Remote Viewing: A 1974-2022 Systematic Review and Meta-Analysis

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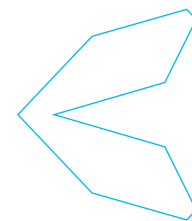
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Remote Viewing: A 1974-2022 Systematic Review and Meta-Analysis

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HIGHLIGHTS

Statistical analysis of the available evidence suggests that remote-viewing is the most efficient way to study "extrasensory perception" for experiments and practical applications.

ABSTRACT

This is the first meta-analysis of all studies related to remote-viewing tasks conducted up to December 2022. After applying our inclusion criteria, we selected 36 studies with a total of 40 effect sizes. Both frequentist and Bayesian meta-analyses revealed a strong average effect size of .34; 95% confidence interval: .22 -.45, after the exclusion of outliers, without signs of publication bias and a minimal decline effect. In terms of raw scores, these average results correspond to a difference in hits score of 19.3%; 95% confidence intervals:13.6%–25%, above the expected chance. Among the meta-analyses of moderators, a small nonstatistical difference emerged between the precognitive and clairvoyance tasks, particularly for those with an outbound agent. A comparison among meta-analyses results observed with other experimental protocols testing extrasensory perception showed the clear superiority of remote viewing. After more than 50 years of investigation into extrasensory perception, remote-viewing experimental protocols appear to be the most efficient for both experimental and practical applications.

KEYWORDS

Remote viewing; meta-analysis; clairvoyance; precognition; extrasensory perception.

Remote viewing is a novel perceptual discipline for gaining information that is not available to the ordinary physical senses. Used extensively by so-called 'psychic spies' during the Cold War for classified military projects, it has a long history both as an intelligence gathering tool and as the subject of research and applications in the civilian world.
 – *International Remote Viewing Association Website*

INTRODUCTION

The central objective of this study is to discover how remote viewing differs from other types of approaches aimed at testing the possibility of extrasensory perception (ESP) in terms of its results with experimental designs. A secondary objective is to identify and compare the central design components and themes of remote viewing studies spanning the past 50 years.

To achieve this, we first present definitions, then a historical overview, and then a comparison of remote viewing to other free-response studies, which will lead us to an operationalization of remote viewing from which our methodology for a comprehensive meta-analysis of remote viewing related projects flows. This will be followed by inclusion criteria, a presentation of our meth-

ods results, and finally, a discussion aimed at identifying further moderators to explore.

Definitions of Remote Viewing

Remote viewing "*pertains to the acquisition and description, by mental means, of information blocked from ordinary perception by distance or shielding and generally considered to be secure from such access*" (Targ et al., 1980; see also Targ & Kantra (2000): "*remote viewing is the acquisition and description by mental means of information blocked from ordinary perception by distance, shielding, or time.*", p.4). Thalbourne (2003) later described remote viewing as *"a neutral term for general extrasensory perception... especially in the context of an experimental design in which a percipient [perceiver/receiver] attempts to describe the surroundings of a geographically distant agent [sender]"* (p. 107). However, Ingo Swann (1993), who coined the term in 1971-72 with Janet Mitchell at the American Society for Psychical Research (ASPR), in cooperation with Karlis Osis and Gertrude Schmeidler, wrote, "*there can be no doubt at all that remote viewing originally referred to a particular kind of experiment, not a particular kind of psi ability... It is very difficult to define a psychic ability. But it is not hard to define an experiment*" (p. 75). He explained that an important aspect of remote viewing methodology is that it includes blinding and feedback protocols.

The International Remote Viewing Association (IRVA) provides the most current definition on their website:

"Proper RV is done within a strict science-based protocol. As mentioned, the viewer is kept unaware of either the nature or identity of the target until after the session is completed. Except in training situations, the monitor (a sort of remote viewing "guide" or facilitator that may assist the viewer during the session) is also unwitting, and external clues or data about the target are carefully excluded. Sessions are conducted in a setting that prevents knowledge of the target "leaking" to the viewer. These measures are important to ensure that the viewer does not receive hints or clues about the target in any way other than what would be considered "psychic."

IRVA's description continues:

"Despite the "viewing" part of the term, remote viewing is only partly about experiences associated with what might be visible about a target. It also involves mental impressions pertaining to the other senses, such as sounds, tastes, smells, and textures, as well as limited telepathy-like effects and, in some cases, just plain intuitive "knowing."...In RV, the viewer not only verbalizes what he or she is perceiving but usually also records in writing, in sketches, and sometimes even in three-dimensional modeling the results of the RV episode or "session."

Early History of Remote Viewing & Its Development

Although the history of remote viewing has been well documented (Puthoff & Targ, 1974, 1976, 1980; May, & Marhawa, 2018), a few noteworthy developments are addressed here. To understand the etiology of remote viewing, one might take a time capsule back to the late 1960s, when ASPR researchers began a series of Out-of-body (OBE) experimental trials designed to explore whether a subject could intentionally perceive objects placed on a shelf, about 10 feet above the subject's head. Mitchell (1987) tracked the development of Swann, whom she stated was their most talented subject, even though he would later tell an interviewer '" Initially I was not very good at this kind of 'perceiving', but as the months wore on, I grew better at it." (Swann, 1993, p. 76). Mitchell recorded 'learning curves' by adding each new target type. Later, she explained that this helped her and her colleagues shift their predominant view from psychic functioning, being purely an inherent ability, to the view that it is something that can be learned.

Initially, Swann voiced his descriptions out loud according to the researcher's instructions. However, having studied the 'picture drawing exercises' of Warcollier (1948) and Sinclair (1930) and being an artist, he began sketching his perceptions of the target materials. This led to what he would go on to describe as the biggest discovery of his life: that in addition, or in place of the visual imagery he would receive (clairvoyance), at times, his hand could know what to draw, with remarkable detail, and similarity to the object, while his conscious mind remained completely unaware of its features or nature. (Swann, 1996). This awareness would eventually play an important role in the development of controlled remote viewing methodology (CRV), which will be discussed below (Smith, D., 2014; Smith, P. 2015).

After becoming bored with their target pool of objects, Swann convinced Osis and Mitchell that he could use his intuitive perceptions to describe people and activities located outside the building. They tasked him with describing unusual weather conditions at distant locations and then had him track the activities of a pair of researchers who visited a museum. When the research-

ers discovered that the main exhibits they intended to visit were closed, they thought the experiment failed. However, they returned to the lab to discover that Swann tracked their movements in remarkable detail, reporting that the museum exhibits were closed (Mitchell, 1987). This could be considered one of the first attempts to use an 'outbounder' approach, as the outbound agent was believed to serve as a mental beacon, providing a necessary anchoring or bridge to a distant and unknown location. These early experiments directed the viewers' awareness out of the lab, to their surrounding neighborhood, then to different states, then to different countries, and eventually to distant planets, demonstrating that distance was not an inhibiting factor in information retrieval at a distance. (Targ & Puthoff, 1974; Puthoff, 1996).

Outbounder Experiments With an Interviewer

In the early 1970s, Swann was recruited by Harold (Hal) Puthoff to serve as both a psychic and a research consultant in the developing psychoenergetics program at Stanford Research Institute (SRI), which was initially funded by various governmental agencies. Building on the earlier efforts of the research at the ASPR and Gertrude Schmeidler's laboratory at the City College of New York, co-directors Puthoff and Targ further developed the 'outbounder' experiment. This involved having a team select and randomize numerous location choices, which were then sealed in envelopes. For each trial, an 'agent' would then select one envelope that he/she would physically go to. The person acting as the 'percipient' (aka remote viewer) would be 'interviewed' by an experienced researcher, often the experimenter, who was blind to the target location. The viewer would be led through a relaxation exercise and then directed to move their attention first to the agent and then to different vantage points around that agent. The aim was to observe the physical characteristics and ambiance of the location, along with any activity happening there. For example, If the viewer described a door, the interviewer would next invite him to walk through the door. If they described a bridge, the interviewer suggested that they walk across the bridge, look down, or on the other side. Using this process, it was reported that remote viewers accurately described buildings, landscapes, objects, and people (Targ & Puthoff, 2005).

These experiments were carried out with select subjects, non-psychic control subjects, and even first-time governmental visitors and agency contract monitors who had input on whether SRI programs would continue. Through informal memos, government agency reports, continued contract renewals, and formal articles, Puthoff

and Targ (1976) reported that the results were significant across all groups. Some sketches of the newer subjects were said to be "exceptional". However, the results of the newer participants were found to be less consistent than those of the experienced participants." (p. 345).

