# Final Report on the Bial Funded Project 65/04

**Abstract**
A long series of experiments was undertaken involving what is commonly referred to as the Electronic Voice Phenomenon (EVP). What was to be investigated was the assertion that in EVP the speech segments recorded were from time to time responses to what the experimenter had said.

Initially the results seemed to back up this assertion, but gradually they seemed less correlated although more numerous. In the end a new theory had to be developed to account for the observations made.

In this, extensive reference is made to the behaviour of neural networks, and to a theory of the subconscious wherein it has a more active and ubiquitous role than previously considered in this context.

## Introduction

The objective was to see if any correlation could be determined between questions asked and speech segments recorded.

A set of six different questions was devised and each experiment consisted of asking each of the six questions, in turn, followed by a 30 second listening "window". Thus you had Question 1, 30 seconds silence: Question 2, 30 seconds silence; and so on.

Any utterances recorded were then clipped out, individually, and the assortment of clips randomized. The randomized clips were sent to an expert listener, Prof. Vorster, who adjudicated on whether each utterance could be construed as a response to any of the questions, and if so, which one.

The randomized clips were also sent to a listening panel that, individually, without conferring, and without knowing of the Adjudicator's results, also declared their opinions. These were summed and used as a weighting factor on the Adjudicator's selections.

The end results were analysed graphically.

## Problems

But problems arose from the start. Or even before the start.

It was intended to make this as like to a clean physics experiment as possible. For example the questions were asked in a loud, precise, formal manner - with good projection.

# 'What is your name?'

was one question we tried out.

The results.

Experimenter. (formal. precise voice).

**'What is your name?'**

Response (a sort of cynical "street-wise" voice).

**'... Who wantsta know?'**

And another time.

**'What is your name?'**

Response (once again. a sort of cynical "street-wise" voice).

**'... Stop shovin' me aroun' "**

What was I - the cops? All I asked was their names!

Realisation. The questioning sounded like an interrogation. My golly - these entities are *sentient* – a discovery before we had even started!

Sentient entities!

So the questioning was softened - and results started coming in. Examples to illustrate the point.

**'Would you like to tell me your name**?'

'Mary Smith.'

**'Would you like to tell me your name?'**

'John Jones'

**An Unexpected Result.**
After a while an extraordinary thing happened. It seemed that the questions were being anticipated. You were getting in-context answers *before* the questions were being asked!

Far out man - not only were the entities *sentient* but they were *pre-cognitive* too!

Nor was this just a sort of fortuitous kind of precognition. The closer you got to the time where the question was. the more anticipatory responses you got. The figure below. taken from the Interim Report. illustrates this point.

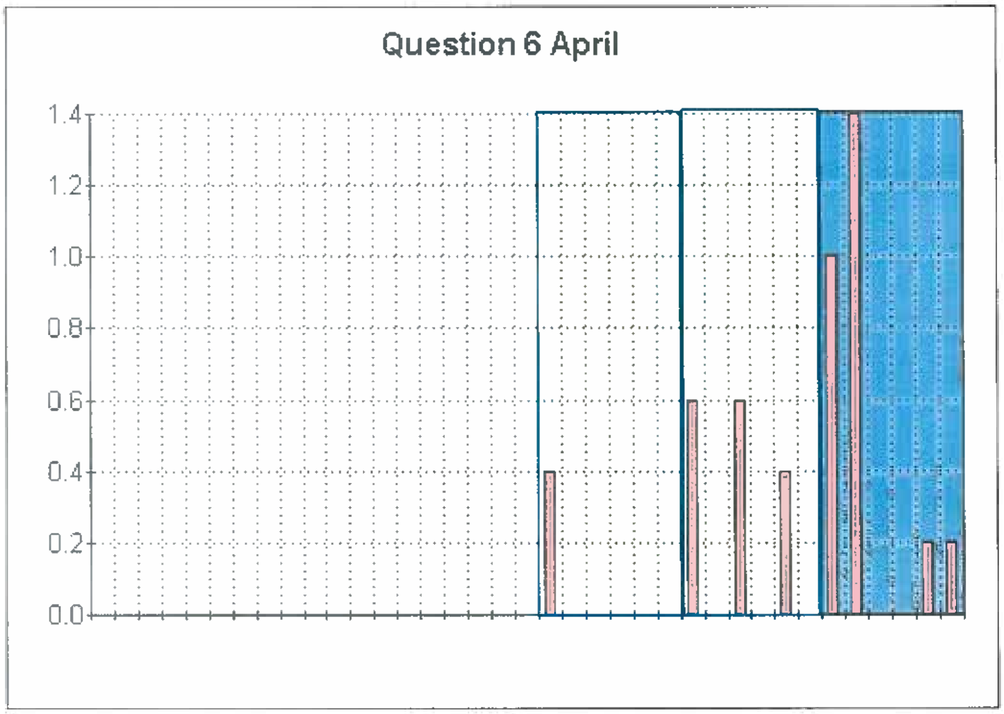



Figure 1

The blue area represents the 30-second wide "time-window" following the question. The yellow areas represent the two 30-second wide time-windows prior to the question. The red bars represent the presence of responses considered to relate to Question 6, their heights representing the number of coincident responses, modified by the weighting (confidence) factor associated with each response. The red bar at the left-hand edge of the blue window overlaps the time taken to ask the question, and is marginally "precognitive".

