Anomalous Cognition: Two Protocols for Data Collection and Analysis

By

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Abstract

This white paper describes in detail two data collection methodologies for what is known as anomalous cognition (a.k.a. remote viewing). Both methodologies are heuristic rituals rather than protocols that were developed under a systematic approach; however, they both have produced a substantial number of significant results in the laboratory and in various application environments. They are designed, at least in principle, to reduce the likelihood of a participant adding too much to the response that was self-generated either by memory, expectation, or logical inference. In addition, they provide a putative technique to illicit information from those participants who appear to be “stuck.” That is, those who are unable to report anything. The first of these is based in a stimulus/response analogy, whereas the second is more “free form” that was used in the early days of anomalous cognition research.

The most common form of analysis is rank-order assessment. In this technique, an analyst is presented with a single anomalous cognition response and five photographs one of which is the intended target for a session. The analyst’s task is to pick which photograph best matches the response, second-best match, and so on. This matching procedure is independent of the quality of the putative match.

The quality of the match—sometimes referred to as an assessment—is conducted by a fuzzy set technique. In this approach, all the targets in the pool of 300 have previously been consensus encoded with regard to their cognitive content. The analyst, who is blind to the encoding of the intended target for the session, encapsulates the response with same set of potential cognitive elements that was used in the coding of the target pool. From these data, a simple calculation constructs the accuracy (i.e., how much of the intended target that was described correctly) and the reliability (i.e., how much of the response that was correct). The assessment for the trial is the product of accuracy and reliability—called Figure of Merit.
Introduction
This paper address data collection and analysis using a specific target set that was
develop over a 30 year period. However, most of the techniques described below can
easily be generalized to any target set. The description that follows is exclusively for
a “clairvoyant” methodology; that is, no sender is used as in a “telepathic”
methodology.

Data Collection
Two different approaches are described in this section.

Background
The anomalous cognition protocols that have been developed do not use any form of
special putative psi-conducive state. That is, there is no somatosensory noise
reduction, relaxations procedures, or specific focusing techniques. However, a very
practical “street-smart” concept is adopted. What is hypothetically asked is what
would disturb a participant in any cognitive task. Clearly such a concept might be
participant-dependent and that is the point. If a participant is hungry, tired, mentally
distracted or distraught, or pressed for time, then it is likely they would not do well in
any cognitive task let alone anomalous cognition. In these cases, the session is
aborted before it begins regardless of the time, energy, and/or expense involved.

Set and Setting
The setting is rather business like. An experimenter (a.k.a. monitor) sits opposite the
participant across a table. Generally they are present in an office like setting
(e.g., in the laboratory); however, this arrangement might be anywhere—depending
upon the participant we have even conducted sessions in restaurants. In preparation
for the arrival of the participant, pens and sufficient what paper (preferably without
lines) are available.

There is no special participant welcoming ritual other than friendly greetings and
small talk before entering the laboratory. Before the session begins, especially with a
novice participant, they are given a set of expectations of what the experience might
be like, or more accurately what the experience is most likely not to be like. They are
informed that vivid and specific internal experiences are most likely to be incorrect
and are advised not to report them. Rather, the experience might be more accurately
described in terms of feeling like a guess and/or a hunch rather than specifics. These
points are emphasized in that the vivid internals often include direct logical inference
or at least a more subtle form of logical inference, and that logical inference of any
kind cannot, but definition of the protocol, lead to accurate data.

Also before the session begins, the participant is asked to write their name, date, and
time on the top of the page of a blank paper. Then, to the best of their ability they are
asked to jot down any mental activity they are currently experiencing. It is
emphasized that no one but they will see what is written. Examples might include:
- Wondering if they will miss the bus to return home.
- Worrying about an exam later in the day.
- General anxiety about the session.
- Fight with a friend or spouse.
- Past or up-coming romantic encounter.

This might take a few sheets of paper. When finished, the participant crumples the sheets of paper and tosses them aside. They are asked to take the crumpled sheets with them when they leave and informed in a humorous way they that if the really want to clutter their minds with this stuff, they can read their writing after they leave.

When the session begins, the participant is asked to write their name, date, and time on the upper right portion of the page and number the page as page one.

There is no other participant preparation.