Coordinate Remote Viewing - Leave the Outbound Agent Behind

In 1973, Swann pushed researchers to start a new series of experiments called 'Project Scanate.' This design was notable because it did not require an agent to be at a location; instead, viewers were given geographic coordinates, latitude, and longitude in degrees, minutes, and seconds, respectively. Initially, there was resistance from the SRI directors because there was a predominant belief that an agent provided a telepathic connection that was essential for the percipient's psi-based attention to be directed to the correct location. There have also been concerns about designing protocols to eliminate the possibility of a combination of geographic coordinate memorization and photographic memory (Puthoff, 1996). However, they found workarounds for these challenges and started a series of trials reporting significant results (Puthoff & Targ, 1974, 1976).

While Project Scanate used National Geographic photographs as feedback for the coordinates, real-life targets were now given to viewers. These ranged from small objects in nearby light-tight canisters, to remote technical facilities at intercontinental distances; from letters and numbers generated at random by a computer, to nuclear tests in a foreign country. To address some of the concerns mentioned above for repeated trials, a procedure was utilized to use random numbers as coordinates rather than latitude and longitude.

Operational Remote Viewing

Essentially, remote viewing had two separate but interconnected tracks. One was research efforts performed at the SRI, SRI-International, and Princeton Engineering Anomalies Research (PEAR) laboratories. Their efforts were aimed at testing psychic functioning, developing both experimental and training protocols, and discovering/demonstrating how it could be useful for intelligence and military gathering purposes. The other track was a highly classified military remote-viewing program located primarily at Fort Meade Army base, where under the initial direction of operations and training officer Capt. Fred Atwater, both enlisted men and officers, along with some civilians, were recruited, trained, and eventually put to work as remote viewers for intelligence collection purposes.

The operational programs had many project names. For the Army: Project Gondala Wish (1977-1979), Grill Flame (1979-83), and Center Lane (1983-85); for the Defense Intelligence Agency: Sun Streak (1986-90), and Star Gate (1990 - 1995). The Air Force sponsored a program from 1975 to 1979, headed by civilian intelligence analyst Dale Graff. The National Security Agency (NSA) reportedly had its own program as well.

A DIA-classified briefing report on Project Sun Streak (1986) identified several advantages of remote viewing as an intelligence-gathering tool, including that it was inexpensive to use, remote viewers could do their work undetected, and there was no known defense against it. The report found that remote viewing has been successfully used for "*penetration of inaccessible targets; science and technology information, cueing of other intelligence collection systems, immanent hostilities, determination of nuclear from non-nuclear targets, human source assessments, and accurate personality profiles.*" (p. 39).

Training Methods for Both Experimental & Operational Purposes

A formerly classified 1984 Star Gate Science Panel Report (Marwaha & May, 2019) mentioned the value of training:

"*A considerable variety of material was presented with photographic evidence to support the validity of the perceptual method. Much of this was highly impressive. The data showed the effects of training on the success rate, which typically reached a sustained plateau at a level higher than before training, both for groups of subjects and for individual trainees*" (p. 4).

The DIA. Sun Streak report indicated that training was considered an important part of remote viewing success and mentioned two different training methods: *extended remote viewing* (ERV) and *controlled remote viewing (CRV).*

Remote Viewers who first entered the military operational unit were largely trained in and practicing ERV. ERV has been defined as "*a system in which the remote viewer prepares through a method of deep relaxation and focused attention. In the early 1970s, the consensus was that the remote viewing process seemed to be facilitated by relaxation and enhanced internal attention or paying attention to one's own mental imagery and impressions.*" (DIA Sun Streak report, 1986). It was heavily influenced by the teachings of Robert Monroe (1977) and the Monroe Institute, which focused on intentional Out of Body Experiences and intentional manipulation of brain wave states through the use

of sound and visualization techniques. (Atwater, 2001).

Controlled Remote Viewing (CRV) was developed by Ingo Swann, under the supervision of Hal Puthoff, in the late 1970s through the early 1980s. In many of his writings, Swann discusses how the stage-based, structured CRV methodology was designed to build on lessons learned by himself and others at Stanford Research Institute and, namely, to reduce perceptual and analytical errors in psi performance. Williams (2023) defines CRV as a "*process designed to help the viewer distinguish between imagination and true intuitive perceptions in order to extract the information they seek. The structure and methodology of the CRV process is introduced step by step by guiding the student through actual sessions, using real and progressively more complex targets.* "(p. 1).

An additional method of remote viewing described as a hybrid of both channeling and automatic writing was called "written remote viewing". It was used by a small number of remote viewers in the operational unit, although it was not formerly developed by SRI researchers. One of the primary remote viewers, Angela Ford, utilized it during the nine years she worked for the unit and had the ongoing support of her supervisors, who indicated she often came up with details and correct names of locations that defied all logic until cases were solved (Graff, 2000). Ford explained that when she came to the unit, she was told to use other methods that did not work so well for her personally. She felt that only once she decided she would rather leave the unit than continue to hold back on using the method, she felt worked best that her remote viewing data really became impressive (Katz & Ford, 2022).

It should be noted that even with the advent of new training protocols, both viewers trained in CRV and ERV continued to work with interviewers to conduct their session work up until the disbandment of the governmental remote viewing programs. Today, some viewers continue to work with monitor, but the majority seem to work on their own.

FINAL PROGRAM REVIEWS

SRI International - Science Applications International Corporation Reviews

In June 1995, the CIA's Office of Research and Development (ORD) contracted with the *American Institutes of Research* (AIR) to perform a comprehensive evaluation of the Star Gate program. However, only ten primary studies were evaluated. Utts (1996), a visiting scientist at SRI International who had already coauthored a 1989 meta-analysis of the SRI research, wrote:

"Using the standards applied to any other area of science, it is concluded that psychic functioning has been well established. The statistical results of the studies examined are far beyond what is expected by chance. Arguments that these results could be due to methodological flaws in the experiments are well refuted. Effects of a magnitude similar to those found in government-sponsored research at SRI and SAIC have been replicated in a number of laboratories throughout the world. This consistency cannot be readily explained by claims of flaws or fraud" (p. 657).

However, her counterpart, Hyman, a known skeptic who was not familiar with the work at SRI beyond the limited reports sent to him, asserted:

"Although I cannot point to any obvious flaws in the experiments, the experimental program is too recent and insufficiently evaluated to be sure that flaws and biases have been eliminated... The statistical departures from chance appear to be too large and consistent to attribute to statistical flukes of any sort... I tend to agree with Professor Utts that real effects are occurring in these experiments... However, the occurrence of statistical effects does not warrant the conclusion that psychic functioning has been demonstrated." (p. 681).

Multilab Involvement & Conceptual Replications

Over the years, other laboratories and parties have attempted to replicate SRI results, although there were always slight alterations that made these more conceptual than direct. Allen et al. (1975) attempted an unsuccessful conceptual replication at the University of California at Santa Barbara. Their protocols differed in three ways from those used at the Stanford Research Institute (SRI): 1) Rather than using select subjects, they used college students who were involved in criticizing experimental designs; 2) they did not bring viewers to the location to view their own feedback; and 3) students had a tight time schedule in which to complete their session work.

In 1976, Hastings and Hunt reported a successful replication when, during a single trial, 20 out of 36 teams chose the correct photo out of six locations. They referred to the interviewer as a 'coach,' who not only assisted the viewer during their session but had full permission both to use their own intuition and to help select the target. This was a departure from SRI protocols, in which only the viewer selected the target in the judging phase.

In 1979, Karnes et al. attempted another replication but did not fare well. In two trials, one with a visit to feedback and one without, students were used as participants, 20 as 'receivers' and 120 as judges, and found 'no support for the psi hypothesis', attributing some successful trials to differences in judging. They noted deviations in protocols from the original SRI experiments, which included dividing viewers into two groups: an experimental group where the viewer, referred to as a "receiver" and an outbounder, referred to as a "sender," were introduced before the trial, and the control group, where there were no introductions. In reviewing their instructions, it appears that they placed a stronger emphasis on telepathic communication between the viewer and the receiver than the SRI researchers did. Instead of encouraging direct perception through clairvoyance of the target locations, instructions to the experimental group directed the receivers to passively receive the thoughts of the senders who were to project their own impressions about the location, as they sketched these onto the paper later used in judging.