On the basis of the first 12 sessions I was able to work out an Anticipation Index (AI), (see Interim Report), and this index increased the closer you got to the point where the question gets asked. A particularly interesting aspect of this was that the rate of change of this index with time was *uniform*.

Pay dirt! A *factor*. We were dealing with mathematics that worked.

But – hold the Eurekas - was it really precognition – could it be that they *[the entities inside the Black Box]* were just getting used to the procedure, were learning what was going to come next, or - could it just be an experimenter effect?

Let us examine what was happening more closely.

**Procedural Details**

Up till this point the experimenter/operator had a list of the 6 questions to look at, as a reminder; and a clock with a second-hand for timing. So as you did the experiment you would have one eye on the clock - and then as it got closer to the time to ask the next question you would check for the next question on the list.

It was decided to see what happened to the anticipation when the clues were removed - the list and the clock.

The questions were recorded on tape, spaced 30 seconds apart, and the experimenter listened to the tape, repeating the question when it was heard from the tape.

The result was that the anticipation effect, so far as one could tell, seemed to disappear. It looked as though it was an experimenter effect. To check this out thoroughly was without the remit of this specification and the tentative conclusion should be re-tested.

**A Third Unexpected Effect.**
Instead of anticipation, *another* effect showed up – in fact it had been beginning to show even earlier than this. In this effect, even though the number of responses per session was increasing from one session to the next, the percentage of *in-context and in-time* responses was decreasing. The increase in responses was now such that the project was becoming unviable in terms of the manpower and man-hours we had originally proposed.

But the in-context and in-time responses were just not appearing as they once had.

The easy option would be to suggest that the entities were beginning to lose interest in the proceedings. After a few more months of experiments it seemed that almost all the responses were either random or seemed to be comments on other previous responses, as though they were following a theme.

Such responses as there were that could be considered as in-context and in-time seemed now to occur in the short period immediately following a question or even while the question was still being asked.

But why the shift in behavioural characteristics?

This one was not so easy to explain - perhaps, once again, it was an experimenter effect, perhaps the experimenter/operator was becoming bored?

The series was continued but seemed now to have deteriorated into a random irrelevance, with a workload much greater than planned.

**2006 Changes**
With 2006 there were attempts to remedy the "boredom effect". The questions were largely changed for what might seem more interesting ones. The operators were changed – three others were tried. Unfortunately this year also saw a series of disasters that rendered 12 key sessions useless.

The change of operators thus became rather difficult to assess, and so we cannot say that we have found any significant improvement by changing to a fresh operator

What this would tend to indicate is that the boredom-effect lay in the sources of the utterances. But more substantial evidence is needed.

**A New Perspective**

However, a new concept of the process has altered the whole picture and indeed has given a whole new perspective, facilitating the introduction of concepts from systems engineering, information technology and artificial neural networks.

In what follows it may seem from time to time that we have strayed a long way from the matter of EVP and questions and answers, but it is our intention to show that in the end it all ties-in, together, and that it is even relevant to other experiments supported by and published through the Foundation.

The concept is that a question is followed, as it were, by an "answer-shaped" hole. And the shape of that hole (in a Gestalt sense) depends on the question.

I had designed the experiment as though it was a straight-forward physics experiment. There would be a Black Box, (to use our terminology for an unknown mechanism), with Words In going into it at one end, and Words Out coming out of it at the other end, hopefully in response. Questions and answers – what could be simpler?

**Words IN>>** **>>Words Out.**

If **Out = In**, make transfer function **1**.
if **In ≠ Out**, make transfer function a variable, **h**.

But it didn't work like that.

When we use the term 'answer-shaped hole' we are referring to a short tense period following a question. It is that tension that is indicative of the fact that the set of words preceding it was a question. It is tense in the same sense that the period of trying to remember something is tense.

We might refer to that activity as "data-seeking", in the current vernacular, the mind is in Data Seek mode.

As examples of data-seeking consider the following.

a) Trying to *remember* something.
b) Trying to *answer* a question.
c) Trying to *recognise* something.

In each case there is a period of silence or emptiness filled with stress until matching occurs, when the stress vanishes.

I have deliberately used the words "trying to..." in the above phrases to make the period of stress more obvious, being of longer duration and higher intensity.

If the memory had been recalled, or the question answered, or the item recognised without trying - then the stress would have been barely noticed, nevertheless it does exist - even as a momentary impulse.

This phenomenon has been long recognised by writers, particularly those writing what are called "page-turners" and by those producing thrilling films, perhaps the best known for doing this being the late Alfred Hitchcock, who would hold a shot seemingly forever to build up the tension.

**Tension analogous to Force**
A question is an example of the induction of data-seeking activity.

**"What is the time?"** – that is a data-seeking instruction.
**"Do you remember Harry?"** – that is another.
**"Are these your shoes?"** – is a third data-seeking instruction.

It is the tension that motivates the Data Seek activity. If the question needing answering is vitally important, there is a lot of tension, it gets handled early, and energetically – if there is really no tension about getting the answer, then the resulting activity is low energy. The tension is thus analogous to force, to potential energy, to electrical potential/the charge on a capacitor, or the charge accumulating across a cellular membrane for example.

