *SHEEP*
C: *STRUCTURE* G: *BUILDINGS*
D: *STUFF* H: *SHEEP*
I: *PERSON*
X: *GROUND* K: *PERSON*

Picture 3

A: *MAN* D: *WOMAN*
B: *MOUNTAIN* E: *AEROPLANE*
C: *MAN* X: *GROUND*

Picture 4

A:	*MOUNTAINS*	a:	*PIG*	a!:	*FISH*
B:	*FACE*	b:	*PIG*	b!:	*FISH*
C:	*MAN*	c:	*LAMA*	c!:	*FISH*
D:	*LAMA*	d:	*LAMA*	d!:	*THING*
E:	*COW*	e:	*BUILDING*	e!:	*FISH*
F:	*DONKEY*	f:	*MAN*	f!:	*FISH*
G:	*MAN*	g:	*LAMA*	g!:	*BIRD*
H:	*MAN*	h:	*LAMA*	h!:	*BIRD*
I:	*WOMAN*	i:	*WOMAN*	i!:	*FISH*
J:	*MAN*	j:	*MAN*	J!	*WOMAN*
K:	*WOMAN*	k:	*MAN*	X:	*GROUND*
L:	*BUILDING*	l:	*MAN*		
M:	*BUILDING*	m:	*LAMA*		
N:	*MAN*	n:	*LAMA*		
O:	*WOMAN*	o:	*WOMAN*		
P:	*LAMA*	p:	*COW*		
Q:	*MAN*	q:	*MAN*		
R:	*WOMAN*	r:	*MAN*		
S:	*BIRD*	s:	*COWS*		
T:	*BIRD*	t:	*MAN*		
U:	*BUILDING*	u:	*FISH*		
V:	*LAMA*	v:	*FISH*		
W:	*LAMA*	w:	*FISH*		
X:	*MAN*	x:	*FISH*		
Y:	*WOMAN*	y:	*FISH*		
Z:	*PIG*	z:	*FISH*		

Picture 5

A: *MAN* B: *SCALES* C: *MAN*
X: *GROUND*

Picture 6

A:	*MAN*	F:	*STRUCTURE*	K:	*CROSS*
B:	*MAN*	G:	*HAMMER*	X:	*GROUND*
C:	*MAN*	H:	*STRUCTURE*		
D:	*MAN*	I:	*STRUCTURE*		
E:	*MAN*	J:	*LADDER*		

Picture 7

A:	*MOUNTAINS*	G:	*BUILDING*	M:	*MAN*
B:	*TREES*	H:	*MAN*	N:	*HILL*
C:	*TREE*	I:	*SHEEP*	O:	*HILL*
D:	*BUILDING*	J:	*SHEEP*	P:	*HILL*
E:	*SHEEP*	K:	*SHEEP*		
F:	*SHEEP*	L:	*ANIMALS*	X:	*GROUND*

Picture 8

X:	*GROUND*				
A:	*MAN*	C:	*MAN*	E:	*ARROW*
B:	*CLOCK*	D:	*CLOCK*	F:	*MAN*
				G:	*CLOCK*

Picture 9

X:	*GROUND*				
A:	*WOMAN*	D:	*DOG*	H:	*STRUCTURE*
B:	*MAN*	E:	*MAN*	I:	*BOAT*
C:	*PERSON*	F:	*MAN*	J:	*TABLE*
		G:	*WOMAN*		

Picture 10

X:	*GROUND*				
A:	*WOMAN*	E:	*CHILD*	I:	*PEOPLE*
B:	*PERSON*	F:	*WOMAN*	J:	*THINGS*
C:	*CHILDREN*	G:	*MAN*	K:	*HELICOPTER*
D:	*WOMAN*	H:	*STRUCTURE*		

Picture 11

X:	*GROUND*				
A:	*MAN*	E:	*MAN*	I:	*SPHERE*
B:	*WOMAN*	F:	*CLOUD*	J:	*STRUCTURES*
C:	*MAN*	G:	*AEROPLANES*	K:	*WOMAN*
D:	*BOY*	H:	*ANIMAL*	L:	*WOMAN*

