Attempting to elicit precall from those with high levels of belief in psi

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Precognition

- The ability to perceive and/or behave in a way that is influenced by a *future* event that would not be anticipated through any known inferential process (see, Mossbridge et al., 2014)

- Various terms and paradigms
    - Presentiment
        - unconscious changes in the ANS (e.g., Radin, 2004)

    - Precognitive priming
        - conscious cognitive awareness of a future event that could not otherwise be anticipated (e.g., Bem, 2011)

    - Precall
        - The ability to precall future information, the retroactive facilitation of recall whereby a response/behaviour 'now' is influenced by a future event,
        (e.g., O'Donnell, 1976; Ritchie et al., 2012)

Initial Findings

- Precognitive priming
  - Pilot work led to development of a functional classification task
  - Multiple future repetitions associated with improved accuracy in the present

(Vernon, 2015)

- Precall using arousing images
  - Given the benefit for 'accuracy' focused on recall task
  - Also incorporated arousing images and used on-line delivery
  - Multiple future repetitions **<u>did not</u>** influence accuracy of recall

(Vernon, 2017)

So Why No Precognitive Effect?

- Because there is nothing there
  - Fits with some claims
    (see Galak et al., 2012; Ritchie et al., 2012)

- The effect is there I simply failed to elicit it
  - Why?
    - Failed to include a relaxation induction
      (Braud, 1974; Bem, 2011)
    - Low arousal levels of the images used
      (Lobach, 2009; Maier et al., 2014)
    - Possible lack of belief in psi
      (Palmer, 1971; Parker, 2000)

Current Study

- Aim to elicit a precall effect
  - Using on-line delivery
  - Including relaxation induction
  - Used more emotive images
  - Selectively recruit those with high levels of belief in psi

- Confirmatory prediction
  - H^{A1} participants will recall more items in the test-phase that appear in the *later* post-test phase compared to those that do not

Precall Study

- Pre-registered study with KPU
  - The study was pre-registered at the Koestler Parapsychology Unit (ref#1025)
    - http://www.koestler-parapsychology.psy.ed.ac.uk/Documents/KPU_Registry_1025.pdf

- Ethics approval
  - University Faculty Ethics Committee (Ref: 16/SAS/313C)

- Participants
  - Based on power analysis of Bem (2011) aimed to recruit N=90
  - Classify participants as having 'high' level of belief in psi if RPBS >89.1 (see, Tobacyk, 2004)
  - Study halted once 213 had begun
    - 35 removed for failing to complete all aspects of the study
    - 18 removed for being distracted
    - 53 removed for having low RPBS score
  - 107 (50.2%) with high level of belief completed
    - Consisting of 54 male, 53 female, aged 19-81y (mean: 46.7; SD 13.7)
  - All participants opportunity sampled via an advertised web-link on Facebook page of College of Psychic Studies, London.

