SCIENTIFIC REPORT FOR BIAL

Surveillance Detection via Nonconventional Means

With thanks to the BIAL Foundation for supporting research conducted by PhD candidate Ross Friday under the supervision of Dr David Luke, Dr Trevor Thompson and Dr Claire Monks at the University of Greenwich, England.

AIMS

Many people have turned to see someone behind them due to a 'sense' they were being watched. Others have 'inexplicably' felt as though they were the focus of others' attention, despite there being no conventional means via which this could be detected (Sheldrake, 2003). The most popular and enduring of the theoretical explanations for these events is that extrasensory awareness was evolutionarily advantageous, and therefore may have developed during an era in which danger was ever-present with survival depending on such capabilities (Sheldrake, 2005).

The term extrasensory perception is often abbreviated to ESP (Rhine, 1934) and refers to the claimed reception of information gained via the mind, rather than the recognized physical senses. Evidence supporting the existence of extrasensory surveillance detection would have implications beyond purely scientific interest, yet the phenomena remains under-researched. Evidence concerning an individual's ability to detect attention which they could not be aware of via conventional senses has previously been restricted to the psychic staring effect, also known as scopaesthesia - a phenomenon in which people respond via non-conventional means to being the subject of another person's gaze (Sheldrake 2003). However, this new investigation furthered the research by incorporating the previously uninvestigated sense of being *listened to* as well as seen.

The existence of these abilities was measured via a) the accuracy of participants' self-reports of being watched or listened to, b) psychophysiological reactions determined by electrodermal activity (EDA) which measures the electrical conductance of the participant's skin, and c) differences in their behaviour during surveillance. All of these measures have provided evidence of extrasensory detection in previous research, however they had never been combined in a single study; doing so provided the opportunity to directly compare these methodologies to answer the following research questions:

i) Can an individual be aware that they are under surveillance via extrasensory means?

ii) If extrasensory detection is possible, how does it affect an individual's behaviour?

iii) Can an individual detect covert surveillance unconsciously?

STUDY ONE METHODS

Design

A multivariate mixed experimental design was used to investigate individuals' ability to 'sense' being i) under no surveillance, ii) being listened to, iii) being watched, and iv) being watched and listened to. The repeated measures methodology meant that participants' ability to detect being watched and/or listened to was measured by conscious self-reports, psychophysiological fluctuations in their EDA, and differences in their behaviour whist undertaking a cognitive task. These measurements were taken during periods of randomised surveillance versus no surveillance which participants could not be aware of via conventional means. The results were analysed using t-tests.

Participants

The participants (aged 18+) were recruited via advertisements in the media (press and radio) and posters in and around a London University. This 112 participants consisted of 66 (59%) females and 46 (41%) males, ranging in age from 18 to 68 years (M = 31.74 SD = 12.99).

Materials

Data collection was conducted in an observation laboratory comprising of two adjacent rooms - one of which was viewable through a one-way mirror (but not vice versa). Room 1 (where the participant was observed) featured two desks with a chair and computer. It also had a microphone to amplify and transmit the participant's voice to the adjacent room. Room 2 (where the observer was situated) featured a chair and a laptop. Additionally, the study required a programme (Psych/Lab) to run and score the conscious self-report task, a computerised random number generator (Random.org) to determine trial sequencing, headphones through which music could be played to control for auditory sensory leakage, psychophysiological monitoring equipment to measure participants' EDA, a computerised version of the Stroop Test, and a mixing desk to control when and what the observer can hear.

