

David Richard Willings

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The response of readers to the imaginal content of comparable passages of English and Spanish poetry.

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ABSTRACT.

The imagery of fifty subjects was examined. The subjects were required to rate the intensity of their response to imaginal suggestions in all modalities on a five point scale. Those reporting an average score of 3.0 or more were invited to participate in the experiment on which this investigation is based. Fifty fragments of English poetry and fifty fragments of Spanish poetry in prose translation were presented to these subjects who were instructed to describe the imagery and emotions and sensations aroused by them.

The Spanish fragments aroused a significantly higher number of images and emotional reactions.

In order to determine whether this response was, in fact, a response to the imaginal content of the selections of verse or merely a response to prose as opposed to poetry, the response of five readers to selections of English verse and prose was investigated. No differences were observed.

The imagery of eighteen Spanish students was tested and the result compared with that reported by the English subjects. No differences were observed.

Finally, a quantitative investigation was made of a selection of English and Spanish verse. It was found that a significantly higher number of references to death and sadness were made by the Spanish poets and also that these poets used the vocative a significantly higher number of times.

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## CHAPTER 1.

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The Greeks were accustomed to begin their works with an invocation to the Muses. The Greeks held that the Muses were from the home of the great god Quetzalcoatl (and it is noteworthy that the son of this god is reputed to have come to earth as a singer). In those works that remain, thanks to the transcriptions of the conquistador priest, Father Garibay, we find the following recurring couplet:-

"From the house of the flowering butterflies  
Was the song born.

I heard it in my heart,

I, the singer.

In Aztec religious thought, a certain divinity was venerated in the butterfly. It was held that the disembodied soul would return to earth for a period as a butterfly.

The anonymity of a great amount of medieval artistry may be safely assumed to be the result of a belief that such work was a gift of God and an offering to God leading to a minimisation of the personal element we now know to be prominent: be such works a gift of God or no.

Our great grandparents might well have regarded an attempt to subject creative art to scientific scrutiny as something of a violation and a number of artists, especially the more self-conscious ones, would, even today, resent the intrusions of the scientist. Indeed, Amy Lowell, wrote a most scathing poem addressed to "A gentleman who wanted to see the first drafts of my poems in the interests of psychological research into the workings of the creative mind"

"To one only do I tell it, will I tell it all day long

## CHAPTER 1.

The Appreciation of Poetry.

Pending detailed scientific investigation, the question of whence comes poetry, and indeed, what is poetry, must remain the subject of continued literary polemics. Only in the last century or so have people ceased to be content with the age old belief that creative art is a gift of the Divine Powers and, as such, inscrutable.

The Greeks were accustomed to begin their works with an invocation to the Muses. The Aztecs held that art came from the home of the great god Quetzalcoatl (and it is noteworthy that the son of this god is reputed to have come to earth as a singer). In those works that remain, thanks to the transcriptions of the conquistador priest, Father Garibay, we find the following recurring couplet: -

"From the house of the flowering butterflies  
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"To one only do I tell it, will I tell it all day long



Only one can see the patches I work into quilts of song  
Crazy quilts I'm sure you'd call them, quite unworthy of  
your prong."

This idea of something intangible, one might even go so far as to say mystic, about creative art may reasonably be assumed to have had some effect on the appreciation of art. Indeed there may well be many lovers of art who may take the view that to subject the process at work to scientific investigation must detract from the appreciation of art. Nevertheless there can be no grounds for supposing this any more than one could argue that because the geologist is aware of the compositional and metamorphic factors of a mountain, he fails, as a result of his knowledge, to appreciate its external beauty.

Nevertheless investigation of the processes at work is fraught with many difficulties, most of these in respect of method. There was an outburst of interest in the subject of literary appreciation in the first three decades of this century. As might possibly be expected at that period, some laxity in regard to method has left us with a number of hypotheses; some plausible and possibly worth investigation, and some which must be treated as sheer wild speculation; and none of which proves anything whatever.

The main method of investigation was to take a selection of the work of certain poets and make a quantitative comparison.

In 1914, Groos (7) compared the work of Schiller, Goethe, Rossetti and Shakespeare, finding that Schiller's work contained double the number of optical qualities found in that of Goethe, and seven times the number found in that of Shakespeare. It was also found that 100 of Shakespeare's sonnets yielded 67 optical qualities, while 100 of Rossetti's sonnets yielded 230 optical qualities. This of course proves absolutely nothing except that Schiller exceeds in optical qualities used, the number used by three other poets. There seems to be no valid reason why the four poets should or should not be similar. As a literary investigation it is by no means without its interest, but to the psychologist it is of little value. Moreover one must agree with Stahlin, as quoted in Downey (6), that a



given sensory word does not necessarily imply a given sensory content.

Downey (4) suggests that a given predominance of suggestions in one modality may well indicate a preference for imagery in that modality. She herself investigated the work of Poe, Keats, Shelley, Swinburne and Blake and found that:-

- 1) Poe gives the highest number of auditory suggestions
- 2) Shelley gives the highest number of olfactory suggestions
- 3) Swinburne and Keats give an excess of suggestions of felt kinaesthesia (1)

This investigation has the redeeming feature that all the poets are of the same language group and largely within the same broad period; and her findings are interesting, but the whole investigation remains essentially a "drop in the ocean". Even if she had selected all the poets of that period and devised a completely reliable method of investigation, it would prove very little.

In her "Literary Synaesthesia" she reported on an investigation of the above poets examining suggestions of possible synaesthesia. She found only one piece of unambiguous evidence of such a process. This was found in Poe's footnote to his 'Al Aaraf'. "I have often thought that I could distinctly hear the sound of darkness as it stole over the horizon." She suggests that Swinburne's poetry furnishes the best of what she calls "Possible synaesthesia". He writes of sounds that shine, of song visible and of coloured sounds.

(1) One is of course left with the question of what Downey understands by felt kinaesthesia, and on what grounds she assumes these to be excessive. This must remain a matter for pure conjecture. She does not make clear the steps she has taken to ensure an objective finding.

(15) found that in the hypnagogic and hypnopompic states many kinds of seemingly unusual imagery were manifested by subjects. This suggests that these sensations may well be more common than is popularly supposed and the paucity of manifestations due either to their fleeting nature or the difficulty of finding adequate language forms to give them expression, or even to an habitual tendency to inhibit

Blake was found to describe the auditory in visual terms, e.g.:-

"And all thy moans flew o'er my roof; but I have called them down."

Shelley seems to translate music into olfactory terms:-

"Music so delicate soft and intense  
It was found like an odour within the sense"

And also:-

"Thine old wild song which in the air  
like homeless odours floated."

It may be that this is purely metaphoric. It may be as Max Nordau has suggested, and of which suggestion Downey takes account, a mere striving after novelty. It is doubtful whether it can be taken to imply that the poet necessarily, as Downey suggests in this work and also in her "Creative imagination," experiences concordant imagery in two or more modalities to a degree not experienced by the average person. It is not known how common such experiences may be. Downey pointed out at that time that there was no case of olfactory audition or olfactory vision on record. Mikkellam and Simpson (15) in 1955 still do not report any such cases in the list of synaesthesia types found to exist. But this in itself can only be taken to prove that as yet no person has manifested such imaginal processes in a psychological laboratory. There is no means of knowing as yet whether or not any number of people we meet in the street every day experience this type of imagery. Delay Gerard and Racanier (3) found in 1951 that under the influence of mescaline synaesthetic reactions could be produced in subjects who did not manifest them under normal conditions. Mikkellam and Simpson (15) found that in the hypagogic and hypnopompic states many kinds of seemingly unusual imagery were manifested by subjects. This suggests that these reactions may well be more common than is popularly supposed and the paucity of manifestations due either to their fleeting nature or the difficulty of finding adequate language forms to give them expression, or even to an habitual tendency to inhibit

such reactions.

Certainly there would appear to be little correlation between supposed synaesthesia and aesthetic pleasantness or poetic appreciation. Downey selected thirty-four fragments she felt to be suggestive of a synaesthetic reaction in the poet, and asked twelve subjects to rate their aesthetic pleasantness as compared with fragments not considered to be suggestive of synaesthesia. To the modern psychologist complete reliability cannot be attributed to the findings, since no control is apparent in respect of the aesthetic capacities of the subjects. Nevertheless her findings are not without interest and one feels that they do leave us with a question, the answer to which can only be left to the opinion of the individual investigator. Is it worth investigating whether the poetry which may well appeal to the individual reader may be influenced by the appeal of the imaginal suggestions in the work to the dominant mode of imaging of the general reader? Briefly, her findings were:

1 The synaesthetic fragments were largely found meaningless, except to the three synaesthetic subjects.

2 An average of twenty synaesthetic fragments were placed among the first fifty fragments (i.e., the more pleasant ones)

3 Fourteen synaesthetic fragments were placed among the second fifty (i.e., less pleasant).

4 With repeated judgements, as many synaesthetic fragments waxed in popularity as waned. Downey points out that this does not substantiate the suggestion, the author of which she does not name, that repeated reading overcomes the strangeness of synaesthetic material.

5 Taking the twenty most pleasant and the twenty least pleasant fragments, five synaesthetic fragments were found in the first group and seven in the second group; a result to be expected from a chance selection.

All of this work is based on the assumption that poetry depends for its appeal largely on its ability to rouse images. In



depend on how striking the subject finds the comparison; a factor which would probably depend largely on the individual reader, and to some extent on that fragment concerned.

1914, Gross (7) took up the suggestion of Pluss, that the value and purpose of poetic comparison in similes and metaphors is to be found in the creation of a common denominator ("Gestamvorstellung") for both principal and subordinate object. He found the following reactions present among eighty-two subjects:-

- a) The imaginal experience chiefly concerned with the main object.
- b) Imaginal reaction largely concerned with the figurative portion of the comparison,
- c) Image for the principal object only,
- d) Image for the accessory object only,
- e) Equally intense representation for both parts.
- f) Oscillation of images.

Representation of equal intensity was found to destroy aesthetic pleasure. Oscillation of images was found either to be pleasant, or to destroy the feeling. Only one subject reported an image purely for the main object.

Downey (6) in her turn found that of 25 subjects reading the fragment:-

- 1 "The plumed insects swift and free like golden boats on a sunny sea,"
- 16 imaged both parts of the simile
- 5 " the first part only,
- 3 " " second " " , and
- 1 was completely occupied with the melody.

She also found that attempts to form an image, fusing both parts of the simile together, destroyed aesthetic pleasure. Here one is left in doubt as to the reliability of such an experiment where only one fragment was used. One would seem justified in asking whether a great deal may or may not



depend on how striking the subject finds the comparison; a factor which would probably depend largely on the individual reader, and to some extent on that fragment concerned.

Downey (5) then went on to investigate the imaginal reaction to poetry by examining the images aroused by fragments of the work of the five poets on which she has based the larger part of her investigations. She presented each fragment either visually or orally to the subjects, invited them to describe the image, rate its intensity on a four point scale and the aesthetic pleasantness of the fragment on an eight point scale. She claims to have found that:-

- 1) The imaginal reaction was largely determined by the type of imagery experienced by the person concerned. This cutaneous imagery was only important for five of her twelve subjects; olfactory imagery was important for three subjects and gustatory imagery was of little significance.
- 2) Self projection was frequent in the imaginal reaction. This appeared to fall into four categories:-
  - a) Visual self projection where the subject's image of the self was not accompanied by kinaesthetic self reference.
  - b) Visual self projection, where the subject's image of the self was accompanied by kinaesthesia. For example, a subject reported an image of the self lying at some distance away and a kinaesthetic impression of this.
  - c) Kinaesthetic self projection, either localised or coalescing, with a visualisation of some object or person described in the fragment.
  - d) Organic or emotional identification of the self with some object or person visualised.

A few other points... for rating the intensity of... certainly be divergent... within the ratings Downey presented... set out by

3) The percentage of images through direct suggestion was, according to Downey's method, significantly higher than those indirectly aroused.

4) There was some correlation between the intensity of imagery and aesthetic pleasantness.

While this investigation is of interest both to the literary scholar and the psychologist, it cannot be held to prove anything. The success of direct arousal of images is no indication that the poet concerned actually experienced an image in that modality. Moreover, one is inclined to question the criterion which Downey applies. She cites as the total number of possible images, the number of suggestions in the fragments by each poet multiplied by the number of subjects and compared this with the number of images actually reported. For an investigation of this nature, one must question the reliability of this: and therefore, the validity of this particular finding. Moreover, one must question what is understood by the term "imaginal suggestion". One can hardly believe that a psychologist of Downey's standing would have classified her imaginal suggestions by an entirely subjective method, but it would be a matter of investigation in itself to devise a method of classification that was entirely free from the influence of the personal imagery of the investigator or investigators. To give a personal example, I myself have practically no auditory imagery. Investigating the imaginal response of readers to literary material, while fully aware of this defect, I was, nevertheless, consistently amazed, indeed one might say puzzled, by the material in which most subjects found auditory suggestions.

It would not appear completely safe to assume that one imaginal suggestion can give but one imaginal reaction in each subject. The number of possible images would appear to be in itself a matter for assessment in the light of experimental findings.

A four point scale would hardly appear adequate for rating the intensity of an image. There would almost certainly be divergent degrees of vividness or faintness within the ratings Downey prescribed. Moreover, the tabulations set out by

Downey, as purporting to prove the existence of a correlation between intensity and aesthetic pleasantness, do not appear to achieve their objective. The number of fragments rated as very vivid and classed as aesthetically very pleasant, are not significantly higher than those classed as very unpleasant. An analysis of variance shows a relatively even distribution of the fragments as rated and classified.

It would appear that Downey's selection of fragments was not subjected to the control that would be required for a more modern investigation. Nevertheless, her findings do suggest that the subject may be well worth investigating by more rigorous methods.

On the subject of rhythm Downey bases her suggestions on the long since outdated idea, that reaction to rhythm is determined by mental tempo which is, in its turn, determined by the Basal Metabolic Rate. She can offer no suggestions on the question of whether rhythm in itself can arouse images and the question, with which she opens her investigation of poetic expression and appreciation, of whether poetry depends for its appeal on its rhythmic qualities or its ability to rouse images, is in itself a subject for investigation. Certainly one must reject as completely groundless her suggestion that in the throes of some highly powerful emotion it is a natural tendency to write in verse.

National factors in poetic appreciation, and indeed in poetic creation, have been largely ignored, despite the rise of interest in national factors in the past two decades. That national factors do affect creative literature is suggested by the work of McGranahan and Wayne (13), who in 1948 chose the forty-five most popular plays in America and Germany in the year 1927. This particular year was chosen because nationally and internationally it was a relatively undisturbed period for both countries. They found that:-

- 1) American plays more frequently had a happy ending,
- 2) American plays showed a greater concern for love and personal morals,
- 3) American plays more often had a contemporary setting,



4) German plays showed a greater concern with social and political problems, usually with a touch of the ridiculous.

5) Women much less frequently played a central role in German plays and, when they did, they tended to be more masculine in characteristics and action than in American plays.

6) The characters reformed or changed in the course of the action for less in German plays than in American plays.

These findings are well worth comparing with the work of Kracauer (10), who examined German films over a long period up to the seizure of power by Hitler, and found the all pervading theme to be a respect for authority in all its forms, and the depiction of a power figure as evil, extremely rare.

Wolfenstein and Leites (18) examined a selection of American films in order to find whether they threw any light on the personality of the individual American. They found that:-

1) In respect of the relationship between the sexes:-

a) Women frequently had a central or even authoritarian role

b) The "good bad Girl", who appeared bad and turned out to be good, was a frequent protagonist.

2) In respect of family life:-

a) The protagonist usually has shadowy or even absent parents,

b) He is more preoccupied with the family he establishes than the one from which he comes.

3) In respect of the relation to authority, authority figures; the police, people in a



supervisory capacity, and people in an administrative capacity, are frequently made to look ridiculous.

It would appear from this that national factors do have a formative part to play in creative art.

It is reasonably safe to assume that such factors would have an effect on the appreciation of such work. There can be little doubt that a German's attitude would shape his entire reaction to a film, making authority appear ridiculous in an entirely different manner from the possible attitude of an American seeing the same film. That this attitude to authority is a definite German characteristic and the predominance of it in the above mentioned forms of expression not largely due to any other cause, is shown by the investigation of McGranahan (12) who found that, to the question "Do you think a boy is justified in running away from home if his father is cruel or brutal?" 30% of his American subjects and 50% of his German subjects, all of high school age, answered "no".

It remains to be established whether such differences would emerge in poetry. It also remains to be established if such differences would affect poetic appreciation to any degree. No investigations seem to have been carried out into the possible difference in national factors between English speaking and Spanish speaking, or indeed, any Romance Groups. There are a host of works by people who have claimed to analyse the Spanish temperament, but their evidence is so completely anecdotal, so entirely subjective, and often so completely contradictory, that it cannot be taken as any more than an indication of one or two notions that may possibly merit investigation. A perusal of the appropriate works by Havelock Ellis and E. Allison Peers would result in two entirely irreconcilable impressions of the same regions of Spain at the same period.

Carlos Bousoño (2) has made a detailed investigation of the work of Antonio Machado, Juan Ramon Jiménez, Federico García Lorca, Gustavo Adolfo Bécquer, Vicente Aleixandre and Damaso Alonso, and finds that the difference between poetry and ordinary language is that "En la poesía las intuiciones

son más vastas y más complejas que en el lenguaje ordinario" (Op Cit p 28). He finds the following elements existent in poetic expression:-

- 1) Complexity of imagery, generally highly individualistic,
- 2) Superimposition of images,
- 3) Emotional factors determining the nature of superimposition,
- 4) Condensation and suggestion in poetic expression,
- 5) Selectiveness in regard to images

In respect of complexity of images, Bousoño claims that these are experienced not in succession, but simultaneously. This he bears out with allusions to the work of Antonio Machado. Referring to his poem on a pool, a despondent work reflecting the poet's tiredness of life, Bousoño claims "The poet has seen a pool and experienced sadness and tiredness of life. But the vision of the pool, the sadness, and the tiredness have not come to him in succession; but with simultaneity, moreover with interdependence." (Trans. from Op. Cit p118).

From the work of Juan Ramón Jiménez he takes several examples of the use of synecdoche in poetry, and suggests it to be a characteristic of poetic expression. The poet talks of "barrios eutornados" (suburbs set ajar) "cielos rápidos" (swift moving skies) and many other applications of adjectives Bousoño considers to be indicative of an inter-relation of images not found in ordinary speech.

On selectiveness, condensation and suggestion, he comments that this, particularly evident in the work of Machado, adds to aesthetic pleasure since it leaves one free to form images. He compares the suggestion in poetry with the suggestion in a joke. He goes on to analyse in some detail the "evocacion" and the "realidades aludidas". He gives an example with a joke, "A husband and wife were woken up by a loud noise in the middle of the night. The wife exclaimed 'My husband!' The husband jumped out of the window." The 'realidades aludidas' are the infidelity of the husband and of the wife. He gives an example of suggestion in poetry where the 'realidades

aludidas' would, however, adequately describe the process referred to.

aludidas' are seen to relate to the impending death of the poet from the lines:-

"- - - - de un amor prendido  
- - - -  
yo voy hacia la mar, hacia el olvido"  
( ) - - - seized with love  
I go towards the sea, towards oblivion

and the conclusion:-

"No me llameis porque tornar no puedo"  
(Do not call me, for I cannot turn back).

Four types of superimposition are listed by Bousoño:-

- 1) Temporal,
- 2) Spatial,
- 3) Situational (1)
- 4) Significational

Temporal superimposition may be the imposition of the past on the present. Bousoño quotes a poem by Vicente Aleixandre where the poet observes a table and contemplates its origins. This does appear rather difficult to accept as a superimposition of ideas, and indeed, as anything at all outside the range of the normal associational reflections of any intelligent person. His second example seems more plausibly to suggest some superimposition of ideas, although associational factors cannot be ruled out. In a poem addressed to his mother, Damaso Alonso, shows himself aware that she is aged, toothless, tired and crippled with rheumatism, and exclaims:-

"No importa madre mía, no importa  
tu eres siempre joven,  
eres una niña,  
tienes once años."

"It does not matter, my mother, it does not matter."

---

(1) In translating the relevant parts of this work I have sought to keep as closely as possible to the terms used by the author. 'Semantic' would, however, adequately describe the process referred to.



... You are forever young, ordinary language, because in  
one you are a little girl, an alternative examination of  
repro you are eleven years old." conversation and compared  
the forms of expression used with the forms of expression used

For an example of spatial superimposition Bousono turns  
to "Ode to a Grecian Urn" by Keats. He suggests that it is  
this process that enables the poet to project the scene to a  
state of permanence in classical Greece.

Situational superimposition Bousono sees in a poem of  
Juan Ramon Jiménez where, contemplating a poor child in a suit  
too big for him, the view of this oscillates from the eye of  
the poet himself to the weeping father of the boy, and finally  
to the boy himself. There is no clear cut transference of the  
viewpoint and the line:-

"hijo  
pareces un niño rico"  
(Sonny, you look like a rich boy),

concludes the poet's scathing comments on the absurdity  
of the spectacle, the weeping father's comments and a similar  
verse concludes with the child telling the fading day:-

"Ea!  
Yo parezco un niño rico"  
(Aha, I look like a rich boy!)

On signification superimposition Bousono quotes a  
poem by Vicente Aleixandre, in which he plays on the word  
"alma" in its meaning of soul, or more correctly 'inner being'  
from the Latin 'anima', and the words "alma mia" which is the  
English equivalent of "my darling".

One must bear in mind that Bousono is a literary critic;  
although apparently fairly well read in some aspects of psycho-  
logy. He appears to have selected the material which bears  
out his hypotheses. One can neither accept nor reject his  
suggestion, that the imagery expressed by the poet is more



CHAPTER II

The Response of Readers to Selected Fragments of English Poetry and Spanish Poetry in Prose Translation.

complex and more vast than in ordinary language, because no one has as yet recorded and made an objective examination of representative samples of everyday conversation and compared the forms of expression used with the forms of expression used in poetry.

The same criticism moreover must be made of Bousóno as of Downey. The selection of poetic works and of poets is neither wide enough nor representative enough, to warrant the formation of more than a suggestion that the idea may merit investigation.

His remarkably detailed analysis of the "evocación" and the "realidades aludidas" of some of the works of Antonio Machado must be regarded as simply the imaginal reaction of Bousóno himself (and as such of immense interest), and his proposed hypothesis, that poetry appeals because by suggestion it leaves the reader free to form images, must be taken merely to mean that Bousóno himself shows a preference for poetry that leaves him personally free to form images.

Nevertheless it is felt that some investigation of the imaginal response to different types of poetic material may be profitable. In the following investigation it is sought to examine the response of readers to fragments of selected English poetry and Spanish poetry in translation. No attempt is made to examine the imaginal content of either group of fragments because it is felt that such an examination would hardly be likely to be reliable or strictly relevant. It has already been pointed out that it is difficult to define the term imaginal suggestion with complete objectivity. Subjects of a relatively uniform degree of imagery are used. It is hoped that this investigation may throw some light on the question of how far the imaginal response is governed by the nature and content of the material, and how far it is governed by presumably subjective factors.

- S 4 Undergraduate student of Psychology, Age 19, (Synaesthetic)
- S 5 Undergraduate student of sociology, Age 18, (Asynaesthetic)
- S 6 Undergraduate student of Psychology, Age 20, (Synaesthetic)

CHAPTER 11The Response of Readers to Selected fragments of English Poetry and Spanish Poetry in Prose Translation.

PROBLEM: Based on the investigation by Downey (5) it was sought in this enquiry:-

- a) to examine the difference, if any, between the imaginal reaction to a selection of English poetry and to a comparable selection of Spanish poetry,
- b) to examine the possibility of a difference between the imaginal reaction to poetry and the imaginal reaction to some other literary form,
- c) to examine the influence of the readers' dominant mode of imaging on their imaginal reaction to given material.

MATERIALS: Questionnaire on Imagery (see Appendix 1)  
 50 cards bearing typed fragments of English Poetry.  
 50 cards bearing typed fragments of Spanish Poetry in Prose Translation. (see Appendix 11)

SUBJECTS: 50 female students of Bedford College, University of London, completed initial questionnaire on imagery.

10 of these subjects were selected for the test of the imaginal response to the fragments listed under the materials heading.

S 1 Undergraduate Student of Psychology, Age 21.

(Asynaesthetic)

S 2 Postgraduate Student of Psychology, Age 23,

(Asynaesthetic)

S 3 Undergraduate student of German, Age 20,

(Synaesthetic)

S 4 Undergraduate student of Psychology, Age 19,

(Asynaesthetic)

S 5 Undergraduate student of sociology, Age 19,

(Asynaesthetic)

S 6 Undergraduate Student of Psychology, Age 20,

(Synaesthetic)

- S7 Undergraduate Student of Psychology, Age 18,  
(Synaesthetic)  
S8 Undergraduate Student of English, Age 19,  
(Asynaesthetic)  
S9 Undergraduate Student of Psychology, Age 18,  
(Synaesthetic)  
S10 Undergraduate Student of Sociology, Age 19,  
(Asynaesthetic)

#### METHOD:

##### 1) Dependent Variables

- i Imaginal responses of the subjects to the two selections of fragments  
The subjects were required to describe the images roused by each fragment in full detail. Images were noted in the following modalities:-

- a) visual
- b) auditory
- c) olfactory
- d) gustatory
- e) cutaneous
- f) kinaesthetic posture
- g) kinaesthetic movement
- h) visualized movement.