PEAR Labs - A Precognitive Remote Perception Focus

The longest-running replication attempts of remote perception research were carried out at the Princeton Engineering Anomalies Research (PEAR) laboratory, beginning in 1978 and spanning the next 25 years. Most of their studies had a 'precognitive' focus, operating under the assumption that participants may be able to describe targets selected at a future date, as well as targets already selected at the time of session work.

Although some studies did involve sending out an agent (aka 'outbounder') prior to session work, Dunne and Jahn (2003) surmised that a substantial subset of trials have been executed in a retrocognitive mode, where perceptions are generated after the agent has visited the target and a smaller number have been carried out in real-time. They found many perceptions that were virtually photographic in accuracy and produced an overall statistical yield that was well beyond chance expectations. Most of these studies demonstrate a sufficient degree of anomalous information acquisition to justify the continued scholarly exploration of this mystifying process.

Despite the overall success of their research, PEAR researchers saw a declining effect in the final years, which they attributed to an increase in project designs involving modes of analysis designed to increase efficiency and rater reliability, but then narrowed free response options into forced choice options. They also noted that, unlike SRI, where most participants work with interviewers who help guide them during their sessions, in most of their

studies, participants were self-guided, they had both less supervision and training than those of SRI.

Remote Viewing Studies: The Present Situation

In 1996, government remote viewing related programs were disbanded and declassified. At this time, a variety of books, films, and training programs were offered to the public, first taught independently by those who had been involved with the programs, followed by their students, and recently even by a third or fourth generation of students. Some have attempted to follow Swann's teachings closely, while others have modified the original forms and created derivatives of the original training (Knowles, 2018).

Today, formal remote viewing studies continue mostly by individuals or groups of researchers in the private sector. Those trained in remote viewing participate in these studies in RV-themed organizations and utilize them for a variety of applied purposes, including crime solving, helping to find lost objects and pets, and financial forecasting. (Katz & Tressoldi, 2022; Katz, 2021).

Exploratory and formal remote viewing studies in recent years have focused on judging and analytical methods and considerations (Storm, 2003; Kruth, 2021; Katz et al., 2020); predictive and timing considerations (Brown, 2012; Fendley & Atwater, 2021) atmospheric conditions (Spottiswood, 1997), target materials (Katz et al., 2021), and states of consciousness (Ballati et al., 2020). Some have taken a mixed-method approach, incorporating dreaming (Katz et al., 2019) or use of the Random Event Generator while remote viewing (Smith & Stahler, 2008).

Several of the more recent RV studies in this meta-analysis are related to a specific remote viewing design, referred to as *Associative Remote Viewing* (ARV) (Schwartz, 2020; Bierman & Rabeyron, 2013; Katz & Knowles, 2022), which is a precognitive approach to making predictions. This is one of the most active areas of remote viewing in terms of both applications and research. It is a precognitive approach to making predictions designed to take limited potential outcomes and turn them into unlimited possible targets by pairing the potential outcomes with photos, objects, or videos. This allows for answering questions such as which of the two teams will win a football match? Which of the five horses will come in first place at a particular race? In which direction will a particular stock go at the end of the closing today? Interest in this methodology may be attributed to the publicizing of past formal studies in which researchers demonstrated they earned substantial winnings from this (Harary & Targ, 1985; Puthoff, 1984) and other large-scale efforts that did not fare so well but involved many

viewers, predictions, and investors (Katz et al., 2018).

Further popularization efforts of ARV would include the marketing and promotional activities of a variety of organizations, such as the Applied Precognition Project, which is devoted largely to this methodology through encouraging those who participate as viewers, judges, and project managers within a social and fun learning environment (Rosenblatt, Knowles, & Poquiz, 2015); Social media platforms devoted to remote viewing, companies sharing ARV-based technologies that offer predictions for traders of cryptocurrencies (Katz & Knowles, 2022), and remote viewing online apps that continue to grow in participant size and activities (Spickett, 2020).

Remote Viewing Comparison With Other Free Response Protocols

Free response is a descriptive term for studies that involve any ESP test in which the range of possible targets is relatively unlimited and is unknown to the percipient [perceiver/receiver]' (Thalbourne, 2003, p. 44).

Free response experiments include collections of studies like the Ganzfeld experiments (Storm et al., 2010; Storm & Tressoldi, 2020; Tressoldi & Storm, 2023a), dream ESP experiments (Storm et al., 2017), and remote viewing studies, which could further be divided into laboratory experiments (Utts, 1996), fieldwork (Schwartz et al., 2000), operational projects (McMoneagle, 2000; Smith, 2005), and applied precognitive projects of both formal and informal nature (Katz et al., 2018).

Although remote viewing, Ganzfeld, and dream ESP approaches possess their own general characteristics, there is variety within each design in terms of participant type, target materials, ways in which participants report their impressions, outcomes, and methods of analysis.

Judging and Analysis Protocols in Remote Viewing

The standard judging/analysis protocols for these studies fluctuate as well, but most include a 'matching' task in which *someone is tasked with matching the remote viewer's perceptions with a series of photo images, one of which is an image of the actual target, chosen at random with both the remote viewer and rater blind to the actual target. These matching tasks can follow three main types: 1)* the *remote-viewing* percipient attempts to match their own intuitive impressions to the correct photo in a set of two or more photos (self-judging*, 2)* an independent rater attempts to choose the closest match from *the remote viewer's* mentation or written impressions, or *3) an independent rater rates* each photo in *a* set *of photos* from best-*matching* to worst-*matching, ranking the photos for example from 1 (best-matching) to 4 (worst-matching).*

These ranks are then combined across the trials in a study to create a statistical measure called the 'sum of ranks.'"

These procedures do fluctuate between studies in terms of the number of photos placed in a target set, but as more photos are used in the set, it becomes more challenging to ensure that they are orthogonal (i.e., different) enough from each other. If two photos in the set are similar, it is difficult to distinguish which photo best matches the viewer's comments. Some experiments involve more careful structuring of target/judging sets to ensure each photo is different from each other in all features and also balanced as far as potential interest and appeal, while others opt for randomized procedures that may increase a project's validity but may make judging much more difficult.

Matching tasks are considered the gold standard across all free response-type experiments because they allow for easy statistical computations. However, they have been criticized for their minimalist nature. The result is that the rich and varied data, which in some trials may be a remarkable match to a highly unique photograph or video clip, often get crunched into a single data point representing a 'hit' or 'miss'. Also, many psi researchers, beginning with Whately Carington in 1925, have noted a phenomenon that occurs when targets are placed within "decoy" sets, which he coined "displacement". This is thought to occur when a psi participant seems to have an extremely strong description of another photo in the judging set ("single trial displacement") or to the target in the next trial ("out of sequence" or "temporal displacement"). (Tart, 1980; Brown, 2012). However, Milton's (1986) dissertation attempting to test whether this is a real phenomenon (rather than simply an excuse for missing a target) found results to be inconclusive.

Analysis and Scoring Methods

Some remote viewing projects utilize more refined scoring methods than other types of free response studies so that rather than simply choosing the best match between a transcript (which contains the viewer's words and sketches) and the photos in a judging set, actual scores are given to each data point, based on a predetermined scale. Once scoring is completed, the highest-scored match is the one selected as the target by either the rater or an independent judge. Scoring includes the SRI 7-point Confidence ranking scale (Targ et al., 1995); A 3-point scale utilized by Smith, Laham, and Moddel (2014); the McMoneagle method of scoring, which involves adding up major attributes (gestalts) and characteristics; and the Poquiz method (Katz & Knowles, 2022), which involves adding up all correct perceptions and subtracting incor-

rect to arrive at a hit-rate.

In 1990, May et al. published a theory of "fuzzy set analysis and figures of merit" which attempted to advance analysis in remote viewing experiments through the use of computer technologies that would address issues in rater reliability and efficiency and provide a means to ensure orthogonality of photos within judging sets. This required the use of a specific target pool, which had been in development for decades at SRI, consisting of *National Geographic* photographs, in which life forms, animals, and vehicles were deleted to make the photos, consisting of natural landscapes and man-made structures, more homogeneous in content while diverse in shapes, patterns, and contrasts.

Positive results were reported (May et al., 1995). Additionally, and in conjunction with this work, May and colleagues considered related theories, such as S*hannon entropy* (May et al., 2000), and another concerning *thermodynamic limits* (May, 2011) in attempts to define what makes a target easier to perceive and also to produce equivalent target types within judging sets.