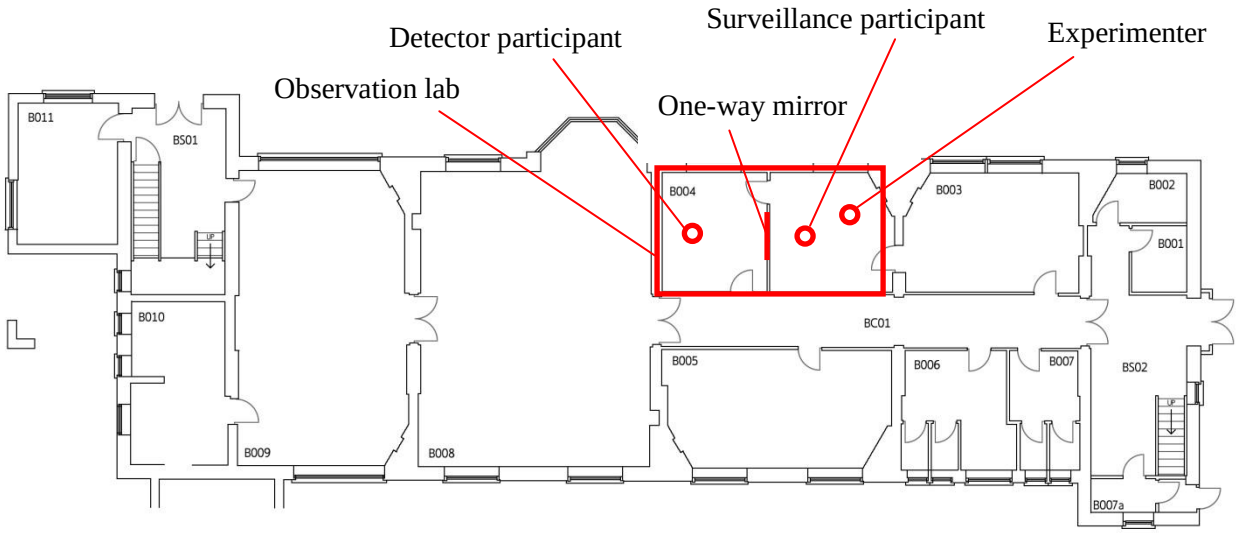
Procedure

The first experiment in Study One utilized self-reports to determine whether participants were consciously aware of being watched and/or listened. During each 30-second trial text was read aloud (to ensure an audible element), at the end of which the programme asked the participant whether they felt they were being watched or listened to. The participant then indicated their response via a keyboard. The results were analysed for a relationship between correct self-reports of being watched and/or listened to, and the times during which such surveillance actually took place.

Study One's second experiment focused on participants' physiological reactions determined by EDA, whereby increased EDA readings were taken to indicate that the participant was showing physiological signs of detecting surveillance. The resulting data was analysed for a correlation between participants' EDA fluctuations, and the times during which they were actually be watched and/or listened to.

The third Study One experiment focused on behavioural change to measure whether remote surveillance has been detected. To test this, each participant performed a computerised version of the Stroop Test (Ridley, 1935) in which they were asked to choose the colour a word is written in, rather than the colour it actually says under the four different conditions. To introduce an audible element, participants also had to say the colour out loud. The results were analysed for a relationship between participants' performance and which of the four condition were taking place.

BELOW: Layout of the adjacent laboratories and key placements for reference.



STUDY ONE RESULTS

Study One, Experiment One (Detection Measured by Self-Reports)

The four self-report scores for each of the four trial conditions were examined for significant differences with chance expectation using one-sample t-tests. All four conditions were randomised and occurred twice, resulting in eight trials. Only one of the six one-sample t-tests was significant; this was when participants were watched and listened to as there was a significant difference between the scores and chance expectation (111) = 2.31, p = 0.023 (two-tailed).

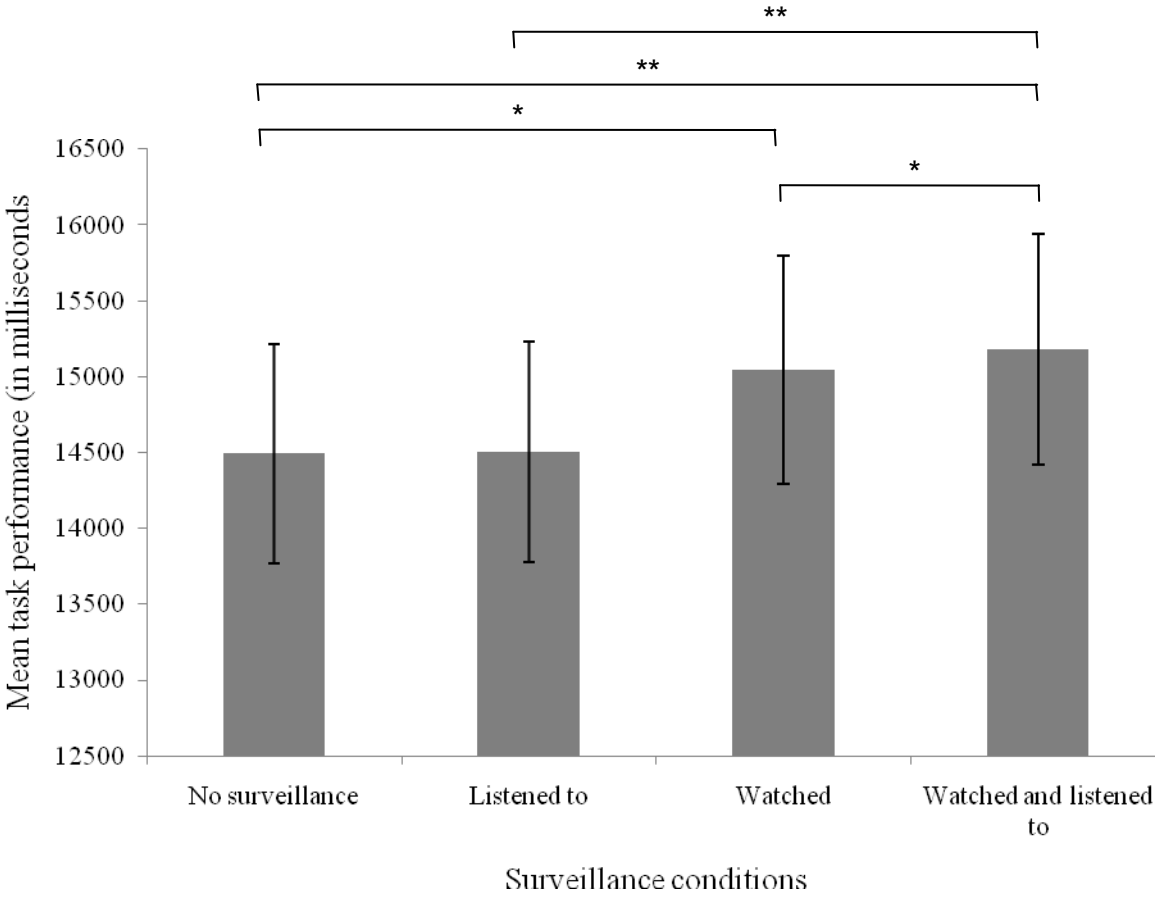
There was however a general tendency for participants to report the feeling of being observed in trials with 950 positive observation responses overall out of a possible 1792, equivalent to a 53% response rate, which was significantly higher than mean chance expectation (50%) where $t(111) = 2.08$, $p = 0.04$ (two-tailed). For this reason, calculations were conducted to take this reporting bias into account. With bias accounted for, trends were still in the predicted direction, although a paired t-test comparing correct combined self-report scores for all 4 conditions, M = 5.51, SD = 2.06, with incorrect combined self-report scores for all four conditions, M = 5.18, SD = 1.91, was not significant, $t(111) = 1.15$, $p = .25$ two-tailed.