Picture 12

A:	*MAN*	D:	*MAN*	G:	*PERSON*
B:	*MAN*	E:	*PERSON*	X:	*GROUND*
C:	*MAN*	F:	*PERSON*		

Picture 13

X:	*GROUND*				
A:	*MAN*	C:	*DOG*	E:	*CAT*
B:	*DOG*	D:	*CAT*	F:	*MOUSE*

Picture 14

X:	*GROUND*				
A:	*MAN*	G:	*MAN*	M:	*BUILDING*
B:	*TREE*	H:	*TREE*	N:	*STICKS*
C:	*STUFF*	I:	*STUFF*	O:	*WALL*
D:	*MAN*	J:	*WALL*	P:	*WALL*
E:	*TREE*	K:	*MAN*	Q:	*WALL*
F:	*BUILDING*	L:	*TREE*	R:	*WALL*

Picture 15

X:	*GROUND*				
A:	*MAN*	B:	*CROSS*	C:	*STOOL*

Picture 16

X:	*GROUND*				
A:	*PERSON*	C:	*MAN*	E:	*PERSON*
B:	*MAN*	D:	*SKELETON*	F:	*PERSON*

Picture 17

A:	*MAN*	D:	*DOOR*	H:	*VEHICLE*
B:	*MAN*	E:	*CLOUD*	I:	*TABLE*
C:	*EQUINE*	G:	*BELL*	X:	*GROUND*

Picture 18

A:	*HAND*	D:	*BIRD*	G:	*CIRCLE*
B:	*HAND*	E:	*PLANT*	H:	*STRUCTURE*
C:	*HAND*	F:	*STRUCTURE*	X:	*GROUND*

Picture 19

A:	*FISH*	D:	*HAND*	G:	*STUFF*
B:	*STUFF*	E:	*STUFF*	X:	*GROUND*
C:	*WIRE*	F:	*STUFF*		

Picture 20

Picture 20a	A:	*FLOWER*				
Picture 20b	A:	*FLIES*				
Picture 20c	A:	*FLOWER*	B:	*FLIES*	X:	*GROUND*

Picture 21

Picture 21a	A:	*DOG*				
Picture 21b	A:	*AREA*				
Picture 21c	A:	*DOG*	B:	*AREA*	X:	*GROUND*

Picture 22

Picture 22a	A:	*MAN*				
Picture 22b	A:	*ANIMAL*				
Picture 22c	A:	*MAN*	B:	*ANIMAL*	X:	*GROUND*

Picture 23

Picture 23a	A:	*GIRL*				
Picture 23b	B:	*GRAVE*				
Picture 23c	A:	*GIRL*	B:	*GRAVE*	X:	*GROUND*

Picture 24

Picture 24a	A:	*LION*				
Picture 24b	A:	*CONDOR*				
Picture 24c	A:	*CONDOR	B:	*LION*	X:	*GROUND*

Picture 25

Picture 25a	A:	*MAN*				
Picture 25b	A:	*BOTTLE*				
Picture 25c	A:	*MAN*	B:	*BOTTLE*	X:	*GROUND*

Appendix B
The Visual Environment (i)

Photographs 1 to 4 show views of Amantaní including the interior of the new *wawawasi*, or playschool.

Photographs 5 to 8 show views of Puno.