In 1994, Lantz et al. set out to utilize the above system and concepts while testing both static (a still photograph) and dynamic targets (video) and the value of telepathic sender and receiver. Researchers found that a sender is unnecessary for extrasensory perception to occur in free-response studies and that dynamic targets seem to be more perceivable than static.

To date, the May et al. (1990) computerized system of targeting and figure of merit has only been utilized for remote viewing studies, and his original research has not been widely replicated by others, although his research is often cited. The downside to this automated system is that it allows for a rater to remain blind to the target choices, but a coder is still needed to read over the viewer's transcript and fill out a spreadsheet that lists a variety of types of structures and environmental aspects. Sometimes a coder has very clear information to go on within the session (such as when the viewer writes the word "bridge" which is one element on the coding sheet), but there is a lot of room for interpretation by the coder, such a when there is simply a sketch with no words, that could resemble both a bridge, or a street, or a path or a river. So, the success or failure of any given trial is dependent on the coder's performance as well as the viewer's.

States of Consciousness

Like remote viewing protocols, percipients within the Ganzfeld collection of studies perform their sessions in a waking or semi-awake state. At the core of the Ganzfeld procedure is *"a noise reduction, psi-conductive*

approach, which is thought to reduce irrelevant background noise." (Storm, 2010, p. 472) Here, the subject reclines in a darkened room, with halved translucent ping-pong balls placed over their eyes while they stare at a red light and listen to white, stereophonic noise. The autoganzfeld, invented by parapsychologist Rick Berger and Charles Honorton as an error reduction method, uses a computer system that allows automated target selection, randomization, and judging techniques (Honorton et al., 1990).

Remote viewing protocols do not use the formal Ganzfeld setup, although some viewers who employ the 'extended remote viewing' methodology may listen to similar audio recordings before or during their session. Many remote viewers do not utilize white noise (although some do) but will sit or lie down and engage in a series of relaxation exercises that involve the tensing and releasing of muscles, slowing down of the breath, and self-guided imagery that moves their attention from their physical body to a 'sanctuary', to a vortex that then brings them to the target location and allows them to move around to different vantage points (Morehouse, 2004).

Remote viewers who utilize controlled remote viewing methodology or derivatives vary more widely from the Ganzfeld approach in that they often sit in a room with the lights on, using structured stage-based writing and drawing and modeling techniques that require them to be in a more alert state of mind. The paper that a viewer writes on is not simply a recording device, but with each stage, it serves as a tool for dowsing or psychometry in a sense.

Using an Interviewer/Monitor

Another departure from other free response methods is that remote viewers are sometimes assisted by "interviewers" (also known as monitors). Studies that were conducted within SRI or within the US operational remote viewing programs used viewer-interviewer teams, who were almost always blind to the targeting task or project objective. For formal studies, interviewers would be blind to the target but, as discussed above, would be there to give the viewer suggestions of where to direct their attention or how to get "unstuck." Sometimes, viewers and monitors, such as Joe McMoneagle and Skip Atwater, worked together for years. Viewers who use both ERV and CRV relied heavily on the help of monitors until the declassification of the government programs in the mid 1990's.

Some researchers have suggested that the interviewer/monitor may be employing their own psychic abilities during a session, such as when, in a double-blind context, the interviewer/monitor nevertheless correctly directs the viewer to explore just the aspect of a target that is necessary to provide the necessary information sought after by the experimenter that the viewer would otherwise not have focused on.

It has also been raised that the interviewer acts as a mentor to the viewer, so even if the viewer doesn't attend a formal training, through this intimate, one-on-one experience, a newer viewer may be receiving more in-depth training than others who take a group class and receive less attention from a teacher. (Katz & Bulgatz, 2019).

However, there are often pitfalls to working with a monitor. Just as viewers in the process of a session may develop a false idea of the nature of the details of a target, monitors may themselves fall prey to this. Even a monitor blind to a target may develop a "guess" as to what the target might be and inadvertently convey such false impressions to the viewer through non-verbal cues. Thus, it is possible that not just viewers' successes but also their misses could at least partially be attributed to having a monitor (Williams, 2017).

Despite the popularity of using interviewers at the SRI and within the operational programs, there has been a lack of exploration into this partnership within the formal research literature. Today, many viewers tend to work solo. (Katz & Bulgatz, 2019). Still, Muller et al. (2019) demonstrated success with pairing novice viewers with researchers acting as monitors. Rather than being blind to the target and photo options, monitors were aware of both photo options but not which one would actualize as the target. For a follow-up study testing timing effects (Mueller, 2021), researchers used experienced viewers who sometimes worked with a partner. Results were still above chance levels. Also, Ballati et al. (2020) paired remote viewers with hypnotists to bring them into a deeper trance state. *'During the RV session, the hypnotist's only task was to help the participant accurately describe all the different characteristics of the target and find as many of them as possible'* (p. 2).

Primary Acquisition of Psi Data vs. Secondary Movements or "Probings"

In comparing remote viewing with other free response type studies, an important difference is in the ways in which psi participants follow up on initial impressions through intentional imagined movements or interactions with the earlier data. As noted above, a sole viewer does this on their own, while one working with a monitor may be guided in this way.

Structured remote viewing methodologies, such as Controlled Remote Viewing (CRV) and its derivatives, provide devices for further exploration of information, which

are thought to be helpful when an interviewer/monitor is not present to provide these prompts. This is done using "matrixes," which remind the viewer to probe for additional characteristics.

Other categories prompt the viewer to discover whether there are any items or living beings found in the location. This is achieved by placing the tip of the pen or the viewer's finger into the field of the matrix (table) and waiting for further impressions that pertain to the particular category being explored to come. CRV also allows viewers to draw, sketch, and use 3-D modeling on occasion. These actions are not simply designed as ways to report data but as tactile exercises by which to extract further details. For example, viewers might sketch the shape of a building and move their pen or finger inside the shape of the paper, or they might write a word such as "purpose" and touch that word. When touching a specific part of the paper or word, a new flow of data may emerge. In recent years, remote viewers have started using larger canvases, such as whiteboards, which get them on their feet using their entire bodies. While there are no formal studies documenting the use of the entire body, Vivanco (2016) informally demonstrated that while standing up and letting the body express itself, the body will essentially begin to pantomime key movements, such as making quick, erratic motions as if steering a wheel for a photograph of a race car.

This following up on earlier perceived data is unique to remote viewing and is used across most RV methodologies, although the means of doing so vary widely. In Ganzfeld studies, even though a researcher may be present to assist the percipient in sharing their impressions, he/she does not guide the percipient to obtain further details about bits of data already perceived. Rather, the researcher may encourage the percipient to continue to deepen their relaxation or invite them to verbalize all they are sensing through a stream of consciousness. In Dream ESP, the dreamer awakens from the dreaming phase and reports the data without attempting to access more information about the target.

Experience And/Or Training in How to Mitigate Analytical Overlay

Participants who are monitored, trained in, or experienced with remote viewing approaches may be better able to mitigate the challenges of psi tasks related to "analytical overlay", that is, the impulse to identify immediately the target with a name or a precise identity, than participants in other types of projects because they have a greater awareness of this concept and are given approaches intended to decrease its negative impact on an

overall session. Analytical Overlay was noted by early SRI researchers and in the military-controlled remote viewing training manual, which were based on the teaching of Ingo Swann and documented his teachings (Smith, D, 2014).

Percipients in other types of free-response studies are not typically provided with the above model or given strategies for mitigating it. Remote Viewing methodology encourages viewers to focus on smaller target characteristics rather than trying to "name" or identify the target. Drawing is emphasized because, even if the target is mischaracterized, the shape may still look identical to the shapes found within a photo or object. Even if an experienced viewer describes the distorted overlay rather than the actual target (i.e., calling a red ball a tomato or falsely describing a train as a fire engine), an experienced viewer may be less likely to put all subsequent impressions into the same context as the false picture.

Timing and Length of Intuitive Information Retrieval About a Target

The timing allowed for participants to engage in a remote viewing session can vary widely based on the type of experiment and the philosophy behind it. For example, some forced choice-type experiments in which the goal is to guess a card by pressing a corresponding button may allow for only a second or two before a response must be made. Juxtapose this with remote viewing, which could potentially require several hours of work.

However, in most remote viewing trials involving the description of photos, the typical time taken by experienced viewers might be 10 minutes to an hour, particularly for those trained in methods designed for further probing of the initial data, as mentioned above. In Ganzfeld studies, induction times usually fluctuate between 5 and 30 minutes.