##### ii Intensity of images roused in each modality.

The subjects were required to note the intensity of each image on the following five point scale:-

- |                           |     |
|---------------------------|-----|
| Vivid enough to seem real | - 5 |
| Vivid but not quite real  | - 4 |
| Quite vivid               | - 3 |
| Not very vivid            | - 2 |
| Rather hazy               | - 1 |
| No image                  | - 0 |

Variations of these ratings were allowed if and where appropriate. It was realised that



individual differences and indeed, individual concepts of vividness would account for some, if not all, of these ratings. Nevertheless it was felt that a relative scale of intensity of images experienced by each subject individually might be obtained by this method.

- iii Differences between the imaginal reactions of each subject to the fragments of English poetry and to the fragments of Spanish poetry in translation.

The fragments from the two groups were presented at separate tests and the following differences noted:-

- a) between the total number of images reported by each subject for each group of fragments
- b) between the number of images in each modality reported by each subject for each group of fragments
- c) between the average intensity of images reported by each subject for images in each modality for images in each group of fragments.

## 2) Independent Variables

Imagery habitually experienced by subjects.

In the initial questionnaire on imagery it was largely sought to determine the subject's ability voluntarily to form an image in response to given suggestions in the following modalities:-

- a) Visual
- b) Auditory
- c) Olfactory
- d) gustatory
- e) cutaneous
- f) kinaesthetic



It was also sought to elicit some indication of the possibility of synaesthetic reaction. The subjects were invited, if and where possible, to relate colour to the suggestions. They were also invited, if and where possible, to relate colour to a short list of emotions and attitudes.

Finally the reactions of the subjects to an ambiguous literary expression was examined by inviting a description and intensity rating of the imagery aroused by each of the following:-

"The voice of thunder"

"A ray of light creaking down the stairs"

"The red hammers of the dawn place the black night  
on their forge."

"The bare black cliff clashed round him."

While it was recognized that some subjects may well experience strong imagery in one or two modalities only, it was desired for the purposes of this experiment to find subjects who experienced a reasonably high degree of imagery in all modalities, and the test was designed to this end.

Thirteen subjects obtained a mean score well above average. Of these thirteen, three were unable to participate in further experiments. The ten remaining subjects were invited, two months later, to complete a further questionnaire in respect of their ability to form images; the only change being the substitution of different imaginal suggestions. The scores were compared with the scores for the previous test and it was found that there was a mean variation of + .037 in favour of the second test. This variation was considered negligible.

Those subjects who had been able to relate colour to the emotional and attitudinal suggestions were invited to relate the first colour that suggested itself to the following:-

1 Gustatory suggestions of raspberries, red-  
currants, gooseberries, grapes, oranges,

blackberries, walnuts, parsnips and tomatoes. It was sought in this way to determine the importance of associational factors. It was felt that where associational factors were prominent, the correct associational colour would be related to the stimulus word.

2 Cutaneous suggestions of silk, canvas, wool (in knitted form), linen, towelling, nylon flannel, bath, soft rubber, polished wood, and rough wood. Subjects were invited to examine these cutaneously when they had been transferred from behind a screen to a chair under the desk, thus ruling out all visual factors.

Finally the subjects were invited to give details of any image or sensation of any kind other than those pertaining to the appropriate modality evoked by any of the stimulus suggestions. Only three subjects were able to do this and, following a lapse of two months, they were invited to complete the relevant parts of the test, again indicating responses remembered from the previous session. In all three cases consistency was found. There was an average of 24.8 responses per subject. The average number of changes in response per subject was 1.75. The average number of remembered responses was 3.6.

Within the numerous limitations of the material it was therefore assumed that:-

S6 appears to translate the auditory into visual terms,

S7 appears to experience coloured gustation (this subject was the only one who consistently related colours other than the ones to be expected from association to the gustatory suggestions), and

S9 appears to experience coloured audition.

During the experiment on the imaginal reaction to the fragments, it was also found that S3 appears to give tactile values

to the imaged scene whereupon the imagery yields an emotional impact.

### 3) Controlled Variables.

#### i Selection of subjects.

It was desired to carry out this experiment with subjects possessing a high overall degree of imagery, and ability voluntarily to form images. A mean score was taken for the suggestions in each modality and for the ambiguous literary expressions. Those subjects who reported a mean rating of 3.0 or above were invited to participate in the principal experiment. Thirteen reported such a rating. Of these, three were unable to participate.

#### ii Selection of fragments.

These were taken from the following anthologies:-

"The Penguin Book of Spanish Verse" Ed. J.M. Cohen, and

"The Pocket Book of English and American Verse"

New York Ed. M.E. Speare.

It was felt that these two works meet the requirements of representativeness and comparability in the following respects:-

- a) Both anthologies cover the same broad period, i.e., medieval to contemporary.
- b) Both anthologies are stated in their respective introductions to be compiled with the object of giving the general reader an overall picture of the poetry concerned.
- c) Both anthologies embrace the work of the appropriate part of the American continent.
- d) It is largely self-evident that the two anthologies consist of the works considered by their respective editors to be the most representative of the poetry dealt with. While it is recognized that the selection represents in each case the personal choice of

look at her garments

the editor, this choice in itself is based on expert judgement and may be considered to furnish, for the purpose of this experiment, a selection of material governed largely by chance and of adequate representativeness. Neither of the works are as exhaustive as the appropriate Oxford Books of Verse, These were discarded in favour of the anthologies used because it was felt that the Oxford Book of Spanish Verse was not wholly representative, in that it includes a great deal of inferior verse by philosophers, novelists and politicians, who, having already made their names in these fields, occasionally expressed themselves in verse of a poor quality and often of a very highly individualistic nature. To use this work, although the standard work, a criterion of poetic quality and representativeness would be needed.

Selection of the fragments was made by the following method. Beginning with two poets writing at comparable periods, Christopher Marlowe (1564-1593) and Fray Luis de Leon (1527-1591), the first verse or couplet (1) of the first verse (2) of the first work included by each poet was typed on a postcard.

- 
- (1) In the Spanish province of Andalusia it is a frequent literary device to open a poem or traditional song with a couplet stating the theme to be developed.
  - (2) The only exception to this was in the case of the poem "The Bridge of Sighs", by Thomas Hood, wher it was felt that the first verse:-

"Al aire se serena"  
"One more unfortunate,  
Weary of breath,  
Rashly importunate,

(2) (From "Gone to her death.")

did not adequately convey the theme of the poem itself (death by drowning) and it was therefore unlikely to rouse imagery at all cognate with the theme. It was therefore decided to include the second verse and part of the third as follows:-

(1) The latter part of the 18th century was a very barren period in "Take her up tenderly" ting from the end of the Siglo de Oro lift her with care movement. No major poetic work was produced so slenderly literary work did appear was merely Young and so fair earlier French works.

Look at her garments



The cards were then turned face downwards and a colleague of the experimenter invited to pick fifty cards from each group, in no case observing the face of the cards. The fifty fragments so selected from each group were used for the experiment.

### iii Arrangement of fragments.

The fragments were numbered according to chronological order and arranged as follows:-

- Group 1, fragments 1-25 (English poetry, Late C 16 to Early C19)
- Group 2, fragments 26-50 (Spanish poetry, Late C16 to Mid C18 (1))
- Group 3, fragments 51-75 (Spanish poetry, Early C19 to contemporary)
- Group 4, fragments 76-100 (English poetry, Early C19 to contemporary)

### iv Translation of fragments.

It was recognized that translation could well be influenced by the experimenter's own imaginal reaction to the fragments to be translated. The translation of J. M. Cohen was adhered to in all cases with the exception of:-

- a) In fragment 26 it was felt that the translation of the line:-

"El aire se serena"

by the English:- "being quiet in my house."

"The air clears"

(2) (From Previous Page Cont'd.)

"Look at her garments

Clinging like cerements

While the wave constantly

Drips from her clothing"

- (1) The latter part of the 18th century was a very barren period in Spanish literature lasting from the end of the Siglo de Oro to the Romantic Movement. No major poetic work was produced. Indeed what little literary work did appear was merely poor imitation of earlier French works.

was too free as a translation. The word 'aire' implies atmosphere and the adjective 'sereno' from which the verb 'serenarse' is derived, is directly translatable as 'serene'. It was, however, felt that to render this line literally:-

"The atmosphere becomes serene" would influence imaginal reaction by its artificiality, and the line was rendered:-

"The air becomes calm".

b) In fragment 31, the translation by Cohen of the lines

"En una noche oscura  
con ansias en amores inflamada,"

by the English:-

"In a dark night, inflamed by love's desires"

was felt to be unlikely to rouse an imaginal reaction at all cognate with the sense of the content implied in this allegorical description of a mystical experience by St. John of the Cross. The word 'divine' was therefore inserted before the word 'love'.

c) In the same fragment the line:-

'estando ya mi case sosegada'

was translated by Cohen:-

'all then being quiet in my house.'

It was felt that the word 'quiet' may well imply absence of noise. The Spanish word 'sosegada' implies a great deal more. The Cuyas-Appleton Spanish dictionary gives as the English for the verb 'sosegar; 'to appease', 'to lull', 'to quiet; and for the noun derived therefrom; 'pacifier', 'appeaser', 'quieter'. The line was therefore rendered:-

"all then being at peace within my house'.

v. Scoring of responses.

intensity level 3 and his tallness at 4.

An arbitrary system of scoring was quite obviously essential. If each scene imaged were scored as one image, the subject who reported, 'I see a girl leaning out of a window,' would receive the same score as the subject who reported the same image, described the period of the girl's dress, her headwear, the front of the house in which the window was situated, and reported in addition a visual impression of the movement of the curtains in the wind. Similarly, the subject who reported, 'I see a man in the distance,' would receive the same score as the subject who reported, 'I see a man in the distance walking towards me.'

While it was recognized that just as one perceives or may perceive a whole scene, allowing for the shift of attention, so one may well image a whole scene, there was a further objection to counting the scene as one image. Where imagery in other modalities was also present, it would entail giving the other image a place of equal importance with the whole visual impression of the whole scene. It may be argued that such may very well be the case in such an image as a rainstorm, with an olfactory impression of the rain on dry ground. The topic remains to be investigated, but it would seem that the most likely process at work is that we see the rain falling, we see the ground, we see the ground is wet, and related to this last factor only is an olfactory impression. For the purposes of this experiment, to assume otherwise might well give misleading results. For example, in the case of the subject who frequently visualized pastoral scenes accompanied by cutaneous imagery of the feet on grass or earth; and the bands on a fence, tree, or rail; and almost always the feel of rain, wind or sun, the result obtained by such a method of scoring would imply that in many cases this subject's cutaneous imagery is 50-100% more important than her visual imagery: an implication not borne out by the initial imagery test and sufficiently misleading to border on the absurd.

Moreover divergences were found in the intensity reported for details of the same imaginal response. A subject reported "I see a man with big hands" and rating the intensity said "I give the man 4 and his hands 5." Another subject reported a visual impression of a tall man, rating the man at



intensity level 3 and his tallness at 4.

Studies of attention have shown that, in ordinary visual perception, certain details stand out, others remain lacking in clear definition, and yet others may escape notice. It is known that but a fragment of what we see retains any clear definition in the memory. It would indeed be inexplicable if the same process did not manifest itself in imagery. All subjects except S9 reported instances of unequal intensity of detail.

It was therefore concluded that the best way to obtain a reliably invariable means of scoring would be to count each detail as an image.

For example, the report "I see a table in an oak panelled room. On the table I see meat, cheese and a large decanter of wine. I can smell the cheese and taste it" was scored as each detail of the scene, the table, the room, the oak paneling, meat, cheese, decanter, largeness of decanter and wine representing a visual image. The score was thus totalled; visual images - 8, gustatory images - 1, olfactory images - 1, total images - 10.

This also enabled proper comparison between this subject and the subject who, reporting a similar image, also added that the table was polished (described as "food on a polished table") visualised the meat as smoking, and added several items of food.

Where there was an unquestionably obvious relationship between two details, they were, however, scored as one imaginal response. In the example given, unless there happened to be a strong fantasy element, the food and the wine would hardly be visualised as on the floor, suspended in mid-air, under the table, or indeed anywhere but where it was visualised, that is to say on the table. It would therefore be misleading to count this as a detail. The criterion adopted for not counting a detail as separate was, therefore, the possibility, excluding a fantasy response, of any other relationship to the object imaged.

These questions were disposed with when the subject showed that she was herself volunteering the details required, or the absence of them.



vi Subject's attention to detail.

It was realised that personal factors might account for meticulous attention to detail by some subjects and a tendency to gloss over detail by others. The scores in this case would be somewhat misleading. At the beginning of each session the subject was instructed "For the purposes of this experiment it is of paramount importance that your descriptions of the images aroused by these fragments be as detailed as possible. On the other hand don't include a detail merely because you think it should be there, nor yet because it logically follows that it ought to be there. But for everything that you actually get an image of, I cannot emphasise too strongly the importance of reporting it in full.

After every five fragments had been presented, the sense of this instruction was repeated in conversation and an assurance sought from the subject that this instruction was being faithfully carried out. It was felt that close questioning on all responses would be disturbing to some subjects. It was found that some subjects more readily accustomed themselves to volunteer detail than others.

Until the subjects volunteered the detail of their own accord they were asked at the end of their response to the fragment:-

Is that everything?

Is there any bodily sensation? Pain? Temperature?

Is there any organic sensation?

Is there any sensation of posture?

Is there any sensation of movement?

Does this passage arouse any emotion in you?

These questions were dispensed with when the subject showed that she was herself volunteering the details required, or the absence of them.

vii Practice effect. It may affect your responses. Ask for a break whenever you feel like one. This was repeated at the start. Only 25 fragments were presented at each session. A lapse of from five days to one week was allowed between each session. The groups of fragments were presented in the following order:-

- It was felt that this would be an individual matter for each subject. There can be little doubt that this would be so.
- S3 1st Session Group I English Poetry.
  - S5 2nd " " II Spanish " in translation
  - S7 3rd " " III English " .
  - S9 4th " " IV Spanish " In translation
  - S2 1st Session Group II Spanish Poetry in translation
  - S4 2nd " " I English " .
  - S6 3rd " " IV Spanish " in translation
  - S8 4th " " III English " . .

viii Effect of nature of material on imaginal reaction.

It was felt that awareness of the fact that the fragments in Groups II and III were translations from Spanish might influence imaginal reactions of some subjects and the attitude to the fragments of some subjects. All subjects were therefore informed, "The object of this experiment is to see if there is any difference between the imagery aroused by poetry and that aroused by prose."

ix Fatigue.

The experimenter began by allowing a rest period of five minutes after the reading of every ten fragments. It was found that, at different sessions, different subjects felt this rest period unnecessary, and others felt the need of more frequent rest periods. (e.g., S6 was only able to complete an average of three fragments without a rest period. S5 refused all rest periods.) After the first four sessions of the experiment, the subjects were instructed as follows:-

"Some people find this more tiring than others. If you find yourself beginning to grow tired, please do not go on

because your tiredness may affect your responses. Ask for a break whenever you feel like one." This was repeated at the start of each session.

x Boredom.   
 i Sex of subjects.

It was felt that this would be an individual matter for each subject. There can be little doubt that this would have an effect on the imaginal response of the subject. Following instruction as regards fatigue all subjects were therefore instructed as follows:-

"Also, if you should find you are getting bored, will you please say so? We will finish for to-day and carry on at some other time." Due inflexion was placed on the word 'should', lest an expectation of boredom be roused.

xi Effect of physical condition of subjects.

Downey (5) found that unusually flamboyant imagery was reported by a subject in a feverish condition due to impending illness. It is known that the threshold is lowered, permitting images to appear under such conditions or under the influence of drugs. In this experiment it was felt that, while such responses are always of interest in view of their astonishing variety, they would be of little or no value, and would only tell us what we already know. Moreover, they would impair the reliability of the experiment. When arranging the time of each session therefore, the following instruction was given:-

"If, when the time comes, you are feeling unwell for any reason, would you mind cancelling the test and we will arrange another time later on. It is known that imagery is influenced by the way the subject feels and, if you are feeling off colour, the results would almost certainly be misleading."

xii Time required by individual subjects.

No time limit was set for any session. Where the sub-



subject had an engagement closely following the session, she was instructed to complete only as many fragments as could be comfortably completed in the time.

4) Uncontrolled Variables.

i Sex of subjects.

All subjects were female students. Downey(5), however, does not appear to have found any difference between the typical reactions of members of the two sexes.(1) In any case, this would not appear to invalidate a study of the imaginal reaction of subjects of a comparable degree of imagery to comparable selections of material.

There seems little reason to suppose that the sex of the experimenter had any influence on the results and if it did, it seems fairly safe to assume that it would be occasional, highly individual, and of little overall significance.

ii Age range of subjects.

The age range of the subjects was from 18-23. This would appear to be of doubtful relevance in an investigation of the difference in the imaginal reaction to comparable selections of material.

iii Method of reporting cutaneous imagery.

Generally speaking, it is difficult if not impossible for subjects not trained in introspection accurately to report the precise nature of cutaneous imagery. Usually one does very little more than repeat the stimulus, while the true imaginal experience remains largely undefined. For example, taken literally, the frequent reports, "I feel the sun", would

---

(1) No mention is made of any such difference and Downey, although using the pronouns, 'he' and 'she' in her allusions to subjects, does not say how many of each sex were used. Nevertheless, one assumes that had there been any striking difference, it would have been mentioned.

imply the imaging of an imaginal experience contrary to all the laws of physics and biology. Such an image may entail a purely thermal reaction accompanied by visual imagery, there may be algesic imagery and even some organic reaction. There is no means of knowing whether or not the image is localised. No attempt has therefore been made to do more than record the number of times reactions classifiable as cutaneous were reported in each case.

iv Emotional reactions.

While these were reported by all subjects, they obviously cannot be considered as part of the imaginal response. Such reactions were noted and account taken of differences in emotional responses to the two groups of fragments. The subjects were requested to rate the intensity of these on a five point scale.

v Organic, pain and temperature reactions.

Downey (5) listed these as imaginal responses. However, it was observed that most subjects reported actual bodily sensations in respect of pain and temperature as distinct from thermal and algesic imagery, and bodily sensation was reported as distinct from imagery. Studies of suggestion have shown that such reactions are consistently evoked by external stimuli. The types of reaction classified as organic were such as: 'a desire to swallow', 'a sinking feeling in the stomach', 'prickling under the lower eyelids', (reported three times by S10). They may well be a response to a strong imaginal stimulus, rather than an integral part of the imaginal reaction. The subject was asked to note their strength on a five point scale.

vi Memory images.

Some imaginal responses were purely images of a scene or situation remembered by the subject and imaged, according to the subject's report, exactly as it happened or was perceived. McKellar (14) stresses the unwisdom of drawing too rigid a distinction between imagination images and memory images. "No imagination image can occur that is not composed of elements derived from actual perceptual experiences" (Op. cit. p 23).

However, where the whole image can be traced by the subject without conscious effort to a series of unified perceptual experiences, it would be misleading to score these as a series of images in response to the fragment and they were therefore scored as one image. Auditory images of the fragment being recited, while it was recognised that they need not be exclusively memory images, were also counted separately, and scored as one auditory image, since they cannot be considered a response to the imaginal content found in the fragment by the reader.

vii Number of words in fragments.

For the English group of fragments the average number of words per fragment was 31.26.

For the Spanish group of fragments the average number of words per fragment was 25.12. Account was taken of this difference when considering the results.

2 Procedure.

Each subject read the same one hundred fragments. The subject was seated in front of the experimenter and the following instructions placed before her on a typewritten sheet:-

For images aroused by material rate intensity

- Vivid enough to seem real - 5
- Vivid but not quite real - 4
- Quite vivid - 3
- Not very vivid - 2
- Rather hazy - 1
- No image - 0

For emotions, bodily sensations, feelings of hotness or coldness rate intensity

- Very intense - 5
- Intense - 4
- Fairly strong - 3
- Weak - 2
- Very weak - 1



The cards bearing the fragments to be used at the session were placed face downwards before the experimenter and handed one by one to the subject. Before the presentation of the first fragment, the subject was advised on the object of the experiment as reported under the 'controlled variables' heading and instructed:- "I am going to present you with a number of fragments of poetry /prose. I would like you to read them (1) and describe the imagery aroused by them and any emotions and bodily sensations. Will you rate all these on the scale in front of you."

The instructions in respect of detail, fatigue and boredom were then given.

None of the conditions were varied for subsequent sessions. The obviously necessary alterations were made in the initial instructions to subjects at each session. All responses and intensity ratings were noted by the experimenter in the course of the session. When all the tests had been completed, the subject was asked to give as soon as possible full and detailed introspections.

## RESULTS.

### a) Total Images.

(1) Downey presented the fragments used by her to one group of subjects by an auditory method, and to one group by a visual method. The subjects to whom they were presented orally reported a significantly lower number of images. She makes no attempt to explain why this should be, but it seems fairly safe to assume that such a result can be reasonably expected. Visual presentation of literary material was in that day the principal means of presentation. Even to-day radio programmes, records, and public recitals of poetry have done very little to change this. In any case oral presentation would have introduced additional variables in respect of tone, stress and inflexion. It was therefore decided to retain the visual method of presentation throughout the experiment.

With the exception of S5, all subjects reported a greater number of images for the Spanish group of fragments. Appendix III gives full details of all images, reactions and intensities reported by all subjects. Table I (See following page), gives the total images reported by each subject for each group of fragments and the difference between the totals. There is a mean difference of -67.1. By the Wilcoxon Signed Rank Test the difference is significant at the 2% level of probability.

The difference in the total number of words for each group of fragments should be taken into account. Table II (Also see following page), gives the total number of images reported by each subject for each group of fragments divided by the average number of words per fragment in each group, i.e.,

Total images reported by subject for English fragments

31.26

and

Total images reported by subject for Spanish fragments

25.12

and the difference between the result for each group. There is a mean difference of -5.244. The difference is significant at the 1% level of probability.

b) Intensity of Images.

There was no significant difference in the intensity of images reported for either group of fragments. It was recognised, moreover, that since the ratings were entirely subjective, no comparison could be made between the ratings of different subjects. Concepts of vividness must vary from subject to subject. This was amply evidenced in this experiment. For example, S4 reported in response to fragment 72 a cutaneous image of herself being branded, and rated the intensity of the image at 5. S5, on the other hand, very rarely rated the intensity of any image at above 4. This cannot be taken to imply that S4's imagery is more vivid than that of S5.

TABLE I

Total Images.

Subject	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
English	237	461	281	575	220	467	383	276	252	132
Spanish	285	466	329	727	185	705	461	283	349	165
Difference	-48	-5	-48	-152	+35	-238	-78	-7	-97	-33

TABLE II

Total images divided by average number of words

Subject	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
English	7.58	14.74	8.92	18.39	7.29	14.93	12.25	8.82	8.06	4.22
Spanish	11.34	18.55	13.09	28.94	7.6	28.06	18.35	11.26	13.89	6.56
Difference	-3.76	-3.81	-4.17	-10.55	-0.31	-13.13	-6.1	-2.44	-5.83	-2.34



It was also recognised that, with individual subjects, no assurance of absolute consistency was available. Importance can hardly be attached to small differences. It was therefore felt necessary to create a somewhat arbitrary dividing line and base the results of this part of the experiment on the following assumptions:-

- 1) Where the difference between the average intensities in each modality for each group of fragments did not exceed 0.5, no difference was considered to exist.
- 2) Where no images were reported in any modality for one group of fragments but images were reported for the other group, no comparison could be made.

Because of the very strong element of chance in the case of the intensity rating reported for one image only in any modality, it was also felt that, where one image only in a given modality was reported for one group of fragments and several images for the other group, no comparison could be made in respect of the average intensity.

Table III gives the average intensity of images reported in each modality for each group of fragments, the difference where a difference has, for the purposes of this experiment been assumed to exist, and the average intensity for all images reported for each group of fragments. The average intensity for all images is given as:-

Sum of average intensities of images reported in each modality
<hr style="width: 80%; margin: auto;"/>
Number of modalities in which images were reported.

N.B. For Table III see following page.

S2, S3 and S10 reported a slightly higher average intensity for all images in the English group of fragments. Only S1 reported a higher average intensity for all images in the Spanish fragments. There was no significant difference

TABLE III

Intensity of Images.

Kinae. Visual.