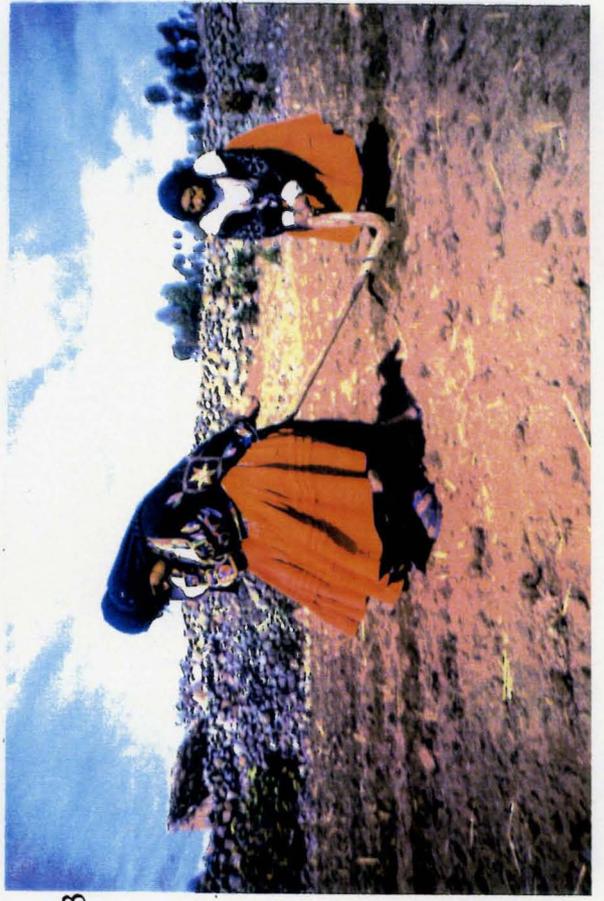
Photograph 1



Photograph 2



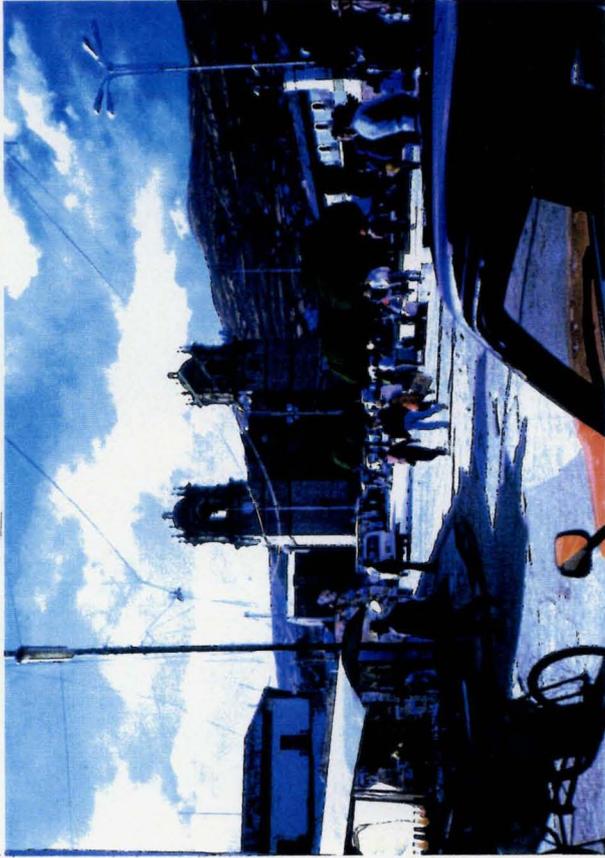
Photograph 3