Furthermore, whereas Ganzfeld participants may not be able to interrupt their sessions and return later, remote viewers are taught to take breaks during their sessions as needed, especially when getting stuck in a concept or feeling stressed. They may return immediately after a break or wait several hours or days before finishing the session, particularly when doing session work at home and emailing or mailing it to a researcher. Swann taught that such breaks were essential and once told his students that if they were not going to take breaks when they felt emotional or stuck in an idea, they might as well "go home" and stop their training (Swann, 1986). Targ (2019) also recounted using breaks as an approach to monitor viewers. However, not all studies have recorded the actual time allowed or taken across all types of free

response studies.

Mixed State of Consciousness-Psi Approach Methods

There are some remote viewing studies that occasionally require a remote viewer to adjust the ways in which they have been trained or typically operate to test a particular variable. This was the case when Krippner et al. (2019) set out to test whether remote viewing is impacted when the percipient does their session in a light compared to a dark condition. The viewers were required to wear a blindfold, which reduced their ability to write and sketch during their session since they could not look at their paper. Meanwhile, several studies in recent years have set out to pair remote viewing with Ganzfeld induction approaches, determining that there was evidence that novice subjects seemed to perform better with this pairing (Baptista et al., 2015; Storm et al., 2010; Roe & Flint, 2007).

Most intriguing was Roe et al. (2020) found that novice participants who used a method that combines the advantages of Ganzfeld-type induction with a location-based feedback mode, such as used in remote viewing studies, performed *'significantly better than chance expectation in all three experiments, demonstrating a degree of replicability that is relatively unusual in parapsychology where novice remote viewers in the remote viewing mode performed only at chance levels.'* (p. 56). It should be noted that in reviewing the instructions given to participants, it appears participants in the Ganzfeld condition were invited to relax and allow images to appear to them about the distant location as targets and record these. Meanwhile, before attempting their session, those in the remote viewing condition were instructed to try out stages one and two of CRV only. Stage 1 refers to the perception of the basic, overall nature of the site or target (usually referred to as the "major gestalt"). Examples of these major gestalts might be "land," "structure," "water," "event," etc.; Stage 2 refers to basic sensory perceptions, tastes, sounds, colors, qualities of light, textures, temperatures, etc.) before attempting their session. In CRV methodology, it is really stages 3, 4, and 6 in which imagined movements around the location and further exploring of sketches and initial impressions happen. Furthermore, it is not until the viewer passes from stage 2 to 3, signified by more integration into the target location, that a viewer is believed to move into a deeper connection with the 'signal line' (Swann, 1983; Smith, D. 2014). Therefore, in Roe et al.'s experiment, the CRV methodology may not have been utilized in a way it was intended and thus may not be comparable to studies in which the full methodol-

ogy has been applied.

Selected Participants

What exactly does "selected participants" mean? In remote viewing, this may mean that they are highly trained, experienced at similar or comparable tasks, previously tested by researchers, and may have been originally selected for indicators suggesting they would do well with intuitive tasks. In other free-response studies, "selected" subjects may be chosen for backgrounds in meditation, music, reporting of prior spontaneous experiences, or successfully participating in other experimental trials. Some remote viewers have participated in hundreds or even thousands of targets over the course of many years (Katz & Tressoldi, 2022; Katz et al., 2021). Swann and Puthoff discussed how Swann may have completed close to a million trials during his time working at SRI, although this included both forced choice and free-response trials. (Swann, 1986). Furthermore, many viewers have noted that they have attended years of training in various RV modalities (Katz & Tressoldi, 2022). This is not to say that some participants in the Ganzfeld study or the ESP Dream study 'selected' are not experienced in various aspects of intentional psi practices, but they may not have as many social, training, or practice opportunities available to them as remote viewers.

Across all types of parapsychological studies, the term 'selected' is often poorly defined, with little more than one sentence or two dedicated to this topic.

In summary, there appear to be several differences between remote viewing studies and other free-response-type designs. These include differences in induction methods, physical setting, the time provided for session work, and possible pairing of a trained monitor or interviewer with both seasoned viewers and novices. Other differences include the level of training of select subjects, which involves an expanded awareness of an analytical overlay model, and the ability of remote viewers to follow up on initial bits or streams of information through learned visualization and kinesthetic approaches. Some viewers employing CRV may use materials that are not used in other free-response studies, such as paper, larger canvases, and modeling tools. Many viewers today conduct their sessions from home and have greater flexibility in terms of when they conduct their sessions and how often they can take breaks. This may allow them to wait until they are more focused.

Differences in analytical models may also include more refined scoring procedures in RV so that not only is a photo chosen from a set of photos, but a score is given that could be on a 7-point, 3-point scale, or other

methodology, and then the photo with the highest score is chosen by the viewer or an independent rater. (Katz & Knowles, 2022).

THE META-ANALYSIS

With the foregoing as background, we will now turn to the meta-analysis of extant remote viewing experiments and evaluate what the data tells us.

Aims of This Meta-Analysis

The main aim of this meta-analysis is to offer a quantitative systematic review of all available evidence obtained with RV protocols up to December 2022. We also planned to compare studies with respect to some potentially relevant moderators, e.g., 'selected' participants, defined as trained or experienced with some kind of record, with non-selected subjects (novice, untrained, inexperienced, etc.); studies utilizing an agent versus those without an agent. Another objective was to compare the results of our meta-analysis with those related to extrasensory perception in a Ganzfeld environment, dream and forced choice protocols to discover which have had the strongest results.

Main Hypotheses

1. Based on previous meta-analyses (i.e., Tressoldi & Storm, 2023), selected subjects will outperform non-selected ones.
2. Given the successful results of earlier 'outbounder' studies involving an agent sent to a location, as well as the apparent success of 'Project Scanate' that used coordinates instead of an agent to focus the viewer's attention, we do not expect to find a difference between these agent / non-agent protocols.

Previous Review

Although RV protocols have been used since 1974, there are no dedicated systematic reviews or meta-analyses. In her review, Utts (1996) considered only the SAIC and SRI results. In Milton's (1997) meta-analysis, RV studies were included in the larger category of free-response studies without altered states of consciousness. The same decision was applied in the two meta-analyses of Storm and Tressoldi (2020) and Storm, Tressoldi, and Di Risio (2010). Only Baptista, Derakhshani, and Tressoldi. (2015) presented a summary of RV evidence up to 2014, but it was not a formal meta-analysis.

METHOD

Reporting Guidelines

We adopted the APA Meta-Analysis Reporting Standards (MARS, Appelbaum et al., 2018) and the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) guidelines (Page et al., 2021).

Search and Inclusion Criteria of Studies

The search of papers using open access scientific databases, such as Google Scholar, using the keyword 'remote viewing AND (logical operator) extrasensory perception' yielded 673 results. We also refined the retrieval of the papers by checking all references related to the studies included in the cited meta-analyses and in all more recent papers.

Inclusion Criteria

We adopted the following inclusion criteria: a) the term 'remote viewing' should be made explicit in the title or abstract; b) the papers must be published in English in peer-reviewed scientific journals or in scientific conference proceedings; c) the papers must be related to experimental studies and not theoretical or methodological issues; d) the total number of trials and hits counts should be available in the results; e). The studies may be of an entirely experimental nature or may have been conducted for both experimental and applied/operational purposes (such as for ARV studies, which tracked statistical results per trial but also earned income from wagering). f) The experiments should be truly free response, rather than forced choice tasks in which experimenters simply used the term "remote viewing" as a modern synonym for clairvoyance. By free response, this means that the participants had to be granted at least some period of time to perform a session and report their impressions for unknown targets that are part of a larger pool they have minimal knowledge of, before being shown judging sets to choose from. g). As long as the above criteria were met, all studies fitting the definition of remote viewing provided at the top of this paper by the International Remote Viewing Association were included. These represented a diverse collection of remote viewing designs, approaches, and participants, as discussed above. We included 36 studies with a total of 40 effect sizes. The PRISMA flow chart is presented in the Supplementary Material.

Variables Coding

The following variables were included in the database: a) Authors' name; b) Year of publication; c) Participants category: 0 = unselected, 1 = selected; d); publication type: 0 = conferences proceedings, 1 = peer-reviewed

journals; e) judges of participants' data: 1 = participants; 2 = independent judges; f) task type: Clairvoyance, Precognition; g) Outbound agent: 0 = no; 1 = yes; h) Interviewer: Yes = 1; No = 0; i) number of participants; l) number of trials; m) number of correct responses (hits); n) proportion of hits; o) number of choices in the judging phase; p) proportion of hits expected by chance or Mean Chance Expected (MCE); q) proportion of hits and proportion of hits expected by chance difference.