**Data Collection Methods**

Both methods assume a random selection of a target and assume that the participant and the monitor are blind to the choice. It is not assumed that both individuals are blind to the target pool in general.

**Stimulus – Response Method**

The primary idea behind this method is analogous to a word association test in psychology. In the psychology test, a therapist asks a client to respond without thinking with the first word that “pops” in after hearing the therapist. For example, the therapist my say “fat” and an immediate response from the client might be “big” or “thin.” The point is that the client does not have enough time to reason out a psychologically acceptable response or fabricate what they might be perceived as the one wanted by the therapist. In the anomalous cognition arena it is assumed that the quickest response is the most genuine because the participant does not have enough time for logical inference or psychologically driven responses.

Many verbal triggers have been examined for anomalous cognition research. Initially, the physical geographical coordinates of the target site/picture were used to trigger a response. However, we have learned that the simple word “Target” is sufficient.

Before the session begins, the participant is instructed that when they are ready, they are to place their pen on the paper near the top of the first page as a signal to the monitor to provide the first stimulus word “Target.” When they hear the stimulus word, they are to rapidly write the word Target and then IMMEDIATELY to scribble words and/or a brief sketch of their first impression. They are told that spelling and neatness do not count. They are also told that if they hesitate—usually indicative of a logical inference attempt—the monitor will say “Break.” The participant writes “Break” on the page also. They are informed that if they register a quick response the monitor will also say “Break” to momentarily end the anomalous cognition. In this way, the target/break couplet is analogous to having an opaque screen between them and the photograph and that each couplet is like punching a hole in the screen to reveal a small amount of the scene.
When the session begins, the monitor gives a stylized taking to the participant: “There is a photograph that requires a description. Access to that photograph is through the trigger word ‘Target.’ When you are ready, place your pen on the page.” Then a number of target/break couplets begins.

Part of the monitor’s responsibility is to make sure that the responses make it to the paper. Often a novice participant will describe in words and gestures rather than writing. The monitor may interrupt and ask that those words be added to the paper. The monitor may also seek clarification. Suppose that the participant draws some waves but does not label them. The monitor can then ask if there are any words associated with the sketch. At no time should the monitor ask leading questions or provide interpretation of what the participant has written or drawn.

After each target/break couplet, the monitor engages the participant with small talk. This might last a few seconds or many minutes. The point is to keep the participant from pondering what the target could be or from analyzing what they have provided before. This continues for a number of couplets probably less than 10. If there is a long break (e.g., the participant needs a bathroom break) or the break has lasted many minutes with small talk, the monitor re-tasks the participant as above.

Finally, the monitor changes the tasking: “A summary of your impressions are required. Access to that summary is through the trigger word “Target.”” Then the last stimulus is provided and the participant is encouraged to summarize what has been their fragmented impressions and to label any sketches they provide. The more advanced participants are encouraged to provide information that will help the analyst differentiate among a number of competing target possibilities. After the summary the monitor says “Break” one last time and the participant is instructed to write EOS after their last entry to indicate End of Session.

Free Form Method
The free form method was used in the early days of the research; however, much of the approach had the same goals in mind as in the stimulus/response technique. That is, to reduce expectation, logical inference, and psychologically driven responses. In this method, the participant is tasked as: “There is a photograph that requires a description. You will see this photograph in about 10 minutes. What can you tell me about it now?” The participant is encouraged to write and draw their impressions.

In an attempt at reducing the cognitive expectations and other sources of incorrect material, the stimulus/response method is replaced by changing the participant’s perspective. The free form approach involves more of a participant/monitor dialog. What follows is a number of possible perspective changes that the monitor might make. This list is not exhaustive and the monitors are encouraged to be creative:

Suppose the participant draws what appears to be a building. The monitor might ask the participant to place their back against it and look outward and describe what they see.

- Fly to the top and look out.
- Punch it and describe what it feels like.
- Taste it.
- Suppose a response includes a relatively formless rural scene. Then float up 1000 meters in the air, rotate rapidly 360 degrees and describe what you see.
One important point in these attention shifting methods is that the monitor should avoid using the participant’s or their own interpretation. For example, even though the participant labels something a building, the monitor might instruct the participant to place their back to *it* rather than against the building.