Subject	Vis.	Aud.	Olf.	Gust.	Crt.	Post.	Move't.	Move't.	Average
1	English	3.0	x	x	x	(1.0)*	2.5	3.2	2.7
	Spanish	3.5	x	x	3.0	3.2	3.2	3.4	3.2
	Difference	-0.5	-	-	N. C.	N. C.	-0.7	None	-0.5
2	English	2.8	2.0	x	4.1*	4.0	4.5	3.1	3.4
	Spanish	2.4	3.0	x	2.6	2.3	3.6	2.8	2.8
	Difference	None	None	-	+1.5	+1.7	+0.9	None	+0.6
3	English	3.2*	4.2	(4.0)	(5.0)	4.4	4.3	3.8	4.2
	Spanish	2.9	3.8	x	4.0	(4.0)	3.0	3.6	3.5
	Difference	None	None	N. C.	N. C.	N. C.	+1.3	None	+0.7
4	English	3.6*	4.8	4.0	4.0	4.4	2.5	3.8	3.8
	Spanish	4.0	4.2	3.0	4.5	4.8	3.7	4.0	4.0
	Difference	None	None	+1.0	-0.5	None	None	-1.5	-0.6
5	English	2.7	2.2	2.5	4.0	3.2*	3.3	2.4	2.8
	Spanish	2.6	2.5	2.7	4.5	2.7	(2.0)	3.0	2.6
	Difference	None	None	None	-0.5	+0.5	N. C.	-0.5	None
6	English	3.6*	4.3	5.0	(5.0)	4.4	4.0	4.0	4.3
	Spanish	3.9	4.3	4.3	(3.0)	4.3	3.3	4.8	4.3
	Difference	None	None	+0.7	N. C.	None	+0.7	None	None
7	English	4.0*	4.0	4.0	(5.0)	4.2	(4.0)	4.2	4.2
	Spanish	4.0	4.0	4.0	(5.0)	4.7	4.8	4.8	4.4
	Difference	None	None	None	N. C.	+0.5	N. C.	-0.6	None
8	English	3.8	3.5	(1.0)	(3.0)	4.5	4.4*	4.0	3.6
	Spanish	3.8	3.2	4.5	x	4.0	4.5	3.8	4.1
	Difference	None	None	N. C.	N. C.	+0.5	None	+0.6	None
9	English	3.9*	4.1	3.5	x	4.3	3.5	4.8	3.9
	Spanish	4.1	4.2	4.0	x	5.0	3.0	3.8	3.9
	Difference	None	None	-0.5	-	-0.7	+0.5	+1.0	None
10	English	3.2	3.6	x	x	4.1	3.4*	5.0	3.7
	Spanish	2.7	2.0	x	x	3.2	3.9	x	3.0
	Difference	+0.5	+1.6	-	-	+0.9	-0.5	N. C.	+0.8

x signifies that no imagery was reported in this modality. N. C. signifies that no comparison has been made for the purposes of this experiment. A figure in brackets signifies that this is the intensity reported for one image only. \* signifies the subject's dominant mode of imagery, as reported in the initial test.

42.

between the average intensity for the responses for each group of fragments in the subject's dominant mode of imagery. Only S2 reported an outstanding difference in this respect. Cutaneous imagery appears to be of greatest importance to this subject according to the initial test, and there was a difference of + 1.5 between the average intensity of her cutaneous responses to the two groups of fragments.

c) Visual Imagery.

In all cases the highest percentage of images reported for both groups of fragments was in this modality. Table IV (See following page), gives the number of visual images reported by each subject for each group of fragments, the proportion of visual images to total images, and the difference in both cases. There is a mean difference between the number reported for each group of fragments of - 63.2. (Significant at the 2% level of probability). The proportion of visual to total images is slightly higher for the Spanish group of fragments. It ranges:-

From 62.3% to 81.3% for the English fragments, and  
From 63.8% to 88.1% for the Spanish fragments.

There is a mean difference of - 3.9%. (Not significant).

d) Auditory Imagery.

For S1, S2, S3, S5, S6, S9 and S10 imagery in this modality is second in importance only to visual imagery. Table V (Also see following page) shows the number of auditory images reported by each subject for each group of fragments, the proportion of auditory to total images, and the difference in each case. A slightly higher number of auditory images were reported for the English group of fragments. There is a mean difference of + 4.2. This difference, however, is not significant. A higher proportion of auditory images was reported for the English fragments. The proportion of auditory to total images ranged:-

From 1.9% to 12.6% for the English fragments, and  
From 3.1% to 9.9% for the Spanish fragments.



TABLE IV

## Visual Imagery.

Subject	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
English	178	337	204	468	165	333	257	172	193	96
% of Total	75.1	73.1	73.1	81.3	72.3	71.3	67.1	62.3	76.5	72.7
Spanish	230	366	273	553	121	483	329	208	299	129
% of Total	80.7	78.5	82.9	76.0	62.8	68.5	71.3	73.4	85.6	88.1
Difference	-52	-29	-69	-85	+44	-150	-72	-36	-106	-33
Variation of %	-5.6	-5.4	-9.8	+5.3	+9.5	+2.8	-4.2	-11.1	-5.1	-15.4

TABLE V

## Auditory Imagery.

Subject	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
English	30	48	31	11	14	57	41	31	27	12
% of Total	12.6	10.4	11.1	1.9	6.1	12.2	10.8	11.2	10.7	9.0
Spanish	24	25	21	39	19	56	40	13	11	12
% of Total	8.3	5.3	6.3	5.3	9.9	7.9	8.7	4.5	3.1	7.2
Difference	+6	+23	+10	-28	-5	+1	+1	+18	+16	None
Variation of %	+4.3	+5.1	+4.8	-3.4	-3.8	+4.3	+2.1	+6.7	+7.6	+1.8

There is a mean difference of + 2.95%. (Significant at the 5% level of probability).

e) Olfactory Imagery.

Olfactory imagery did not appear to be of great importance for any subject. Two subjects reported no imagery in this modality and only five subjects reported it for both groups of fragments. Table VI (See following page), shows the number of olfactory images reported by each subject for each group of fragments, the proportion of olfactory to total images, and the difference between the total images in this modality for each group. There is a mean difference of + 0.3. (Not significant).

For the English group of fragments the proportion of olfactory to total images ranged from .3% to 1.06%.

For the Spanish group of fragments the proportion of olfactory to total images ranged from .3% to 1.6%.

f) Gustatory Imagery.

Gustatory imagery was the least important for all subjects. It was only reported by five subjects, and only three reported it for both groups of fragments. Table VII (Also see following page), shows the number of images reported in this modality by each subject, the proportion of gustatory to total images, and the difference between the number of images reported. There is a mean difference of + 0.2. (Not significant).

For the English group of fragments the proportion of gustatory to total images ranged from .2% to .6%.

For the Spanish group of fragments the proportion of gustatory to total images ranged from .2% to .5%.

TABLE VI

## Olfactory Imagery.

Subject	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
English	Nil	4	3	6	Nil	4	4	1	3	Nil
%	-	.6	1.06	1.04	-	.8	1.04	.3	.7	-
Spanish	Nil	Nil	Nil	3	3	7	5	2	3	Nil
%	-	-	-	.3	1.6	.9	.8	.7	.8	Nil
Difference	None	+4	+3	+3	-3	-3	None	-1	None	None

TABLE VII

## Gustatory Images.

Subject	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
English	Nil	Nil	1	4	Nil	1	1	1	Nil	Nil
%	-	-	.3	.6	-	.2	.2	.3	-	-
Spanish	Nil	Nil	Nil	2	Nil	4	1	Nil	Nil	Nil
%	-	-	-	.3	-	.5	.2	-	-	-
Difference	None	None	+1	+2	None	-3	None	+1	None	None



g) Cutaneous Imagery.

Cutaneous imagery varied in importance from subject to subject. It was reported by all subjects, although S1 reported no cutaneous imagery for the English group of fragments. Table VIII (See following page), shows the number of cutaneous images reported by each subject, the proportion of cutaneous to total images, and the difference between the number of images reported. The mean of the differences is - 5.4. (Not significant).

For the English group of fragments the proportion of cutaneous to total images ranged from 0 to 16.3%.

For the Spanish group of fragments the proportion of cutaneous to total images ranged from 0.8% to 11.6%.

h) Kinaesthetic Imagery.

Kinaesthetic Imagery was reported by all subjects. Downey ( 5 ) and Martin ( ) divided the kinaesthetic reactions reported in their experiments into two groups:-

- a) Imaginal posture, and
- b) Imaginal movement.

The same division has been made here. Table IX (Also see following page), shows the number of kinaesthetic reactions of each type reported by each subject for each group of fragments, the proportion of kinaesthetic to total images, and the difference between the number of images reported. There is a mean difference between the total kinaesthetic reactions for each group of fragments of - 1.4. (Not significant).

For the kinaesthetic images of posture there is a mean difference of - 1.9.

For the kinaesthetic images of movement there is a mean difference of - 0.3. Neither of these differences is significant.

TABLE VIII

Cutaneous Imagery,

Subject	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
English	Nil	31	22	42	13	19	40	45	3	7
%	-	6.9	7.9	7.4	5.9	4.06	10.4	16.3	1.1	5.3
Spanish	8	8	26	85	16	53	43	26	3	10
%	2.1	1.6	7.9	11.6	8.6	7.4	9.5	9.1	.8	6.1
Difference	-8	+23	-4	-43	-3	-34	-3	+19	+3	-3

TABLE IX

Kinaesthetic Imagery.

Subject		S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
English	Posture	1	2	1	4	3	1	1	7	5	5
	Movement	7	2	4	4	5	4	12	5	8	6
	Total	8	4	5	8	8	5	13	12	13	11
	%	3.3	.8	1.7	1.2	3.6	1.6	3.5	4.6	4.7	8.3
Spanish	Posture	4	3	1	7	1	9	5	5	7	7
	Movement	3	4	3	6	4	9	7	8	8	Nil
	Total	7	7	4	13	5	18	12	13	15	7
	%	2.4	1.5	1.2	1.7	2.7	2.5	2.3	4.5	4.3	4.2
Difference	-	+1	-3	+1	-5	+3	-13	+1	-1	-2	+4

For the English group of fragments the proportion of kinaesthetic to total images ranged from 0.8% to 8.3%.

For the Spanish group of fragments the proportion of kinaesthetic to total images ranged from 1.2% to 4.5%.

#### 1) Visualised Movement. (1)

Imaginal visualisations of movement were reported by all subjects. Table X (See following page), shows the total number of moving visual images reported by each subject for each group of fragments, the proportion of moving visual to total images, and the difference between the number of images reported. There is a mean difference of - 5.9. (Not significant).

For the English fragments the proportion of moving visual to total images ranged from 4.5% to 12.6%.

For the Spanish fragments the proportion of moving visual to total images ranged from 1.5% to 12.9%.

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(1) Downey (5) and Martin (11) both termed such imagery 'optical kinaesthetic'. This term is not used here because it appears to imply some kinaesthetic reference. In the case of perceived movement there can be no grounds for supposing that any connection exists between the perceptual experience and kinaesthesia, except perhaps where identification or empathy are present in the interpretative process. Equally, no such connection can be assumed to exist in the imaginal process. The name of such imagery has therefore been changed here to visualised movement, which is felt to be a less ambiguous term.

**TABLE X**  
**Moving visual images.**

	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
English	21	38	5	36	20	48	27	14	13	6
%	8.8	8.2	5.3	6.2	9.1	12.6	6.7	5.8	5.1	4.5
Spanish	16	60	5	32	22	84	32	21	18	7
%	5.6	12.9	1.5	4.4	11.8	11.9	6.9	7.4	5.7	4.2
Difference	+5	-22	+10	+4	-2	-36	-5	-7	-5	-1



j) Temperature Pain and Organic Reactions.

Temperature and organic reactions were reported by all subjects. Seven subjects reported pain reactions, although only three reported them for both groups of fragments. Table X (See following page), shows the number of temperature pain and organic reactions reported by each subject for each group of fragments, and the difference in each case.

For the temperature reactions there is a mean difference of - 1.5. (Not significant).

For the pain reactions there is a mean difference of - 1.0. (Not significant).

For the organic reactions there is a mean difference of - 4.8. (Significant at the 1% level of probability).

k) Emotional Reactions.

Emotional reactions were reported by all subjects. Table XI (Also see following page), shows the number of emotional reactions reported by each subject for each group of fragments, and the difference between the two totals. There is a mean difference between the number of emotional reactions reported for the two groups of fragments of - 9.7. (Significant at the 5% level of probability).

The Spanish group of fragments evoked a wider variety of emotional reactions than did the English group of fragments. Table XIII (See page 48), shows the number of times each emotion listed was reported by each subject.

For the English fragments each subject reported an average of 6.7 different types of emotion.

For the Spanish fragments each subject reported an average of 9.4 different types of emotion. (Significant at the 2% level of probability).

The Spanish fragments evoked a significantly higher number of

TABLE XI

Temperature Pain and Organic Reactions.

Subject		S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
Temperature	E	4	6	1	7	1	1	2	2	1	4
	S	1	3	7	10	2	4	7	3	3	4
	Diff.	+3	+3	-6	-3	-1	-3	-5	-1	-2	None
Pain	E	Nil	2	Nil	1	Nil	Nil	1	Nil	1	Nil
	S	Nil	Nil	1	5	Nil	Nil	1	2	5	1
	Diff.	None	+2	-1	-4	None	None	None	-2	-4	-1
Organic	E	1	8	1	3	2	1	1	4	1	10
	S	3	7	11	10	9	8	5	5	7	14
	Diff.	-2	+1	-10	-7	-7	-7	-4	-1	-6	-4

TABLE XII

Emotional Reactions.

Subject	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
English	6	12	25	17	44	16	18	22	4	28
Spanish	8	16	43	40	36	31	36	18	22	39
Difference	-2	-4	-18	-23	+8	-15	-18	+4	-18	-11

TABLE XIII

Emotions aroused by Fragments.

Subject	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
Pleasure	E 1 S 2	4 6	11 6	7 7	6 6	3 4	8 4	- 1	1 5	5 8
Excitement	E 1 S 1	- 1	- -	- -	- 1	1 -	1 2	- -	1 -	- -
Loneliness	E 2 S 2	- -	- -	1 2	1 -	- -	- -	5 2	- -	- -
Apprehension	E - S 1	- -	- -	1 7	2 4	- 6	- -	3 3	2 2	4 4
Fear	E 1 S 2	- -	6 5	2 2	6 3	1 2	1 4	1 1	1 4	- -
Positive Emotion	E 1 S -	- -	- -	- -	2 1	- -	- -	- 1	- -	4 4
Negative Emotion	E - S -	- -	- -	- -	- -	3 3	2 -	- -	- -	4 4
Anger	E - S -	2 -	1 6	- -	- 1	- 3	- 4	- -	- 5	- -
Aversion	E - S -	2 -	- 7	6 15	1 5	2 6	1 8	2 4	1 1	2 4
Resignation	E - S -	1 5	1 -	- -	2 -	- 2	1 -	2 -	- -	4 2
Resistance	E - S -	2 4	- -	- -	- 1	- -	- 2	- 3	- -	1 1
Confusion	E - S -	2 -	2 -	2 -	- 1	- -	- -	- -	2 -	1 1
Sadness	E - S -	1 -	- 4	- 2	3 7	1 2	- 4	- 2	- -	- -
Envy	E - S -	- -	1 -	- -	6 5	- -	- -	- -	- -	- -
Frustration	E - S -	- -	1 -	- -	- 1	- -	- -	- -	- -	- 3
Depression	E - S -	- -	1 -	- 2	- -	1 1	- -	1 -	1 -	- 1
Disappointment	E - S -	- -	- -	- -	- 2	- 3	- 4	- -	1 -	- -
Anticipation	E - S -	- -	- -	- -	5 1	2 -	- -	- -	- -	- -
Detachment	E - S -	- -	- -	- -	1 -	- -	- -	- -	- -	- -
Despair	E - S -	- -	- -	- -	- -	- 1	- -	- -	- -	- -
Amusement (at image)	E - S -	- -	- -	- -	- -	- -	- -	- -	- -	1 4
Not Defined	E - S -	- -	1 2	- 1	9 1	2 1	3 -	3 -	- -	2 -
Total	E 6 S 8	12 16	25 43	17 40	44 36	16 31	18 36	22 18	4 22	28 39

## 1. Synaesthesia.

reactions of:-

- a) Aversion, (mean difference of - 3.4), and  
 b) Sadness, (mean difference of - 1.6). (In both cases the difference is significant at the 5% level of probability).

In no case did the English fragments evoke a significantly higher number of reactions.

There was a significant difference between the number of  
 laughs reported by the synaesthetic and the a-synaesthetic sub-  
 jects.

Details of the appropriate responses of these subjects  
 are given below.

11. Because of the unusual nature of this subject's  
 laughs, they were neither observed nor investi-  
 gated until the first experimental session in which fragments  
 1-2) were presented. In response to fragment 3 this subject  
 reported, "I see the dark, hard colours of laurel and ivy.  
 I feel dark hardness and get a feeling of fear." The sub-  
 ject was asked, "Do you get the feeling of fear from the  
 hardness?" She replied spontaneously, "No, from the hardness."  
 She tried to make response as a cutaneous image. Asked if  
 she was really associated fear and hardness, she replied,

"Fragment 1 is good. It is a very good one - the sky has a friendly  
 feeling which I feel. It gives me a most pleasant feeling.  
 When I see the dark '1010' the darkness she replied, "Why?  
 Don't you?" In the later sessions it was observed that:-

1. Fragment 1 was associated with pleasure in three responses  
 2. Darkness was associated with fear in four responses, e.g.,  
 fragment 14, "The sea is hard and glinting ----- I get a  
 definite experience of hardness. It is frightening."  
 3. Brightness, reported by the subject as a cutaneous image,  
 was associated with fear in three responses. e.g.,  
 fragments 3) and 4), "The unfriendly white sky frightens me."



l. Synaesthesia.

Only four subjects reported images that might indicate synaesthesia.

S3 appears to give the visualised scene cutaneous and pressure values. When she has achieved this, the visualisation yields an emotional impact,

S6 appears to translate the auditory into visual terms,

S7 appears to experience coloured taste, and

S9 appears to experience coloured audition.

There was no significant difference between the number of images reported by the synaesthetic and the asynaesthetic subjects.

Details of the appropriate responses of these subjects are given below.

S3. Because of the unusual nature of this subject's imagery associations, they were neither observed nor investigated until the first experimental session in which fragments 1-25 were presented. In response to fragment 3 this subject reported, "I see the dark, hard colours of laurel and ivy. I feel their hardness and get a feeling of fear." The subject was asked, "Do you get the feeling of fear from the colours?" She replied spontaneously, "No, from the hardness." She rated the whole response as a cutaneous image. Asked if she usually associated fear and hardness, she replied, "Naturally."

Fragment 8 evoked, "A churchyard ----- the sky has a friendly darkness which I feel. It gives me a most pleasant feeling." Asked if she usually 'felt' the darkness she replied, "Why? Don't you?" In the later sessions it was observed that:-

- i Darkness was associated with pleasure in three responses
- ii Hardness was associated with fear in four responses, e.g., fragment 14, "The sea is hard and glinting ----- I get a definite impression of hardness. It is frightening."
- iii Brightness, reported by the subject as a cutaneous image, was associated with fear in three responses. e.g., fragments 33 and 45, "The unfriendly white sky frightens me."

fragments. It is noteworthy, however, that while most people who are synaesthetes are only vaguely aware of the fact, if at all, and rarely conscious of its unusual nature (e.g. the reaction of S5 to enquiry) this subject did note that coloured gustation is seldom experienced

- iv Wetness was associated with aversion in five responses. e.g., fragment 65, "A dead seagull ----- I don't touch it, but I feel its wetness and get a feeling of horror."
- v Softness was associated with a feeling of peacefulness in three responses. e.g., fragment 18, "The starry sky gives a velvety feeling of peace."

Thirty-nine English and Thirty-seven Spanish fragments evoked an imaginal response. Of these, nine English (23%) and nine Spanish (24%) evoked responses suggestive of this type of imagery association. (1)

S6. The initial test shows that S6 seemed to experience visual audition. Only three fragments, however, evoked responses that may suggest this process, one of which is somewhat ambiguous (fragment 20, "A meadow ----- I see and hear the ripples of the wind"), and two of which may well be explained by associational factors, e.g.:-

Fragment 57, "Big Ben on top of its tower ----- I hear it strike and I see the ripples going out through the air as it strikes," and

Fragment 61, "Tiers of cloud ----- music falls out of them and the notes travel a long way through space as if they had risen from a glass."

S7. Although S7 appears to experience coloured gustation, there was no evidence of this process in her responses to the

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(1) Fragments 41, 52 and 59 evoked feelings of cold which the subject associated with misery. These have not been counted since they may well reflect nothing more than the familiar association of cold with discomfort and depression.

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fragments. It is noteworthy, however, that while most people who are synaesthetic are only vaguely aware of the fact, if at all, and rarely conscious of its unusual nature (e.g. the reaction of S3 to enquiry) this subject did know that coloured gustation is seldom experienced among people whose imagery has been investigated, and that she found the fact disturbing. It may well be that this subject inhibited her synaesthetic tendencies.

S9. S9 appears to experience coloured audition. A student of Psychology, this subject knew a fair amount about synaesthesia before the investigation. She reported after the initial test, "the parts on synaesthesia in our lectures on imagery made sense to me which they didn't to A and B (fellow students attending the same lectures) and, in fact I got a feeling of relief when I heard about it. It was not until this test that I realised that I was synaesthetic and I got a silly feeling I ought to apologise to you."

This attitude may well explain why only two of the subjects's responses contained evidence of synaesthesia. These were:-

- fragment 12: "A dark forest ---- a tiger in the middle ----it gives a sort of light grey growl."
- fragment 61: "----an elf ----playing on a pipe----black tinkling sounds."

The response to fragment 12 disturbed the subject. Handing the card back to the experimenter she remarked, "I know I didn't do too well on that but you might have congratulated me on my alliteration." This seems to suggest that this subject may also tend to inhibit synaesthetic imagery.

...breaking them off at the stalks. ... standing at the edge of the meadow with a ... All this is from a ... Development of the image was reported for ... In seven responses the sub- ... For example, fragment 14 evoked, ... The caves are of ... Then I got a picture ... He stands at the edge of the cliff with ... Now I have it. He's looking



m) General characteristics of the imaginal response.

... relation of individual subjects. For this subject, twelve fragments evoked first an auditory response followed by S1's imagery was largely concrete and clearly defined. Her images were related to specific scenes or occasions and in logical sequence, implying extensive volitional control. In the one case where absence of control was suggested, she was somewhat disturbed. In her response to fragment 79 she reported, "I see a large galleon. Its sails are down. There is a lighthouse flashing on the left. Oh dear. That's an anachronism, isn't it. It doesn't make sense, does it." In actual fact the scene imaged was in no way anachronistic. The lighthouse dates back at the very least to Roman times. Nevertheless to the subject she believed that this was an anachronism disturbed her.

All other imagery appeared to be subordinate to the visual imagery, since it was generally reported after some related visual image. Out of twenty-four responses containing auditory imagery only two contained auditory imagery not accompanied by visual imagery.

S2's imagery was very much more kaleidoscopic. The scenes imaged very frequently developed or one part of the scene imaged came into prominence, independently of the stimulus material. Mental models were frequently used. For example, fragment 2 evoked, "A meadow. It is a very clean washed meadow. Young damsels in Jane Austenish gowns are gathering buttercups and daisies. There are three or four of them dotted all over the meadow. They are not gathering roses ----- at first this was a picture, now I am in it. I see tall flowers and myself breaking them off at the stalks. Now I can see Herrick standing at the edge of the meadow with a broad Pickwickian beam on his face. All this is from a different angle." Development of the image was reported for twenty-three of the fragments. In seven responses the subject amalgamated two images. For example, fragment 14 evoked, "A pen and ink drawing of the sunless sea. The caves are of ice and the river runs through them ----- Then I get a picture of Kubla Khan ----- He stands at the edge of the cliff with his arm thrown out. Ah, yes. Now I have it. He's looking



down to the sunless sea below him." extensive use of sensory material will be discussed under the appropriate heading.

Auditory imagery was very important for this subject. Twelve fragments evoked first an auditory response followed by a related visual response. The auditory quality of some of the English fragments seemed to influence her imagery and she reported an auditory image of five fragments (Nos. 3, 7, 8, 14 and 19) recited by herself.

All other imagery was essentially subordinate to the visual response.

S3's imagery was essentially concrete. Her visual imagery had the peculiarity that brightness was very much more important than colour. (1) Only four responses contained any reference to colour (red was visualised three times and yellow once). Nineteen fragments evoked responses where brightness or darkness were important. Darkness appears to have pleasant associations, e.g., fragment 8 evoked, "----- a friendly darkness in the sky," while fragment 45 evoked, "----- an unfriendly white sky." Auditory imagery was largely dependent on visual imagery. 62, 84, 96 and 100 evoked purely auditory imagery. Only this subject showed preoccupation with the auditory quality of any of the Spanish fragments and fragments 28, 39, and 43 evoked auditory imagery of them being recited.

Her cutaneous imagery showed more preoccupation with consistency than was evidenced by any other subject. Of the twenty-one imaginal responses containing cutaneous imagery, eight related to hardness or softness, four to wetness, three to wind, and two to texture. Her responses to fragments 68 and 69 are more difficult to classify. These were respectively, "I feel the hardness of the sunlight" and, "I feel the bright light." and fragment 67, "I am building solid castles but as fast as I build them the waves wash them away." S4's imagery appeared to be the most varied. It was

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(1) The Ishihara test of Colour Vision was administered and this subject was found to have normal colour vision. ----- but it is not fierce and active because the words 'black winged night' soften the attack."

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largely kaleidoscopic and her very extensive use of memory material will be discussed under the appropriate heading. She reported in her introspections that, "all the images developed as I looked at them." While all subjects occasionally employed historical material, this subject reported that her imaginal responses to fragments 1 to 46 and to ten other fragments were set in medieval or seventeenth century scenes. Twenty-six fragments evoked visualisations of pastoral scenes, all of which were accompanied by related cutaneous imagery. Eight of these responses were cutaneous images of wet grass underfoot.

85's imagery was very strongly emotionally overtone. She described her imagery as "very vague and fleeting. It came and went before I could catch it, but it did leave me with a variety of sensations and impressions." This subject has a fiance whose work takes him out of London for most of the time and at present only meets him for occasional weekends. This unsatisfactory state of affairs appears to have influenced her responses. Eight responses were visualisations of people engaged in some activity and seeking to do as much as they can in a very limited time. Four responses were visualisations of the home she would like to have, while three fragments evoked visualisations of "someone ----- stable ----- who is content to stay at home and ----- not wanting to be here one minute and somewhere else the next." Fragments 2 and 97 evoked images of a couple whom she specifically stated, "wish they had more time together." The "futility" of the scene imaged was what struck this subject in three of her responses. These were evoked by fragment 41, "I am swimming against the waves but the tide is going out against me ----- it's useless to struggle," fragment 64, "----- cliffs ----- the waves dash against them to no avail, ----- it leaves me with a sense of futility," and fragment 67, "I am building sand castles but as fast as I build them the waves wash them away, but I just go on building them."