Study One, Experiment Two (Detection Measured by EDA)

To determine whether changes in participants' EDA can be used to measure surveillance detection, participants' mean EDA values (in micro Siemens) under the four conditions were calculated. Each of these trials lasted 30 seconds and occurred twice. Paired-samples t-tests were conducted on every combination of the means associated with the four surveillance conditions to investigate whether they were statistically different from one another, however none demonstrated results that suggested participant's changes in physiology were related to the surveillance conditions.

Study One, Experiment Three (Detection Measured by Behavioural Change)

A paired-samples t-test was conducted on all six possible surveillance condition combinations to investigate whether the delay in responding when there was an incongruent word-colour condition differed statistically depending on which of the four surveillance conditions where occurring. The results showed that four of the six task performance combinations were significant, two of them at the 0.001 significance level which is shown in the below graph.



* One-sample t-test significant at the 0.05 level (two-tailed).
** One-sample t-test significant at the 0.01 level (two-tailed).

DISCUSSION OF STUDY ONE

It was hypothesised that participants' ability to successfully detect being watched would be above chance levels, however initial analysis of the mean self-report scores demonstrated that the current study did not find this to be the case once reporting bias had been taken into account. Previous research has suggested that even if genuine, the scopaesthesia effect is subtle and typically results in a success rate of around 55% (Sheldrake, 2003) so the well-

established method of asking an individual to consciously guess whether they are being stared at may be valid, but the current self-report experiment suggests the signal is weak - if it exists at all. It was however noteworthy that all findings were in the predicted direction.

With the self-report aspect of Study One analysed, the researchers turned their attention to whether EDA may provide a valuable method of measuring remote surveillance detection. Lobach and Bierman's (2004) experiment provided insight into methods of measuring remote observation detection as it was the first to directly compare self-reports and EDA. As these researchers found that EDA readings were a statistically significant 1% higher when under observation, it was predicted that the current study would find stronger results using EDA than they would do using self-reports. Whilst the EDA results were 1.2% lower in the 'watched and listened to' condition when compared to the 'no surveillance' condition, the difference was not statistically significant.

Surprisingly, whilst due to the limited research in this area, the inclusion of 'behavioural change' as a measure of detecting surveillance was exploratory, it seems to have provided the most powerful results as only two of the six possible condition combinations failed to reach significance. In fact, task performance under no surveillance compared to task performance while watched and listened to, and task performance while listened to and task performance while watched and listened to differed from each other at a 0.001 level of significance suggesting that surveillance can affect an individual's cognitive performance even if they cannot be aware of it via conventional senses.

STUDY TWO METHODS

Design

The results from the first study were largely unexpected, and therefore led to new avenues of investigation. So as to not render the second study incomparable to the first, small but potentially important changes were introduced.

Study Two, Experiment One (Detection Measured by Self-Reports)

The experimenters considered that in the first version there may have been a statistical power issue, as if data for all conditions is combined, the effect size increases whilst the p-value decreases - albeit not to a significant level. To attempt to establish whether this may account for the results, Study Two's self-report experiment used the same methodology, but with twice as many trials. The experimenters also decided not to highlight that periods of surveillance would take place until after the experiment in an attempt to eradicate the problem of reporting bias.

Study Two, Experiment Two (Detection Measured by EDA Whilst Taking the Stroop Test)

The experimenters hypothesised that the lack of a 'need to detect' may have played a role in the disappointing EDA results demonstrated in Study One - an idea supported by Study One's behavioural change experiment results in which the participants being 'scored' may have encouraged them to care about their performance, and so could have helped generate positive results. Study Two's EDA experiment was therefore redesigned to measure EDA responses whilst they undertook the same task that generated the powerful results in Study One's behavioural change experiment.