This kind of dialog exchange should not go on more than 15 minutes. Five or 10 minutes is more typical. Longer sessions appear to only provide additional noise.

When the participant and monitor agree that the session is complete, the participant writes EOS on the page to end the session.

In both collection techniques, when the session ends is a subjective impression mainly by the monitor. If there is no new information being provided or more and more complex responses are being provided then it is time to end the session. Often the monitor will say that the session is nearly complete and is there any final impression the participant wishes to add before the session is over.

**Analysis Methods**

We describe two approaches for the analysis of remote viewing. Figure 1 is an actual AC response as a specific example for clarity:¹

![Figure 1. A Complete Typical AC Response with Insets for Translation of the Writing.](image)

We will use this response to illustrate both analysis techniques.

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¹ This response was generated using the Free-form method described above.
Rank-Order Analysis

In the rank-order method, a blind analyst (not the participant) is presented with five photographs one of which is the intended target. Regardless of the response material, the analyst is obligated to pick one of the set of five as their own subjective assessment as the best match to the response. Having completed that, the analyst then continues to choose the second best match, the third best match, and so on. In principle, this matching must proceed even if the response is a blank page!

Figure 2 shows an example of a pre-defined analysis set. In this case, one of the photographs is the intended target for the response shown in Figure 1, above.

![Analysis Target Pack](image)

**Figure 2. Rank-Order Analysis Set for the Response in Figure 1.**

Like anomalous cognition itself, the judging should not be one of deep consideration and pondering. There are no specific methods for the analyst to use, however the follow are a set of guidelines that have proved to be successful:

Focus on any cognitive surprises. For example, the response might be mostly about a city, but in the middle, the participant says, “Wait a minute, what is all this sand doing here?”

Do not focus on any single detail. For example, one detail might lead you to one photograph but another might lead to a second one. In the response in Figure 1, “perspective flat area” might suggest the mountain and lake target; whereas “flat side, vivid white” might suggest the road target.

- Tend to emphasize the drawing over the words. This is a general rule; however, some participants are not too visually oriented.
- Eliminate the worst match first. Often this is easiest.
- If two photos contend for first place go with the first impression.
In this case, the analyst ordered the photographs from best match to worst as: Road, Ruins, Mountain, Coast, and City. The Road was the intended target. After $M$ sessions the effect size is given by:

$$ES = \frac{n+1}{2} - \frac{R_{ave}}{M} \pm \frac{0.5}{\sqrt{n^2-1}}$$

where $n$ is the number of targets to be ranked (i.e., 5 in the current example) and $R_{ave}$ is the average rank number over the $M$ trials. The $\pm$ term is for continuity correction. The choice of sign is always to reduce the Effect Size. The $Z$-score for $M$ trials is given by:

$$Z = ES \times \sqrt{M}.$$

**Fuzzy Set Assessment and Figure of Merit**

It is beyond the scope of this white paper to provide a tutorial on set mathematics and particularly fuzzy sets. It suffices to say that fuzzy sets were developed to provide an objective and quantitative assessment of imprecise information. For example, a fuzzy set approach can answer the following question. “Please provide a list cities that are sort of big.” Anomalous cognition response are inherently imprecise so fuzzy set analysis is an ideal approach.

May, et al.* describe in detail how fuzzy sets were defined for the targets in the pool of 300 photographs. We outline the approach here.

Table 1 shows the list of possible elements in the target pool. In fuzzy set terminology, this is called the Universal Set of Elements.

<table>
<thead>
<tr>
<th>Universal Set of Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buildings</td>
</tr>
<tr>
<td>Villages/Towns/Cities</td>
</tr>
<tr>
<td>Ruins</td>
</tr>
<tr>
<td>Roads</td>
</tr>
<tr>
<td>Pyramids</td>
</tr>
<tr>
<td>Windmills</td>
</tr>
<tr>
<td>Lighthouses</td>
</tr>
<tr>
<td>Bridges</td>
</tr>
<tr>
<td>Coliseums</td>
</tr>
<tr>
<td>Hills/Cliffs/Valleys</td>
</tr>
<tr>
<td>Mountains</td>
</tr>
<tr>
<td>Land/Water Interface</td>
</tr>
<tr>
<td>Lakes/Ponds</td>
</tr>
<tr>
<td>Rivers/Streams</td>
</tr>
<tr>
<td>Coastlines</td>
</tr>
<tr>
<td>Waterfalls</td>
</tr>
<tr>
<td>Glaciers/Ice/Snow</td>
</tr>
<tr>
<td>Vegetation</td>
</tr>
<tr>
<td>Deserts</td>
</tr>
<tr>
<td>Natural</td>
</tr>
<tr>
<td>Manmade</td>
</tr>
<tr>
<td>Prominent/Central</td>
</tr>
<tr>
<td>Textured</td>
</tr>
<tr>
<td>Repeat Motif</td>
</tr>
</tbody>
</table>