We will have more to say on this later, but meanwhile what we have to recognise is that we are going to have to change direction somewhat from that which we had originally conceived. And for that we need to tighten up our terminology. The Electronic Voice Phenomenon (EVP) is a 1970s buzz-word which is no longer very useful, indeed it is something of a misnomer.

Most people agree that EVP is no longer a useful term, and so we should change it to accord better with current areas of related research such as neural networks.

**QANASS**
The term for an EVP utterance that I will use here is a "QANASS" event. The SS in QANASS meaning Speech Segment, which is what we hear; NA is Non-Acoustic, meaning it is not transmitted by acoustic waves, as is normal with spoken speech; and QA stands for Quasi – Autonomous. These speech segments are autonomous in that we cannot cause them at will, but quasi-autonomous in that a person has to be there for them to occur. Quasi-autonomous Non-Acoustic Speech Segments – QANNASS.

**Feedforward**
There is a rather important finding that should be mentioned here. At the Bial Symposium of March 2006, during a lecture on some experiments in neuro-physiology involving rats, mazes, left and right turns and edible rewards - what was being studied was the firing of neurones/neurone clusters in the hippocampal region of the rat brain. The experimenters had got to the point where they could detect one neuron firing in the area of interest. Quite an achievement.

In passing, they mentioned a peculiar thing – messages would be sent from one neural network to another – that is fine - but then that cluster would send the message back again. "Jolly strange" – they said, in effect, and then went to the really interesting bits about lesions and changes in behaviour.

For computer and communications people, something that was mentioned there STOOD OUT as a very significant feature, something that would not necessarily seem so important to neuro-physiologists.

We are talking about the need for such things as ECC and CRC here. Let me explain.

Although they operate on completely different principles, computers, like the brain, need *reliable* communications. ECC means Error Correction Codes – one of the methods of ensuring reliable communications in digital systems – and CRC, Cyclic Redundancy Check, is an example of that.

What happens with CRC is this. For example, lets say that a binary Word consisting of 16 bits (1s and 0s) is sent from a section, A, in the computer to another section, B. How can we be sure that what was sent from A is what arrived at B?

In CRC what happens is the number of 1s in the binary word [lets say it is **1101110111111011**] is counted, (lets say it comes to **13**), then that number, (**13**), is added on to the end of the word [**1101110111111011**] in binary form (**1101**).

The message now consists of **"I am sending you a Binary Word with 13 ones, please check,"** so to speak .and this advice can be sent in advance – feed-forward – (**I am going to send you...**) or at the end. (**I have sent you....**)

At B when the word is received, the number of 1s received is counted, and if that number matches the check sum (**13**) added to the end of the word, then there are probably no errors in the word.

(Isn't that boring and longwinded?)

So to check reliability there is a lot of adding and encoding and decoding and comparing going on. You see how klunky and procedural that is?

With human beings the method is simpler and more robust.

Suppose I am giving you my phone number over a noisy telephone line.

What do I do to check – I ask you to <u>repeat back the number that I sent</u> you. The number that was received is sent back again to check system reliability.

Two minor notes:

1. If the number read out to you is more than 7 digits or it takes more than 3 seconds to say it, then it may be better to write it down, instead of relying on

remembering what you heard. The reason for this is what is called the Working Memory. This is part of a feature of the brain called the Phonological Loop – a feature that we will have occasion to refer to later.

2. ECC and CRC and all those clever but klunky and slow systems cannot guarantee 100% reliability. close - but not 100%. The repeat-back system is simple and robust and guarantees 100% reliability. And that is the way that organisms function

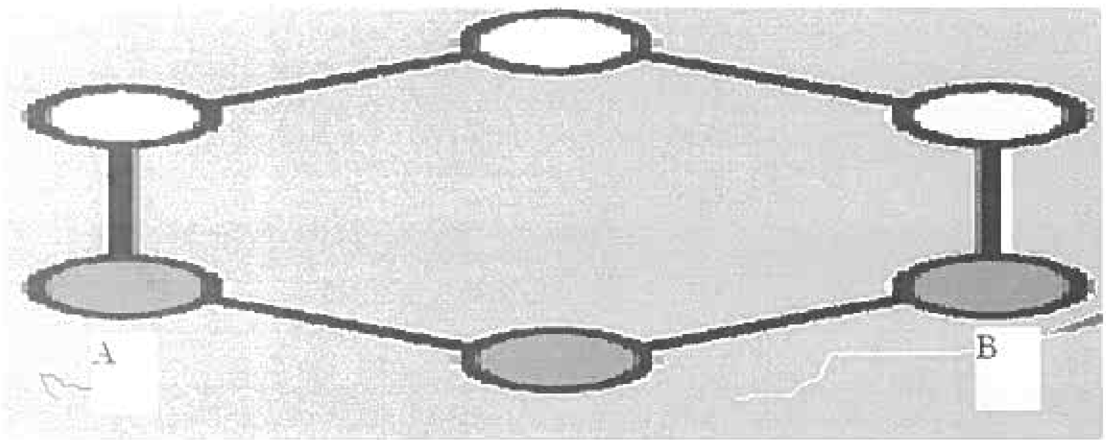
So. what is being suggested here is that the repeat-back observed in the neural networks of the hippocampal area is concerned with communications reliability. And knowing which ways to turn to get fed is crucial-to-survival.