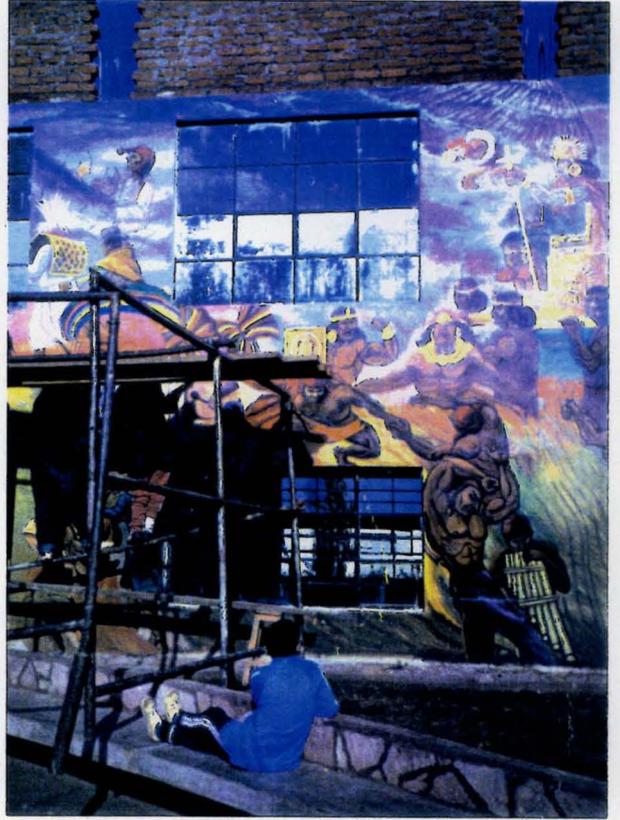
Photograph 4



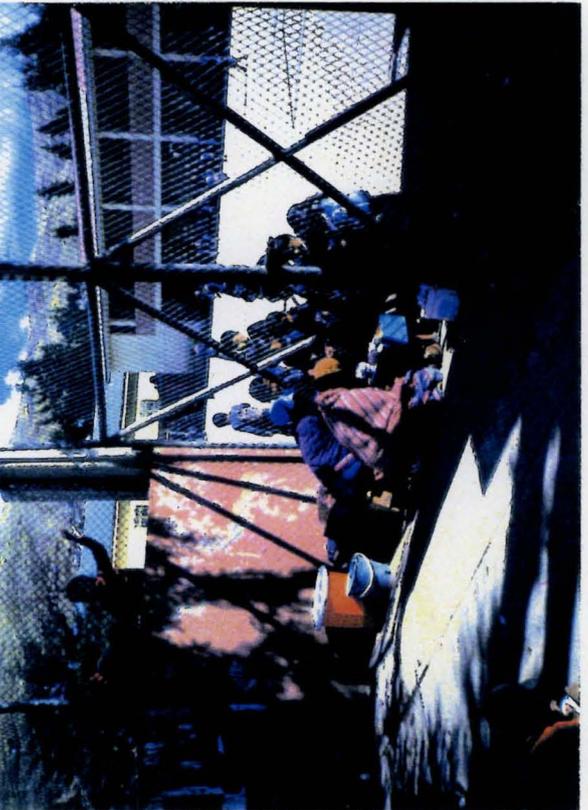
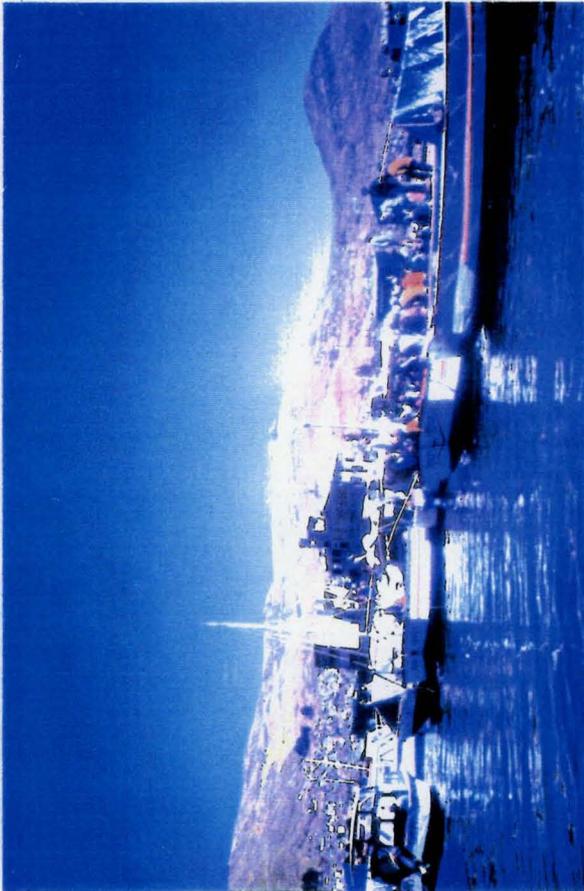
Photograph 6