Study Two, Experiment Three (Detection Measured by Behavioural Change)

A simple recreation of the Study One version of this experiment would be interesting to investigate whether the initial results are replicable, but whilst the bias which appeared to have affected self-report experiment should not have influenced participants' performance as they were not choosing a response - by running this experiment again *before* it is revealed to the participants that periods of surveillance will be taking place, the experimenters were able to directly compare the results of when the participants were, and were not aware of being 'watched' and/or 'listened to'.

RESULTS OF STUDY TWO

Study Two, Experiment One (Detection Measured by Self-Reports)

The scores for each of the trial conditions were examined for significant differences with chance expectation using one-sample t-tests as before, but this time all conditions occurred four times for each participant, resulting in 16 trials, and they were not told surveillance would occur. This time there was a significant difference; $t(111) = 2.886$, $p = 0.05$ (two-tailed) when the self-report scores of participants while watched and listened to were compared against chance.

Participants made 1,770 positive observation responses overall out of a possible 3,520, equivalent to a 50.29% response rate, which was not significantly higher than mean chance expectation (50%) where $t(109) = 1.67$, $p = 0.424$ (one-tailed). This indicates that the experiment redesign had its intended effect, and by not telling the participants that they will be randomly watched and listened to, the tendency over report surveillance was eradicated.

*Signal Detection Rates (Red = Above Chance, Blue = Below Chance) for all Responses Combined, for all Trials (Nt = 4) for all Participants (N = 110) for all of the Four Conditions **

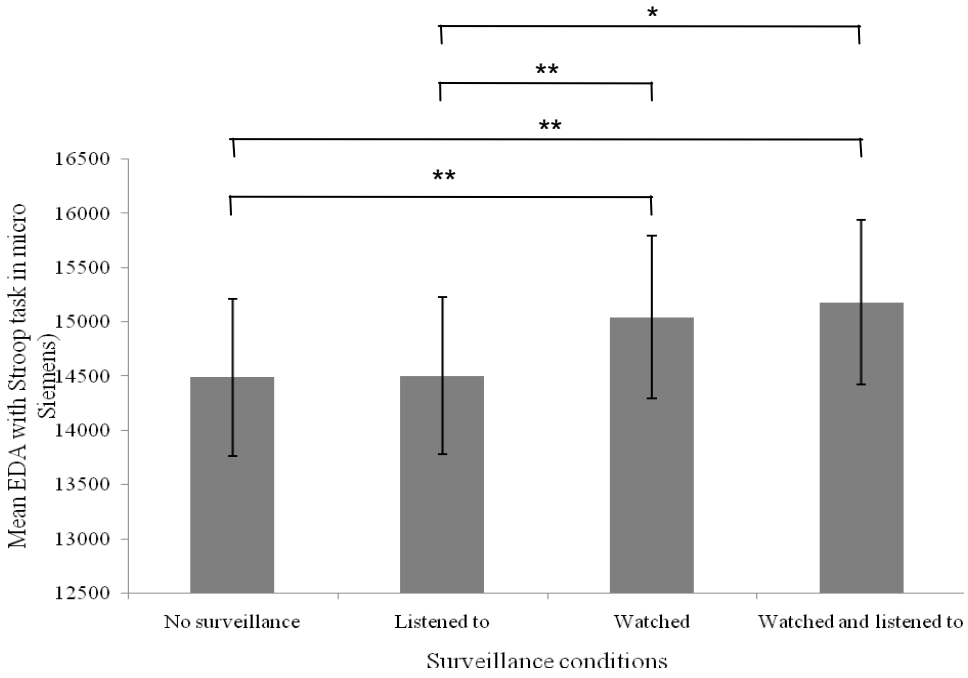
	True	True %	False	False %
Positive** N = 2,640	1285 (hit)	48.67%	1484 (false alarm)	56.21%
MCE 50%		41.67%		58.33%
Negative*** N = 2,640	1270 (correct rejection)	48.11%	1469 (miss)	55.64%
MCE 50%		41.67%		58.33%
Total		48.39%		55.93%
% above MCE		6.72%		-2.40%

* [total number of trials across all conditions and all participants = 1760 (440 for true, 1320 for false]
** True/False Positives are those trials where participants responded that they had been both Watched and Listened to
*** True/False Negatives are those trials where participants responded that they had not been Watched or Listened to

A one sample t-test comparing the total true response rate to mean chance expectation was highly significant $t(5279) = 9.77$, $p = 0.2 \times 10^{-21}$ as predicted. Similarly, a one sample t-test comparing the total false response rate to mean chance expectation was highly also significant $t(5279) = 3.52$, $p = 0.0004$.

Study Two, Experiment Two (Detection Measured by EDA Whilst Taking the Stroop Test)

To determine whether changes in participants' EDA whilst taking the Stroop test can be used to measure surveillance detection, participants' mean EDA values under the four surveillance conditions were calculated. Each of these conditions lasted 30 seconds and occurred twice. Paired-samples t-tests were conducted on every combination of the means, and four of the six combinations highlighted significant differences. Please see below.