The system has to be fast accurate and reliable. The system is fast accurate and reliable. not because - "*Well, we're a special breed of pure WHITE rats, don't you know, our Family absolutely insist on Reliability....*"

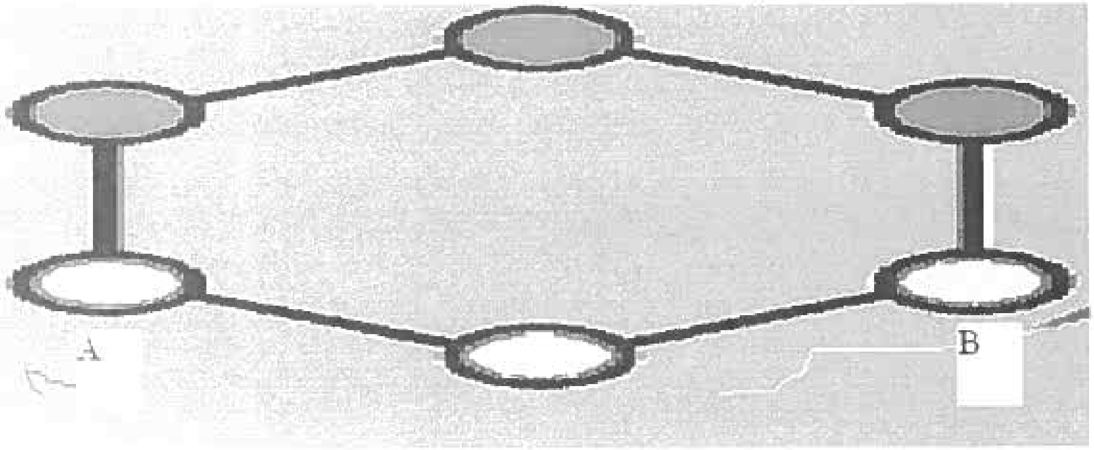
The system is fast accurate and reliable because it is a case of survival.

Getting a match – filling a hole correctly in Gestalt or protein chemistry terms – is an essential stratagem. Here the incoming information is fed back to provide a 100% check. It is fast accurate and reliable and carried out by a simple and robust system.

Phase 1




Phase 2




We know from research with artificial neural networks that not just feed-*back* but feed-*forward* is also a useful feature.

We can view this in various ways, but this one is of special interest here.

A signal is sent out from A to B. This is then fed back from B to A, to check for matching. As in Phase 1 and Phase 2, above.

Now in this type of feed-forward situation consider that the signal is sent from B to A *before* any signal is sent from A to B.

This unlikely sounding event does occur and it explains a number of otherwise inexplicable phenomena involved in EVP.

Feed-forward seems to be happening in data-seeking and matching situations all the time.

Why?

Speed.

You are out in the jungle at night. There is a low rumble. Is it a chair creaking? A train approaching? A cello? Now there is a loud beating sound. The percussion section of an orchestra? A giant eagle flapping off? A motor pile driver …

CRUNCH!!! … and the tiger which growled and pounded up, has you for its evening meal.

Survival comes down to rapid recognition - in this case the recognition of sound patterns.

There is no time for the hearer to scan through an entire library of sound patterns to find a match - the pattern has to be there - immediately - and this comes from feed-forward, or in other words – *expectation*. Professor Vorster emphasises the relevance of contextual environment here.

Where the expectation is present, then even a slight noise, a small animal's footsteps for example, can give rise to fear and panic. It is only when in recall the sensory input is found not to be a close match to the expectation input (the feed-forward) that the fear and panic can subside. But if the tension is very high then the listener can be convinced in their own mind that they *actually* heard a tiger not a small animal. OK, their behaviour was somewhat inapt – but at least they *survived*. The guy who was musing on about "Is that a cello I hear behind me?" is no longer with us.

**Perception and Recognition**

As we shall presently see, expectation and perception are very relevant to QANASS events (EVP) - whether we adopt the positions of Professors French and Wiseman regarding EVP, that you hear what you want to hear - or a more current viewpoint based on recent experiments.

We are so accustomed to the time difference between perception and recognition being so short that they seem to be simultaneous, that we regard perception and recognition as being one and the same thing. Which they are not - obviously. Two people can perceive the same thing but only one recognise it.

When it comes to recognition, speed of recognition would be inhibited by having to search through a large library of potential matches. It should be remembered too that the relatively slow speed of neural signals militates against a long series of fetch and compare cycles to find the best match. But feed-forward gets around that by presenting a *restricted* set of potential matches. This can be as Vorster has suggested, environment driven. The person who on entering an empty concert hall hears a cello being tuned-up and promptly runs for the exit in fear, has obviously got the wrong set of potential matches.

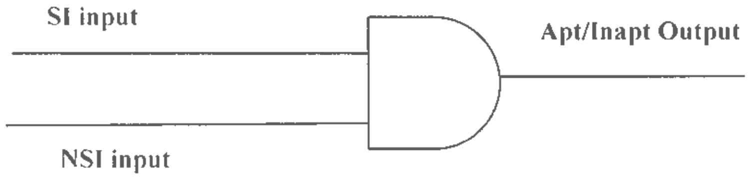
The person running from the sound of the cello being tuned-up might be considered to be psychologically disturbed, but consider, themselves, that their behaviour and conclusions were entirely appropriate.