Photograph 8



Photograph 5



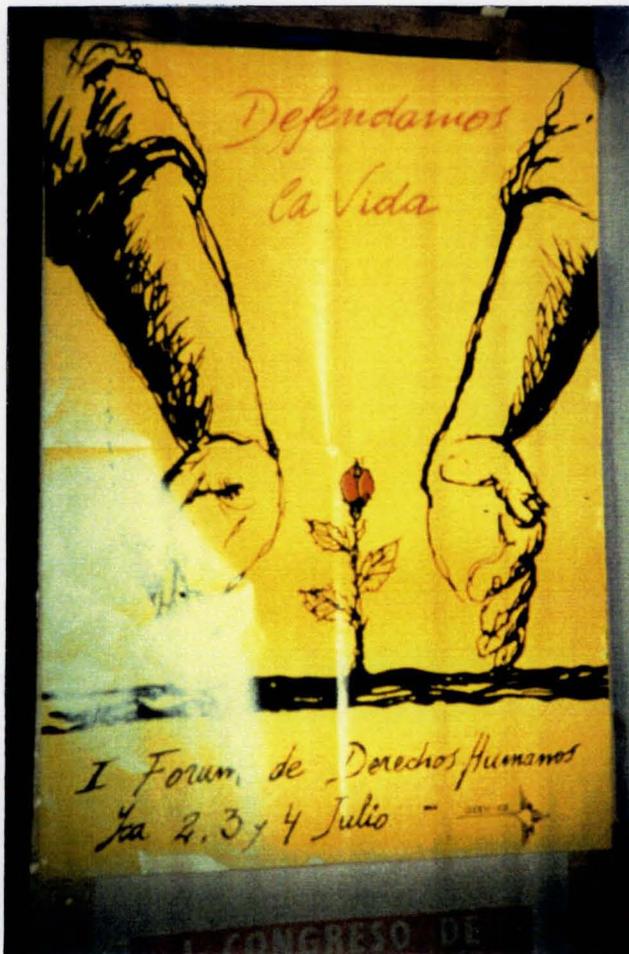
Photograph 7

Appendix C
The Visual Environment (ii)

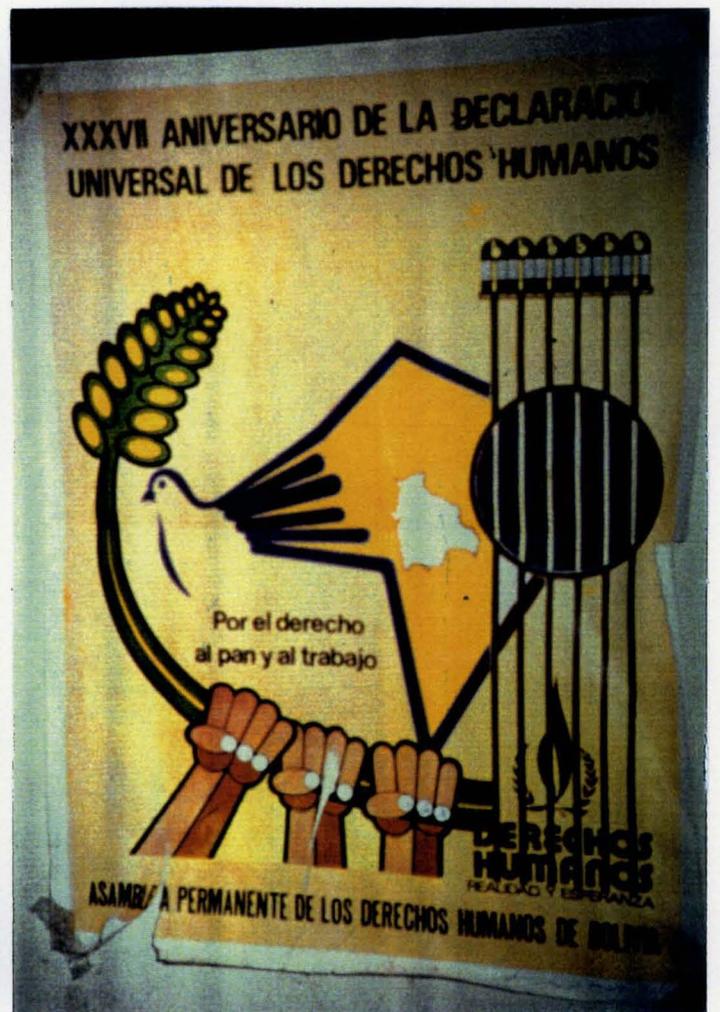
Posters 1 to 4 were photographed in Amantaní's community hall;
Poster 5 and 6 in Puno;
Posters 7 and 8 near Temuco in southern Chile.