Effect Size Measures

Taking the number of trials, the number of hits, and the MCE as raw data, the standardized effect sizes, similar to Cohen's d, were estimated using the formula $Z/\sqrt{N}$ of the trials. The Z values were obtained using the normal approximation to the binomial distribution. Under the null hypothesis of no psi, the number of hits in each study has a binomial distribution with n = the number of sessions and p = 1/number of choices in the target set used for judging. Because there are differing values of p across studies, it makes sense to convert the exact binomial values to z-scores using the normal approximation. This calculation can be obtained online at this site: https://www.omnicalculator.com/statistics/normal-approximation.

The corresponding standard errors were estimated using the formula:

$$\frac{\text{(hits proportion)} * (1 - \text{hits proportion})}{(MCE) * (1 - MCE) * (N \text{ of the trial})}$$

Meta-Analysis Models

We applied a frequentist random effect model using the metafor package v. 3.8 (Viechtbauer, 2010), adopting the restricted maximum likelihood (REML) to estimate the heterogeneity variance (Langan et al., 2019) and the Hartung method to control effect size nonnormality (Rubio-Aparicio et al., 2018) and corresponding confidence intervals estimation.

To test the results' robustness, we also applied a Bayesian random effect model using the MetaBMA package v. 0.6.7 (Heck et al., 2017). As priors for the average effect size, we used a normal distribution with mean = 0.1, considered as the minimum expected effect size; SD = 0.03, positive constrained, lower bound = 0 (Haaf & Rouder, 2023), given our expectation of a positive value. For the tau prior parameter, we used an inverse gamma distribution with shape = 1, scale = 0.15, suggested as the default option.

Outliers Detection

We identified as outliers the effect sizes whose 95% confidence interval lies outside the 95% confidence interval of the average effect using the function find.outliers of the dmetar package (Harrer, Cuijpers, Furukawa, & Ebert, 2021).

Publication Bias Tests

From an empirical point of view, 13 Z values (34.2%) resulted below 1.65, the statistical threshold corresponding to a p-value of .05. Furthermore, following the suggestions of Carter, Schönbrodt, Gervais, & Hilgard (2019), we applied two further tests to assess publication bias:

The 3-Parameter Selection Model (3PSM)

The three parameters model, implemented by Coburn and Vevea, (2019) in the package 'weightr' v.2.0.2, represents the average true underlying effect, δ, the heterogeneity of the random effect sizes, τ^2 and the probability that there is a nonsignificant effect in the pool of effect sizes. The probability parameter is modeled by a step function with a single cut point at p = 0.025 (one-tailed), which corresponds to a two-tailed p-value of 0.05. This cut-off point divides the range of possible p-values into two bins: significant and nonsignificant. The three parameters are estimated using maximum likelihood (Carter et al., 2019).

The Robust Bayesian Meta-Analysis Test

The Robust Bayesian meta-analysis (RoBMA) test implemented with the RoBMA package v.2.3.1 (Bartoš, Maier, Wagenmakers, Doucouliagos, & Stanley, 2022) is an extension of the Bayesian meta-analysis obtained by adding selection models to account for publication bias. This allows model-averaging across a larger set of models, ones that assume publication bias and ones that do not. This test allows us to quantify evidence for the absence of publication bias estimated with a Bayes factor. In our case, we compared only two models: a random-effects model assuming no publication bias and a random-model assuming publication bias.

Meta-Regression

To test the so-called 'decline effect', that is, if the average effect size declines with further data accumulation, we estimated the overall effect size by taking the variable 'year of publication' as a covariate and the effect size of each study as a dependent variable using a meta-regression model.
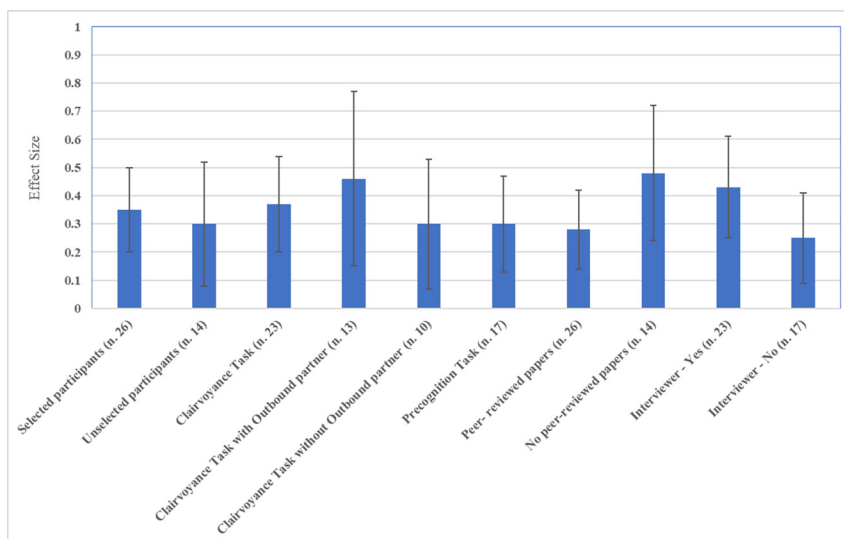
Moderators' Effects

Figure 1: Effect size and corresponding 95% confidence intervals related to the different moderators.

We compared the difference of the following four moderators: (a) Type of participant, (b) Type of task, (c) Publication type, and d) Interviewer presence. As described in the Variable Coding paragraph, the variable Type of participant has been coded in a binary way: selected vs. unselected; Type of task has been coded as Clairvoyance or Precognition; Publication type = 0 for studies published in conference proceedings or = 1, for the studies published in scientific journals with full peer-review; Interviewer = Yes (1) or No (0).

The entire database and the code used for all statistical analyzes are open access available at https://doi.org/10.6084/m9.figshare.22298266.v1 for independent reproducibility and analyses.

Table 1: Descriptive Statistics of the Main Variables

Type	Count (Percentage)	Mean - Median (SD)	Range
Participants type	Selected= 26 (65) Unselected=14 (35)		
Publication type	Peer-reviewed= 26 (65) No peer-reviewed= 14 (35)		
Judges type	Participants= 6 (15) External = 34 (85)		
Tasks type	Clairvoyance= 23 (57.5) Clairvoyance with agent= 13 (32.5) Clairvoyance without agent= 10 (25) Precognition= 17 (42.5) Precognition with agent= 3 (7.5) Precognition without agent= 14 (35)		
Interviewer	Yes = 23 (57.5) No = 17 (42.5)		
Participants number		50.6 – 7 (139.46)	1 - 770
Trials number		242.1 – 38.5 (897.5)	5 - 5677
Hits % above MCE		19.3 – 13.2 (17.9)	-2.8 – 55.6

Table 2: Frequentist and Bayesian Meta-Analytic Results

Meta-analysis	n. effect size	Effect size	95% Confidence/Credible Intervals	p/Bayes Factor H1/H0	Heterogeneity I²
Frequentist	40	.36	.23 - .48	8.7^{-e10}	100
Frequentist without outliers	39	.34	.22 - .45	2.94^{-e9}	100
Bayesian without outliers	39	.33	.23 - .42	530209	

RESULTS

Descriptive Statistics

The descriptive statistics of the main variables are presented in Table 1.

Average Effects

The results of the frequentist and Bayesian average effects meta-analyses are presented in Table 2. The outliers detection identified Husting & Hurts (1976) as an influential outlier. The results of both the frequentist and Bayesian meta-analyses are in close agreement. The level of heterogeneity among studies is very high, as expected by the wide variability of participants and experimental designs. The forest plot is available in the Supplementary Material.

Publication Bias Analysis

The results of the 3-parameter selection model and the robust Bayesian meta-analysis are reported in Table 3. From both an empirical and a simulated point approach, there is no sign of publication bias.

Moderators' Analyses

The results of the meta-analyses related to the main moderators are presented in Table 4.