* One-sample t-test significant at the 0.05 level (two-tailed).
** One-sample t-test significant at the 0.01 level (two-tailed).

Study Two, Experiment Three (Detection by Behavioural Change)

Whether participants' cognitive task performance would be affected by covert surveillance was again tested by asking them to take an online Stroop Test (Ridley, 1935) under the four surveillance conditions. A paired-samples t-test was conducted on all six possible condition combinations to investigate whether the delay in responding when the word appearing on screen did not match the colour in which it was written differed statistically depending on the condition under which the test was being taken. This time only one combination was significant, and this was when the 'no surveillance' condition was compared with the 'watched and listened to' condition. A paired-samples t-test revealed a significant difference in the scores; $t(111) = -2.10$, $p = 0.038$ (two-tailed).

DISCUSSION OF STUDY TWO

Following the promising, but ultimately not significant results of Study One's self-report experiment, methodological changes were made to Study Two's version. By doubling the number of trials to increase statistical power and not announcing to the participants that surveillance would be taking place, it was hypothesised that the former would mean that the results would become significant rather than just show correlations in the predicted direction, and that the latter would eradicate the reporting bias that was evident in the first experiment. As before, the participants' ability to successfully detect surveillance was compared against chance levels, and this time a significant and positive result was found for the surveillance condition of 'watched and listened to' ($p = 0.005$). An important revelation from Study Two's self-report experiment was that even after reporting bias had been accounted for, the 'watched and listened to' condition yielded powerful results with participants guessing correctly 36.36% of the time, when chance expectation would be just 25%. A paired t-test comparing correct guesses in this condition with incorrect guesses revealed the difference to be significant ($p = .010$)

Despite the results of the EDA experiment in the first study producing results that were not significant, the experimenters were keen to include EDA as a measurement in the second study, but paired samples t-tests comparing the means of every EDA condition against each other again revealed that there was no statistical difference between them. It was considered that perhaps the lack of 'necessity' in the EDA experiments may have rendered this measurement redundant in the absence of actual danger, or a reasonable and realistic substitute. This theory is supported by Sheldrake's (2003) anecdotal evidence for scopaesthesia offered by Special Forces operatives, snipers, security guards and police officers who claim the ability to know when they are being watched and vice versa is both real, and essential to their work. This theory was supported when participants undertook the Stroop Test at the same time, no less than four of the possible six combinations were statistically different from one another.

Following the convincing results of the task performance experiment in Study One, the experimenters wanted to see if this could be replicated in Study Two's version, with the only difference being that the participants were not informed in advance that randomised periods of surveillance would take place - this time only 'no surveillance' compared to 'watched and listened to') produced a significant result ($p = 0.038$).

METHODS FOR STUDY THREE

Design

Possibly the most widely accepted theoretical explanation for scopaesthesia is that such an ability would be evolutionarily advantageous (Sheldrake, 2003), and could have developed when humans were both hunters and the hunted, with this ever-present present danger leading to the development of the extrasensory ability to detect being watched. If evolution were to offer an explanation for scopaesthesia - then it may be naive to expect a sense which developed in response to threat and survival to manifest itself in a University laboratory setting in which every effort is made to relax the participant - in doing so, the experimenters created an artificial situation which would never be encountered in everyday life. As people have reported sensing being stared at in real-world settings, the problem of ecological validity exists with the first two studies due to the laboratory setting that can only be overcome by conducting research in more realistic situations.

Study Three therefore investigated whether a more naturalistic setting could exacerbate the ability hinted at in the first two studies. Few experiments of this sort have been conducted, but the researchers theorised that Study Three will be a valid test of whether human observation in a real-world setting will elicit more or less substantial results than the previous laboratory-based experiments, and whether the environments play a role in scopaesthesia. To test this, field studies were conducted in two distinctly different areas which oppose each other in atmosphere to investigate whether a 'safe' environment produces a difference in Scopaesthesic ability when compared to a 'threatening' environment.

The current study utilised a multivariate mixed experimental design to investigate whether participants are able to detect being watched and listened to, and whether the setting and atmosphere in which this takes place plays a role in the accuracy of their Scopaesthesic and acoustathesic detection. The resulting data was analysed for possible trends, patterns and relationships.

Participants.

The participants (aged 18+) were not actively recruited due to the naturalistic design of this experiment. Rather participants were made up of university students, employees and visitors who happened to be walking along the two selected areas of observation during the periods of experimentation. This produced 100 participants consisting of 66 (66%) females and 34 (34%) males, ranging in age from 18 to 67 years (M = 35.87, SD = 13.08).

Materials.

The study required:

i) A discrete and weatherproof video camera to record participants.
ii) A directional microphone to listen to the participants.
iii) Two suitable and notably different environments free from hazards and distractions.
iv) SPSS statistical analysis programme to analyse the data.

Procedure.