Poster 2

Poster 1



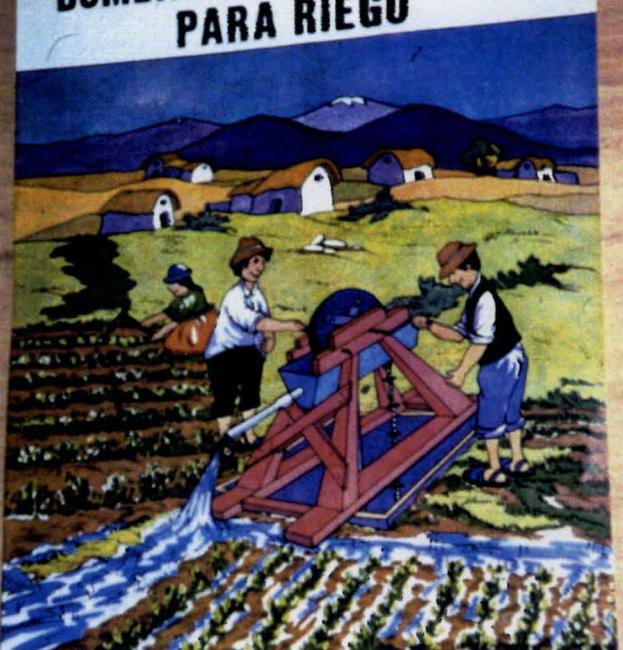
Poster 3



Poster 4

Poster 6

BOMBA MANUAL DE SOGA PARA RIEGO



Para mayor información sobre la adquisición de la BOMBA DE SOGA, diríjase al

CENTRO DE ASESORIA PARA BOMBEO DE AGUA
Calle Bolognesi 165, Puno
Teléfono No. 789

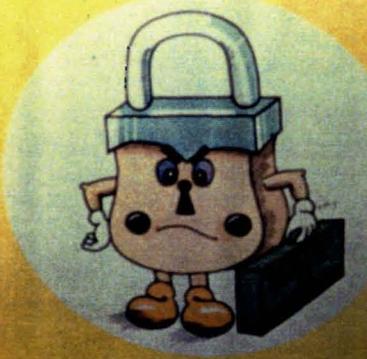
Convenio: Perú - República Federal de Alemania
CORPUNO - CONCYTEC - G.T.Z.

VENTAJAS

- Económico
- Durable
- Un caudal alto (hasta 150 lts por minuto)
- Manejable por una o dos personas
- Transportable
- Fácil de instalar
- Mantenimiento simple y de bajo costo
- Bombeo de agua hasta 6 metros de profundidad

Poster 5

ENTREGUE FACTURA SI NO...



TODA PERSONA QUE VENDE UN BIEN O PRESTA UN SERVICIO ESTA OBLIGADA A ENTREGAR FACTURA O COMPROBANTE DE PAGO, SIN REQUERIMIENTO DEL COMPRADOR.

Ministerio de Economía, Finanzas y Comercio Exterior
Dirección General de Contratación y Abastecimiento

Poster 7

ES TIEMPO DE CRECER




ALIANZA CRISTIANA Y MISIONERA

Poster 8

¡AYUDATE!