86's imagery showed more dependence on the meaning of the fragment than that of any other subject, e.g., her response to fragment 30, "An army charging downhill on horseback ----- but it is not fierce and active because the words 'black winged night' soften the attack."

All her imaginal responses had an obvious relation to the fragment. She herself reported self-projection. "Images appeared ----- all around me. As I looked around I was able to describe them in relation to my own position."

This subject showed special preoccupation with costume in her visualisations with costume, which in eighteen of her responses was used to characterise or date the people visualised.

Of her auditory imagery she herself reported that "Where there was a sufficiently strong visual image, I was able to get an auditory one as well." Where there was an auditory response the visual response was with one exception rated at an intensity of 4 or 5. In twenty-five responses the auditory response was related by the subject to some specific part of the visual response.

The imagery of S7 showed some degree of image control. This subject has made some study of the folklore of Wales, and her preferred hobby is the painting of portraits. In ten of her responses it was the face of the person visualised that was reported as the dominant factor of the image, e.g., her response to fragment 87 in which she reported, "I see a very old man. From his face I believe he is a judge." Eight of her responses utilized folkloric material, while her responses to fragments 57 and 66 were reported as based entirely on the Welsh legends of "The Lady of the Lake", and "The Little People", respectively. The image was never reported to change or develop. In her introspections she claims that, "All the images come spontaneously and never changed in intensity. Most of them I could have retained for a long time and a number of them I had to make an effort to banish before going on to the next card." She went on to report, "I felt that all the images of open air scenes were set in Wales where I have lived all my life. I could not tell you exactly where." This was, however, a retrospective falsification. Thirty-six fragments evoked visualisations of open air scenes. The visual responses to fragments 31 and 36 were reported as set in Venice and Rome respectively, while the visual response to fragment 22 was reported as set in nineteenth century London. When this was pointed out to the subject, she had no recollection of these responses.



assumes non-imaginal association to be necessary for this sub-  
ject. Cutaneous imagery was important for this subject and frequently related to her visualisations of open air scenes. Of forty fragments evoking cutaneous imagery, fourteen (35%) evoked images of the feel of wind on the face and six (15%) of rain on the face.

The imagery of S8 frequently showed absence of image control. Many of her images arose immediately and without the mediation of any meaningful idea. The imaginal response then remained undefined in whole or in part. She reported, "I often found them (the imaginal responses) difficult to define. But they were nevertheless quite strong although I could not explain them." Her response to fragment 10 was described as, "blackness over every thing. Stripes but they are not the stripes of the tiger. Pinpoints of light," while fragment 27 evoked, "A great black bar going at an angle across a yellow background." Her response to fragment 28 showed partial success at concretization, "A wet weeping willow branch. It is grey. There are streaks of white across the whole scene," while her response to fragment 46 showed an unsuccessful attempt at image control, "A shape. It could be connected with a rhododen-dron. Pause. No, but it's not." Seventeen of this subject's responses were a series of apparently unconnected visualisations. Sixteen responses were impressions of shape or colour. Five responses were reported as superimpositions of two impressions.

S9's imagery was essentially reported as concrete. Her visual imagery was almost always localised and persons visualised were, with three exceptions, persons whom she had at some time met. Fourteen responses were visualisations of scenes or experiences in her own life. \* These included herself in detention at school, herself in Birmingham during the rush hour, and herself being questioned by the police in Germany which had happened in the previous vacation. This Downey terms 'the visual self'. Only this subject showed any evidence of the use of the visual self.

S10's imagery showed more than that of any other subject deliberate use of associational material. One might indeed

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\* In five of these she visualised herself participatioq.



assume non-imaginal association to be necessary for this subject. In her introspections she reported, "Where the card did not give some sort of association I was naturally unable to get an image. Many of the cards did not seem to relate to anything." It seems safe to assume that this accounts for the fact that only fifty-eight of the fragments evoked any imaginal response whatever and for the relative paucity of images. In nine of this subject's responses she reported first an association, and then an image. For example, in response to fragment 8 she reported, "I associate this with the churchyard at home. There is a yew tree there. This gives me an image of a cowman and a herd silhouetted against the sky," and in response to fragment 14, "I associate this with an essay I wrote on this poem. The essay gives an image of dark icy waters ----." In all these responses the subject made it clear that there was no image of the associational material.

With the exception of S7 all subjects reported that they had preferred the poetry to the prose and found the poetry much less tiring. S1, S2, S3, S4, S6, S8 and S9 all reported that reading for pleasure, they prefer poetry. S5 and S10 claimed that they were able to read poetry or prose with equal pleasure.

All subjects except S7 were under the impression that they had reported more images for the poetry than for the prose. Indeed S6 reported that, "I found the experiment rather irritating. I could not see the point of an experiment to prove that poetry gives richer imagery than prose. Would anyone doubt this anyway?"

S7 reported, "I liked the prose far better than the poetry: so much so that I was tempted to rush through the poetry cards to get back on to the prose. I prefer reading prose to poetry, although I know this is not usual. I am sure I did better on the prose for this reason. (I do hope I haven't ruined your hypothesis) and I certainly enjoyed the prose cards very much."

vi. Influence of subject's dominant mode of imaging.

Under the appropriate heading, it has already been

(1) Although the intensity ratings of this subject are evidently exaggerated the order of importance may still be valid.

suggested that the subject's dominant mode of imaging has no observable effect on the intensity of images reported. Likewise there is no correlation between the score on the initial test and the number of images reported in each modality. Table XIV (Please see following page), shows the average score in each modality in the initial test and the proportion of images reported for both groups of fragments together in each modality.

In the initial test visual imagery was of greatest importance for S3, and shared first place with imagery in some other modality for S4, S6, S7 and S9. It was by far of greatest importance for all subjects in the response to the fragments.

In the initial test auditory imagery was only outstandingly important for S9, for whom it had equal strength to visual imagery. For S5 imagery in this modality was least in importance. In the response to the fragments auditory imagery was second in importance for S1, S2, S3, S5, S9 and S10.

In the initial test cutaneous imagery was the most important for S5. In the response to the fragments, imagery in this modality was slightly less important than auditory imagery.

In the initial test, kinaesthetic imagery was of greatest importance to S1, S8 and S10. In the response to the fragments it was considerably less important than auditory imagery and only slightly more important than cutaneous imagery. It was fourth in importance for S8, being considerably less important than cutaneous imagery and somewhat less important than auditory imagery. For S10 kinaesthetic imagery was slightly less important than auditory imagery.

In the initial test, olfactory imagery was more important than auditory imagery for S3, S4 (1), S5 and S8. It was of little importance for any subject in the response to the fragments.

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(1) Although the intensity ratings of this subject are evidently exaggerated the order of importance may still be valid.

TABLE XIV

Initial test scores and proportion of images.

Modality	Score	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
Visual	1st Test	4.0	3.2	4.8	5.0	4.0	4.8	4.6	3.8	3.2	4.0
	% of tot. images.	85.02	86.3	81.5	83.6	80.9	80.04	76.4	74.2	87.02	80.1
Auditory	1st Test	3.2	2.8	2.4	4.0	2.2	3.6	4.2	2.8	3.2	2.6
	% of tot. images.	10.3	7.9	8.5	3.8	8.1	9.6	9.6	7.8	6.6	8.1
Cutaneous	1st Test	2.8	4.2	4.6	5.0	4.6	4.6	4.6	3.8	3.0	4.2
	% of tot. images.	1.5	4.1	7.9	9.7	7.2	6.1	9.8	12.7	1.0	5.8
Kinæsthetic	1st Test	4.4	2.8	3.8	4.6	2.4	4.8	3.6	4.9	2.0	5.0
	% of tot. images.	2.8	1.1	1.5	1.6	3.2	1.9	2.9	4.5	4.6	6.1
Olfactory	1st Test	1.8	2.0	3.4	4.2	4.0	3.0	3.6	3.6	3.2	3.6
	% of Tot. images.	-	0.3	0.5	0.7	0.7	0.9	0.9	0.5	1.0	-
Gustatory	1st Test	2.8	3.8	4.5	4.0	3.4	2.8	4.2	2.0	2.6	2.8
	% of tot. images.	-	-	0.2	0.5	-	0.4	0.3	0.2	-	-



In the initial test, gustatory imagery was more important than visual for S 2, third in importance for S 3, and equally as important as auditory for S 7. It was of least importance for all subjects in the response to the fragments. Total: 7 fragments.

3) Each fragment aroused cutaneous imagery for an average of 2.97 subjects. The following fragments aroused cutaneous imagery for five or more

o) The effect of the fragments.

English: 3, 8, 16, 19, 20, 76, 78. Total: 7 fragments.

Downey (5) attempted to correlate the imaginal response of her subjects and the imaginal content of the fragments she presented. The reasons why no such attempt has been made in this investigation have been discussed in the introduction. It was, however, observed that certain fragments were more successful in arousing imagery in a particular modality than others, e.g.

English: 18, 78 (7 subjects), 83, 99. Total: 4 fragments.

i. The following fragments aroused visual imagery for all subjects :-

English: 8, 10, 13, 19, 82, 92, 93.

Total: 7 fragments.

Spanish: 27, 30, 43, 53, 59, 60, 64, 66, 68.

Total: 9 fragments.

6) Fragment 27 also aroused gustatory imagery for three subjects.

ii. 7) Each fragment aroused auditory imagery for an average of 2.631 subjects. The following fragments aroused auditory imagery for five or more subjects:-

English: 23, 85, 98. Total: 3 fragments.

Spanish: 37, 46, 49, 74 (only responded to by 83 and 86), 75. Total: 5 fragments.

English: 8, 12, 21, 22, 25, 76, 77, 78, 88,

89, 95, 96 (evoked auditory imagery for eight subjects).

Total: 12 fragments.

Based on the Rorschach Tabulation of Content, developed by Klopfer and Kelly for the Rorschach Institute (1942), table XV (Please see following two pages), shows the number of visual images of each type reported by each subject for each group of fragments.





Content of the Visual Response.

Subject		S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
H	E	30	18	5	20	19	14	18	8	10	7
	S	15	36	6	7	7	6	13	11	22	13
Hd	E	7	64	16	63	19	42	28	13	-	-
	S	6	22	47	14	3	15	22	-	15	-
A	E	4	3	2	3	1	-	10	8	3	2
	S	4	4	1	5	10	10	-	11	6	-
Ad	E	1	14	1	3	-	-	-	-	-	-
	S	2	-	4	5	13	5	-	4	5	-
Aobj	E										
	S										
At	E				-	-		1	3	3	
	S				13	1		4	5	-	
Sex	E		-		-						
	S		3		10						
Obj	E	45	30	25	20	19	23	33	32	4	8
	S	38	14	16	16	4	107	36	21	33	-
Pl	E	5	14	11	33	12	26	23	24	19	1
	S	4	11	1	10	9	12	25	36	36	9
N	E	28	55	66	67	8	29	33	22	20	22
	S	79	59	50	188	43	119	56	23	74	34
Geo	E	4	-			-					
	S	6	6			1					
Art and Des	E	1	15	4	2	2	1	5	1		2
	S	9	36	8	-	4	14	21	1		20
Arch.	E	3	-	21	60	20	40	10	15	15	8
	S	10	8	46	132	3	26	13	17	29	21
Clouds	E	-	3		-	-	3	-	4	-	2
	S	2	2		1	3	-		2	3	-
Blood	E				7			6			
	S				-			-			
Fire	E	-	-				-	-	1		
	S	2	7				15	1	2		

TABLE XVI

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## Content of the visual response.

Subject		S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
Abstract	E	3	14	12	10	13	3	1	20		-
	S	-	18	17	18	6	18	-	52		8
Lit. (1)	E	6	23	7	47	10	32	21	4	44	18
	S	14	15	10	61	6	49	28	-	-	3
Hist. (2)	E	9	8	3	68	2	23	-			4
	S	15	22	-	31	-	8	32			4
Fairy	E				-	-	-				39
	S				7	1	7				35
Folklore	E							4			
	S							29			
Theatre (3)	E	5	2			5	43	-			-
	S	-	14			1	21	14			2
Cin. (4)	E		26	-	-		4	6			5
	S		34	13	10		-	-			-
Sea	E	13	18	12	43	21	12	30	2	25	9
	S	20	12	13	17	3	20	12	13	25	8
Horror (5)	E		10	-	9			10	6	-	2
	S		25	14	12			11	4	9	5
Fantasy	E	5			-		10	4			
	S	-			17		20	4			
Colour	E	9	20	19	13	11	28	14	9	11	6
	S	7	18	11	20	3	11	8	6	7	2
Total	E	178	337	204	468	165	333	257	172	193	96
	S	230	366	273	553	121	483	329	208	299	129

1) Number of responses directly relating to literary material.

2) " " " " " " " historical "

3) " " " " " " " Theatrical presentations.

4) " " " " " " " films known by subject.

5) " " " " " " " such topics as death, torture, violent accident, etc.



For the Spanish group of fragments a significantly higher number of the following responses were reported:-

- 1) Nature, mean difference of -37.5 (significant at the 2% level of probability).
- 2) Art and Design, mean difference of -8.0 (significant at the 2% level of probability).
- 3) Horror, mean difference of -4.3 (significant at the 5% level of probability).

A slightly higher number of architecture (mean difference - 11.3) and abstract (mean difference -6.8) responses were reported for the Spanish group of fragments. In neither case, however, was the difference significant.

For the English group of fragments a significantly higher number of colour responses were reported. There was a mean difference of + 4.6 (significant at the 2% level of probability).

What sex responses there were were evoked by the Spanish fragments. Only one fire response was evoked by the English fragments. Twenty-seven fire responses were evoked by the Spanish fragments.

Images of fairies were only evoked by the English fragments for S9. Twenty-three anatomical responses were evoked by the Spanish fragments and only six for the English fragments, for which no subject reported more than three such responses.

Only two subjects reported blood responses. Both subjects reported them in response to fragment 84 and S7 reported considerable pleasure from the image.

The incidence of some responses appears to be the result of personal preference. Only S1 reported an appreciable number of geographical responses. S2 reported a total of sixty cinema responses, (average number per subject reporting



such responses, 16.3). S4 reported a total of ninety-nine historical responses (average number per subject reporting such responses, 29.03), and one hundred and ninety-two architecture responses (average 49.8). S6 reported a total of one hundred and thirty object responses (average 19.0). S7 was the only subject to report folklore responses. S8 reported seventy-two abstract responses (average 23.1), of which 72.1% were evoked by the Spanish fragments.

It is not possible to make any but the very broadest observations on the individual responses since there has been no systematic enquiry and it would be unsafe to base any such observations on content alone. Nevertheless the interpretations suggested by Klopfer and Kelly (9) and Phillips (17) would lead one to suppose that those who reported a variety of types of response below average are somewhat more limited in interests than those who report a greater variety. The average number of types of responses per subject was 18.6. S9 reported only fifteen types of responses and S10 sixteen. The relatively large number of anatomical and sex responses reported by S4 suggest some psychotic tendencies. This is further borne out by her nature responses, many of which were of mud, cut grass, accompanied by cutaneous imagery of it pricking her, stagnant water and dark trees. The majority of these responses, it will be observed, were evoked by the Spanish fragments. It is impossible to make any reliable observation on the incidence of architecture responses in this subject as an indication of a masculine protest. However, noting the high number of such responses, the experimenter enquired if the subject ever wished she were a man. This question brought a discursive and energetic denial, which may be evidence for or against this. S6, on the other hand, showed masculine tendencies in her general bearing that would be apparent even to the casual observer and showed herself to be extremely dogmatic and unbending, an observation borne out by the large number of object responses reported. It has already been mentioned that S9 has an ambition to write fairy stories and it may be that the large number of fairies imaged can be accounted for by this fact. Nevertheless, her images of animals were generally brown mice or "soft" animals of childhood fancy. Such responses could well signify some immaturity. The experimenter observed this in her behaviour in

Conclusions.

the laboratory. She became irritated if she could not get an intense image and giggled on first reading a number of the fragments. The lack of detail in SLO's responses would appear to suggest limited imaginative powers, as proposed by Phillips (16) or extensive image control. Whichever it is, it would account for the paucity of images reported by this subject.

iii. A significantly higher number of visual responses was reported for the Spanish group of fragments. There was no difference in the variety of response evoked by the two groups of fragments. An average of 15.5 types of responses were reported for the English group and 16.3 for the Spanish group. There is a mean difference of 0.8 which may be considered negligible.

v. A significantly higher number of emotional reactions were reported for the Spanish group of fragments. A wider variety of emotional reactions was reported for that group and a significantly higher number of reactions of aversion and sadness.

vi. A significantly higher number of organic reactions was reported for the Spanish group of fragments.

The subjects for the test of organic responses to the fragments were not presented to the Spanish subjects.

The significant results of the results of the test of organic responses to the fragments were not presented to the Spanish subjects.

1. The subjects for the test of organic responses to the fragments were not presented to the Spanish subjects.

2. The subjects for the test of organic responses to the fragments were not presented to the Spanish subjects.

3. The subjects for the test of organic responses to the fragments were not presented to the Spanish subjects.

## 4) Conclusions.

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- The imagery of a series of Spanish subjects as compared with
- i. A significantly higher number of images was reported for the Spanish group of fragments.
  - ii. There is no difference between the intensity of the responses to the English and to the Spanish group of fragments.
  - iii. A significantly higher number of visual responses was reported for the Spanish group of fragments. A significantly higher proportion of auditory to total images was reported for the English group of fragments.
  - iv. There was no difference between the number of responses indicative of possible synaesthesia reported for the two groups of fragments.
  - v. A significantly higher number of emotional reactions were reported for the Spanish group of fragments. A wider variety of emotional reactions was reported for that group and a significantly higher number of reactions of aversion and sadness.
  - vi. A significantly higher number of organic reactions was reported for the Spanish group of fragments.

### Subjects.

Eighteen women students of the Facultad de Filosofía y Letras at the University of Madrid; age range 18 to 22 years.

### METHOD.

#### 1. Dependent variables.

- i. Imagery habitually experienced by subjects.
- ii. Difference between this imagery and that of a random selection of eighteen English subjects.

#### 2. Independent variables.

Images suggested by experimenter. Five images were suggested in the following modalities:-

- a) visual,
- b) auditory,
- c) olfactory,
- d) gustatory,
- e) cutaneous,
- f) kinaesthetic.



The imagery of a series of Spanish subjects as compared with that of a similar series of English subjects.

Although the experimenter has some command of the Spanish language, all instructions were given to the subjects by

INTRODUCTION. María Dolores Vicente Alarcón, Licenciada en

In the response to the selections of Spanish and English verse there were certain differences in modalities. It was not possible adequately to account for this difference without discovering whether the Spaniard experiences the same type of imagery as the Englishman. If there exists a difference in modalities in the imagery experienced by the two peoples, it would be expected that this would influence the work of their respective poets. If such a difference were found to correlate with the imaginal response of readers to the two selections of poetry, it would be justifiable to assume that this accounts for the differences in modalities in the response to the fragments of poetry.

Many English subjects, especially those studying or having friends who are studying Psychology or Sociology, are familiar with materials of this nature. In Spain the study of human

Initial test (Appendix 1) translated into Spanish. Since, however, the four sentences requiring a general imaginal response were included in the initial test to aid in the selection of subjects for the test of imaginal response to the poetry, they were not presented to the Spanish subjects.

Uncontrolled variables.

subjects.

Eighteen women students of the Facultad de Filosofía y Letras at the University of Madrid; age range 18 to 22 years.

It was hoped that the presence of señorita vicente alarcón would offset, at least to some degree, any effect this may have had on the subject.

METHOD.

1. Dependent variables.
  - i. Imagery habitually experienced by subjects.
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Images suggested by experimenter. Five images were suggested in the following modalities:-

- a) visual,
- b) auditory,
- c) olfactory,
- d) gustatory,
- e) cutaneous,
- f) kinaesthetic.



3. Controlled variables.

i. Language difficulties.

Although the experimenter has some command of the Spanish language, all instructions were given to the subjects by Señorita María Dolores Vicente Alarcón, Licenciada en filosofía y letras, a bi-lingual friend of the experimenter.

ii. Desire of Subjects to excel at Test.

The subjects were advised by Señorita vicente Alarcón on the instructions of the experimenter, that it would be inconceivable that any subject should experience an equally high degree of imagery in all modalities and that to exaggerate the ratings of intensity would render the experiment absolutely valueless. "Inconceivable" and "absolutely valueless" were repeated, a spanish linguistic form of expressing absoluteness.

iii. Unfamiliarity of test material.

Many English subjects, especially those studying or having friends who are studying Psychology or Sociology, are familiar with tests of this nature. In Spain the study of human behaviour is in its infancy and meeting with some resistance in certain Catholic and medical circles. The subjects were given some information on the object of a sample survey and and a brief account of the work of Galton.

4. Uncontrolled variables.

i. Sex of Experimenter.

Even in the Universities there is still some measure of segregation of the sexes in Spain. Social contacts inside and outside the University are often limited by convention. It was hoped that the presence of señorita vicente alarcón would offset, at least to some degree, any effect this may have had on the experiment.

5. Procedure.

The subjects were tested in groups of three. Señorita vicente Alarcón gave the information and instructions reported under the 'Variables' heading and instructed the subjects:-

"Read the instructions carefully and then fill in the questionnaire accurately. Take as long as you like over it!"

The subjects were then allowed to complete the questionnaire without any interruption.

RESULTS.

A slightly higher intensity of auditory imagery was reported by the English subjects, but no statistically significant difference was reported in any modality.

Table XVI gives the average intensity of images reported in each modality by the two groups of subjects and the difference in each case.

TABLE XVI  
Average Intensity of Images

Modality	Visual	Audit.	Olfac.	Gust.	Cutan.	Kinaes.
English	3.7	2.6	1.2	1.0	2.2	2.4
Spanish	3.9	2.1	1.1	1.2	2.4	2.6
Difference	-0.2	+0.5	+0.1	-0.2	-0.2	-0.2

In view of the essential subjectivity of the intensity ratings it was suggested in Chapter 2 section 2b, that it was necessary to create a somewhat arbitrary dividing line and assume that where a difference did not exceed 0.5, no difference could be assumed to exist. The same dividing line has been adopted in this experiment. It will be observed, therefore, that the only difference in imagery is in the auditory modality and even here it is slight.

DISCUSSION.

It would be impossible to draw any rigid conclusion from this result. Within the limitations of this experiment, there is considerable similarity between the two national groups except for a slightly lower auditory image intensity among the Spanish subjects. Certainly this difference is not great enough to suggest an explanation of the lower proportion of auditory images evoked by the fragments of Spanish verse.

This slight difference may, however, confirm an observation I made on perception while employed as a teacher of English in Madrid. I found on numerous occasions, and similar findings were reported by my colleagues, that material had to be presented by a visual method if the student was to appreciate the point being taught. Auditory methods of presentation were very rarely successful in teaching. Of eight language schools in Madrid, only one used the direct method. Even advanced students invariably experienced very considerable difficulty with scanning,





CHAPTER IV

The Response of Readers to Comparable Selections of English Poetry and Prose.

Object.

To examine whether the response of readers to fragments of English verse and Spanish verse in prose translation was, in fact, a response to the imaginal content of the fragments or whether it was merely the response to prose as compared to the poetry.

Materials.

Initial Test (Appendix 1).  
15 cards bearing typed fragments of poetry and  
15 cards bearing typed fragments of prose (Appendix 5).

Subjects.

Twelve women students or former students completed the initial test. Five of these were selected for the investigation reported below:-

- S1 Student at the College of Art, Brighton, age 18.
- S2 Student of Domestic Science at the Technical College, Brighton, age 19.
- S3 Part time student of Social science at the Technical College, Brighton, age 23.
- S4 Student of Modern Languages at Newnham College, Cambridge, age 20.
- S5 Former student at the Royal Academy of Music, age 25.

METHOD.

1. Dependent variables.

- i. Imaginal response of the subjects to the two selections of fragments.

The subjects were required to describe the images roused by the fragments and these were noted as in the experiment reported in Part 1.

- ii. Differences between the imaginal reactions of each subject to the fragments of prose and to the fragments of poetry.

The fragments from the two groups were presented at separate tests and the following differences noted:-



- a) between the total number of images reported by each subject for each group of fragments, and
- b) between the number of images in each modality reported by each subject for each group of fragments.

## 2. Independent Variables.

Imagery habitually experienced by the subjects.

## 3. Controlled Variables.

### i. Selection of subjects.

The subjects selected all reported a mean rating on the initial test of 3.0 or more.

### ii. Selection of Fragments.

These were taken from issues of 'The Argosy' dated from June 1952 to September 1953. This magazine featured each month a selection of fragments of verse and prose on a given topic. The last fragment of verse and the last fragment of prose in each selection was used for this experiment.

The topics on which fragments were presented are as follows:-

Bed and Board	Fragments 1 and 16,
Colour	2 and 17,
Office Hours	3 and 18,
Cowboy	4 and 19,
Bathing	5 and 20,
Royal Romances	" 6 and 21,
Pass the Port	" 7 and 22,
Museum Piece	" 8 and 23,
The Englishman	" 9 and 24,
Dance	" 10 and 25,
Bright Lights in the	" 11 and 26,
The Seaside	" 12 and 27,
Cricket	" 13 and 28,
Fireworks	" 14 and 29,
Dawn	" 15 and 30.

