

The survey of evaluation of paranormal experiments

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Specification of paranormal experiments

Some ESP, PK or CV (clairvoyance) experiments are characterizable by the triple (N, K, L) , where N is the number of options, K is the number of rounds, L is the lower limit required for success. Numbers N and K define binomic probability distribution and additional function $R(i)$ – see the computation details block. Rounded integer $D = 1 / R(L)$ gives the difficulty of the test. A is the number of the testee's correct answers. The mean index M is computed as $R(M) = 0,5$, ie. as an average of the results of the random answers.

Here is real example: The ESP test was co-designed and performed with testee Mr. **S. Bradley**: 30 boxes contain either stone or flower, therefore $K = 30$ and $N = 2$. The lower limit was set on $L = 25$. It gives $M = 15,50$ and $D = 6155$. The testee achieved $A = 19 > M$, but that is less than lower limit $L = 25$, so he failed.

The characteristics of performed tests

ID	N no. of options	K no. of rounds	L lower limit	D initial difficulty	M mean index	Number of testees = under + over $A \leq M$ $A > M$
GWUP 2004 – 2017 (phase 1)						
GW2	2	50	40	83815	25,50	17 = 8 + 9 B. Textor 2015
GW10	10	13	7	10072	1,67	36 = 21 + 15 B. Krockner, G. Gabrisch
GW5 ball	5	420	122	64268	84,40	1 = 0 + 1
GW10 c-ball	10	300	52-55	14980	30,37	2 = 1 + 1
GW ill	2	38	34	3312061	19,50	1 = 1 + 0
				SUMA		57 = 31 + 26
PV - Sisyfos 2013 – 2017 (phase 1)						
PV1	2	30	25	6155	15,50	4 = 2 + 2 S. Bradley, J. Pišoja
PV2	3	20	15	5975	7,11	3 = 3 + 0 D. Klímová, P. Vojtěch, ...
PV3	12	15	6	1157	1,62	1 = 0 + 1 M. Hein
				SUMA		8 = 5 + 3
ZV – Zadna Veda 2016						
ZV	6	72	23	932	12,39	11 = 4 + 7 ThC.
Result: 39 failed under M, 36 failed under L, nobody won						
				TOTAL		76 = 40 + 36

Let us presume that testees try to pump information from an esoteric source, eg. heaven, hell, Gaia morphic field, ghosts, Ufonians ... If they fail in the test, it means they have pumped out information insufficiently - and so they suffer by **information deficit**. Its value in bits is the difference between negated diadic logarithms of probability values of the function R on indexes L and A .

This allows comparability of failed testees and to say how far he/she is from paranormal mastery. But **deficit** bits is a logarithmic measure that can hardly be acceptable to the general public. The designed linear measure denoted as **debacle** = 2^{deficit} is certainly more expressive – and it determines how many times each testee should improve his/hers performance to achieve victory.

Results of 36 testees ($A > M$)

A	T	group-id	BIT DEFICIT:			LEAGUE			DEBACLE:			LEAGUE			league qualification
			initial	3.	2.	1.	initial	3.	2.	1.	initial	3.	2.	1.	
36	1	GW2 1/36	6,77	0,38	3,70	7,02	109	1,3	13	130	4	B. Textor			
34	1	GW2 1/34	9,33	2,94	6,26	9,58	643	8	77	767	4	Groger1			
32	1	GW2 1/32	11,41	5,02	8,34	11,66	2720	32	325	3245	5	?			
4	1	GW10 1/4	8,43	5,09	8,42	11,74	344	34	342	3416	5	G. Gabrisch			
99	1	GW5 1/balls	12,70	5,34	8,66	11,98	6649	40	405	4048	5	?			
18	1	ZV ThC	5,43	5,53	8,85	12,17	43	46	462	4621	5	ThC.			
19	1	PV1 Bradley	9,27	6,65	9,97	13,29	617	100	1002	10024		S. Bradley and all others not qualified			
30	1	GW2 1/30	13,05	6,66	9,98	13,31	8492	101	1013	10132					
3	4	GW10 4/3	10,40	7,06	10,39	13,71	1348	134	1339	13388					
36	1	GW10 c-ball	11,09	7,18	10,51	13,83	2177	145	1453	14534					
18	1	PV1 PISOJA	10,12	7,50	10,82	14,14	1113	181	1808	18080					
15	3	ZV student	7,62	7,72	11,04	14,36	96	211	2106	21065					
28	3	GW2 3/28	14,30	7,91	11,23	14,55	20112	240	2399	23994					
14	1	ZV boy2	8,17	8,27	11,59	14,91	287	308	3081	30810					
27	1	GW2 1/27	14,78	8,39	11,71	15,04	28155	336	3359	33591					
2	1	PV3 Hein	8,70	8,49	11,81	15,13	416	359	3592	35916					
2	10	GW10 10/2	11,90	8,56	11,89	15,21	3814	379	3787	37866					
13	2	ZV mother	8,63	8,73	12,05	15,37	395	424	4237	42372					
26	1	GW2 1/26	15,18	8,79	12,12	15,44	37203	444	4439	44386					

T – group size. The table is sorted according to 3rd league ascending.

Leagues

It is hard to set D to a prescribed value by (N, K, L) . To make the tests comparable and let us consider a few leagues - as in sports:

D	league	random victory probability
10	5.	1 / 10 for child(ish)
100	4.	1 / 100 for junior
1 000	3.	1 / 1 000 PV-Sysif. ph.1
10 000	2.	1 / 10 000 PV-Sysif. ph.2
100 000	1.	1 / 100 000
1 000 000	EXTRA	James Randi's rate
10^7	SUPER	PV – Sisyfos strictness
10^9	ULTRA	GWUP strictness

Nobody reached deficit = 0 ie. debacle = 1 with original difficulty nor in easier 3. league.

Then 4 testees are qualified in 5. league. And 2 testees are qualified in 4. league. These braves should get colourful diplomas.

Prizes for victors

GWUP offers a one-off sum of **10 000 EUR**. A testee must pass the test described in phase 1 but also the stricter test of phase 2. Eg.: (2,60,46) or (10,18,10) with $D_2 = 47350$ or 488998. Total $D = D_1 \times D_2 = 3968883950$ or 4922228785 - ie. ULTRA league.

PV - Sisyfos offers a sum of **10 000 CZK (370 EUR)** for each victor of phase 1 where $D_1 \geq 1 000$ ie. 3. league. The entry fee is 2 000 CZK (74 EUR).

The one-off prize for phase 2 is **3 333 333 CZK (123456,78 EUR)** where $D_2 \geq 10 000$, $D = D_1 \times D_2 \geq 10^7$ ie. SUPER league.

Computation details

Integers $N > 1$, $K > 0$, $0 \leq L \leq K$.
 $0 \leq A \leq K$ and table index $0 \leq i \leq K$.
 Probability of binomic distribution is given by
 $p_i = \text{comb}(K, i) (N-1)^{K-i} / N^K$

Function $R(i)$ is summation where
 $r_i = p_j + p_{j+1} + \dots + p_K$ $1 \leq j \leq K$.
 and $r_0 = 1$, $r_M = 0,5$, thus $-\log_2 r_M = 1$ bit.
 where M is calculated index of mean of function R .

If $A < L$ then testee failed and information deficit = $(-\log_2 r_L) - (-\log_2 r_A) > 0$ bits and debacle = 2^{deficit} , otherwise the testee succeeded.

References

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