- Materials
  - Built and delivered using Qualtrics (www.qualtrics.com)
    - Inbuilt Mersenne Twister pseudorandom number generator (PRNG) to randomly select the order of stimuli presentation.
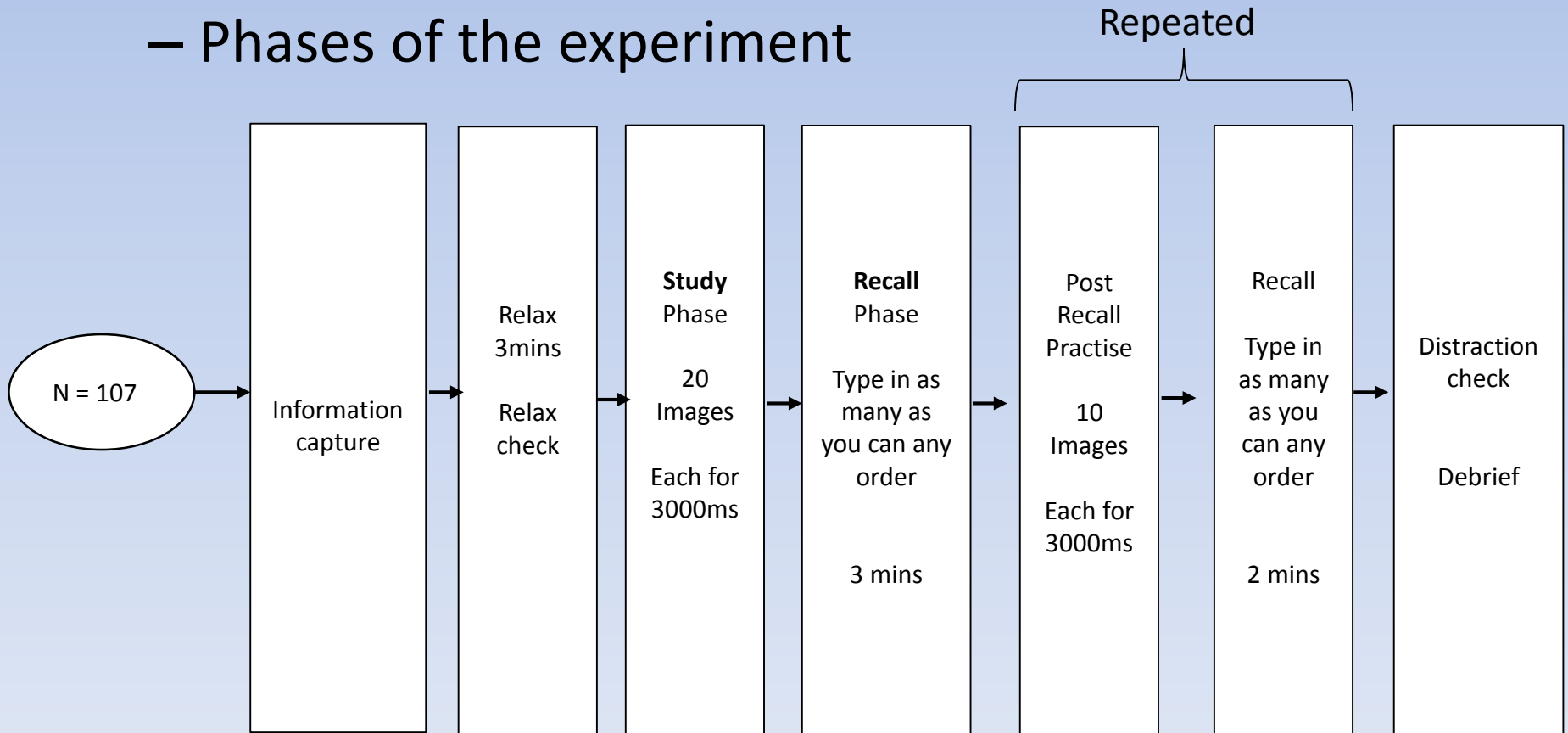 - Revised Paranormal Belief Scale (RPBS: Tobacyk, 2004)

Precall Study

- Materials
  - 20 images from IAPS (Lang et al., 1997)
    - Each image cropped to width of 700px and height of 525px, name in Ariel 36pt
    - Created 8 sub-lists each with 5 positive and 5 negative matched for mean valence and arousal

Positive Image	IAP#	Valence	Arousal	Negative Image	IAP#	Valence	Arousal
Astronaut	5470	7.35	6.02	War	2683	2.62	6.21
Hiker	5629	7.03	6.55	Gun	2811	2.17	6.9
Skier	8030	7.33	7.35	Grave	3005.1	1.63	6.2
Sailing	8080	7.73	6.65	Suicide	6570	2.19	6.24
HangGlider	8161	6.71	6.09	Solider	9160	2.81	6.04
Skydivers	8185	7.57	7.27	Toilet	9301	2.26	5.28
Pilot	8300	7.02	6.14	Police	6834	2.91	6.28
Gymnast	8470	7.74	6.14	Ship	9600	2.48	6.46
RollerCoaster	8490	7.2	6.68	Accident	9910	2.06	6.2
Money	8501	7.91	6.44	Fire	9921	2.04	6.52
	Mean	7.36	6.53		Mean	2.32	6.23