### iii. Scoring of Response.

The same system of scoring was adopted as for the experiment reported in Chapter 2 (see page 29).

### iv. Subjects' attention to detail.

The same measures were taken as reported in part 1 (see page 31)

"You have already done one test on imagery. The object of

v. Practice effect.

Only one group of fragments was presented to each subject at a single test. These were presented in the following order:-

- S1) 1st Session Poetry fragments.
- S2) 2nd Session Prose Fragments.
- S3)

- S4) 1st Session Prose Fragments.
- S5) 2nd Session Poetry fragments.

vi. Fatigue, boredom and physical condition of subjects.

The same measures were taken as in the experiment reported in Part 1 (see pages 30 to 32).

4. Uncontrolled variables.

i. Position of Experimenter.

All subjects were members of an interdenominational organisation led by the experimenter and based at the Church where the experimenter was a Lay Reader. Due allowance has been made for this in considering some of the responses but it was felt that the proportionately large number of responses relating to religious topics may well be due to nothing more than the importance of religion in the lives of the subjects.

ii. Emotional reactions.

These were noted and account taken of differences.

iii. Number of words in the fragments.

The poetry fragments contained an average of 32.7 words per fragment. The prose fragments contained an average of 41.9 words per fragment. Account was taken of this difference when considering the results.

5. Procedure.

Each subject was tested individually. The cards were placed before the experimenter face downwards and handed to the subject one by one. Before the first fragment was presented the subjects were instructed:-

"You have already done one test on imagery. The object of

## b) Modalities.

this next test is to see whether there is any difference between the imagery roused by poetry and by prose. I am going to give you some cards to read bearing selections of poetry/prose and I want you to describe in detail the images they arouse!

Instructions were also given as reported under the 'variables' heading.

## ii. auditory imagery

All responses were noted by the experimenter. Intensities were not noted since they were not considered relevant to this part of the investigation.

## vi. Kinesthetic imagery

None of these differences is significant.

## RESULTS.

## a) Total Images.

There was no significant difference between the number of images aroused for the prose fragments and for the poetry fragments.

Table XVIII shows the total number of images reported by each subject for each group of fragments and the difference in each case.

For temperature reactions there is a mean difference of +2.4 (not significant).

TABLE XVIII

For pain reactions there is a mean difference of -0.3 (not significant).

## Total Images.

Subject	S1	S2	S3	S4	S5
Prose	127	71	82	255	153
Poetry	136	60	93	232	154
Difference	-9	+11	-11	+23	-1

A slightly higher number of emotional reactions were reported

There is a mean difference of +2.6 (not significant). This very slight difference may well be connected with the number of words in each group of fragments. The average number of words for the prose fragments exceeded that for the poetry fragments by 9.2 words. Table XIX shows the total number of images reported by each subject for each group of fragments divided by the average number of words per fragment and the difference in each case. (see following page).

As was observed in part 1 the nature and content of the responses were essentially concrete and related to the topic concerned. Some identification and participation were reported and sometimes an emotion was evoked from a consciously associated memory. She had herself, for a year between leaving school and commencing her present course held an office job, which she had



b) Modalities.

There was no difference in modalities reported by any subject. Table XX (see following page) shows the number of images in each modality reported by each subject for each group of fragments and the difference in each case.

The following mean differences are observable:-

- i. visual imagery +4.8,
- ii. auditory imagery +1.6,
- iii. olfactory imagery +0.4,
- iv. gustatory imagery +0.6,
- v. cutaneous imagery -2.2,
- vi. kinaesthetic imagery +0.6.

None of these differences is significant.

c) Temperature, pain and organic reactions.

No significant difference was reported in respect of temperature, pain and organic reactions. Table XXI shows the total number of reactions reported by each subject for each group of fragments and the difference in each case.

For temperature reactions there is a mean difference of +0.6 (not significant).

For pain reactions there is a mean difference of -0.2 (not significant).

For organic reactions there is a mean difference of -0.4 (not significant).

d) Emotional reactions.

A slightly higher number of emotional reactions were reported for the prose fragments but the difference is not significant. Table XXII shows the number of emotional reactions reported by each subject for each group of fragments and the difference in each case.

There is a mean difference of +1.4 (not significant).

e) General characteristics of the Imaginal Response.

As was observed in Part I the nature and content of the imaginal response appeared to have been shaped largely by personal factors.

Sl's responses were essentially concrete and related to the topic concerned. Some identification and participation were reported and sometimes an emotion was evoked from a consciously associated memory. She had herself, for a year between leaving school and commencing her present course held an office job, which she had



TABLE XVIII

Total Images divided by average no. of words.

Subject	S1	S2	S3	S4	S5
Prose	3.1	1.7	1.9	6.0	3.4
Poetry	4.1	1.8	2.8	7.1	4.4
Difference	-1.0	-0.1	-0.9	-1.1	-1.0

TABLE XIX

Scores in each modality.

Subject		visual	Audit	Olfac	Gustat	Cutan	Kinaes	Total
1	Pro	34	13	2	3	16	19	127
	Poe	91	11	Nil	1	21	12	136
	Dif	-7	+2	+2	+2	-5	+7	-9
2	Pro	40	15	Nil	Nil	4	12	71
	Poe	32	14	Nil	Nil	4	10	60
	Dif	+8	+1	-	-	-	+2	+11
3	Pro	49	17	1	2	11	2	82
	Poe	57	23	1	Nil	8	4	93
	Dif	-8	-6	-	+2	+3	+2	-11
4	Pro	136	32	1	6	19	11	255
	Poe	160	29	2	6	21	14	232
	Dif	+26	+3	-1	-	-2	-3	+23
5	Pro	104	27	7	Nil	11	4	153
	Poe	99	21	6	1	13	9	154
	Dif	+5	+6	+1	-1	-7	-5	-1

found highly un congenial. Fragment 3 evoked "A horrible old bag of a woman I used to work with...." accompanied by an emotion of aversion. Fragment 13 evoked "That stinker, Mr Pike (her former employer) see his face and his horrible double chin... at times!"

TABLE XXI  
Temperature, pain and organic reactions.

subject	S1	S2	S3	S4	S5
Temp.	Pro 2	2	1	2	1
	Poe 1	3	3	2	Nil
	Dif +1	-2	-2	-	+1
Pain.	Pro Nil	1	2	4	1
	Poe Nil	4	1	3	3
	Dif -	-3	+1	+1	-
Org.	Pro 2	3	1	4	3
	Poe 3	2	2	7	1
	Dif -1	+1	-1	-3	+2

S2's imagery appeared to be quite rigidly controlled. Nearly all her responses were related to the subject matter of the fragments and, on several occasions responded "I see the scene as described" and promptly to furnish details.

Emotional reactions.

S5's responses were related to religious topics. She was recently converted to the Christian faith after hearing a sermon by the experimenter and discussing it at great length with him. None of her responses related to religion included an image of the experimenter.

Subject	S1	S2	S3	S4	S5
prose	6	11	7	13	6
Poetry	3	3	4	12	9
Difference	-2	+3	+3	+6	-3

Fragment 5 evoked an image of a service of Baptism by Immersion held by the sea. Fragment 9 evoked an image of a street in Jerusalem with the experimenter preaching to a group of beggars. This was accompanied by the auditory image of someone singing:-

"Jerusalem, Jerusalem, lift up your voice and sing"

Fragment 22 evoked an image of the experimenter in a licensed bar discussing religious matters with a group of noisy, revelling students and receiving a great deal of hostile criticism. Fragment 13 evoked an image of a game of cricket organized among children on the beach by members of the Children's Special Service Mission. Images of her responses were reported that they were very strong. She seemed to have been

S4's imagery was very full and varied and often narrative in nature. She reported afterwards that she could have called up very much more imagery for all the fragments. People were described in full detail. Fragment 5 evoked "A fishing boat

found highly uncongenial. Fragment 3 evoked "A horrible old bag of a woman I used to work with ....." accompanied by an emotion of aversion. Fragment 13 evoked "That stinker, Mr Pike (her former employer). I can see his face and his horrible double chin..... He's making his secretary cry. He used to at times:"

Fragment 5 evoked memories of herself bathing with some fellow students while fragment 20 evoked memories of a holiday spent at a Cornish seaside resort. Both of these were accompanied by kinaesthetic imagery of swimming. Fragment 26 evoked a visual image seen from her own angle as from a position on stage with a kinaesthetic image of herself executing a grand jete and a strong sensation of moving upwards. She expressed very considerable pleasure at this image.

Fragment 9 evoked an image of a solitary Englishman in a bowler hat and carrying a rolled umbrella walking down a deserted Oriental street. This appears to have made such an impression on her that, shortly afterwards, she made it the subject of a painting. In her image she reported herself as standing in a doorway looking at him and reported a strong sensation of heat and suffocation.

S2's imagery appeared to be quite rigidly controlled. Nearly all her responses were related to the subject matter of the fragments and, on several occasions responded "I see the scene as described" and required prompting to furnish details.

S3's responses were frequently related to religious topics. She was recently converted to the Christian faith after hearing a sermon by the experimenter and discussing it at great length with him. Some of her responses relating to religion included an image of the experimenter.

Fragment 16 evoked an image of a Christian couple entertaining a stranger whom she knew to be an angel. This was a reference to the Pauline injunction to "receive strangers, for thus have some entertained angels unawares"

Fragment 5 evoked an image of a service of Baptism by Immersion held by the sea. Fragment 9 evoked an image of a street in Jerusalem with the experimenter preaching to a group of beggars. This was accompanied by the auditory image of someone singing: - "Jerusalem, Jerusalem, lift up your voice and sing"

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S4's imagery was very full and varied and often narrative in nature. She reported afterwards that she could have called up very much more imagery for all the fragments. People were described in full detail. Fragment 5 evoked "A fishing boat



in a storm. On the bridge a young officer is trying to get the radio to work. He can't and he is getting more and more flustered. The Captain is cursing him "This is bloody serious! I hear him saying it. I feel I want to go and help him!"

Fragment 3 evoked "A beetle under a brick. He is very snug but there are workmen digging up the rubble. He suddenly finds himself scooped up on a shovel. He blinks his eyes and says to himself "Now what's happening?" and tries to scurry across the shovel. He looks over the edge and sees a long drop and I see the ground far below me moving and jerking in a really frightening way. Then a workman sees him and says "Look out!" (I hear him say it in a cockney voice) and picks the beetle, his name's Blackie, off the shovel and puts him down on the grass verge. Blackie scurries off to find another brick. I hear the workman say "He's got as much right to live as I have!"

Fragment 26 evoked "An attic window. I see a glimmer inside and then flames start leaping out and spread to the other houses..... I reel the heat.....a man comes rushing up to the scene and talks animatedly to a fireman. I hear him say "My wife's in there" He tries to run into the house. A policeman tries to stop him but he's desperate. He knocks the policeman out and rushes in.....He staggers out with his wife unconscious in his arms and collapses. Then I see him in court for striking a policeman. The policeman, with a very swollen jaw, asks the judge to let him off.....He gets into a car and visits his wife in hospital!"

Eleven of her responses appeared to be similar narration of a somewhat naive nature and having a happy ending.

S5 cast an apparently humorous construction on some of the fragments. Fragment 1 evoked "An old woman dressed in an enormous dock leaf sitting in a shrubbery writing.....". She showed very little image control and associated different scenes quite freely. For example, fragment 4 evoked "A cowboy on the plains of Arizona.....an East London spiv in a tie that shrieks aloud to the heavens and a suit that makes the sky want to hide its face, is trying to buy the horse. I can imagine him saying (I don't hear it) "Nah, what abaht it, mate?" He's called Alf. I get the same picture of Alf whenever I think of Kubla Khan. You remember that bit:-

"Where Alph the sacred river ran  
Through caverns measureless to man"

the only image I can ever get is of Alf. He comes up in all sorts of places, in conversation, even in concerts and I must confess quite often in sermons and Bible Studies. He's a bit of a nuisance at times!"

Images of "Alf" were reported in three of her responses. She reported that they were very strong. She seems to have been disturbed by the recurrence of this image introducing her report "Oh dear! There's Alf again" and "Oh no! It's Alf" The image, she reported, has been habitual for some years. In describing his character she said "He could seal a bikini to an



Eskimo and talk himself out of anything".

Often she reported her response as associated with a particular line or phrase. Fragment 30 evoked "I hear Rat's song from Toad of Toad Hall:-

"All along the backwater, through the rushes tall,  
Ducks are dabbling, up tails all"

(subject sang this) .... carol of birds gives a lot of birds singing round a tree trunk... rather Christmas rushes past on his sleigh up in the sky.... he comes to a roof and finds the chimney entangled with barbed wire. There is a great big notice in front of it in red letters "Please do not encourage children to believe fantastical legends!" \*

visual imagery was important for all subjects.

second in importance to visual imagery was auditory imagery for S2, S3, S4, and S5. Cutaneous imagery was second in importance for S1 for whom auditory imagery was slightly less important than kinaesthetic imagery.

Olfactory imagery was only important for S5.

Gustatory imagery was important for S4. Most of the tastes images were of food objects and she herself pointed out that she thought a great deal about this subject and her food intake was such that her doctor had found it necessary to prescribe drugs to reduce her appetite.

## DISCUSSION.

Galton remarked of the images reported to him "I am astonished at their variety"! The modern investigator, expecting variety, can still hardly fail to be less astonished. Whether the stimulus material has a direct or associative effect would appear to depend on the subject. Certainly it would appear that personal factors dominate the way in which a subject reacts to the stimulus material.

Nevertheless, some uniformity is observable. In the test of response to the fragments of English and Spanish poetry it appeared that, the greater the image control, the fewer the images reported. S10 in that experiment showed by far the most rigid image control and reported, by a not inconsiderable

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\*The responses of S4 and S5 may perhaps be performances of "being imaginative" for the benefit of the experimenter and it would be unsafe to take them as an indication that similar fantasies occur in their everyday reading.

margin, the fewest images. S2 in this enquiry adhered most apparently to the content of the fragments and reported the lowest number of images.

Both the subjects who have an active interest in painting, S7 in the enquiry reported in Chapter 2 and S1 in this enquiry, frequently identified themselves with the scene imaged and included cutaneous or kinaesthetic self reference in their responses.

Dominant personal factors appear to have influenced the imagery of S5 in the experiment reported in Chapter 2 and of S3 in this experiment. S5 of the former experiment was frequently influenced by the relationship between herself and her fiance while S3 of this experiment was influenced by her recent religious conversion and the experimenter's part in it.

Conclusions:

- i. There is a slight difference in favour of the references to fragments of poetry between the imagery aroused by the selection of poetry and that aroused by the selection of prose.
- ii. There is no difference between the number of reactions aroused by the fragments of poetry and those aroused by the fragments of prose.
- iii. The differences in the response to the English and Spanish fragments of verse are not due to differences in the response to prose as compared to poetry and may therefore be considered as due to differences in the imaginal content of the poetry of the two cultures.
  - a) The number of references to death.
  - b) The number of references to sadness.
  - c) The number of references to death.
  - d) The number of references to sadness.

A total of 167 English and 146 Spanish poems was investigated. The average number of poems per poet investigated was 5.3 for the English selection of poems and 4.3 for the Spanish selection. A total of 935 verses was investigated for the English selection of poems and 750 verses for the Spanish selection. The average number of verses per poem was 6.2 for the English selection and

## CHAPTER V.

The Content of a Selection of Spanish and English verse.

That imagery is influenced by external stimuli was proved almost a century before Galton, when the Methodist Revivalist, George Whitefield, was describing in his usual graphic manner a man slowly walking to the edge of a precipice. As he reached the climax of his peroration, Lord Chesterfield, noted for his stolid impassivity, is said to have jumped out of his chair and exclaimed "Good God! He's gone!"

What is not easily ascertainable is the manner in which imagery is effected. In this investigation of the reaction of subjects to written words it would be difficult, if not impossible, to discover what part of the fragments have aroused any particular part of the imaginal response. On the other hand, it ought to be possible to ascertain certain differences in the content of the two selections of verse and whether these bear any obvious relation to the differences in the imaginal response. While this, in itself, would prove nothing it would give a broad based indication that certain differences could possibly be accounted for while giving no indication of the exact process at work. For example, if a significantly higher number of references to sadness were found in the Spanish selection of poems it would be safe to assume that this accounts for the fact that a significantly higher number of reactions of sadness were reported in response to the Spanish group of fragments.

In the two anthologies from which the fragments were taken all the works of the fifty poets concerned were systematically investigated and the following differences noted:-

- a) The number of times the vocative is used by each poet. It is felt that the use of the vocative may well imply a high emotional import sufficient to wish to invite participation.
- b) The number of verses written in the first person. This may be taken to imply a more subjective approach on the part of the poet concerned.
- c) The number of references to death.
- d) The number of references to sadness.

A total of 167 English and 146 Spanish poems was investigated. The average number of poems per poet investigated was 3.3 for the English selection of poems and 2.9 for the Spanish selection. A total of 935 verses was investigated for the English selection of poems and 730 verses for the Spanish selection. The average number of verses per poem was 6.2 for the English selection and



6.3 for the Spanish selection. The poems may therefore be considered to be of comparable length.

a) The use of the vocative.

The vocative was used by 26 (52%) of the English poets and 34 (63%) of the Spanish poets. Thus this form was used by 16% more Spanish poets than English poets.

A total number of 134 uses of the vocative was found in the English selection of poems and 250 in the Spanish selection. The vocative was used an average of 1.2 times per poem in the English selection and 1.7 times in the Spanish selection. There is a difference of 0.5 (not significant).

The average number of uses of the vocative per poet using this form was 5.4 for the English selection of poets and 7.3 for the Spanish selection. The difference of 1.9 is significant at the 5% level of probability.

The number of times the vocative was used by a given poet in each selection ranged from 1 to 20 times for the English selection of poets and from 1 to 32 times for the Spanish selection.

In no case did an English poet address the reader. Downey (6) suggests that the use of the second person in literature puts the writer at a disadvantage since it invites participation. In most cases English poets addressed the subject of the poem or verse, e.g.

- William Blake: "Tiger. Tiger, burning bright"
- Wordsworth: "O world, thou chocest not the better part"
- "Milton, thou shouldst be living at this hour"

Burns opens six of his eight poems in the selection with an address to the subject:-

- "Oh, Mary, at thy window be"
- "John Anderson, my jo' , John"
- "Flow gently, sweet Afton! among thy green braes"
- "Scots, wha hae wi' Wallace bled"
- "Ye banks and braes and streams around  
The castle o' Montgomery"

(1) All of "Wee, sleekit, cow'rin, tim'rous beastie" to 1631. Any interpretation of this would be speculative and impossible

Some Spanish poets did address the reader:- Luis de Leon in a reflective poem on the vanity of life begins a verse:-

- "Ay, despertad mortales !"  
(O, awake, mortal men)



Francisco de Aldana opens a poem with such an address:-

"Vistes alguna vez en la campana  
ejercito español, fiero y lozano?"

(Have you ever seen the fierce and active Spanish army  
in the field?)

Góngora describing the tomb of Cardinal Sandoval addresses  
the reader:-

"Esta que admiras fabrica ---"

(This fabric which you admire) but this is not in the  
strict sense a vocative.

Many Spanish poets, <sup>addressed</sup> several objects and other factors  
connected with the subject of the poem. Luis de Leon in his  
poem in memory of Salinas, organist at Salamanca Cathedral,  
begins his first verse:-

"El aire se serena  
y viste de hermosura y luz no usada  
Salinas, cuando suena  
la musica extremada"

(The air becomes calm and takes on a beauty and unaccustomed  
light, Salinas, when the consummate music sounds)

and other verses of the same poem begin:-

"O desmayo dichoso"  
(O, happy swoon)  
"O muerte que das vida"  
(O death that givest life)  
"O dulce olvido"  
(O sweet oblivion)

and in the last verse:-

"O suene de contino,  
Salinas, - - -"

(O go on sounding, Salinas -,- -)

His poem on the Ascension begins:-

"¡Y dejas, Pastor Santo,  
tu grey en esta valle - - ?"

(And are you leaving, Holy Shepherd, your flock in this  
valley?)

and the last verse:-

"¡Ay, nube envidiosa!  
Cuán triste, ay, nos dejas!"

(O envious cloud! How sad, alas, you leave us)

Seven Spanish use the vocative in this way<sup>(1)</sup>. The Deity,

(1) All of these poets belong to the period 1540's to 1631.  
Any interpretation of this would be speculative and impossible  
to verify. It may well be, however, that the foreign  
influence which found its way into Spain after this period  
and the relative advance in civilisation in the 16th with its  
emphasis on rational thought under the influence of Faejoo  
led to some inhibition of emotional expression. The period  
seems to be given relatively equal representation in the  
English selection.

classical characters, loved ones (usually where love is unrequited), war, death, nature, the elements, music, beauty (sometimes as a quality of the loved one) and the stars are among those things addressed by the Spanish poets. English poets largely address tangible objects and specific persons and occasionally historical personalities. The uses of the vocative by the Spanish poets are not only more frequent but considerably more varied.

b) The Use of the First Person.

The first person was used by 37 (74%) of the English poets and 29 (53%) of the Spanish poets. Thus this form was used by 3% more English than Spanish poets.

A total of 242 uses of the first person was found in the English selection of poems and 145 in the Spanish selection.

The first person was used an average of 4.3 times per poet in the English selection and 2.9 times in the Spanish selection. There is a difference of + 1.9 which is, however, not significant. Nevertheless, this difference falls just short of statistical significance.

The average number of uses of the first person per poet using this form was 6.54 for the English selection and 5.0 for the Spanish selection. There is a difference of + 1.54 (not significant).

The uses of the first person are so varied in both selections that no observations can profitably be made.

c) References to Death.

The following words were included as references to death: - death, dead, dying, die, killed, grave, graveyard, cemetery, shroud (Spanish mortaja which is a shroud specially used for burial), tomb, tombstone, sepulchre, corpse, funeral, coffin. In the context of Oscar Wilde's "Ballad of Reading Gaol" the words "swing" "noose" and "hangman" were also included.

References to death were made by 15 (30%) of the English poets and 23 (46%) of the Spanish poets. Such references were found in 22 English poems and 41 Spanish poems. A total of 64 such references was found in the English poems and 103 in the Spanish poems.

The average number of references to death per poet in each selection was 1.28 for the English poets and 2.04 for

the Spanish poets. There is a difference of  $-0.76$  (not significant). However, Oscar Wilde's "Ballad of Reading Gaol" contained thirty references to death. Excluding this poet, the average number of such references for the remaining English poets is  $0.69$ . This gives a difference of  $-1.33$  (significant at the 5% level of probability).

The average number of references to death per poet using such references was  $4.2$  for the English selection of poems and  $4.4$  for the Spanish selection. There is a difference of  $-0.2$  (not significant).

No Spanish poet referred to death by suicide. Thomas Hood devotes a whole poem to this subject with his "The Bridge of Sighs" which deals with a girl who appears to have drowned herself.

Two Spanish poems are written on the subject of a cemetery. Luis Cernuda describes a cemetery in Glasgow and asks:-

"¿ Es el infierno así ?"  
(Is hell like this ?)

and Xavier Villarutia describes a cemetery in the snow:-

"A nada puede compararse un cementerio en la nieve"

(Nothing can be compared with a cemetery in the snow)

while Unamuno comments on a cemetery:-

"Aquí descansan los contentos"  
(Here rest the contented ones).

The nearest to this in the English selection is Gray's 'Elegy' which is evidenced as being written in a country churchyard but with very few references to the churchyard itself.

#### d) References to Sadness.

The following were included as references to sadness:-

sadness, sad, tragedy (in a personal context), mourn, lament, pain, woe begone, despair, hopeless, alas, tears, weep, grieving, grieve, grief, evil fortune, pitiful, bitterness (Spanish amargura which conveys a personal bitterness).

References to sadness were made by 16 (32%) of the English poets and 26 (42%) of the Spanish poets. 22 English poems contained such references and 52 Spanish poems.

A total of 68 such references was found in the English selection and 137 in the Spanish selection.



The average number of references to sadness per poet using such references was 4.25 for the English selection of poems and 5.3 for the Spanish selection. There is a difference of - 1.05 (not significant).

The average number of references to sadness per poet was 1.36 for the English selection and 2.74 for the Spanish selection. There is a difference of - 1.38 (significant at the 5% level of probability).

The references to sadness in the Spanish selection were fairly varied and largely personal expressions of sadness evoked by the theme being treated. The references to sadness in the English selection usually occurred in a poem in which the first person was used and were generally an expression of personal sadness.

DISCUSSION.

The use of the vocative may well imply a high degree of emotional import. If this is so it would be safe to assume that the significantly higher number of emotional reactions in response to the Spanish fragments is a response to the emotional content of the fragments themselves.

The slightly higher number of uses of the first person by the English poets may suggest a more introspective approach by poets of this nationality as compared with Spanish poets. Frequently it was suggested to me by Spaniards, while in Spain, "The English are a race of introverts. We are a race of extraverts". This remains to be investigated but, if it were so, one would expect an introspective approach to inhibit free emotional expression to some degree.

The higher number of references to death and sadness by the Spanish poets may well account for the significantly higher number of reactions of aversion and sadness in response to the Spanish fragments. It may also account for the higher number of horror responses in the visual imagery roused by the Spanish fragments.