There seems to be a computation here that the selection for the restricted set is based on frequency of recent matches. The person who ran from the cello being tuned-up would have been fresh from his normal environment, the tiger frequented jungle; the person who got eaten by the tiger would have been fresh from his normal environment, the concert hall.

**SI and NSI**

Although this has to be an hypothesis at this stage, it is suggested to account for the rapidity of responses that a totality of potential feed-forward signals is continually present, from which a restricted set is automatically selected, on the basis of relevance – connectedness.

This would be the basic building block for recognition/matching.




Where SI is the Sensory Information input, and NSI is the Non-Sensory Information input. The SI input is being compared with the Non-Sensory Information (the Feed Forward/Expectation or Reference) Input; with the comparison resulting in an Apt/Inapt (Match or No Match) output.

To resort to the vernacular once again. SI is the **default** mode for perception - for reasons of survival. Using the NSI mode for perception, instead, could mean such things as not seeing the approaching bus, or jumping out of a window believing it wasn't there or that one could fly, none of which aids survival. For survival, use Sensory Inputs.

It is also suggested that NSI – essentially, the subconscious, is better seen not as a sort of giant library, with passive books which have to be opened to become active, but rather as an environment of continually active global information, which is generally not perceived as such because the default mode has to be that of perceiving sensory inputs.

The type of block shown above, commonly known as a Comparator, occurs widely in electronics, both analog and digital; in software and in neural networks – Dr Alex Sumich has very kindly provided us with an example of an error detecting neural network, which is an example of that type.

**Experimental Support**

Briefly, there also appears to be evidence in favour of the view of the restricted set of NSI options from a series of experiments carried out by the author at the AAEVP convention in June 2006. These consisted of a series of monosyllabic word tests, some carried out in the auditorium, others by email. In the classical monosyllabic word test (MSWT) a set of single syllable words is read out at defined intervals and the listeners try to guess what the words are. To prevent the test being too easy and thus yielding no information, there is also a defined level of background white noise. In this experiment some of the recorded word lists were acoustically modified to make them resemble the characteristics of QANASS Events.

The word lists are standard and in this case were of American origin.

What is interesting to us here is that on a significant number of occasions a large percentage of the listeners were agreed on what a particular interpretation should be – but that interpretation was wrong, only a minority got it right. Which is a warning signal to those of us who believe that the use of panels and consensus provides a more objective result!

When the words that were wrongly interpreted were examined something significant showed up.

Here is one of the words from the American list – 'Creed'. The overwhelming majority reported this as 'Greed'.

Another word on the list was 'Strife'. The overwhelming majority reported this as 'Strength'.

As the MSWT is quite old, now, at the time it was originally devised the words 'Creed' and 'Strife' might have been found in more frequently used parts of the common vocabulary.

They are no longer as frequent and current as once they might have been. The listeners interpreted them in terms of their current high usage vocabulary.

Further confirmation of this hypothesis of the restricted option list comes from the fact hat in earlier experiments it was found that the common characteristics of the highest scoring EVP listeners were, tertiary education and exposure to a wide linguistic environment.

**Other Examples of Precognitive Behaviour**

Dr Michael Turner MIEEE has suggested comparing the anticipatory results with those of Dr Dean Radin, and the results of Dr Ed May regarding precognition as indicated by EDA responses.

In Dr Radin's experiments the subjects were shown a series of pleasant and unpleasant pictures while connected to GSR monitoring apparatus. It was found that eventually unpleasant pictures were being anticipated, as indicated by the GSR machine.

In Dr May's experiments the subjects were subjected to a very loud burst of white noise or to a slight electrical shock, at random intervals. Once again the unpleasant experiences were anticipated by the GSR results.

In both cases it was the *unpleasant* futures not the *pleasant* futures that were anticipated, suggesting a motivation to avoid unpleasant futures, which is another way of expressing survival. The resemblance to the type of survival motivated measures described in relation to the comparator functions is noted.

It is hypothesised that a neurologically-based survival predict and protect system exists, largely at a subconscious level, which probably goes back to a time when physical survival was more of an everyday issue, and which indeed may have come through earlier species.

The key lies more in the threat to survival – there are numerous reports of animals moving away from an earthquake area prior to the event or any evidence of it, and there was the recent case of the Tsunami and the animals leaving their zoo ahead of it.

**Prediction and Comprehension in Speech**
The role of prediction. as asserted by the Expectation or Reference Input is very significant in the comprehension of speech, including QANASS events.

Consider how long it would take a person to complete each of the four phrases given below.

**Example 1**
Jeremy had a great ……

**Example 2**
Mary had a little….

**Example 3**
Bo Boo red bird what is…..

**Example 4**
Baa Baa Black sheep have you…..

For native English speakers the Expectation input will fill in the missing words in Examples 2 and 4. enabling their rapid completion.

For examples 1 and 4 the set of options is not restricted . There is no current or frequent usage. They could take forever.

**Davies and Davies**
In the work of Davies and Davies we have another example from a Cognitive Psychology approach regarding hearing perception. In this we find what is known as the phoneme regeneration experiment.

In this experiment the letter group '*-eel*' was included as though it was a word. in different phrases. such as.