POR FAVOR NO BEBAS

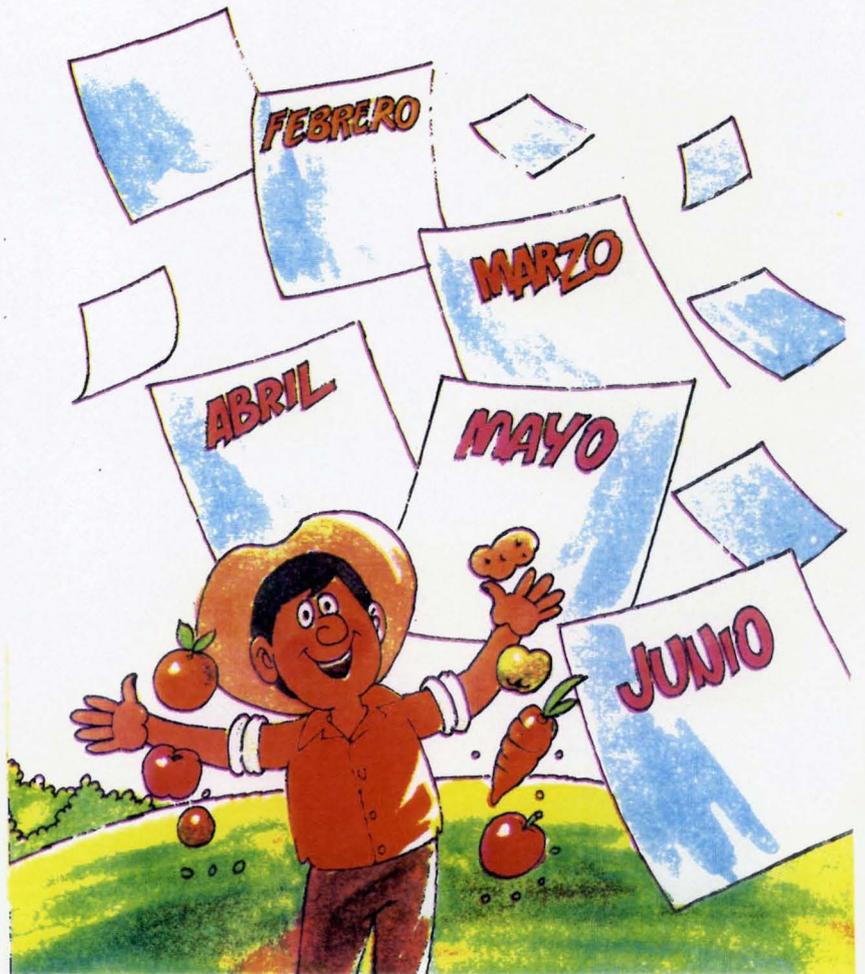
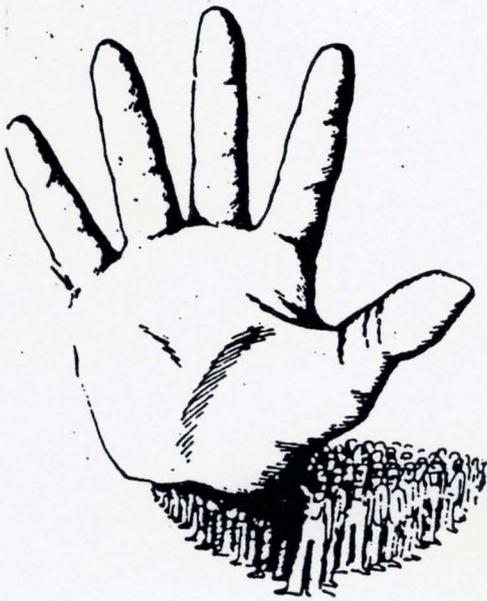
COMISIÓN CONTRA EL ALCOHOLISMO
POLICÍNICOS METODISTAS

ALLJANDRO SLEMAN
Bº AÑO C. METODISTA
1º PUNTO

Appendix D
Supplementary Pictures

S I TU QUIERES QUE TU CAMPO
PRODUZCA TODO EL AÑO,
HAZ COMO DON FLORENTIN.

Supplementary Picture 1



Supplementary Picture 3