That the dominant element in Spanish poetry is soledad, translatable only as despondency, is agreed upon by most Spanish literary critics. It would appear that this element is more dominant in Spanish poetry than in English poetry.

## Conclusions.

- i. Spanish poets use the vocative more frequently than English poets.
- ii. A slightly higher number of uses of the first person (falling just short of statistical significance) was found in the work of the English poets investigated. This may imply that English poets tend to approach their topics more subjectively than do Spanish poets.
- iii. Spanish poets more frequently allude to death than do English poets.
- iv. There is an element of sadness in the work of some Spanish poets far in excess of that apparent in English poetry.

None of the above mentioned differences have not, so far, been extensively investigated although it is self evident that a German, shown by the work of McGeehan and Wayne to have respect for authority which might safely be described as exclusive, would react differently from an American to a display of an authority figure as ridiculous. It would be, however, that the reaction to the literature of different cultures goes far deeper than such obvious and measurable differences.

In response to a representative selection of English poetry and of Spanish poetry in prose translation subjects evoked a significantly higher number of images to be evoked by the Spanish fragments of poetry. This result was contrary to the expectations of the subjects all of whom, with one exception, preferred the poetry fragments; and indeed the subject who considered that an experiment to prove poetry evoked richer imagery than prose a waste of time and the result a foregone conclusion reported the highest difference between the number of images evoked by the two groups of fragments.

The difference is not a great one but it is consistent. However, the total number of words in the Spanish fragments was less than that in the English group by three hundred and twenty words and one would therefore expect the English fragments to evoke a higher number of imaginal suggestions. It might (though not very plausibly) be suggested that this response was not to poetry but an investigation of the response of subjects to comparable selections of English poetry and prose fragments to more extensive imagery in response to the fragments of images.

It is difficult to make observations on a matter such as the evocation of images which depends on introspective reports

CHAPTER VISummary and Conclusions.

## a) Total Images.

It may be questioned whether a given sensory word implies a given sensory content in the mind of the poet. It is by no means inevitable that a given sensory word will arouse in the reader a predictable sensory impression. There is, however, evidence of some dependence of the imaginal response on the imaginal content of the stimulus material. It has already been suggested that the evocation by the stimulus material can be surprisingly strong. National peculiarities in the reaction to literary material have not, so far, been at all extensively investigated although it is self evident that a German, shown by the work of McGanahan and Wayne to have a respect for authority which might safely be described as compulsive, would react differently from an American to a portrayal of an authority figure as ridiculous. It would appear, however, that the reaction to the literature of different cultures goes far deeper than such obvious and predictable differences.

In response to a representative selection of English poetry and of Spanish poetry in prose translation subjects reported a significantly higher number of images to be evoked by the Spanish fragments of poetry. This result was contrary to the expectations of the subjects all of whom, with one exception, preferred the poetry fragments; and indeed the subject who considered that an experiment to prove poetry aroused richer imagery than prose a waste of time and the result a foregone conclusion reported the highest difference in favour of the prose translations between the number of images evoked by the two groups of fragments.

The difference is not a great one but it is consistent. Moreover, the total number of words in the Spanish fragments was less than that in the English group by three hundred and ten words and one would therefore expect the English fragments to contain a higher number of imaginal suggestions. It might (although not very plausibly) be suggested that this response is, in fact, nothing more than the response to prose as opposed to poetry but an investigation of the response of readers to comparable selections of English poetry and prose showed a tendency to more extensive imagery in response to poetry.

## b) Intensity of Images.

It is difficult to make observations on a matter such as intensity of images which depends on introspective reports



of an essentially subjective nature. Comparisons of intensities of imagery between any two subjects could not profitably be made. It is clear that subjects had different ideas of intensity. S4 reported a cutaneous image of herself being branded and rated its intensity at 5 (equivalent to an actual sensation). Moreover, in modalities where only one image was reported, it would be impossible to compare this with the average intensity of the images reported in the same modality for the other group of fragments. An arbitrary dividing line was therefore set and it was assumed that where a difference in the average intensity did not exceed 0.5 no difference could be taken to exist.

There was no significant difference in the intensity of images aroused by the two groups of fragments for any one subject.

There was no difference between the English and Spanish fragments in evoking such reactions. Jackson suggests that c) Modalities may be more frequent among Spanish peoples but this remains to be investigated. Even if it were so,

Downey found that there was a correlation between the imaginal suggestions contained in the poetic fragments she presented to her subjects and the imaginal responses reported by them. This conclusion is unacceptable because it is scarcely possible to define an imaginal suggestion by a method which would preclude the influence of the investigator's own imagery. Nevertheless differences were observed in certain modalities in response to the English and Spanish fragments. A significantly higher number of visual images was reported in response to the Spanish fragments and a significantly higher proportion of auditory to total images for the English group.

There are several reasons for assuming this difference to have been influenced by the fragments themselves:-

- i. Certain fragments were more successful than others in arousing responses in a particular modality.
- ii. Certain fragments were more successful than others in arousing imagery of any kind, twelve fragments being less than 60% successful in arousing imagery.
- iii. There is no correlation between the subject's dominant mode of imaging and the imaginal response to the fragments.

On the other side, however, it must be pointed out that there does not appear to be any difference in the degree of imagery experienced by the Spaniard and the Englishman and therefore no reason to suppose that different imagery is experienced by the poets of the two nationalities. An investigation of the imagery of a group of Spanish women students at the University of Madrid revealed no differences

from the imagery of a comparable group of English women students. It is, however, possible that the Englishman might have a slight preference for the auditory modality as compared to the Spaniard.

d) Synaesthesia.

Downey found that the fragments she termed synaesthetic were only appreciated by those subjects who showed evidence of synaesthesia. There is no means of knowing whether the fragments so termed by Downey are any indication of synaesthesia on the part of the poet. Her investigation, therefore, proves nothing.

In the present investigation, it was found that the imaginal responses which may indicate synaesthesia were only reported by the apparently synaesthetic subjects, of whom there were four. These responses were themselves very few. There was no difference between the English and Spanish fragments in evoking such reactions. Jaensch suggests that such reactions may be more frequent among Spanish peoples but this remains to be investigated. Even if it were so, however, one would expect evidence of this in Spanish literature only to affect synaesthetic readers.

e) Emotional Reactions.

In response to the fragments of Spanish poetry a significantly higher number and a significantly wider range of emotional reactions were reported.

It would appear that national factors may be taken to account for this difference. An investigation of the content of a representative selection of Spanish and English poetry shows a significantly higher number of references to death and sadness in the Spanish selection. One may therefore describe these as preferred topics in Spanish poetry. It was also found that Spanish poets use the vocative a significantly greater number of times than the English poets; it may be that the use of the vocative implies a greater degree of emotional import sufficient for the poet to wish to invite participation. A significantly higher number of reactions of aversion and sadness were reported in response to the Spanish fragments. The similarities between the results of the two enquiries (i.e. the higher number and greater variety of emotional reactions and the greater number of uses of the vocative; the higher number of emotions of aversion and sadness and the more frequent references to death and sadness) cannot be ignored.

It is known that intense emotion is accompanied by organic reactions. If the greater emotional content is contained in the Spanish fragments one would expect them to have an organic effect. This appears to be the case.

A significantly higher number of organic reactions were reported in response to the Spanish fragments.

f) The Content of the Imaginal Response.

Galton remarked of the images reported by his subjects "I am astonished at their variety". There can be very few, if any, investigators who have not felt precisely the same. The variety, however, seemed to be influenced by personal preferences and, within the limitations of this experiment, it would appear that personality factors have some influence. S2 reported a great number of cinema responses while S7 was the only subject to report folklore responses. The subjects who participated in the enquiry into the response to English poetry and prose all reported a number of responses relating to religious matters. All these subjects were active members of the Church where I served as a Lay Reader.

The responses of several subjects suggested personality traits which were otherwise observable. S4 reported a large number of responses suggestive of a psychotic state. S6, whose bearing is very masculine, reported a large number of object responses.

The majority of fire, sex, anatomical, nature, blood and horror responses were evoked by the Spanish fragments. Since little work has been done to date on personality factors among Spanish peoples, no observations on this can profitably be made. One can, however, note that where responses suggestive of neurotic or psychotic states were in evidence they were more frequently evoked by the Spanish fragments.

Those who showed the greatest degree of image control also reported the fewest images. The controlled imagers' responses were less varied and these subjects responded to a smaller number of the fragments.

"In poetry" writes Bousoño "the imaginings are more vast and more far reaching than in ordinary language". It would appear that Spanish poetry is more far reaching than English poetry in the imaginings it evokes.



Age: .....

Object of study: .....

to call up images of each of the objects listed.

their intensity as follows:

- Vivid enough to seem real 5
- Vivid but not quite real 4
- Appendix 1. Initial test of imagery, used to select subjects for the investigation of the imaginal response to the fragments. 2
- Not very vivid 2
- Rather hazy 1
- No image 0

Visual

- a rose garden .....
- a front garden .....
- a grey cat .....
- a grey pitch .....
- a green sea .....

Put a tick if you genuinely see colour.  
(It is quite likely that you will not)

Sound

- your mother's voice .....
- thunder .....
- a train whistling .....
- an alarm clock .....
- a cheering crowd .....

Put a tick if any colour suggests itself and indicate colour)

Name: ..... Age:.....

Subject of study: .....

Try to call up images of each of the objects listed.

Rate their intensity as follows:

- Vivid enough to seem real 5
- Vivid but not quite real 4
- Quite vivid 3
- Not very vivid 2
- Rather hazy 1
- No image 0

The look of:

- a rose garden .....
- your front garden .....
- a siamese cat .....
- a hockey pitch .....
- a rough sea .....

(Please put a tick if you genuinely see colour.  
Note: it is quite likely that you will not)

The sound of:

- your mother's voice.....
- thunder.....
- a train crash .....
- an alarm clock .....
- a cheering crowd

(Please put a tick if any colour suggests itself and indicate colour)

The feel of:

rain on your face .....

having your hair pulled .....

a pin prick .....

the petal of a rose .....

a sudden gust of wind .....

(Please put a tick if any colour suggests itself and indicate colour)

The smell of:

onions .....

beer .....

tobacco smoke .....

rotting seaweed .....

burning rubber .....

The taste of:

sea water .....

castor oil .....

bacon .....

gin and orange .....

milk .....

The feeling of:

falling .....

swimming .....

spinning round .....

leaping upwards .....

running .....

(Please put a tick if any colour suggests itself and indicate colour)



What colours, if any, are suggested by the following:

- Death
- pain
- hatred
- love
- greed
- kindness
- joy
- fear
- sorrow
- elation
- success

(If no colour suggested do not try to find one. Please leave blank)

Describe and note the intensity of the images, if any, called up to you by the following passages.

1. "The voice of thunder"

intensity .....

2. "The bare black cliff clashed round him.

intensity .....

3. "A ray of light creaking down the stairs"

Intensity.....

4 "The red hammers of the dawn place the black night on  
their forge."

Intensity.....

Would you be willing to participate in a series of experiments  
on this topic? If so which afternoons would suit you best?

Please would you return this to Mr.D.R.Willings, Psychology Department  
not later than December 15th,1959.

1. When I do count the clock that tell the time,  
And see the brave day sunk in hideous night;  
Leaving the world to darkness and to me,  
William Shakespeare.  
Thomas Gray.
2. Gather ye rosebuds while ye may  
Old Time is still a flying;  
And this same flower that smiles today  
Tomorrow will be dying.  
Lingering blooms delayed.  
Robert Herrick.  
Oliver Goldsmith.
3. Yet once more, O ye laurels, and once more  
Ye mirtles brown, with ivy never sere,  
I come to pluck your berries harsh and crude,  
And with forced fingers rude  
Shatter your leaves before the mellowing year.  
William Blake.  
John Milton.
4. Out upon it, I have loved  
Three whole days together!  
And am like to love three more,  
If it prove fair weather.  
Robert Burns.  
Sir John Suckling.
5. When love with unconfined wings  
Hovers within my gates  
And my divine Althea brings  
To whisper at the grates;  
When I lie tangled in her hair  
And fettered to her eye  
The birds that wanton in the air  
Know no such liberty.  
Richard Lovelace.  
Sir Walter Scott.
6. Well then! I now do plainly see  
This busy world and I shall ne'er agree  
The very honey of all earthly joy  
Does of all meats the soonest cloy.  
Abraham Cowley.  
Down to a sunless sea.
7. Happy the man whose wish and care  
A few paternal acres bound,  
Content to breathe his native air,  
In his own ground;  
Alexander Pope.  
Rose Ayler, all were thine.  
Walter Savage Landier.



8. The curfew tolls the knell of parting day  
The lowing herd winds slowly o'er the lea,  
The ploughman homeward plods his weary way  
Leaving the world to darkness and to me.  
So flower of her kindred  
So rosy as his night,  
Thomas Grey.
9. Sweet Auburn! loveliest village of the plain  
Where health and plenty cheered the labouring swain,  
Where smiling spring its earliest visit paid,  
And parting summer's lingering blooms delayed.
17. Jenny kissed me when we met  
Rising from the chair and hat in,  
Oliver Goldsmith.
10. Tiger! Tiger, burning bright  
In the forest of the night,  
What immortal hand or eye  
Could frame thy fearful symmetry?
18. She walks in beauty, like William Blake.  
Of cloudless climes and starry skies,
11. O Mary, at thy window be,  
It is the wished, the trysted hour!  
Those smiles and glances let me see  
That makes a miser's treasure poor:
19. I met a traveller from an antique land  
Who said: Two vast and trunked legs of stone  
Stand in the desert. Near them on the sand,  
Percy Bysshe Shelley.
12. She dwelt among untrodden ways  
Beside the springs of Dove,  
A maid whom there were none to praise,  
And very few to love.  
William Wordsworth.
20. To one who has been long in exile  
13. Oh, young Lochinvar is come out of the west:  
Through all the wide border his steed was the best;  
And save his good broadsword he weapons had none;  
He rode all unarmed and he rode all alone.  
Sir Walter Scott.
14. In Xanadu did Kubla Khan  
A stately pleasure dome decree:  
Where Alph, the sacred river, ran  
Through caverns measureless to man  
Down to a sunless sea.  
Lift her with care; Samuel Taylor Coleridge.  
Fashioned so slenderly,
15. Ah what avails the sceptred race,  
Ah what the form divine!  
What every virtue, every grace!  
Rose Aylmer, all were thine.  
Drips from her cloth; Walter Savage Lander.  
Thomas Hood.

16. 'Tis the last rose of summer  
 Left blooming alone  
 Her lovely companions  
 Are faded and gone;  
 No flower of her kindred  
 No rosebud is nigh,  
 To reflect back her blushes,  
 To give sigh for sigh.

Thomas Moore.

17. Jenny kissed me when we met  
 Rising from the chair she sat in;  
 Time, you thief, who love to get  
 Sweets into your list, put that in !

Leigh Hunt.

18. She walks in beauty, like the night  
 Of cloudless climes and starry skies,  
 And all that's best of dark and bright  
 Meet in her aspect and her eyes.

Lord Byron.

19. I met a traveller from an antique land  
 Who said: Two vast and trunkless legs of stone  
 Stand in the desert. Near them on the sand,  
 Half sunk, a shattered visage lies, whose frown,  
 A wrinkled lip and sneer of cold command,  
 Tell that its sculptor well the passions read.

Percy Byshe Shelley.

20. To one who has been long in city pent  
 'Tis very sweet to look into the fair  
 And open face of heaven - to breathe a prayer  
 Full in the smile of the blue firmament.

John Keats.

21. One more unfortunate  
 Weary of breath  
 Rashly impertunate  
 Gone to her death !

Baltasar del Alcazar.

23. Take her up tenderly  
 Lift her with care;  
 Fashioned so slenderly,  
 Young, and so fair.

Look at her garments  
 Clinging like cerements;  
 While the wave constantly  
 Drips from her clothing.

Fernando de Herrera.

Thomas Hood.

22. I tell you, hopeless grief is passionless;  
That only men incredulous of despair,  
Half taught in anguish, through the midnight air  
Beat upwards to God's throne in loud access  
Of shrieking and reproach.

Elizabeth Barrett Browning.

23. Tell me not in mournful numbers  
Life is but an empty dream !  
For the soul is dead that slumbers  
And things are not what they seem.

Henry Wadsworth Longfellow.

24. Blessings on thee, little man,  
Barefoot boy with cheek of tan !  
With thy turned up pantaloons  
And thy merry whistled tunes.

John Greenleaf Whittier.

25. Once upon a midnight dreary, while I pondered, weak  
and weary,  
Over many a quaint and curious volume of forgotten  
lore,  
While I nodded nearly napping, suddenly there came  
a tapping,  
As of someone gently rapping, rapping at my chamber  
door.

Edgar Allan Poe.

26. The air becomes calm and takes upon itself beauty  
and unaccustomed light, Salinas, when the  
consummate music sounds, guided by your skilled hand.

Fray Luis de León.

27. Three things keep my heart the prisoner of love, the  
fair Ines, smoked ham, and aubergines in melted  
cheese !

Baltasar del Alcázar.

28. Let a voice and a song of lamentation and a spirit of  
fear blended with anger, make a bitter beginning to  
the memory of that fatal and abhorrent day for which  
wretched Portugal groans, naked of valour, stripped  
of glory.

Fernando de Herrera.

38. Alas, Fátima, what a  
mound, were all the flowers



29. White ivory inlaid in ebony, soft voice heard by one unworthy, sweet glance - on whose account I carry a great wound in my heart - ill tenanted.

Francisco de Figueroa.

30. Have you ever seen the fierce and active Spanish army in the field when black winged night is scattering silence, sleep, fear and alarm on the dark air ?

Francisco de Aldana.

31. In a dark night, inflamed by Divine Love's desires - oh, happy chance ! - I went out unnoticed, all being then tranquil in my house.

Saint John of the Cross.

32. I will dance a dance treading the dust fine, so very fine.

Miguel de Cervantes.

33. Who wouldn't be the sky, oh, nymph brighter than the sky, to enjoy the infinity of your face with a thousand lights, when you look at its stars.

Barahona de Soto.

34. They are beating the drums in Bethlehem, shepherd; they are sounding little trumpets and the sound rejoices me.

Jose de Valdivieso.

35. Fortune presents gifts, not according to the book; when you expect whistles, it is flutes; when you expect flutes, it is whistles.

Luis de Góngora.

36. The greater the human handiwork, the sooner it tires the gaze; the clearest spring and garden arranged by man tell us reproachfully that our skill and our hands are short lived.

Francisco de Medrono.

37. If I were a grain of wheat in the hands that I bless, I say she could make me into flour and then into cake or biscuit, so that she could eat me then.

Tirso de Molina.

38. Alas, Fabio, these solitary fields, this parched mound, were once the famous Italica.

Rodrigo Caro.

39. In a shattered ship, without helm or mast, I sail  
sail the broad gulf of love, in whose sea the  
waves are fire, and break on hearts, not sand.

Luis Martin de la Plaza.

40. These purple roses that today fell from the white  
breast of dawn, and a vase of brightly coloured  
flowers, I offer you now, O sweet breezes.

Pedro Espinosa.

41. In the curled tempest of wavy gold my heart, thirsty  
for beauty, swims gulfs of pure and burning light, if  
you let down your beautiful hair.

Francisco Quevedo.

42. The flowery hills on which the April bull pastured  
in the mountains are now hills, and the cold north  
wind prevents the shepherds from entering or  
leaving their huts.

Francisco de Borja.

43. Strip off the leaves from those shrines dedicated to  
the lamps of the sky, those scaly deities, the  
nereids, and let the gilded lyres show mute between  
the thorns.

Juan de Tarsís.

44. Her rare voice and the clear tone sent forth from  
that sweet throat, with their gentle effect on the  
ear, might well cause any pain to cease.

Conde de Villamediana.

45. Leave your abode, mute silence, for on the cold bank  
of this sacred river, and in this solitary and  
untilled valley, my heart awaits you.

Juan de Jauregi.

46. With what fleet steps you run by ! Oh, how you leave  
me, vain time ! Oh, tyrant over my fortune and my  
being, how continually I feel your lordly hand !

Luis de Carrillo y Sotomayor.

47. Now, o brook, the crystals of your lovely course,  
bright truth to the neighbouring flowers, unreservedly  
murmurs my love when I most tenderly complain.

Pedro Soto de Rojas.

48. That sweetest of birds and this loveliest of flowers were scattering their gentlest loves in songs and smooth mother of pearl.

Fray Jerónimo de San José.

49. What was pomp and delight, waking in the first light of morning, will be, in the evening, a vain object of compassion, sleeping in the arms of the cold night.

50. Better not to see Pedro Calderón de la Barca. Idea that is silent is its mutilation from artillery

50 The eyes are large, the sight brief - or love cuts it short because it aims to wound - the brow is the bow, a glance the aim to which love owes its conquests.

60. Do souls keep you Gabriel Bocángel. Or are you? keeps you any chimboles of glass,

51. Giant waves, that break with a roar on deserted and remote shores, carry me away with you wrapped in a sheet of foam.

Gustavo Adolfo Bécquer.

52. On the branch the exposed corpse was rotting, like a horrible fruit, hanging close to the trunk, bearing witness of an improbable sentence and swinging with a pendulum's rhythm over the road.

62. There are blows in Salvador Díaz Miron. Blows that seem to come from God's hatred, as if

53. White night, in which the glassy lake sleeps quietly in its lake bed, over which watches a round full moon that leads its army of stars.

63. When the moon comes Miguel de Unamuno. lost and the impenetrable paths appear.

54. The sea, like a vast quicksilver mirror, reflects the metal sheet of a zinc sky. García Lorca.

64. My eyes always see y Ruben Darío. y days by the sea. Hanging from the powerless mountains, scarcely

55. On my own waiting heart, arriving from the future or from the forgotten past, voices that once were, souls that have never been, knock outside, as on an old house door.

65. If my heart should die on land, take it to sea level and leave it on the Enrique Gonzalez Martinez.

56. Evening pays for field labour in divine gold.

Julio Herrera y Reissig.

66. Speak, away with the speak! Little black lap, away with the little black lap!

Nicolas Guillén.



57. The clock struck twelve . . . it was twelve blows  
of the spade on the earth. "My hour !" I cried.  
But silence answered me.

Antonio Machado.

58. The world's thousand towers against a golden  
sunset, raise their towers before my mind.

Juan Ramon Jimenez.

59. Better not to return to the village, to the ravaged  
Eden that is silent in its mutilation from artillery  
fire.

Ramon Lopez Velarde.

60. Do souls keep you company ? Do you see them ? Or  
are what keeps you company tiny thimbles of glass,  
imprisoning the pink tips and flights of the  
fingers ?

Pedro Salinas.

61. Who is advancing through the evening, playing his  
lute on the clouds, as if in his own dwelling  
place ?

Ricardo Molinari.

62. There are blows in life so strong . . . I know not !  
Blows that seem to come from God's hatred, as if  
before them the surge of all that is suffered were  
to dam up the soul.

Cesar Vallejo.

63. When the moon comes out, the bells are lost and the  
impenetrable paths appear.

Federico García Lorca.

64. My eyes always see you, city of my days by the sea.  
Hanging from the powerless mountains, scarcely  
supported in your headlong fall to the blue waves.

Vicente Aleixandre.

65. If my voice should die on land, take it to sea level  
and leave it on the shore.

Rafael Albertí.

66. Spook, away with the spook ! Little black imp,  
away with the little black imp !

Nicolas Guillén.

67. I live in a card building, a house of sand, a  
castle in the air, and spend the minutes waiting  
for the walls' collapse.

Alfred, Lord Tennyson,  
Jorge Carrera Andrade.

68. Behind the open railings, there within the walls,  
the black earth without trees or grass, with wooden  
benches where, in the afternoons, a few old people  
sit in silence.

Luis Cernuda.

69. Nothing can be compared with a cemetery in the snow.  
What name can one give to whiteness laid upon  
whiteness?

Xavier Villarrutia.

70. Leave the wine on the table. See how a new winter  
of profound distances - brushwood and cloud,  
dryness and cold - appears unfathomable and  
fantastic. Let us drink again.

Manuel Altologuierre.

71. Araucanian stones and detached water flowers,  
expanses of root meet the man who has come from  
Spain. They invade his armour with their giant  
creepers. The shadows of ferns tread down his  
sword.

Pablo Neruda.

72. Like the bull, I was born for mourning and grief,  
like the bull, I am marked with a brand of hell on  
my side, as a man by a seed in my groin.

Miguel Hernandez.

73. O Love, the ruins of the light and of shapes  
worship your dense shadow.

Octavio Paz.

74. Look at me; I do not love you; you are the hope on  
which I place my loving voice, which is dead.

Alberto Quintero Alvarez.

75. When you have finished, look at this burning wall  
where the beast is finishing his rest.

Alf Chumacero.

76. There is sweet music here that softer falls  
Than petals blown from roses on the grass.  
At the sea-down's edge  
Walled round with rocks  
Alfred, Lord Tennyson.

77. The owl and the pussy cat went to sea  
In a beautiful pea green boat;  
They took some honey and plenty of money

83. Wrapped up in a five pound note.  
The owl looked up to the stars above  
And sang to a small guitar  
'Oh lovely pussy, oh pussy my love,  
What a beautiful pussy you are!  
William Ernest Henley.  
Edward Lear.

78. The grey and the long black land;  
And the yellow half moon large and low;  
And the startled little waves that leap  
In fiery ringlets from their sleep,  
And I gain the cove with pushing prow,  
And quench its speed in the slushy sand.  
Oscar Wilde.