The '*-eel*' is on the table. The '*-eel*' is on the car. The '*-eel*' is on the orange.

The recorded phrases were played to different listeners who were then asked what exactly they had heard.

What they heard was. The *meal* is on the table. The *wheel* is on the car. The *peel* is on the orange. And. questioned. they would insist that they had actually heard the missing phoneme - which can be explained as contextually driven phonemic regeneration.

But. hold on a minute – here we have an appropriate phoneme being generated – <u>before</u> the entire sentence is heard. The 'm' of meal. for example, was generated *before* there was anything about it being on the table.

We have two options. either there is some kind of precognitive process of which we know nothing. or what they heard was what they were allowed to hear after the WM had finished interpreting it. They reported hearing what they remembered hearing.

"The eel is on the table" went into the working memory (wm) where it was reported as appropriate when an "m" sound preceded "eel". Being then flagged as a match the entire series of sounds – "The meal is on the table" - is taken as sensory information. even though the 'm' was inserted NSI.

Anyone who has done a number of experiments involving QANASS events will be familiar with this otherwise unbelievable phenomenon.

One may be meticulous in keeping records of one's results. For example, if after some considerable scrutiny, when one is certain that an interpretation of a particular utterance is correct, one should carefully record that fact - in a log book for example.

But sometime later, when it is listened to again, occasionally one might find that it appears to have changed! EEEK!!!!

It can even happen over a period of 24 hours.

I was asked this specific question in such a case by someone new to recording QANASS events.

Why is it that yesterday I was totally convinced that I heard such-and-such, she asked, whereas today I am totally convinced that I hear something else.

The answer is that both cases are correct, not in conflict.

What was heard yesterday was correct and what one hears today is correct.

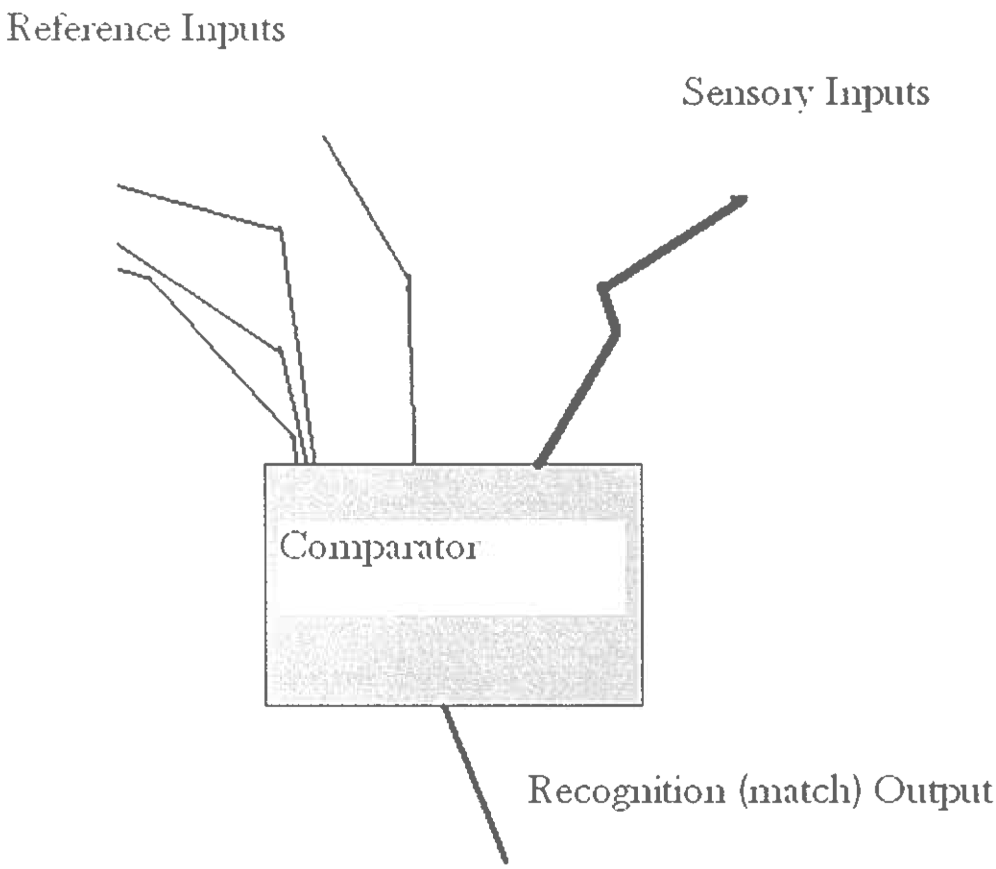
This is because – as in the case of so-called regenerated phonemes – what one hears is not just a *Sensory* Information input but the contribution from a *Non-Sensory* Information input also.

**The Processes of Recognition**

QANASS speech is, as yet, difficult to recognise. But recognising QANASS speech is no different from recognising any other speech.

In recognition (whether visual or audible) we have two inputs, the Sensory input and the reference or NSI input. That is what recognition means - finding that the two match.

Speech recognition is no different. In order to *understand* speech we have to *recognise* it. To *recognise* it, the *sensory* input has to be compared with a *reference* input, to obtain a *match*. The area of the brain known as the Phonological Loop (PL) plays a part in this. One of the components of the PL is what is called Working Memory (WM). The contents of the WM will be successively altered until a best match is found.