Table 3: Effect Size and Corresponding 95% Confidence / Credibility Intervals of the 3PSM and RoBMA Publication Bias Tests

	n. effect size	Effect size	95% Confidence/ Credible Intervals
3PSM	39	.31	.16 - .47
RoBMA	39	.32	.23 - .42

Among the more relevant results, there is a small difference between the conditions requiring a clairvoyant or a precognitive activity, particularly when there was an outbound partner. Given the low number (2, 5.4%), we did not estimate studies that require precognitive activity with an outbound partner. Another difference is between peer-reviewed and no peer-reviewed studies, with a larger effect size for the latter ones, and between protocols with and without an interviewer, even if their confidence intervals overlap. Given the low number of studies (5, 13%) that used self-judging, we did not compare them with the studies using independent judges. However, these differences in the means do not correspond to a statistical difference, given the wide range and overlap of their confidence intervals, as shown in Figure 1, for a better visual comparison of these statistical parameters.

Decline Effect

To check if there was a decline effect, that is, a decrease in effect size since 1974, we performed a meta-regression analysis using the variable 'year' of publication as moderators. The results were the following: effect size = -.008; 95% Cis = -.015 - -.002, suggesting a minimal statistically significant decline, z = -2.43; p = .015

Differences with Other ESP Protocols

In Figures 2a and 2b, we compared the average standardized identical effect size with the corresponding 95% confidence intervals of selected and unselected participants with those obtained with other protocols, all aimed at detecting extrasensory perception. Results related to forced-choice protocols with participants in a normal state of consciousness are obtained by Storm and Tressoldi (2023); those related to free response protocol with participants in a Ganzfeld environment are obtained by Tressoldi & Storm (2023), and those obtained from presentiment protocols by Duggan & Tressoldi, (2018). For this protocol, there are no data related to selected participants.

Table 4: Results of the meta-analyzes related to the main moderators.

Type	n. effect size	Effect size	95% Confidence Intervals	p	Heterogeneity I²
Selected participants	26	.35	.20 - .50	3.5^{e-7}	100
Unselected participants	13	.30	.08 - .52	.01	99.9
Clairvoyance Tasks	22	.37	.19 - .54	.0003	99.8
Clairvoyance Tasks with Out-bound partner	12	.46	.15 - .77	.007	93.7
Clairvoyance Tasks without Outbound partner	10	.30	.06 - .53	.01	99.8
Precognition Tasks	17	.30	.13 - .47	.001	100
Peer- reviewed papers	26	.28	.14 - .42	.0002	99.9
No peer-reviewed papers	13	.48	.23 - .72	.001	99.6
Interviewer - Yes	22	.43	.25 -.61	3.02^{-e7}	99.7
Interviewer - No	17	.25	.09 - .41	.003	100

DISCUSSION

The results of this first meta-analysis related to all RV studies carried out in almost 50 years are quite encouraging, even if they are few, approximately one per year. The observed average effect size was confirmed by both frequentist and Bayesian meta-analyses. Furthermore, no signs of publication bias and a minimal decline effect were observed.

The average size of the RV effect was the strongest with respect to all other protocols used to investigate extrasensory perception.

In terms of raw percentage of hits difference from chance, RV protocols obtained 19.3%, 95% confidence intervals: 13.6% - 25%, much higher than that obtained with

the Ganzfeld protocol of 6.8%, 95% confidence intervals: 4.7% - 8.9% (Tressoldi & Storm, 2023).

Among the meta-analyses of the moderators, it is interesting that we did not observe differences between selected and non-selected participants. This result is quite unexpected given the importance given to training in RV. We will see if this finding will be confirmed in future studies. However, from a statistical point of view, this small difference did not turn out statistically significant (t(37) = .15: p=-88) given the small number of studies, the large variability of effect sizes, and, consequently, the lower statistical power.

Furthermore, we observed a small difference between the precognitive and clairvoyance tasks, particularly with those with an outbound agent, but without reaching a
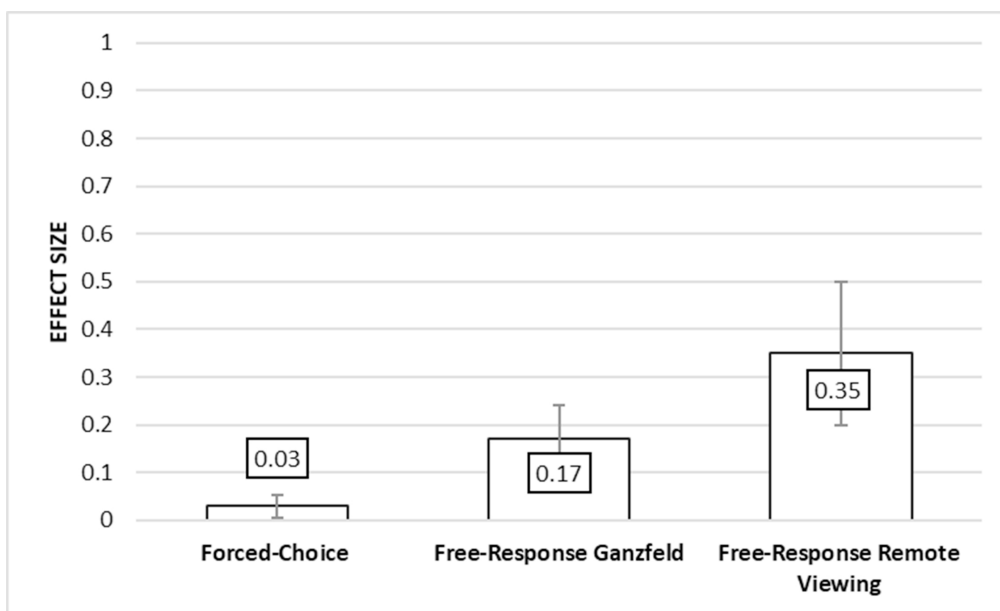

Figure 2a: Average effect size with corresponding 95% confidence intervals obtained by selected participants
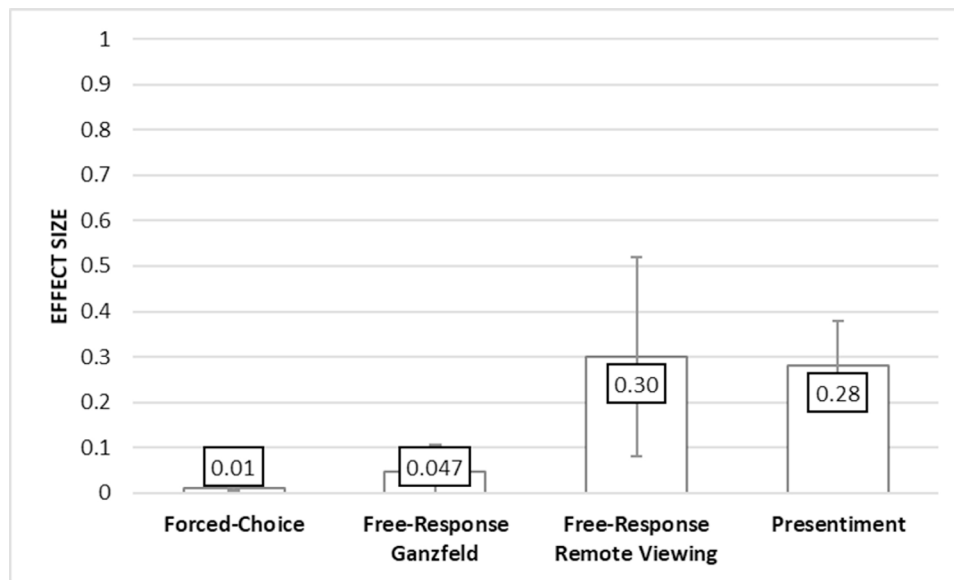
Figure 2b: Average effect size with corresponding 95% confidence intervals obtained by unselected participants.

statistical difference given the wide confidence intervals of the means.

Participants in studies in which remote viewers were paired with interviewers who helped guide them through their session work performed slightly better on average than those in which they worked independently. While many viewers today tend to perform their work solo (Katz & Tressoldi, 2022), our findings may encourage some to revisit this practice. In the research and military arms of the RV programs, viewers almost always worked in partnership with an experienced interviewer (Katz & Bulgatz,2019; Puthoff, 2023). Although we can only speculate here, this might also account for the only very slight differences between studies using select vs. unselect subjects, as it is possible that utilizing an experienced interviewer could make up for the lack of experience in an unselected subject.

In this meta-analysis, we did not have enough studies with descriptions of their methods to analyze potential differences among the different RV techniques, for example, ARV and CRV; ERV and CRV, or stages 1-6 of CRV vs. studies using only stages 1 & 2 (Roe et al., 2020). Such an assessment is certainly warranted.

Similarly, we did not have enough studies to compare self-judging with independent judging protocols, another relevant characteristic worth investigating.