79. When I consider Life and its few years -  
The sea is calm tonight, and the sun;  
The tide is full, the moon lies fair  
Upon the straits;-on the French coast the light  
Gleams and is gone; the cliffs of England stand  
Glimmering and vast.  
Robert Browning.

80. The blessed damozel leaned out  
From the gold bar of heaven;  
Her eyes were deeper than the depth  
Of waters stilled at even.  
Matthew Arnold.

81. O world, thou choosest Dante Gabriel Rossetti.  
It is not wisdom only to be wise.

'Twas brillig and the slithy toves  
Did gyre and gimble in the wabe;  
All mimsy were the borogroves  
And the mome raths outgrabe.

82. By the old Moulesin Pagoda, lookin' eastward to the  
sea,  
There's a Burma girl a-settin', an' I know she  
thinks of me,  
For the wind is in the palm trees, an' the temple  
bells they say:  
"Come you back, you British soldiers; come you back  
to Mandalay"  
Lewis Carroll.

Rudyard Kipling.



82. In the coign of a cliff between highland and lowland,  
At the sea-down's edge between windward and lee,  
Walled round with rocks as an inland island,  
The ghost of a garden fronts the sea.

Algernon Charles Swinburne.

83. Out of the night that covers me,  
Black as the pit from pole to pole,  
I think whatever gods there be  
For my unconquerable soul.

William Ernest Henley. Robinson.

84. He did not wear his scarlet coat,  
For blood and wine are red,  
And blood and wine were on his hands  
When they found him with the dead,  
The poor, dead woman whom he loved,  
And murdered in her bed.

Oscar Wilde.

85. When I consider Life and its few years -  
A wisp of fog betwixt us and the sun;  
A call to battle and the battle done  
E'er the last echo dies within our ears.

Lisette Woodworth Reese.

86. With rue my heart is laden  
For golden friends I had,  
For many a rose lipped maiden,  
For many a lightfoot lad.

A. E. Houseman.

87. O world, thou chocest not the better part,  
It is not wisdom only to be wise,  
And on the inward vision close the eyes.

George Santayana.

88. By the old Moulmein Pagoda, lookin' easward to the sea,  
There's a Burma girl a-settin', an' I know she thinks of me,  
For the wind is in the palm trees, an' the temple bells they say:  
"Come you back, you British soldier; come you back to Mandalay"

Rudyard Kipling.

89. I will arise and go now to the Lake of Inisfree,  
 And a small cabin build there, of clay and  
 wattles made,  
 Nine bean rows will I have there, a hive for the  
 honey bee,  
 And live alone in the bee-loud glade.  
 And the grey mist on the sea's face and the grey  
 dawn breaking.

William Butler Yeats.

90. Whenever Richard Cory went to town,  
 We people on the pavement looked at him;  
 He was a gentleman from sole to crown,  
 Clean favoured and imperially slim.  
 And the music's not in the street  
 In the city as the sun sinks low,  
 And the music's not in the street

Edwin Arlington Robinson.

91. I bought every kind of machine that's known -  
 Grinders, shellers, planters, mowers,  
 Mills and rakes and ploughs and threshers -  
 And all of them stood in the rain and sun  
 Getting rusted, warped and battered.  
 And they've given it a part to play  
 Again

Abel Melveny.

92. "Is anybody there?" said the traveller,  
 Knocking on the moonlit door.

red Noyes.

97. The fiddles were playing  
 The fiddles were playing

Walter de la Mare.

93. I walk down the garden paths,  
 And all the daffodils  
 Are blowing, and the bright blue squills.  
 I walk down patterned garden paths  
 In my stiff brocaded gown.  
 With my powdered hair and jewelled fan,  
 I too am a rare  
 Pattern.

Amy Lowell.

94. Something there is that doesn't love a wall,  
 That sends the frozen-ground-swell under it,  
 And spills the upper boulders in the sun;  
 And makes gaps even two can pass abreast.

Robert Frost.

100. My father, he was a mountaineer,  
 His fist was a knotty hammer,  
 He was quick on his feet as a running deer,  
 And he spoke with a Yankee stammer.

Stephen Vincent Benet.

- 1117  
95. I must go down to the sea again, to the lonely  
sea and the sky,  
And all I ask is a tall ship, and a star to steer  
her by,  
And the wheel's kick and the wind's song and the  
white sail's shaking,  
And the grey mist on the sea's face and the grey  
dawn breaking.

John Masefield.

96. There's a barrel-organ carolling across a crowded  
street,  
In the city as the sun sinks low;  
And the music's not immortal but the world has  
made it sweet  
And fulfilled it with a sunset glow:  
And it pulses through the pleasures of the city  
and the pain  
That surrounds the singing organ like a large  
eternal light;  
And they've given it a glory and a part to play  
again  
In the symphony that rules the day and night.

Alfred Noyes.

97. The fiddles were playing and playing,  
The couples were out on the floor;  
From converse and dancing he drew me,  
And across the door.

Padraic Colum.

98. Tenderly, day that I have loved, I close your eyes,  
And smooth your quiet brow and fold your thin  
dead hands.

Rupert Brooke.

99. They are unholy who are born  
To love wild plum at night,  
Who once have passed it on a road  
Glimmering and white.

Orrick Johns.

100. My father, he was a mountaineer,  
His fist was a knotty hammer,  
He was quick on his feet as a running deer,  
And he spoke with a Yankee stammer.

Stephen Vincent Benet.



Undergraduate Student of Psychology. Age 21 years.

Aesthetic.

	<u>English</u>	<u>Spanish</u>	<u>Difference</u>
Total Images	237	285	+48
Average per fragment	4.74	5.7	+1.04
Average Intensity	2.7	3.2	+0.5
Image	11	6	-5
Visual Intensity	178	250	+72
Average Intensity	3.0	3.5	+0.5
Auditory	30	24	-6

Appendix 3. Detailed analyses of the imaginal responses and other reactions, with average intensities, of all subjects to the fragments of English and Spanish verse.

Intensity	Nil	8	-8
Average Intensity	Nil	3.0	+3.0
Aesthetic Feature	1.8	4	+2.2
Average Intensity	1.0	3.2	+2.2
Aesthetic Movement	7	3	-4
Average Intensity	2.5	3.2	+0.7
Qualified Movement	21	16	-5
Average Intensity	3.2	3.4	None
Temperature Reactions	4	1	-3
Average Intensity	3.2	4.0	+0.8
In Reactions	Nil	Nil	None
Average Intensity	Nil	Nil	None
Cardio Reactions	1	3	+2
Average Intensity	3.0	3.5	+0.5
Emotional Reactions	6	8	+2
Average Intensity	3.2	3.4	None

S1. S2

Undergraduate Student of Psychology.

Age 21 years.

Asynaesthetic.

	<u>English</u>	<u>Spanish</u>	<u>Difference</u>
Total Images	451	405	-46
Total Images fragment	9 237	9 285	- 48
Average per fragment	3 4.74	2 5.7	+ -1.04
Average Intensity	5 2.7	7 3.2	- 2 -0.5
No Image	33 11	36 6	- 2 +5
Visual Intensity	178	2 230	Not -52
Average Intensity	3.0	3.5	+2 -0.5
Auditory Intensity	30	24	Not +6
Average Intensity	3.7	3.2	+4 +0.5
Olfactory Intensity	Nil	Nil	(+ None
Average Intensity	-1	Nil	None -
Gustatory Intensity	Nil	Nil	None
Average Intensity	-	-	+22 -
Cutaneous Intensity	Nil	2.8	+ -8
Average Intensity	-2	3.0	- 1 -3.0
Kinaesthetic Posture	14.0	4.3	+ -3
Average Intensity	1.0	3.2	+ 2 -2.2
Kinaesthetic Movement	7.3	3.6	+ 4
Average Intensity	2.5	3.2	- -6.7
Visualised Movement	21.1	16	Not +5
Average Intensity	3.2	3.4	None
Temperature Reactions	6	3	+ 3
Average Intensity	3.3	3.0	+ 0.3
Temperature Reactions	4	1	+ 2 +3
Average Intensity	3.2	4.0	Not -0.8
Pain Reactions	Nil	Nil	+ 1 None
Average Intensity	3.6	2.6	+ 1.0
Organic Reactions	1	3	-4 -2
Average Intensity	5.0	3.5	+0. +1.5
Emotional Reactions	6	8	-2
Average Intensity	3.3	3.4	None

S2

Postgraduate Student of Psychology

Age 23 years

Asynaesthetic

	English	Spanish	Difference
Total Images	461	466	- 5
Average per fragment	9.2	9.32	- 0.22
Average Intensity	3.4	2.8	+ 0.6
No. Image per fragment	5	7	- 2
Visual Intensity	337	366	- 29
Average Intensity	2.8	2.4	None
Auditory	48	25	+23
Average Intensity	3.4	3.0	None.
Olfactory	4	Nil	+4
Average Intensity	2.0	-	(+2.0)
Gustatory	Nil	Nil	None
Average Intensity	-	-	- comparable
Cutaneous	30	8	+ 22
Average Intensity	4.1	2.6	+ 1.5
Kinaesthetic Posture	22	3	- 19
Average Intensity	4.0	2.3	+ 1.7
Kinaesthetic Movement	2	4	- 2
Average Intensity	4.5	3.6	+ 0.9
Visualised Movement	38	60	- 22
Average Intensity	3.1	2.8	None
Visualised Movement	13	3	+ 10
Average Intensity	3.8	3.6	None
Temperature Reactions	6	3	+ 3
Average Intensity	3.5	2.0	+ 0.5
Pain Reactions	2	Nil	+ 2
Average Intensity	4.0	"	Not comparable
Organic Reactions	8	7	+ 1
Average Intensity	3.6	2.6	+ 1.0
Emotional Reactions	12	16	- 4
Average Intensity	3.2	2.7	+ 0.5
Average Intensity	3.0	2.9	Not comparable
Emotional Reactions	25	43	- 18
Average Intensity	4.4	4.3	None.



S8

Undergraduate Student of GermanologyAge 20 years.Synaesthetic

	<u>English</u>	<u>Spanish</u>	<u>Difference</u>
Total Images	281	389	- 48
Average per fragment	5.8	6.6	- 0.8
Average Intensity	4.2	3.5	+ 0.7
No Image	11	13	- 2
Visual	204	273	- 69
Average Intensity	3.2	2.9	None
Auditory	31	21	+ 10
Average Intensity	4.2	3.8	None
Olfactory	3	Nil	+ 3
Average Intensity	4.0	-	Not comparable
Gustatory	1	Nil	+ 1
Average Intensity	5.0	-	Not comparable
Cutaneous	22	26	- 4
Average Intensity	4.4	4.0	None
Kinaesthetic Posture	1	1	None
Average Intensity	5.0	4.0	1.0
Kinaesthetic Movement	4	3	+ 1
Average Intensity	4.3	3.0	+ 1.3
Visualised Movement	15	5	+ 10
Average Intensity	3.8	3.6	None
Temperature Reactions	1	7	- 6
Average Intensity	5.0	4.8	None
Pain Reactions	Nil	1	- 1
Average Intensity	-	5.0	Not comparable
Organic Reactions	1	11	- 10
Average Intensity	5.0	3.9	Not comparable
Emotional Reactions	25	43	- 18
Average Intensity	4.4	4.3	None.
Average Intensity	4.3	4.3	None

Asynaesthetic

	<u>English</u>	<u>Spanish</u>	<u>Difference</u>
Total Images	575	727	- 152
Average per fragment	11.5	14.5	- 3.0
Average Intensity	3.8	4.0	None
No Image	2	1	+ 1
Visual	468	553	- 85
Average Intensity	3.6	4.0	None
Auditory	11	39	-28
Average Intensity	4.8	4.2	+ 0.6
Olfactory	6	3	+ 3
Average Intensity	4.0	3.0	+ 1.0
Gustatory	4	2	+ 2
Average Intensity	4.0	4.5	- 0.5
Cutaneous	42	85	- 43
Average Intensity	4.4	4.8	None
Kinaesthetic Posture	4	7	- 3
Average Intensity	4.0	3.7	None
Kinaesthetic Movement	4	6	- 2
Average Intensity	2.5	4.0	- 1.5
Visualised Movement	36	32	+ 4
Average Intensity	3.8	4.4	- 0.6
Temperature Reactions	7	10	- 3
Average Intensity	2.7	3.9	- 1.2
Pain Reactions	1	5	- 4
Average Intensity	4.0	4.8	- 0.8
Organic Reactions	3	10	- 7
Average Intensity	5.0	4.2	+ 0.8
Emotional Reactions	17	40	- 23
Average Intensity	4.3	4.3	None

AsynaestheticSynaesthetic

	<u>English</u>	<u>Spanish</u>	<u>Difference.</u>
Total Images	220	185	+ 35
Average per fragment	4.56	3.82	+ 0.74
Average Intensity	2.8	2.8	None
No Image	11	13	- 2
Visual	165	121	+ 44
Average Intensity	2.7	2.6	None
Auditory	14	19	- 5
Average Intensity	2.2	2.5	None
Olfactory	Nil	3	- 3
Average Intensity	-	2.7	Not comparable
Gustatory	Nil	Nil	None
Average Intensity	-	-	- 0
Cutaneous	13	16	- 3
Average Intensity	3.2	2.7	+ 0.5
Kinaesthetic Posture	3	1	+ 2
Average Intensity	3.3	2.0	+ 1.3
Kinaesthetic Movement	5	4	+ 1
Average Intensity	2.5	3.0	- 0.5
Visualised Movement	20	22	- 2
Average Intensity	2.4	2.6	None
Temperature Reactions	1	2	- 1
Average Intensity	5.0	1.5	+ 3.5
Pain Reactions	Nil	Nil	None
Average Intensity	-	-	-
Organic Reactions	2	9	- 7
Average Intensity	3.0	1.4	+ 1.6
Emotional Reactions	44	36	+ 8
Average Intensity	3.0	2.5	+ 0.5



Synaesthetic

	<u>English</u>	<u>Spanish</u>	<u>Difference</u>
Total Images	469	705	-238
Average per fragment	9.34	14.1	-4.76
Average Intensity	4.3	4.0	None
No Image	Nil	2	-2
Visual	333	483	-150
Average Intensity	3.6	3.9	None
Auditory	57	56	+ 1
Average Intensity	4.3	4.3	None
Olfactory	4	7	-3
Average Intensity	5.0	4.3	+ 0.7
Gustatory	1	4	- 3
Average Intensity	5.0	3.0	+2.0
Cutaneous	19	53	- 34
Average Intensity	4.4	4.3	None
Kinaesthetic Posture	1	9	- 8
Average Intensity	4.0	3.3	+ 0.7
Kinaesthetic Movement	4	9	- 5
Average Intensity	4.5	4.8	None
Visualised Movement	48	84	- 36
Average Intensity	4.0	4.3	None
Average Intensity	4.3	4.3	None
Temperature Reactions	1	4	- 3
Average Intensity	4.0	4.3	None
Pain Reactions	Nil	Nil	None
Average Intensity	-	-	-
Organic Reactions	1	8	- 7
Average Intensity	4.0	4.0	None
Emotional Reactions	16	31	- 15
Average Intensity	4.0	4.3	None
Average Intensity	3.5	4.0	- 0.5

A. Synaesthetic

	<u>English</u>	<u>Spanish</u>	<u>Difference</u>
Total Images	383	461	- 78
Average per fragment	7.66	9.22	- 1.56
Average Intensity	4.2	4.4	None
No Image	1	3	- 2
Visual	257	329	- 72
Average Intensity	4.0	4.0	None
Auditory	41	40	+ 1
Average Intensity	4.0	4.0	None
Olfactory	4	4	None
Average Intensity	4.0	4.0	None
Gustatory	1	1	None
Average Intensity	5.0	5.0	None comparable
Cutaneous	40	43	- 3
Average Intensity	4.2	4.7	- 0.5
Kinaesthetic Posture	17	5	- 4
Average Intensity	4.0	4.8	- 0.6
Kinaesthetic Movement	12	7	+ 5
Average Intensity	4.2	4.8	- 0.6
Visualised Movement	27	32	- 5
Average Intensity	4.3	4.3	None
Temperature Reactions	2	7	- 5
Average Intensity	4.0	4.2	None
Pain Reactions	1	1	None
Average Intensity	5.0	4.0	+ 1.0 comparable
Organic Reactions	1	5	- 4
Average Intensity	4.0	4.5	- 0.5
Emotional Reactions	18	36	- 18
Average Intensity	3.5	4.0	- 0.5

Asynaesthetic

	<u>English</u>	<u>Spanish</u>	<u>Difference</u>
Total Images	276	283	-7
Average per fragment	5.52	5.66	- 0.14
Average Intensity	3.6	3.9	None
No Image	Nil	3	- 3
Visual	172	208	- 36
Average Intensity	3.8	3.8	None
Auditory	31	13	+ 18
Average Intensity	3.5	3.2	None
Olfactory	1	2	- 1
Average Intensity	1.0	4.5	- 3.5
Gustatory	45	Nil	+ 1
Average Intensity	3.0	-	Not comparable
Cutaneous	45	26	+ 19
Average Intensity	4.5	4.0	+ 0.5
Kinaesthetic Posture	7	5	+ 2
Average Intensity	4.4	4.5	None
Kinaesthetic Movement	5	8	- 3
Average Intensity	4.6	3.8	+ 0.8
Visualised Movement	14	21	- 7
Average Intensity	4.0	4.1	None
<u>Temperature Reactions</u>			
Average Intensity	2	3	- 1
Temperature Reactions	2	3	- 1
Average Intensity	5.0	3.6	+ 1.4
Pain Reactions	Nil	2	- 2
Average Intensity	-	5.0	Not comparable
Organic Reactions	4	5	- 1
Average Intensity	3.2	4.0	- 0.8
Emotional Reactions	22	18	+ 4
Average Intensity	4.0	3.4	- 0.6



SynaestheticAsynaesthetic

	<u>English</u>	<u>Spanish</u>	<u>Difference</u>
Total Images	252	349	- 97
Average per fragment	5.04	6.98	- 1.94
Average Intensity	3.9	3.9	None
No Image	14	22	- 8
Visual	193	299	- 106
Average Intensity	3.9	4.1	None
Auditory	27	11	+ 16
Average Intensity	4.1	4.2	None
Olfactory	3	3	None
Average Intensity	3.5	4.0	- 0.5
Gustatory	Nil	Nil	None
Average Intensity	-	-	None
Cutaneous	3	3	None
Average Intensity	4.3	5.0	- 0.7
Kinaesthetic Posture	5	7	- 2
Average Intensity	3.5	3.0	+ 0.5
Kinaesthetic Movement	8	8	None comparable
Average Intensity	4.8	3.8	+ 1.0
Visualised Movement	13	18	- 5
Average Intensity	3.3	3.3	None
Temperature Reactions	4	4	None
Average Intensity	1.0	1.0	- 0.0
Pain Reactions	1	5	+ 4
Average Intensity	4.0	4.5	- 0.5
Organic Reactions	1	7	- 6
Average Intensity	5.0	4.5	+ 0.5
Emotional Reactions	4	22	- 18
Average Intensity	4.5	3.6	+ 0.9

Fragment 1. Asynaesthetic

S 1: I see the light of day gradually fading down a dark tunnel.

	English	Spanish	Difference
Total Images	132	165	- 33
Average per fragment	2.64	3.3	- 0.66
Average Intensity	3.7	2.9	+ 0.8
No Image	21	21	None
Visual	96	129	-33
Average Intensity	3.2	2.7	+0.5
Auditory	12	12	None
Average Intensity	3.6	2.0	+ 1.6
Olfactory	Nil	Nil	None
Average Intensity	-	-	-
Gustatory	Nil	Nil	None
Average Intensity	-	-	-
Cutaneous	7	10	- 3
Average Intensity	4.1	3.2	+0.9
Kinaesthetic Posture	5	7	- 2
Average Intensity	3.4	3.9	- 0.5
Kinaesthetic Movement	6	Nil	+ 6
Average Intensity	3.0	-	Not comparable
Visualised Movement	6	7	- 1
Average Intensity	3.3	3.0	None.

S 5: Our Hall at home. There is a grandfather clock behind the door. Outside there is an orange red sunset.

Temperature Reactions	4	4	None
Average Intensity	4.0	4.5	- 0.5
Pain Reactions	Nil	1	- 1
Average Intensity	-	5.0	Not comparable
Organic Reactions	10	14	- 4
Average Intensity	4.3	3.8	+ 0.5
Emotional Reactions	28	39	- 11
Average Intensity	3.7	3.1	+ 0.6

S 7: Beautiful black and yellow sunset over the sea. I hear a loud tick. I feel the cold wind and a wonderful feeling that this is eternal.

S 8: A huge clock with a white face. I cannot connect brave day at all.

S 9: Ogres, Witches on broomsticks, Big Ben in the middle. I hear Big Ben strike. It is very dark.

S 10: Rather horrible feeling of the inevitability of everything. This conjures up a picture postcard view of Big Ben.

Appendix 4. The Responses of all Subjects to a  
Random Selection of Fragments.

S 1: No image.

S 2: Fragment 1. Man dressed in black Jacobean dress. A

S 1: I see the light of day gradually withdrawing down  
a dark tunnel. I am at the end of the tunnel.

S 2: A ridiculous kind of picture. One bit of it is  
Shakespeare in a little short cloak and padded  
trousers. He has his back to me and is looking at  
a grandfather clock. It is one of those revolting  
ornate things, brass dial, Roman numerals, large  
pendulum. Now I realise that that is only the  
first line. The second line gives the sun going  
down and lots of black clouds. Shakespeare is  
looking at it.

S 3: No image.

S 4: Makes me think of Paradise Lost. A kind of black  
pit with molten metal smouldering in the bottom.  
I can feel it, hot and sticky. It is all bubbling  
up and I feel I am going to fall in. I get a  
feeling of fear and anticipation of pain.

S 5: Our Hall at home. There is a grandfather clock  
behind the door. Outside there is an orange red  
sunset.

S 6: The first line gives a grandfather clock ticking in  
a dark hall, I hear and see this.  
The second line gives a very stormy sunset. Bare  
trees are silhouetted against a dark sky. There  
are dark fields. Very black clouds. Flares of  
colour. There is a light in the distance. It  
gives me a dismal feeling.

S 7: Beautiful black and yellow sunset over the sea.  
I hear a loud tick. I feel the cold wind and a  
wonderful feeling that this is eternal.

S 8: A huge clock with a white face. I cannot connect  
brave day at all.

S 9: Ogres. Witches on broomsticks. Big Ben in the  
middle. I hear Big Ben strike. It is very dark.

S 10: Rather horrible feeling of the inevitability of  
everything. This conjures up a picture postcard  
view of Big Ben.



## Fragment 20.

- S 1: No Image.
- S 2: I see a man clothed in black Jacobean dress. A John Wesleyish look about him. He is walking through a narrow cobbled street with the upper stories overhanging. The noise and bustle of carts. It is hot and stuffy. He walks to the end of the street and it opens out onto a meadow. Now it is not as hot and I feel the fresh breeze. I could feel the cobblestones underfoot and now this changes to grass. My clothes felt heavy like serge and these change too. I do like this one.
- S 3: Reminds me of very high buildings and narrow streets. Dirt. Grey skies. Hurrying people. I hear the din. At the end of the street there is a broad blue sky and green field. I want to push things aside but I stand still.
- S 4: Clear blue sky on a sunny day. I am in a cut cornfield and the stubble is pricking my feet.
- S 5: I don't get an image but I feel with this person who goes to the country from the city. I feel refreshed.
- S 6: A meadow, very green, yellow buttercups, a springlike sky. I see and hear the ripples of the wind. I see the shadows of the clouds on the fields.
- S 7: I see the blue sky very clearly. I feel a slight wind. Taste hawthorn leaves.
- S 8: I see a round white face. It is radiant. I have a desire to avoid it. I feel myself shrinking back. I think it is the monotony of the verse that gives this.
- S 9: No Image.
- S 10: I am in complete agreement with the sentiments of the poet. I have the feeling of being on top of a hill and feel the sun and wind on my face.

## Fragment 35.

- S 1: I can hear someone saying this in the manner of a Shakespeare fool. Now I begin to see him but he is very faint.
- S 2: No Image. I think this is absolutely horrid.
- S 3: No Image. I feel about it all but it is hardly personal.

- S 4: I see books, whistles and flutes. They are tin whistles and I come to hear them. The flutes are black and silver. I just see the objects. There is no connection.
- S 5: No Image.
- S 6: Lots of little tin whistles. Two children pulling crackers. All they get is these little whistles. They are disappointed. There is a little boy and girl. The grown ups are watching. I hear the bang of the crackers. They scabble on the floor. The little girl says 'Not another one of those !' They are wearing paper hats.
- S 7: Personification of fortune. A woman dressed in white. She carries a scroll. I feel the texture of her dress. Has one hand stretched out. Has a Mona Lisa smile on her face.
- S 8: Back of a garden. Weeds. It is rather overgrown. I feel them brush against me as I walk along. I hear them.
- S 9: I see a fair haired boy. He looks puzzled. Long fair hair. Sitting on a bed. He has pyjamas on. Blue and white striped ones. The wall behind is a pale pink.
- S 10: This sounds a bit like a character out of Dickens. It is all a bit fatalistic but cheerful. I hear somebody saying it. It amuses me.
- Fragment 63.
- S 1: I look through the railings. The ground is sloping upwards. There are a few garden seats but I cannot see the old people.
- S 2: Oh ! My God ! Another one ! Well, I'll do my best. I see a Park (rather like Bethnal Green but it has green grass). The grass has flecks from the railway. A black railing. I see it as if from ground level. There are old men huddled together in overcoats, sitting all shapeless. I feel cold from a dirty clammy day. There is a dreary feel about it all but it is hardly personalized.

