

AUDL 4007

A simple adaptive psychoacoustic test

Gap detection A fairly typical psychoacoustic task



time \rightarrow

Gap detection

- Pick the sound with the gap vary the gap duration to find threshold
 - when a listener is 'doing well', make it harder
 - when a listener is 'doing poorly', make it easier
 - What does this remind you of?
 - adaptive procedure
- Thresholds for wide-band noise are around 3 ms

By 'toggling data'



Now it's your turn ...

- Use Glimpse to find your own gap detection threshold
- Toggle 'data' to see if you have a reasonable adaptive track
 - if so, print out the two results files sr Triples TriplesGaps 13_01_09 16_40 .csv & .txt
 - if not, repeat

Look at your own data

	A	В	C	D	E	F	G	Н	1	J	K	L	M
1	Trial	Standard	Comparison	Correct?	TrackDirection	LevittCount	Reversals	StepSize	Latency	TrialType	Time	Order	Response
2	1	0	50	1				15	298	C	16_38_31	M	M
3	2	0	50	1					344	C	16_38_35	Z	Z
4	3	0	50	1	dwn	1			208	Т	16_38_39	В	В
5	4	0	35	1	dwn	2			276	Т	16_38_43	Z	Z
6	5	0	20	0	up		1	11.33	992	Т	16_38_46	Z	В
7	6	0	31	1	up	1			193	T	16_38_50	Z	Z
8	7	0	31	1	up	2			232	Т	16_38_54	В	В
9	8	0	31	1	dwn	3	2	7.67	168	Т	16_38_57	Z	Z
10	9	0	24	1	dwn	1			263	T	16_39_01	Z	Z
11	10	0	24	1	dwn	2			183	Т	16_39_05	Z	Z
12	11	0	24	1	dwn	3			175	T	16_39_09	Z	Z
13	12	0	16	1	dwn	1			1247	Т	16_39_12	В	В
14	13	0	16	1	dwn	2			856	Т	16_39_17	M	M
15	14	0	16	1	dwn	3			1270	Т	16_39_21	Z	Z
16	15	0	8	0	up		3	4	852	T	16 39 26	M	В
17	16	0	12	1	up	1			525	Т	16_39_30	M	M
18	17	0	12	0	up				406	Т	16 39 34	В	M
19	18	0	16	0	up				845	Т	16_39_37	M	В
20	19	0	20	1	up	1			781	Т	16_39_40	M	M
21	20	0	20	1	up	2			887	T	16 39 45	В	В
22	21	0	20	0	up				1167	Т	16 39 49	M	Z
23	22	0	24	1	up	1			269	Т	16 39 53	Z	Z
24	23	0	24	1	up	2			287	Т	16_39_57	В	В
25	24	0	24	1	dwn	3	4	4	150	Т	16 40 01	Z	Z
26	25	0	20	1	dwn	1			759	Т	16_40_04	В	В
27	26	0	20	0	up		5	4	806	Т	16_40_08	Z	В
28	27	0	24	1	up	1			451	Т	16 40 12	M	M
29	28	0	24	1	up	2			126	Т	16 40 16	Z	Z
30	29	0	24	1	dwn	3	6	4	134	Т	16 40 20	Z	Z
31	30	0	20	1	dwn	1			687	Т	16 40 23	В	В
32	31	0	20	1	dwn	2			398	Т	16 40 27	M	M
33	32	0	20	0	up		7	4	837	Т	16 40 31	В	M
14 4		sr Triples	TriplesGaps 13	01 09 /	•	1	i						

Plot your own adaptive track



- Use different symbols for right and wrong
- responses
- Mark reversals in some way
- Calculate the mean of the 4th reversal on ...
 - an estimate of your own minimal detectable gap

Extra information in .txt file

13 Trial Standard Comparison Accuracy Direction LevittCount Reversals StepSize RespTime TrialType Time Answer RespKey 3

_____ SpecFile Used was TriplesGaps Stimulus_file \Materials\Lists\GapsList.txt Design SingleToken Standard fixed True Standard start 0 Comparison_start 50 Sample_replacement True Same_continuum True Levitt constant 3 Initial_step_size 15 Final_step_size 4 Initial reversals 3 Final reversals 4 Catch trials 0 Ignore_trials 0 Balloons False Master Volume 15 Wave Volume 40 X pause 100 X_A_pause 300 A_B_pause 300 Next_button False Feedback True Anim Frogs Response Mouse Max_trials 50 Final_popup False Catch_practice 2

Extra information in .txt file

1#\Gaps\gaps_0050.wav 2#\Gaps\gaps_0055.wav 3#\Gaps\gaps_0060.wav 4#\Gaps\gaps 0065.wav 5#\Gaps\gaps_0072.wav 6#\Gaps\gaps_0078.wav 7#\Gaps\gaps_0086.wav 8#\Gaps\gaps_0094.wav 9#\Gaps\gaps_0102.wav 27#\Gaps\gaps_0511.wav 28#\Gaps\gaps_0559.wav 29#\Gaps\gaps_0612.wav 30#\Gaps\gaps_0669.wav 31#\Gaps\gaps_0731.wav 32#\Gaps\gaps_0800.wav 33#\Gaps\gaps_0875.wav

0#\Gaps\gaps_0000.wav

47#\Gaps\gaps_3059.wav 48#\Gaps\gaps_3345.wav 49#\Gaps\gaps_3658.wav 50#\Gaps\gaps_4000.wav

34#\Gaps\gaps_0956.wav

35#\Gaps\gaps_1046.wav

Plot your own psychometric function



- Here, the proportion of correct responses as a function of gap duration
- More typical to have equal numbers of trials at each level, but this is from an adaptive procedure



Determining a psychometric function



The End