This set was designed to match the current pool and is sensitive the type of information that can be obtained by anomalous cognition.

For the target encoding, each of the elements were rated between zero and one with regard to that element’s *visual* relevance to the photographic scene.² Visual relevance

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² This technique is not limited to visual relevance. It is possible to construct different universal sets of elements that might be sensitive to functional relevance, or spiritual relevance, and so on.
is not simply the area of the element in the photograph. For example a small bright red object might score high; whereas a large dull item might score low.

Figure 3 show the coding of the intended target Road scene shown in Figure 2.

<table>
<thead>
<tr>
<th>Element</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roads</td>
<td>0.6</td>
</tr>
<tr>
<td>Hills/Criff/Mountains</td>
<td>0.6</td>
</tr>
<tr>
<td>Mountains</td>
<td>0.3</td>
</tr>
<tr>
<td>Vegetation</td>
<td>0.8</td>
</tr>
<tr>
<td>Natural</td>
<td>0.8</td>
</tr>
<tr>
<td>Manmade</td>
<td>0.4</td>
</tr>
<tr>
<td>Prominent/Central</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Figure 3. Consensus Coding of Intended Target

All the other elements in Table 1 were scored as zero. The items shown in Figure 3 are a fuzzy set representation of the cognitive elements of the photograph.

The entire set of 300 photographs in the current pool has been coded and the results are contained in a Microsoft Access database.

The analyst, who is blind to the target and the target encoding, is asked to encode the response against the elements shown in Table 1 from zero to one in steps of 0.1. Rather than assessing the visual relevance as in the target case, the analyst must subjectively assess the degree to which each of the elements is present in the response. For example, if the response includes the word “road” or a drawing that is completely unambiguous, then the “roads” element must receive a one. On the other hand if the response includes two lines in the same general direction then the “roads” element might receive a small number such as .0.2; that is, the analyst is not much convinced that “roads” are part of the response.

Figure 4, below, shows the fuzzy set encoding of a single analyst of the response shown in Figure 1. Some elements appear to be contradicting. For example “natural” and “man made” both are present in the response. Keep in mind that the response encoding is not done with regard to how the analyst might believe the element in the response is also in the target; rather, it is just constructing a fuzzy set representation of the response.
Notice that the element “White Squares” is not present in the Universal Set of Elements shown in Table 1. To provide a better assessment of the quality of the response, the analyst is allowed to add specific elements in the fuzzy set representation of the response. Naturally, they cannot be in the target by definition. The Laboratories for Fundamental Research’s anomalous cognition computer program allows for easy entry of the response encoding.

Now that a fuzzy set representation of both the intended target and response are complete, we can construct the assessment called the Figure of Merit. It is beyond the scope of this white paper to describe the mathematics used to do this, but the details can be found in two peer-reviewed publications that can be found in the library at www.LFR.ORG. Rather, we quote the result. The percent of the target that was described correctly (i.e., the accuracy) was 63.3% and the percent of the response that was correct was 59.4% leading to a Figure of Merit (i.e., the product of accuracy × reliability) of 0.376.

A “rule of thumb” that has been derived over the years through extensive analysis suggests that about a third of any response will match about a third of any target, so chance expectation is about 0.1 for the Figure of Merit. This trial was nearly four times that value.

Assessments are critical in process-oriented psi research because they should be used exclusively in correlation studies rather than rank order statistics. The reason for this is obvious. The ability of an analyst to pick the correct match in a rank order method strongly depends upon how orthogonal the decoy targets are (i.e., different from one another and the intended target) which, by definition, adds noise in correlation studies. An assessment avoids this confound.