As indicated in Figure 2b, our findings corroborate what previous meta-analyses have found: remote viewing is an actual phenomenon in the human experience; however, forced-choice designs may be limited in capturing it. Our statistical findings suggest that remote viewing protocols may have stronger results than the collection of other free response protocols, which are already found to

have stronger results with respect to forced-choice ones.

Our literature review suggests that a mixed-method approach, such as pairing a Ganzfeld set up with remote viewing (Roe et al., 2020) or hypnosis (Ballati et al., 2020), may hold potential. We recommend that such pairings be further explored with experienced remote viewers.

Implications and Applications

Our results, paired with previous findings, suggest that the use of RV if properly applied by experts, can have wide practical applications, from military and intelligence applications to archeological investigations (Schwartz, Mattei, & Society, 2000) to finance (Katz, Grgic, & Fendley, 2018), as documented by Katz and Tressoldi (2022).

Another interesting finding was the almost identical outcome of studies related to precognitive or clairvoyant tasks, particularly when there was an outbounder (agent). This finding suggests that the future may be as easy to describe as the present.

Study Limitations

The main limitation of this study is similar to all other available meta-analyses related to ESP. That is, studies were not pre-registered, allowing the possibility that the researchers may have engaged in so-called questionable research practices (John, Loewenstein, & Prelec, 2012). However, the percentage of 34.2% non-statistically significant z scores observed in this meta-analysis suggests that these practices were not widely applied.

Although Spitzer & Mueller (2021), speaking to psychological research in general, found that 'pre-registering studies is still not the norm in the field' (p. 1), our rec-

ommendation for all future studies is that researchers pre-register methodology and data analyses and make their raw data open access for independent reproducibility of results.

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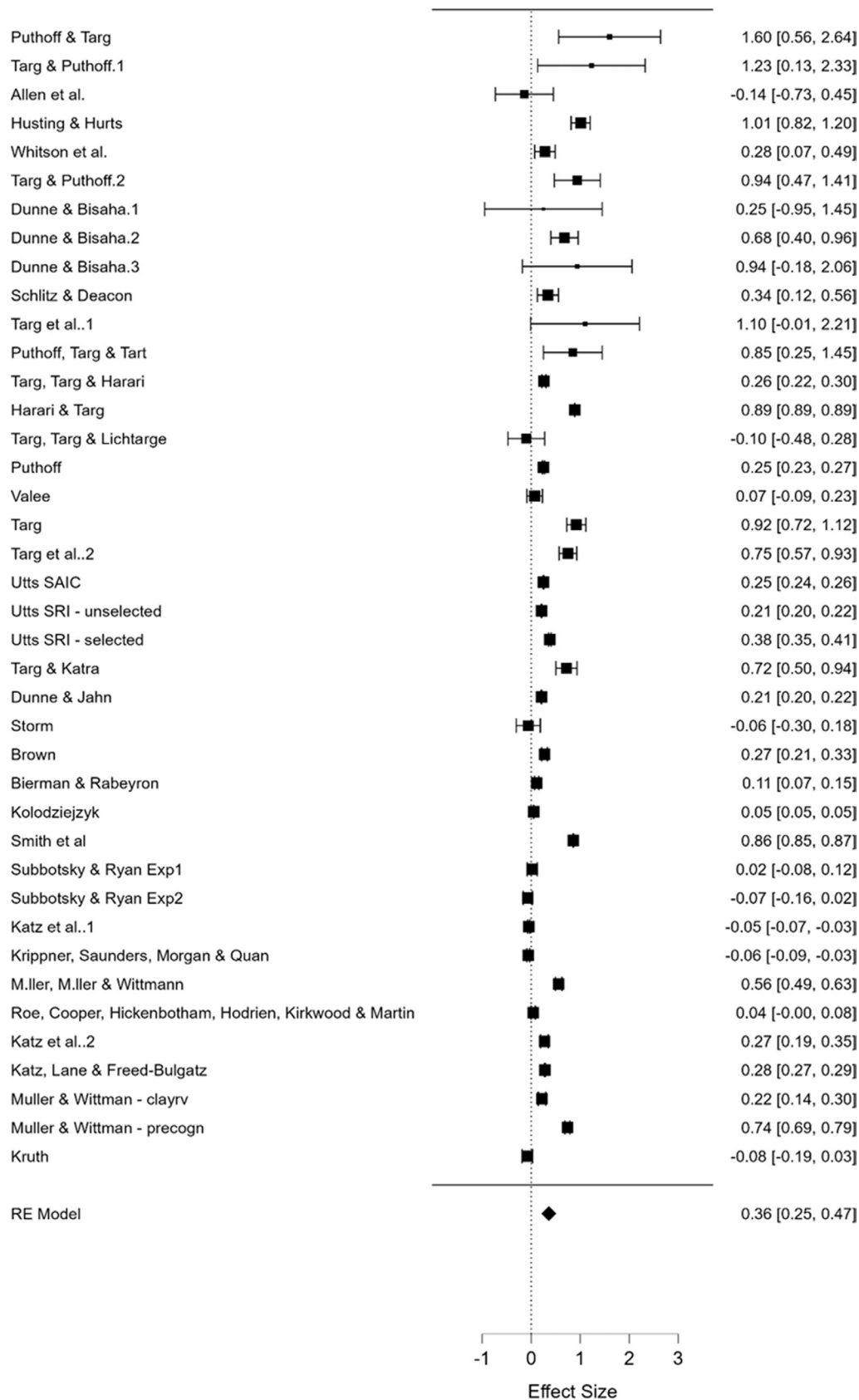Dunne, B. J., & Jahn, R. G. (2003). Information and uncertainty in remote perception research. *Journal of Sci-*

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APPENDIX A: Forest Plot

Study	Effect Size [95% CI]
Puthoff & Targ	1.60 [0.56, 2.64]
Targ & Puthoff.1	1.23 [0.13, 2.33]
Allen et al.	-0.14 [-0.73, 0.45]
Husting & Hurts	1.01 [0.82, 1.20]
Whitson et al.	0.28 [0.07, 0.49]
Targ & Puthoff.2	0.94 [0.47, 1.41]
Dunne & Bisaha.1	0.25 [-0.95, 1.45]
Dunne & Bisaha.2	0.68 [0.40, 0.96]
Dunne & Bisaha.3	0.94 [-0.18, 2.06]
Schlitz & Deacon	0.34 [0.12, 0.56]
Targ et al..1	1.10 [-0.01, 2.21]
Puthoff, Targ & Tart	0.85 [0.25, 1.45]
Targ, Targ & Harari	0.26 [0.22, 0.30]
Harari & Targ	0.89 [0.89, 0.89]
Targ, Targ & Lichtarge	-0.10 [-0.48, 0.28]
Puthoff	0.25 [0.23, 0.27]
Valee	0.07 [-0.09, 0.23]
Targ	0.92 [0.72, 1.12]
Targ et al..2	0.75 [0.57, 0.93]
Utts SAIC	0.25 [0.24, 0.26]
Utts SRI - unselected	0.21 [0.20, 0.22]
Utts SRI - selected	0.38 [0.35, 0.41]
Targ & Katra	0.72 [0.50, 0.94]
Dunne & Jahn	0.21 [0.20, 0.22]
Storm	-0.06 [-0.30, 0.18]
Brown	0.27 [0.21, 0.33]
Bierman & Rabeyron	0.11 [0.07, 0.15]
Kolodziejzyk	0.05 [0.05, 0.05]
Smith et al	0.86 [0.85, 0.87]
Subbotsky & Ryan Exp1	0.02 [-0.08, 0.12]
Subbotsky & Ryan Exp2	-0.07 [-0.16, 0.02]
Katz et al..1	-0.05 [-0.07, -0.03]
Krippner, Saunders, Morgan & Quan	-0.06 [-0.09, -0.03]
M.ller, M.ller & Wittmann	0.56 [0.49, 0.63]
Roe, Cooper, Hickenbotham, Hodrien, Kirkwood & Martin	0.04 [-0.00, 0.08]
Katz et al..2	0.27 [0.19, 0.35]
Katz, Lane & Freed-Bulgatz	0.28 [0.27, 0.29]
Muller & Wittman - clayrv	0.22 [0.14, 0.30]
Muller & Wittman - precogn	0.74 [0.69, 0.79]
Kruth	-0.08 [-0.19, 0.03]
RE Model	0.36 [0.25, 0.47]

Effect Size

APPENDIX B: Prisma Flow Chart