Eventually a match will be found. According to CIA-funded research at the University of Chicago something referred to as the recognition impulse or signal has been identified, a feature suggested on the basis of earlier research by the present author some 7 years ago, sad - but a welcome development nevertheless.

**WM and QANASS Events**
One of the primary characteristics of a QANASS event is that its duration is less than 2-3 seconds – which corresponds to the "length" (durational capacity) of the WM.

For computation to occur data has to be comprehensible. You can't just feed in a stream of 1s and 0s to a computer and expect it to compute. It has to be in the right language. Even computers have languages. Similarly with people. The most urgent instruction will be ignored if it is not in an understood language. Comprehension is essential.

Another feature exhibited by some QANASS events is that of following a theme.

**Theme Following**
With QANASS experiments, some 24 hours or so after a particular subject has aroused significant interest or anxiety, it sometimes happens that it becomes a feature of the next day's utterances.

This has been remarked upon by several experimenters.

The utterances generally consist of comments – criticisms, advice, or warnings, in the subject area.

It is as though a restricted set had somehow been formed, as suggested earlier, from options that are current and relevant.

And a similar behaviour seems to have occurred in the Bial series of experiments.

In the beginning, for the first 6-8 experiments, all went well, questions were asked, and a significant amount of in-context and in-time responses were found. But gradually the number of such responses decreased although there was an increase in the overall number of responses. The responses now seemed to be about other concurrent responses rather than about the questions asked – it was as though a type of "conversation" - of theme-following - was happening.

**Conclusions**

1) Sentient entities. We believe that the reactions to the initial interrogation were just that of appropriate responses.
2) We believe that there is a significant correlation in timing and context to justify the supposition that in a number of cases the response is actually a derived from
   the question. The maximum number of cases in one experiment was 43%.
3) There seems to be a decrease in motivation to answer questions, as the questions are repeated and the tension which leads to consequent activity is less, as evidenced by the continually decreasing number of in-context and I-time responses.
4) As the tension associated with specific questions decreases nevertheless the number of responses increases and they appear with time to be "themed", as though in commenting one-on-another. It is suggested that what is being monitored is non-sensory information – a restricted set.

It has to be pointed out, however, that his is not the only method of obtaining EVP and that there is no attempt made here to explain anything outside EDA derived QANASS events.

**Comment**

Is the whole thing purely a set of neural processes, or do the sources of the events have a discrete existence in themselves?

We did not have sufficient opportunity within this project to explore this question to any depth, and to the extent that we were able to do so, the results obtained were compromised by unrecoverable analytical errors. All that can be said is that the results do not appear to be influenced with regard to the question of inherent tension by who is doing the experiment – who is operating the equipment.

What is implied, therefore, is that the sources of the utterances are not corporeally defined, but that there would seem rather to be a local population of utterance sources.

What you would expect as you changed from one operator to another is that the fresh neural networks would counteract the neutralisation effect on the original operator of multiple repetitions of the same questions. So what seems to be implied in this is that the sources operate *through* the neural networks but are external to them.

This is an area that would reward much more attention.

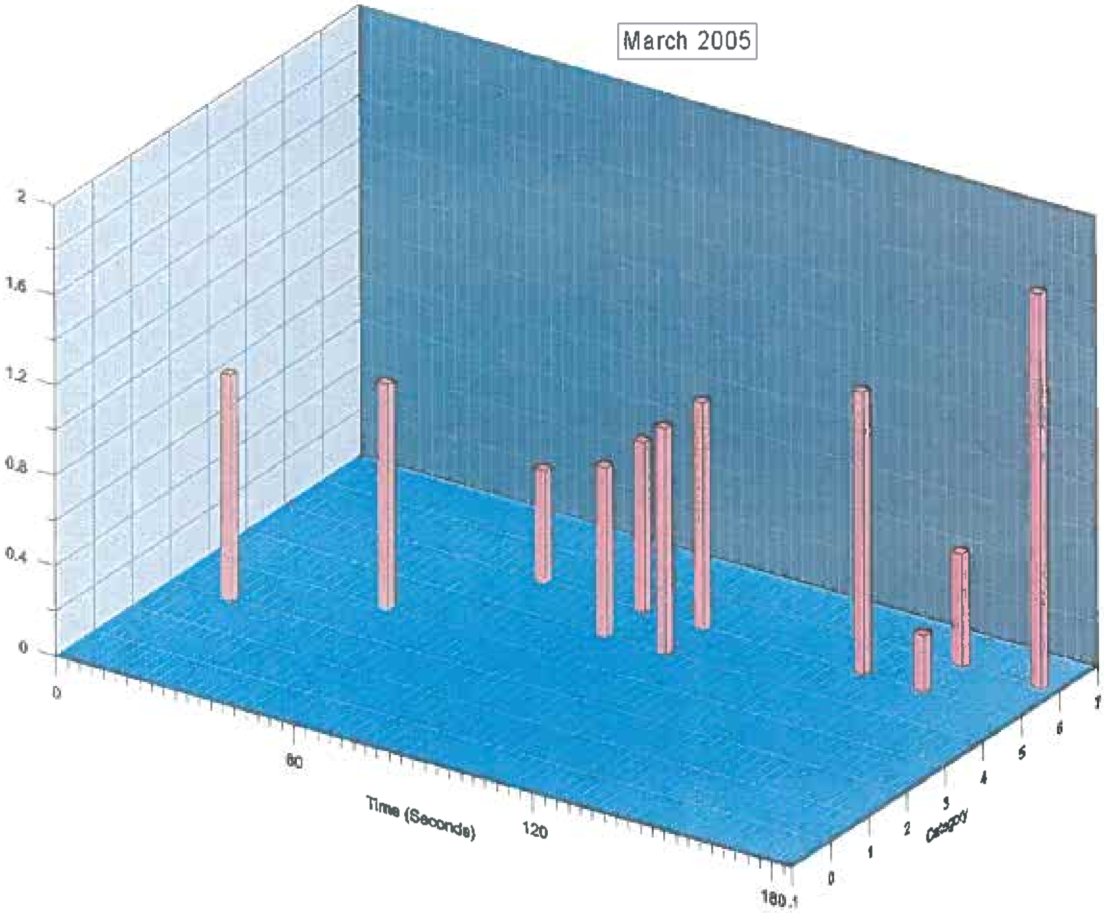
If it is found in a series like this that the results are in some ways independent of the operator then we will have illustrated a non-corporeal aspect to QANASS events.