- S 3: Feeling of sorrow and a little anger. People sitting motionless. They have no faces and I couldn't speak to them. It is as if they were carved. Very hard sunlight. I feel its hardness and I feel sorrow. There is a grey stone wall behind them and they are on grey stone seats. The grey is shiny like the sun. It makes me a little angry. I feel that shiny greyness.
- S 4: This brings to mind the junior school I went to. I see the railings. They are dark green but they look black. There is a piece of waste ground. I feel the hard earth. I have got in my nails. There are a few wooden benches. Old people dressed in black sitting on them. It is a dull day. I get the unpleasant smell from the gasworks. I want to run away.  
(Enquiry revealed that only the railings were visualised as remembered. There was a gasworks near to the school remembered.)
- S 5: I see elderly people on a bench outside their home. It makes me recall a visit to an Old Peoples' Home where conditions were very bad. I feel sad as I think of it. I get an image of the building.
- S 6: Reminds me of a park opposite a college I was at in Paris. Railings and a wall ten yards behind. There were benches where we used to sit and write letters. The last line gives the pavilion at home where old people sit day in and day out.
- S 7: I see some rusty railings. Benches with old people huddled on them. I see trees although it says there aren't any... a few leaves. They fall. I hear them. The ground is muddy, I feel it. I get a feeling of distaste.
- S 8: A courtyard. Wooden benches. Old people sitting on the benches. Ragwort is growing there. I feel as if I can't breathe very easily. I feel frustrated and I want to get away.
- S 9: Grey wooden bench. Trodden down grass. It's a november day. An old man sits on the bench. Grey suit. Grey cap. Grey overcoat. He leans on a stick as he sits.  
There is an old man playing a violin organ outside the C&A Stores. I hear him. There's lots of starlings making an awful noise. I feel exhilarated.
- S 10: The rhyme is so uninteresting that I can't get an image.



S 10: Brings to mind Bloomsbury Square on a wet soggy day. Depression. I am on a bench. I feel the wetness and hardness. The trees are black from the dirt. They are dripping. I feel limp and huddled up.

fragment 96.

S 1: I see a man turning a barrell organ across an empty street. I hear it and I hear the rhythm of the poem.

S 2: No Image.

S 3: The rhythm is the strongest. It suggests music and bustling people. Accordeon comes vaguely through the noise. I lose the impression when I stop reading.

S 4: You have picked some, haven't you ! It reminds me of a street I stayed in in Amsterdam. There is a barrell organ on the other side of the street. I hear this. There is a lovely sunset with streaks of orange. I am looking down from a two storey window.

S 5: I hear and see a barrell organ. There is a group of children (none of them could be more than five) standing round it.

S 6: First of all I get somebody practising typing. Then the thing goes to barrell organ music. A little old man turns the handle of the the organ. I see a very grubby cap with a few coppers in it. Several people watching at a distance. I see the sunshine and feel warm from it. There is lots of smoke.

S 7: I hear a barrell organ. I feel the sun. It is very hot. There are lots of trees, all coming into bud. People in Edwardian dress are moving around. I like this one, it gives me a feeling of pleasure. The image I mean.

S 8: I hear the music of the sky. It comes from everywhere. It is eternal.

S 9: Walking along a street in Birmingham at five o' clock on a november day. The crowds are pushing around. There is an old man playing a barrell organ outside the C&A Stores. I hear him. There's lots of starlings making an awful noise. I feel exhilarated.

S 10: The rhythm is so uninteresting that I can't get an image.

## Appendix 5. Fragments for Chapter 4.

1. I sit down, sad - not daunted,  
And, in my weeds, begin  
A new card - "Tenant wanted,  
Particulars within!"  
(Arthur Dobson: Ad Rosam)
2. A casement high and triple arched there was,  
All garlanded with carven imag'ries  
Of fruits and flowers and bunches of knot-grass,  
and diamonded with panes of quaint device,  
Innumerable of stains and splendid dyes,  
as are a tiger moth's deep damasked wings.  
(John Keats: Eve of Saint Agnes.)
3. Miss McCaskett  
Gathered the mail -  
The cheques, the orders,  
The bills of sale,  
The ads and circulars  
By the bale -  
And placed them neatly  
As one could ask it  
In Mr Federber's  
IN basket.  
(Norman Jaffray: Routine)
4. I heard a cowboy ride over the range  
And the song he sang was wonderful strange.  
Come, sell your pony, cowboy -  
Sell your pony to me;  
Braided bridle and your puncher saddle  
And spend your money free.  
(Edward Ford Piper: Sweet Grass Range.)
5. Odysseus saw the sirens; they were charming,  
Blonde with snub breasts and little neat posteriors,  
But could not take his mind off the alarming  
Weather report, his mutineers in irons,  
The radio failing; it was bloody serious.  
In twenty minutes he forgot the sirens.  
(John manifold: The sirens)

6. How many times, when London bells have rung  
At Royal weddings in these crowded ways,  
The air has trembled to the iron tongue:  
The same Hope stirs as in those yesterdays.....

(John Masefield: Lines on the Wedding of  
H.R.H. the Princess Elizabeth)

7. We very much rever our sires  
Who were a splendid race of men;  
For every glass of port we drink  
They nothing thought of ten.

(Sir George Trevelyan: The Ladies in Parlia-  
ment)

8. Museums offer us, running from among the buses,  
A centrally heated refuge, parquet halls and  
sarcophaguses,  
Into whose tall fake porches we hurry without a  
sound  
Like a beetle under a brick that lies, useless, on  
the ground.

(Louis McNeice: Museums)

9. Mad dogs and Englishmen  
Go out in the midday sun.  
The Japanese don't care to.  
The Chinese wouldn't dare to.  
At twelve noon the natives swoon  
And no further work is done,  
But mad dogs and Englishmen  
Go out in the midday sun.

(Noel Coward)

10. When you dance, remember the dancing shape  
Which was yours when you first  
Stirred your limbs in the dance.

(Gilbert Phelps: The Dancer)

11. These days, the bright days and white days,  
These nights of blue between the days,  
These streets a glimmer in the haze:  
These are for you but you come not these ways.

(Gerald Cumberland: Set Down in Malice)

I am half in  
telegrams. With letters and cables and brief but  
courteous commands on the telephones to Paris,  
Berlin, New York. I have fused my many lives into  
one.

(Virginia Woolf: The Waves)



12. Let wail of gulls. What would he say  
The sunbrows in the breakers and the breeze  
Which blows the sand into the sandwiches,  
Let castles crumbling in the rise of tide  
Spell joy or misery to youth. For we,  
We older ones have thoughts of higher things  
Whether we like to sit with Penguin books,  
Or on a twopenny borough council chair  
To doze away the strains of Humoresque.  
(John Betjeman: Beside the Seaside)
13. Across green taffeta the bowler runs  
With circling arm. The red ball magnifies  
Down to the clicking bat. The ball seems suns  
Whose planets are the watchers' turning eyes.  
(George Moor: Beauty and Richness)
14. We must have rockets, of course, and again,  
Golden rain was safer than Catherine wheels,  
These sometimes refused to turn, wouldn't burn.  
(Phyllis Reid: Fireworks)
15. And down the long and silent street,  
The dawn with silver sandled feet,  
Crept like a frightened girl.  
(Oscar Wilde: The Harlot's House)
16. For the price of my room, breakfast was (literally)  
thrown in. Polly plumped the tray down so  
heavily on the bed that its contents seldom remained  
upright. Not that much was ever on the tray.  
Birdie wasn't naturally a mean woman. It was just  
that sometimes her landlady's instinct got the  
better of her.  
(Arthur Dobson: Ad Rosam)
17. My first dash into poetry was as early as 1860. It  
was the ebullition of a passion for my first  
cousin Margaret Parker... She looked as if she had  
been made out of a rainbow.  
(Byron: Detached Thoughts)
18. I am half in love with the typewriter and the  
telephone. With letters and cables and brief but  
courteous commands on the telephone to Paris,  
Berlin, New York. I have fused my many lives into  
one.  
(Virginia Woolf: The Waves)

19. Lucy dismounted reluctantly. What would he say about the riding habit she wore? She felt very curious to learn and shyer than ever before and altogether different. The skirt had made her more of a girl, it seemed.

(Zane Grey: Wildfire)

20 Virginia neither floated nor thought of Epipsychidion, but took another sip of whiskey and soda, climbed onto the highest platform of the diving tower, spread her arms, plunged, glided under water and, coming up immediately beneath the unsuspecting Pordage, caught him by the belt of his bathing pants and pulled him under.

(Aldous Huxley: After Many a Summer)

21. VICTORIA: In my position it is I who have to say it - unfortunately. Ordinarily it is not what a woman would wish to say herself. She would rather - he said it.

ALBERT: Is there anything you wish me to say - that I can say?

(Laurence Houseman: Woman Proposes)

22. I have drunk three bottles of port without being the worse for this. University College has witnessed this.

(Dr Johnson)

23. "Have you discovered" Stephen asked addressing both the girls together, "that there is a Greek astray among the Egyptian mummies?"

"I have never discovered much here except the way to lose myself"; Rhoda informed him. "The mummies depress me a little, there is such a weight of dust and ashes and materialism in them!"

(Dora Greenwell McChesney: London Roses, an Idyll of the British Museum)

24. He was the worst type of Englishman; he could not even cheat without being found out.

(Norman Douglas: An Almanac)

25. Stealing softly, and always on her points, she comes to the front of the stage with a run of little steps, a clocking, clocking, clocking of her ballet shoes.

(Sacheverell Sitwell: Dance of the Quick and the Dead)

26. An hour or so before the gas was turned on; lamp-lighters scoured the city; in every house, from kitchen to attic the windows kindled and gleamed forth into the dusk.

(R.L.Stevenson: Edinburgh)

27. Every seat is occupied; the boats and small yachts are filled; some of the children pour pebbles into the boats, some carefully throw them out; wooden spades are busy; sometimes they knock each other on the head with them, sometimes they empty pails of sea water on a sister's frock. There is every luxury of noise.

(Richard Jeffries: The Open Air)

28. No doubt, "summer sets in with its usual severity" every year, but at last the right golden days return and then cricket simply has to be. It springs from the meadows. It adorns them like the ox eye daisy and the buttercup.

(Edmund Blunden: Is it still our national game ? )

29. Bang ! A shower of green stars fill the sky. They changed to blue, then red, then silver. Another and yet another. "Oh ! and then Ah ! that is what one says" observed Poirot close to my ear. "At the end it becomes monotonous. Brr ! The grass is damp to the feet. I shall get a chill!"

(Agatha Christie: Peril at End House)

30. Sudden and magnificent, the sun's broad golden disk showed itself over the horizon facing them; and the first rays, shooting across the level of the water meadows, took Rat and Mole full in the eyes and dazzled them. When they were able to look oncemore the vision had vanished and the air was full of the carol of birds that hailed the dawn.

(A.A.Milne: The Wind in the Willows)



Appendix 6: Types of Imagery manifested in the Response of Readers to the fragments of English and Spanish Verse.

on it. "On the other side is his 'Wilton'. I follow the Westminster Bridge sonnet and hear someone reciting it."

This was followed by a visual image of Westminster Bridge

a) Eidetic Imagery.

Pear and McKellar (14) both stress the eidetic like quality of imagery associations. Allport (1) finds that synaesthesia occurs more frequently among those who experience eidetic imagery. It seems that further investigation would be necessary to explain why this should be. Eidetic imagery would appear to be closely allied to reality while it must be assumed that synaesthetic imagery is essentially subjective and to some extent divorced from reality. If this were not so it would surely be easier to give it expression. Nevertheless, eidetic imagery was only reported by two subjects believed to be synaesthetic.

For S3 fragment 12 evoked "A little stream --- clear water -- overhanging banks. I hear the trickle of the water and I see it sparkle. It is a long way in front of me. I could get up and walk to it but I would never reach it" fragment 24 evoked "An Italian scene -- a long way in front of me, not in terms of feet, it could be a thousand miles away, far beyond that wall. I looked to the side and then back again. It was still there. (Subject had been looking at experimenter to make report. She then looked back again at the wall). It is still there."

Five unambiguous examples of eidetic imagery were reported by S6.

fragment 21: "I see the iambic syllables as if on a board in front of me. I follow them as I hear the drumming of the beat. Rather like a horse."

fragment 46: "The first sentence gives a deer --- The second sentence gives a picture of a Latin vocabulary Book from which I had to copy a group of words fifty times. It is almost as if it is on the desk before me. I could read the words out. I turn the page over and read the next lot of words I had to copy out. Do you want me to read them out? I rub the corner up and down. I get the musty smell of a book. I rate the whole thing at 5. It's so real I could rate it at 6 or 7. An enquiry was made in which the

fragment 47: I see a verse from 'The Brook' and I follow the words as I hear it recited --- Then I get an image of a brook. Willows. The sun catches the ripples. I hear the murmuring of the brook. I still see the verse in front of me."

fragment 53: "I see a book of Wordsworth's Sonnets in front of me. I see the page with "On Westminster Bridge

on it. On the other side is his "Milton". I follow the Westminster Bridge sonnet and hear someone reciting it."

This was followed by a visual image of Westminster Bridge at sunset but the image of the verse was reported to remain. It was also considered to be the stimulus for the latter image.

Fragment 91: "I see Kipling's Song of the Machines on a piece of paper in front of me. It is typed and the type is very small. I have to strain my eyes to read it as I hear it recited. This gives an image of musty farm machinery -----"

To test the eidetic nature of the imagery evoked by these last two fragments, the subject was invited to read out the material. This she did furnishing details of the print of the titles, the dates reported in brackets below the title, punctuation and spacing.

Some of these eidetic responses contain a strong auditory and, in one case, olfactory element. Eidetic imagery is generally assumed to be visual eidetic. Certainly the Jaensch brothers (3) give this impression and their studies centre on the visual aspect. The above examples show at least an accompaniment in some other modality.

response to fragment 18 she reported, "I am walking on the clouds. I touch the stars as I pass." Her response to fragment 33 was similar, "I am floating on the clouds. I brush against the stars. They are hard. They tinkle as I touch the points."

While 33 visualised seven scenes in which elves and pixies played the dominant role and was unable to give a specific source for any of them, she felt that, since the subject reported that she had been "an avid reader of fairy stories as a girl," and furthermore, would like to write them herself,

#### b) Fantasy Responses.

fantasy responses were reported by S1, S4, S6, and S7. For the purposes of this enquiry fantasy responses were defined as responses which one would not expect to have a counterpart in the perceptual experience of a reasonable person. It was recognised that the subject could have seen or read a portrayal of a scene which might be described as fantastic and reproduce the image evoked. Therefore, when a subject reported a fantasy response an enquiry was made in which the

subject.

subject was asked, "Have you ever seen such a scene portrayed in any form?" In all cases the subject answered that she had not.

S1 reported one fantasy response. This was evoked by fragment 37, "I see a hen pushing a wheelbarrow up a hill."

S4 reported in response to fragment 39, "A galleon going across a chasm. Someone lights a fire underneath it."

The fantasy responses of S6 showed some variety. These were in response to fragment 43, "A six foot golden hamster standing outside the Acropolis with a broad grin on his face. In his left paw he holds up a 'Gone to lunch' sign in Greek," fragment 50, "An archer drawing a bow but what he is really drawing is an eyebrow," and fragment 97, "People dancing. Him draws her to the door. He hooks her to the rail and makes her hold out her skirt to keep the draught out." The subject then went on to describe "the type of woman who would have been useful for keeping a draught out."

S7 identified herself with her fantasy responses. In response to fragment 18 she reported, "I am walking on the clouds. I touch the stars as I pass." Her response to fragment 33 was similar, "I am floating on the clouds. I brush against the stars. They are hard. They tinkle as I touch the points."

While S9 visualised seven scenes in which elves and pixies played the dominant role and was unable to give a specific source for any of them, it was felt that, since the subject reported that she had been "an avid reader of fairy stories as a girl," and furthermore, would like to write them herself, these responses were classified as imagination images.

#### VCI. Utilization of Private Memory Material and the Memory Image.

The instances of the use of private memory material varied from subject to subject. Table XIV (Please see following page), shows the number of memory images reported by each subject for each group of fragments and the number of responses where memory material is utilized reported by each subject.



There is no difference between the number of responses for each group of fragments.

The average number of memory images per subject for the English group of fragments was 1.2.

The average number of memory images reported per subject for the Spanish group of fragments was 1.1.

The difference is negligible.

The responses showing utilization of the English group of fragments

showing the utilization of the Spanish group of fragments

negligible.

TABLE XXII

Memory images and responses using private memory material.

Subject	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
Memory	1	1	3	3	-	-	-	-	3	-
Images	2	-	-	-	4	3	1	1	1	-
Memory Material Utilized	7	10	-	8	3	8	3	3	4	7
Total	16	16	9	20	10	14	7	6	15	11

There is no difference between the number of responses for each group of fragments.

H. Number Forms.

The average number of memory images per subject for the English group of fragments was 1.2. In response to fragment 4, S1 reported, "I see the days of the week in numbers

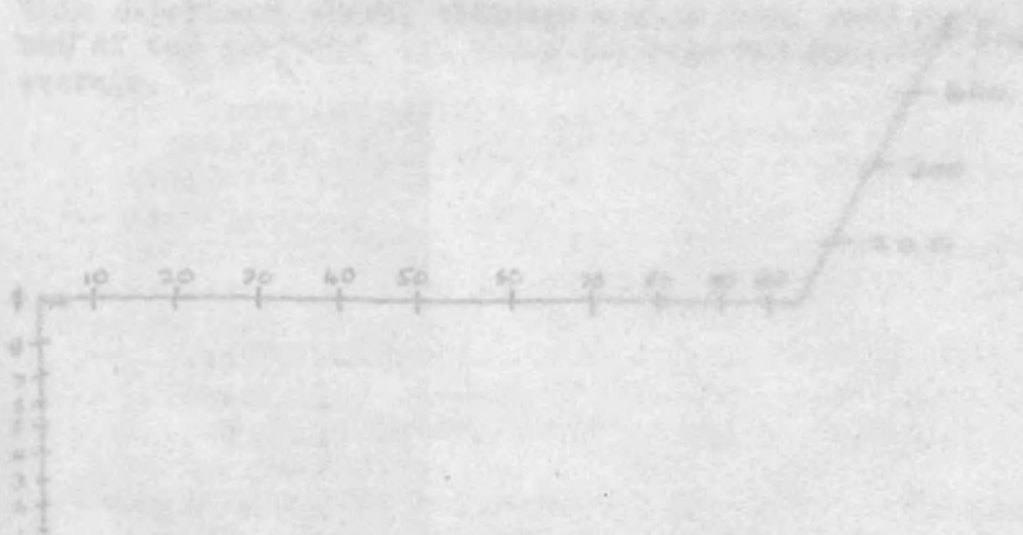
The average number of memory images reported per subject for the Spanish group of fragments was 1.1.

The difference (+0.1) is negligible

The average number of responses showing utilization of memory material for the English group of fragments was 5.3.

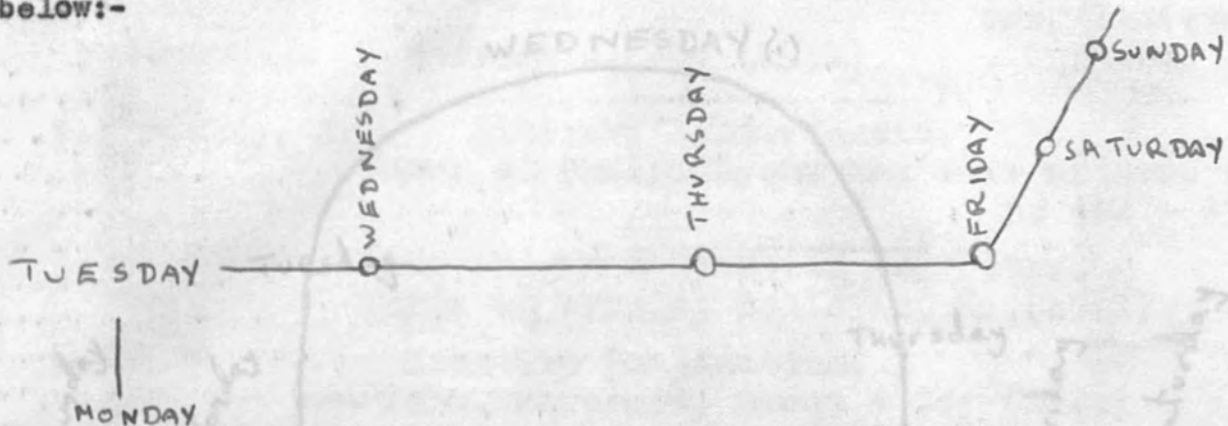
The average number of responses showing the utilization of memory material for the Spanish group of fragments was 4.6.

The difference (+0.7) is negligible.



With these images, she reported, had seen horizontal lines  
 school days.

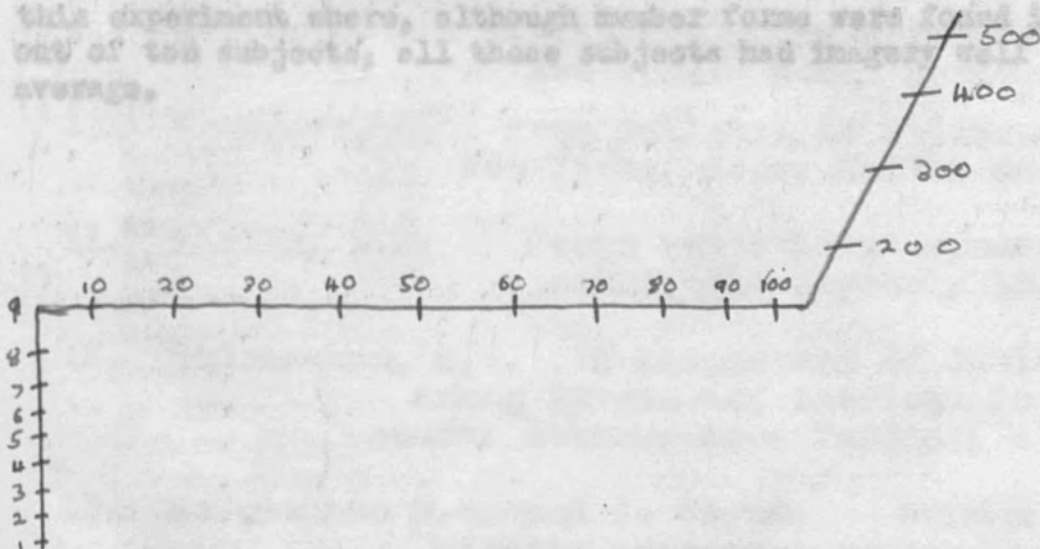
d. Number Forms. see to fragment 4, S8 reported, "I see my visual conception of the days of the week." Her illustration of the Only S1 and S8 reported number forms. In response to fragment 4, S1 reported, "I see the days of the week in number form -----". Her illustration of the image is reproduced below:-



The subject then added that she habitually experiences the following number form:-

(1) Subject's capitals

Such forms are relatively rare. Galton found them in 7% of his adult subjects, Peck in 6.7%, and Mr Kellar in 7.6%. This is not however inconsistent with the results of this experiment where, although number forms were found in two out of ten subjects, all these subjects had images well above average.



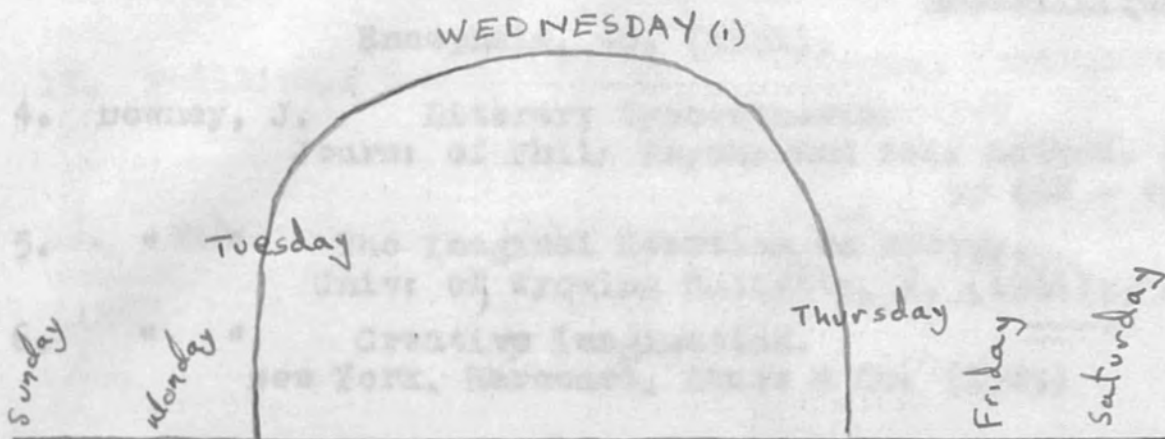
Both these images, she reported, had been habitual since schooldays.



1. Allport, G.W. *Child Psychology*

*Brit. Journ. Psychol.* 15, (1924)

Also in response to fragment 4, SB reported, "I see my visual conception of the days of the week." Her illustration of the image is reproduced below:-



(1) Subject's capitals *Helwig (1924)*

Such forms are relatively rare. Galton found them in 5% of his adult subjects, Pear in 6.7%, and Mc Kellar in 7.69%. This is not however inconsistent with the results of this experiment where, although number forms were found in two out of ten subjects, all these subjects had imagery well above average.

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