Precall Study

- Design/Procedure
  - Phases of the experiment

Repeated

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N = 107  →  Information capture  →  Relax 3mins    →  Study Phase        →  Recall Phase      →  Post Recall Practise  →  Recall            →  Distraction check
                                    Relax check       20 Images             Type in as            10 Images               Type in as            Debrief
                                                      Each for 3000ms       many as you                                    many as you
                                                                            can any order         Each for 3000ms         can any order
                                                      3 mins                                                               2 mins
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Precall Study

- Results
  - Data processing
    - RPBS coded according to Tobacyk (2004)
      - High levels of belief had sum of items score >89.1

    - 107 participants each exposed to 20 images
      - 2140 trials

    - 154 (7.2%) trials required additional consideration by two judges blind to the study
      - Examples:
        » 7 instances of 'motorbike' for 'motorcycle'
        » 8 instance of 'cockroaches' for 'cockroach'
        » 18 instances of 'lightening' for 'lightning'
        » 6 instances of 'skydiver' for 'skydivers'

    - Agreement between judges was 100%

    - Also 38 (1.8%) semantically related intrusions not included in analysis (e.g., leopard in place of jaguar)
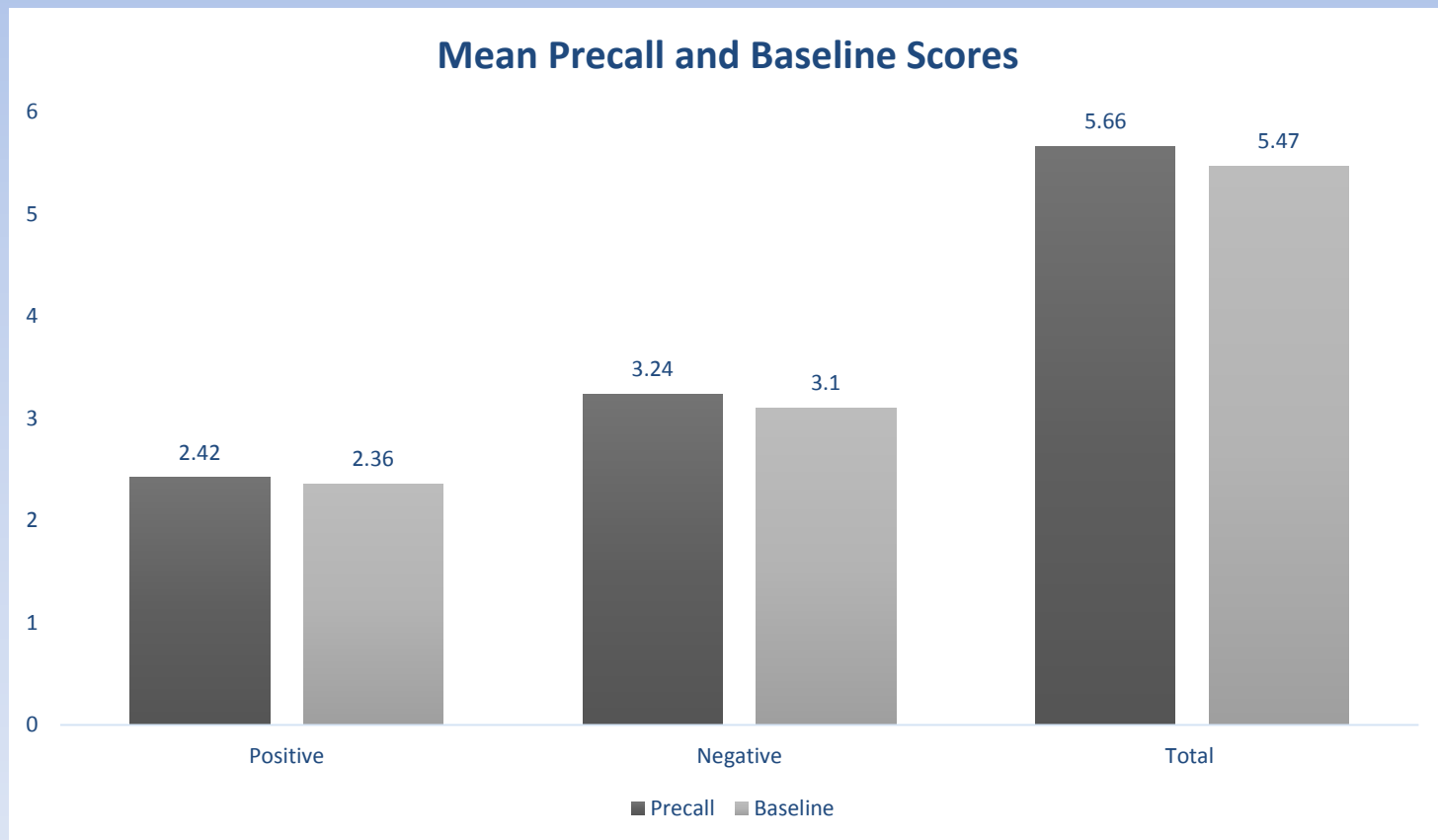
Precall Study

