Supplementary Tables to Vliegen, Van Grootel and Van Opstal:

“Dynamic Sound Localization During Rapid Eye-Head Gaze Shifts”

Table IIA provides the linear regression results of Eqn. 1 on the **gaze-displacement data** from the five individual subjects who participated in the experiments (JO, JV, TG, RK, MW), as well as for the pooled data.

a = gain (dimensionless) for the initial sound location relative to the head (measured at the time of sound onset).
b = gain for the head displacement following sound onset.
c = gain for the eye position in the head at the start of the second gaze shift.
d = offset (in deg)
N = number of data points
R = Pearson’s linear correlation coefficient between fit and data
Standard deviations in the parameters were obtained by bootstrapping the data 100 times (see Methods).

Ra = partial correlation coefficient for parameter a
Rb = partial correlation coefficient for parameter b
Rc = partial correlation coefficient for parameter c
Rd = partial correlation coefficient for parameter d

h = horizontal response components (azimuth)
v = vertical response components (elevation)
tr = triggered double-step condition
nt = non-triggered double-step condition

Table IIB provides the linear regression results of Eqn. 2 on the **head-movement data** from the same subjects, as well as on the pooled data. Same conventions as in Table IIA.

Table II A: Gaze displacement: $\Delta G_2 = a \bullet T_{H,Ini} + b \bullet \Delta H_1 + c \bullet E_0 + d$

subj	trig	h/v	a	Ra	b	Rb	c	Rc	d	Rd	R	N
jo	tr	h	**1.06 ± 0.02**	0.96	**-1.01 ± 0.02**	-0.96	**-1.18 ± 0.07**	-0.80	-1.13 ± 0.39	-0.21	0.96	178
		v	**0.89 ± 0.03**	0.91	**-1.21 ± 0.06**	-0.83	**-1.00 ± 0.09**	-0.64	2.14 ± 0.72	0.22	0.97	178
	nt	h	**1.19 ± 0.04**	0.90	**-1.13 ± 0.04**	-0.90	**-0.97 ± 0.08**	-0.67	-0.33 ± 0.47	-0.06	0.90	164
		v	**0.79 ± 0.04**	0.87	**-1.01 ± 0.05**	-0.87	**-0.59 ± 0.12**	-0.36	3.70 ± 0.85	0.33	0.95	164
jv	tr	h	**1.09 ± 0.02**	0.98	**-0.94 ± 0.02**	-0.97	**-1.06 ± 0.06**	-0.87	-0.33 ± 0.34	-0.09	0.98	121
		v	**1.25 ± 0.04**	0.94	**-1.45 ± 0.17**	-0.63	**-1.06 ± 0.12**	-0.63	4.05 ± 0.88	0.39	0.95	121
	nt	h	**1.23 ± 0.05**	0.94	**-1.25 ± 0.05**	-0.94	**-1.02 ± 0.08**	-0.80	0.22 ± 0.58	0.04	0.93	92
		v	**1.36 ± 0.09**	0.86	**-1.30 ± 0.14**	-0.69	**-0.95 ± 0.17**	-0.52	6.23 ± 1.38	0.43	0.87	92
tg	tr	h	**0.94 ± 0.03**	0.95	**-0.83 ± 0.03**	-0.90	**-1.06 ± 0.07**	-0.80	0.92 ± 0.50	0.16	0.96	130
		v	**0.99 ± 0.06**	0.80	**-0.61 ± 0.12**	-0.42	**-0.58 ± 0.13**	-0.38	4.65 ± 1.23	0.32	0.83	130
	nt	h	**1.03 ± 0.03**	0.95	**-0.97 ± 0.04**	-0.92	**-0.97 ± 0.07**	-0.78	-0.49 ± 0.67	-0.06	0.94	131
		v	**0.93 ± 0.05**	0.87	**-0.84 ± 0.06**	-0.80	**-0.56 ± 0.10**	-0.44	5.07 ± 1.06	0.39	0.88	131
rk	tr	h	**0.89 ± 0.03**	0.97	**-0.88 ± 0.03**	-0.97	**-0.88 ± 0.08**	-0.84	1.16 ± 0.45	0.33	0.97	59
		v	**0.92 ± 0.04**	0.94	**-0.37 ± 0.42**	-0.12	**-1.03 ± 0.18**	-0.60	4.05 ± 0.94	0.50	0.96	59
	nt	h	**1.08 ± 0.06**	0.93	**-1.20 ± 0.06**	-0.94	**-1.01 ± 0.15**	-0.69	1.20 ± 0.71	0.23	0.95	53
		v	**0.95 ± 0.05**	0.94	**-0.39 ± 0.23**	-0.24	**-0.92 ± 0.09**	-0.81	4.71 ± 0.69	0.70	0.97	53
mw	tr	h	**1.07 ± 0.03**	0.97	**-1.09 ± 0.05**	-0.91	**-0.89 ± 0.13**	-0.56	2.82 ± 0.62	0.41	0.96	105
		v	**0.94 ± 0.06**	0.85	**-1.46 ± 0.09**	-0.85	**-1.02 ± 0.11**	-0.67	11.29 ± 1.21	0.68	0.97	105
	nt	h	**1.28 ± 0.04**	0.95	**-1.28 ± 0.06**	-0.91	**-1.20 ± 0.13**	-0.68	4.23 ± 0.63	0.56	0.93	101
		v	**1.18 ± 0.05**	0.93	**-1.09 ± 0.05**	-0.92	**-1.19 ± 0.10**	-0.76	8.00 ± 1.07	0.60	0.97	101
all	tr	h	**1.02 ± 0.01**	0.96	**-0.96 ± 0.01**	-0.95	**-1.05 ± 0.03**	-0.80	0.38 ± 0.22	0.07	0.96	593
		v	**1.06 ± 0.02**	0.90	**-1.09 ± 0.06**	-0.62	**-0.87 ± 0.05**	-0.60	4.83 ± 0.41	0.44	0.93	593
	nt	h	**1.12 ± 0.02**	0.93	**-1.09 ± 0.02**	-0.92	**-0.99 ± 0.04**	-0.76	0.47 ± 0.29	0.07	0.91	541
		v	**1.02 ± 0.02**	0.89	**-1.00 ± 0.03**	-0.82	**-0.75 ± 0.05**	-0.57	4.52 ± 0.39	0.44	0.92	541