To test for whether environment and atmosphere may play a role in participants' ability to detect surveillance, university grounds were explored for areas which differed from each other as much as possible in an effort to define one as a 'safe' location and the other as a 'dangerous' location. This was due to the experimenters theorising that the 'need' to detect surveillance predicts individuals' ability to do so. Participants would walk the distance between the starting and finishing points, and half of them would be watched and listened to whilst the other half were not. After they had travelled the distance of the path, a research assistant approached them and explained the experiment so that the participants could be asked if they consented to being part of the research; if they said 'yes' they were asked if they 'felt' as though they were being watched and their response recorded for analysis.

STUDY THREE RESULTS

The overall sample of 100 participants ranged in age from 18 to 67 (M = 35.87, SD = 13.08) and 66 (66%) were female and 34 (34%) were male. The participants were staff, students and members of the public walking within two designated and predetermined areas within a London University. Within this sample, the participants could be broken down into two distinct groups; those who were walking within the 'safe' area, and those walking within the 'dangerous' area.

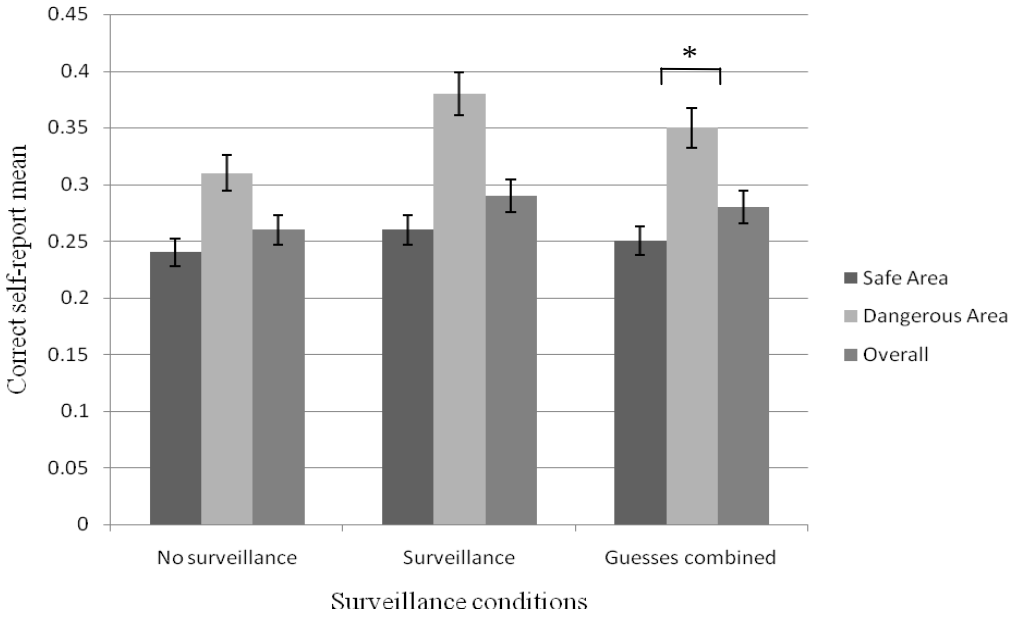
The sample walking within the 'safe' area consisted of 74 participants ranging in age from 18 to 67 (M = 36.78, SD = 13.66) and 45 (61%) were female and 29 (39%) were male.

The sample walking within the 'dangerous' area consisted of 26 participants ranging in age from 18 to 63 (M = 33.27, SD = 11.08) and 21 (81%) were female and 5 (19%) were male.

Interestingly, 53% of participants reported feeling as though they were under surveillance overall which is not statistically different to chance expectation (p=.551), whilst 51.4% of the participants in the 'safe' condition reported the same sensation which again was not statistically different from chance (p=.818). However, a greater percentage (57.7%) of the participants in the 'dangerous' condition reported the feeling of surveillance, but due to the lower number of participants (N=26) this was also not a significant difference when compared to chance expectation (p=.444) so there was not a significant reporting bias.

Comparisons with Chance Expectation.