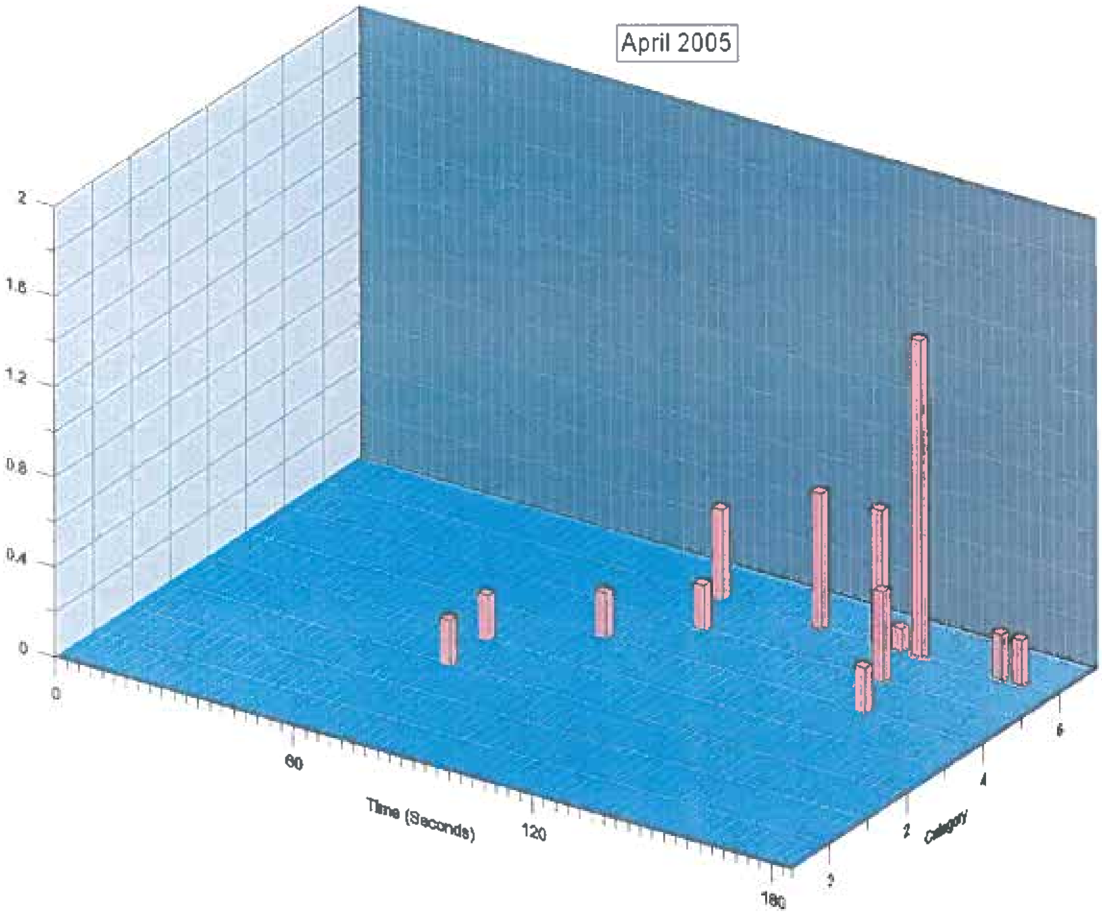
## ACKNOWLEDGEMENTS

The author would like to thank, particularly, Fundacao Bial for their invaluable support for this project: Profesor Charl Vorster for undertaking the onerous duty of Adjudicator and doing it so well; and to the many listening panellists who put up with so many difficulties to make this project possible.

**Samples of Drawings**

These are draft results the company doing the database work is still working on a more appropriate format.


March 2005
2
1.6
1.2
0.8
0.4
0
0
60
Time (Seconds)
120
180.1
0
1
2
3
4
5
6
7
Category


April 2005
2
1.6
1.2
0.8
0.4
0
0
60
Time (Seconds)
120
180
2
4
6
Category