Table 1. Showing participants mean and SD scores for each of the seven sub-scales, as well as the sum of items, on the RPBS.

	Traditional religious belief	Psi	Witchcraft	Superstition	Spiritualism	Extra life form	Precognition	Sum of items
Mean	4.89	5.05	4.84	1.71	5.78	4.44	4.65	116.92
SD	1.22	1.06	1.49	1.04	0.93	1.13	1.19	17.03

- Sum of items scores for RPBS were sig higher than prior study, $t(199)=10.84$, $p=0.001$, 95% CI (32.1, 46.4), $d = 1.6$

- Participants mean relaxation score was 7.25 (SD 1.5) using a scale from 1 (very tense) to 10 (completely relaxed)

Precall Study

- Results

No difference between precall and baseline t(106)=0.84, p=0.40, 95% CI (-0.26, 0.66), *d* =0.11

Precall Study
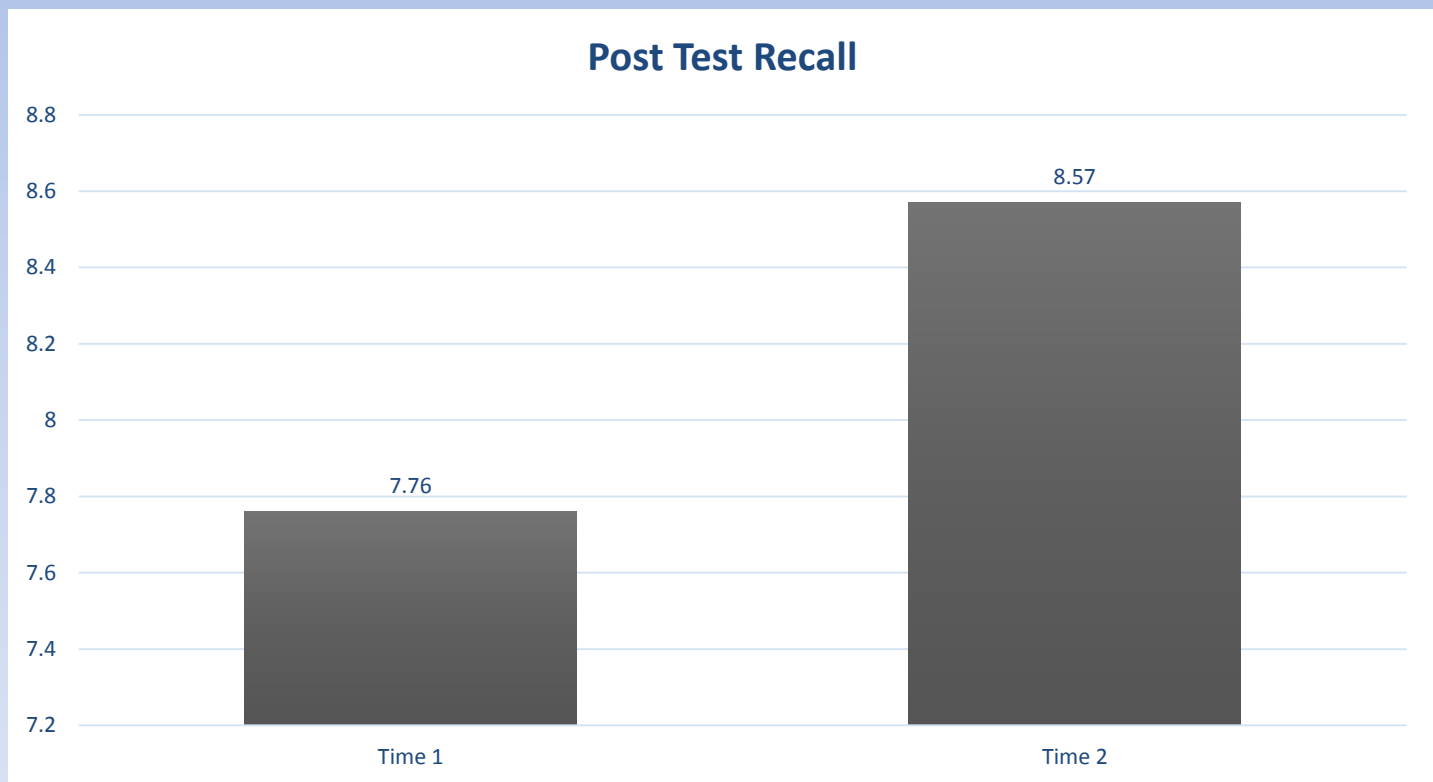
- Correlations
  - Between precall and belief (RPBS)

	correlation	significance
Traditional Religious Belief	.043	.66
Psi	-0.04	.66
Witchcraft	-.006	.95
Superstition	-.040	.68
Spiritualism	-.026	.78
Extraordinary Life Form	.-.019	.84
Precognition	.085	.38

  - Between precall and level of relaxation

$$r[107]=-0.146, p=0.133$$

Precall Study

- Post recall practice

Improved recall with practice, t(106)=5.267,p<0.001, 95% CI(-1.112, -0.507), *d*=0.57.

Discussion

- Summary
  - No evidence of precall arousing images and selected participants with high levels of belief in psi

  - No evidence of any relationship between precall and relaxation or belief

  - Post recall practise shows performance not at ceiling

- Evidence of nothing or no evidence?
  - Nothing there
    - Statistical anomalies, fraud (see, Wagenmakers et al., 2011; Stokes, 2015)

  - Precognition (precall) is real I've simply failed to find it (e.g., Bem, 2011; Maier et al., 2014; Subbotsky, 2013)

Discussion

- Why no effects?
  - Coding of responses *MAX* allow for bias

    (see, Bem, 2011)

  - Images not emotive enough

    (see, Maier et al., 2014)

  - Belief was higher but perhaps not high enough
    - Could have used top quartile, or +1SD

  - Belief alone may not be sufficient
    - Selectively recruit participants with 'ability'

    (see, Haraldsson, 1970)

Discussion

- Why no effects?
  - Is it me?

  - Do on-line studies throw the baby out with the bath water?

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Questions?

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