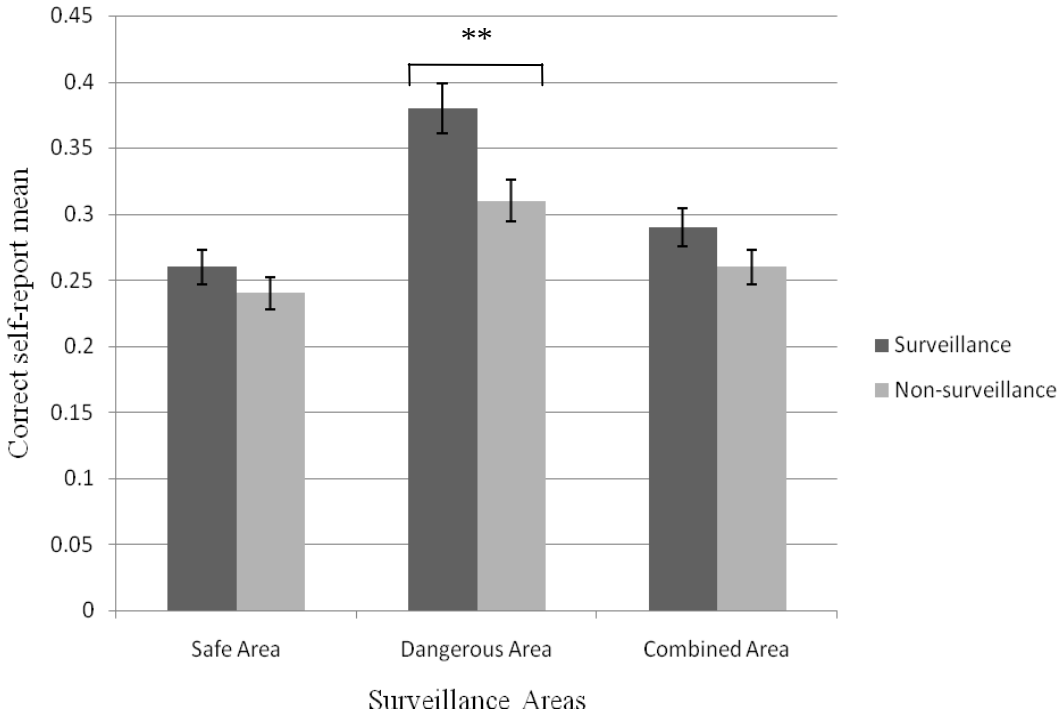
The self-report scores for both of the trial conditions as well as the experiment overall were examined for significant differences with chance expectation using one-sample t-tests. The t-tests revealed that there was no significant difference between these scores when the experiment was conducted in the safe area, however when a one-sample t-test was conducted to compare the correct self-report scores of participants against chance expectation whilst in the 'dangerous' area there was a significant difference; $t(25) = 2.083$, $p = 0.048$ (two-tailed). It is worth noting that when both areas were combined, there were no significant differences between scores as demonstrated in the figure below.



*. One-sample t-test significant at the 0.05 level (two-tailed).

Comparisons Between Trial Conditions

Both trial conditions were examined for significant differences against each other using paired samples t-tests. Only one combination revealed significant differences when an independent samples t-test compared correct responses of surveillance against correct responses of non-surveillance in the 'dangerous' area. There was a significant difference between these two scores; $t(25) = 3.333$, $p = 0.03$ (two-tailed). The below figure shows the results.



**. One-sample t-test significant at the 0.05 level (two-tailed).

DISCUSSION OF STUDY THREE

At the end of their period of surveillance (or non-surveillance) participants were asked whether they felt as though they had been watched and listened to or not. As they were simply guessing between two options, their correct responses were compared with chance expectation using one-sample t-tests. The results showed that participants' self-reports in the 'safe' area did not significantly differ from chance expectation (being correct 50% of the time) whether they were under no surveillance (p = 0.893), under surveillance (p = 0.895), or if both of these conditions were combined (p = 1.000). These results suggest that in a real world setting that is not threatening, individuals are no more likely to be correct in detecting surveillance via extrasensory means than if they were just guessing randomly.

There was no significant difference when correct responses of participants under no surveillance were compared with chance expectation in the 'dangerous' area either, although this was very close to significance (p = 0.538), and the results were also found to be not significant when the correct self-report scores of participants while under surveillance were compared against chance expectation (p = 0.179), yet when these conditions were combined the difference just reached significance (p = 0.048). Whilst this suggests only a weak signal, this is important as the dangerous area is the *only* area in which the accuracy of participants' self-reports differed significantly from chance expectation.

To further investigate whether participants were able to detect covert surveillance in a real-life setting, both of the trial conditions were examined for significant differences against each other using paired samples t-tests in each of the areas. Whilst the correct responses of surveillance were not significantly different to the correct responses of non-surveillance in the 'safe' area (p = 0.871), or when the data from both areas was combined (p = 0.688), there was a significant difference between the correct reports of surveillance and non-surveillance specifically in the 'dangerous' area (p = 0.03). This result suggests that the researchers may have been correct to choose to conduct the field study in two areas which featured opposing atmospheres, and that these atmospheres differed from one another enough to engage participants' extrasensory ability in one area and not the other.

CONCLUSIONS

The reality of investigating a phenomena that may not exist was always going to be challenging. But when a thorough review of the literature revealed that even the researchers who claim to have found evidence that scopaesthesia (Sheldrake, 2003) is possible admit the sense of being stared at is difficult to capture, it was clear that any experimentation focused on something so elusive may yield no results at all. The current researchers were determined to eradicate the problems of past studies by ensuring that conventional senses and possible artefacts such as guessing patterns could not account for positive results.

By utilising all three possible methods of signal capture described in the literature, the current researchers not only ensured themselves the best possible chance of results which may show that the ability to sense being watched or listened to exists, but this also helped them to develop a theory that was driven by comparison of these differing methods. It was this unique approach that led to the possibility of not only investigating whether scopaesthesia (Sheldrake, 2003) and acoustasthesia (Friday & Luke, 2014) are a real phenomenon, but also to examine which situations and circumstances might be necessary to activate or enhance such an ability.

A noteworthy finding from Study Two's self-report experiment was that even after reporting bias had been taken into account, participants guessed correctly 36.36% of the time in the 'watched and listened to' condition, with chance expectation being just 25%. A paired t-test comparing correct guesses in this condition with incorrect guesses revealed a significant difference (p = .010). Furthermore, even when participants' self-reporting ability was investigated in a real-world setting in Study Three to address the possible ecological validity issues associated with the tightly controlled artificial settings of Study One and Study Two, evidence of reporting accuracy remained. Indeed, a statistically significant reporting accuracy (p = 0.048) was demonstrated when participants were asked whether they felt surveilled whilst walking across one of the two areas in which Study Three took place. The authors therefore conclude that there may well be a detectable signal which an individual can be consciously aware of, and that this can be self-reported with some degree of accuracy even when sensory leakage and artefacts are controlled for. This supports much of the previous literature; however perhaps more interestingly, the researchers conclude that self-reporting may not be the most accurate means of measuring surveillance detection.

It was with a certain amount of surprise and fascination that the current researchers analysed the behavioural change data and discovered powerful evidence that this method of surveillance detection appears to be the most reliable.

Indeed paired t-tests showed that when comparing the means of participants' reaction times, three-quarters of the possible combinations were significantly different from one another. These results appeared to suggest that covert surveillance can be detected via non-conventional means, and that this detection can affect an individual's decision making ability. This continued to be true in Study Two's version of the task performance experiment.

As a possible means of covert surveillance detection, physiological response measured by changes in participants' EDA is in some ways the opposite of self-reports. The latter requires conscious awareness of the surveillance, whereas the former could be measured without the individual even knowing their body had reacted to the differing surveillance conditions. Following the failure to capture any meaningful changes in participants' EDA in Study One, the experimenters' decision to see if having participants undertake the Stroop test whilst measuring their EDA was exploratory and considered unlikely to make a difference at the time - however it could be considered one of the major findings of the entire series of experiments as this one methodological change made a substantial difference to the outcome.

The idea that 'threat' or 'necessity' is required for surveillance detection to manifest is logical if Sheldrake's (2003) anecdotal evidence for scopaesthesia offered by Special Forces operatives, snipers, security guards and police officers is considered. Sheldrake claims that these professionals report that they are able to sense when they are being watched - and in every career example listed, they would *need* to know when this is taking place. It could therefore be extrapolated that perhaps without the necessary stimuli, individuals' extrasensory ability may be dormant - but is activated under the certain circumstances. Perhaps in the absence of a situation that matters to the person such as danger, embarrassment, personal gain, or in this case being tested - the individuals will not 'react' as they do not need to. The researchers tentively suggest that this supports their theory that the ability to detect surveillance detection could be a real phenomenon, but that the necessity to detect is required for the ability to be accessed. Put simply, it needs to 'matter' to the individual whether they are under surveillance or not for them to become aware of it.

FUTURE DIRECTIONS

Overall, the researchers have found their results to be both expected *and* surprising having produced data that broadly reflects the existing literature such as the self-report detection rates whilst other some of their research opposes that which preceded it such as the EDA experiments. Indeed, they also found evidence which encourages previously unproposed theories relating to the need for stressful situations or perceived threat in future covert surveillance research. It is this potential discovery that the authors suggest may be one of the most important contributions their body of work may offer future researchers. Whilst they set out to investigate whether it is possible for individuals to detect covert surveillance via unconventional means - through a willingness to consider ideas beyond their initial hypotheses, they cautiously suggest that not only have they found evidence that the phenomenon of surveillance detection may exist, but also the specific situation in which it is most likely to occur.

The theory that the presence of threat or necessity makes it more likely that an individual can access their ability to detect covert surveillance is not only important in and of itself, but should also be considered by researchers in future studies. The authors acknowledge that real and actual danger cannot and should not be introduced within experiments intended to further investigate this idea, however they do suggest that situations in which the participants feel judged (as evidenced by the experiments related to task performance), embarrassed, or self-conscious may prove vital in this research area. The authors would also encourage the inclusion of the sense of being listened to, as whilst there was indeed some evidence within the results to support their theory of acoustasthesia (Friday & Luke, 2014), the data seems to suggest that listening to an individual while watching them also results in a condition more detectable than if scopaesthesia (Sheldrake, 2003) is measured independently.

The authors would like to highlight that with replication and robust supportive research, these discoveries are potentially useful outside of the laboratory setting and could be applied to real-world situations in which surveillance plays a role. These could include everyday examples such as occupational and education settings in which employees and students are monitored for performance, to more extreme clinical applications such as when a symptom of a disorder is paranoia which may turn out to be based on the actual sensing of attention directed at the patient, or the more obvious but hugely important use of covert surveillance detection information to agents involved in matters of security. It is sincerely hoped that this body of research will be shown to be ecologically valid, and will contribute in a meaningful way to these areas.

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