Table II B: Head displacement: $\Delta H_2 = a \bullet T_{H,ini} + b \bullet \Delta H_1 + d$

subj	trig	h/v	a	Ra	b	Rb	d	Rd	R	N
jo	tr	h	**1.10 ± 0.03**	0.94	**-1.11 ± 0.03**	-0.94	-1.33 ± 0.54	-0.18	0.94	178
		v	**0.77 ± 0.03**	0.90	**-1.29 ± 0.05**	-0.89	8.42 ± 0.39	0.85	0.96	178
	nt	h	**1.31 ± 0.04**	0.92	**-1.27 ± 0.04**	-0.91	-1.01 ± 0.55	-0.14	0.90	164
		v	**0.68 ± 0.03**	0.85	**-1.00 ± 0.04**	-0.89	7.88 ± 0.50	0.78	0.93	164
jv	tr	h	**0.92 ± 0.03**	0.95	**-0.87 ± 0.03**	-0.93	-1.85 ± 0.53	-0.31	0.94	121
		v	**0.71 ± 0.04**	0.87	**-1.08 ± 0.11**	-0.66	5.29 ± 0.82	0.51	0.89	121
	nt	h	**1.09 ± 0.06**	0.89	**-1.22 ± 0.06**	-0.91	-0.82 ± 0.67	-0.13	0.88	92
		v	**0.92 ± 0.07**	0.80	**-1.07 ± 0.12**	-0.70	6.89 ± 1.02	0.58	0.84	92
tg	tr	h	**0.80 ± 0.02**	0.95	**-0.70 ± 0.03**	-0.89	-3.40 ± 0.45	-0.56	0.94	130
		v	**0.78 ± 0.05**	0.82	**-0.80 ± 0.10**	-0.57	2.92 ± 0.91	0.27	0.86	130
	nt	h	**0.89 ± 0.03**	0.94	**-0.85 ± 0.04**	-0.90	-4.19 ± 0.60	-0.53	0.93	131
		v	**0.70 ± 0.04**	0.84	**-0.84 ± 0.04**	-0.86	3.11 ± 0.78	0.33	0.89	131
rk	tr	h	**0.74 ± 0.04**	0.91	**-0.75 ± 0.04**	-0.92	4.51 ± 0.62	0.70	0.92	59
		v	**0.59 ± 0.03**	0.92	**0.13 ± 0.31**	0.06	2.08 ± 0.79	0.33	0.93	59
	nt	h	**0.90 ± 0.05**	0.92	**-1.01 ± 0.04**	-0.96	5.04 ± 0.77	0.68	0.94	53
		v	**0.61 ± 0.05**	0.85	**-0.24 ± 0.30**	-0.11	1.58 ± 0.68	0.31	0.93	53
mw	tr	h	**0.73 ± 0.03**	0.90	**-0.69 ± 0.05**	-0.79	1.64 ± 0.53	0.29	0.93	105
		v	**0.56 ± 0.06**	0.71	**-1.44 ± 0.09**	-0.85	0.81 ± 0.78	0.10	0.96	105
	nt	h	**0.91 ± 0.05**	0.88	**-0.88 ± 0.07**	-0.81	3.05 ± 0.64	0.44	0.90	101
		v	**0.84 ± 0.04**	0.89	**-0.95 ± 0.04**	-0.92	-1.65 ± 0.77	-0.21	0.95	101
all	tr	h	**0.87 ± 0.02**	0.89	**-0.85 ± 0.02**	-0.86	-0.51 ± 0.29	-0.07	0.91	593
		v	**0.69 ± 0.02**	0.84	**-1.20 ± 0.05**	-0.71	4.01 ± 0.35	0.42	0.91	593
	nt	h	**0.97 ± 0.02**	0.86	**-0.96 ± 0.03**	-0.84	-0.09 ± 0.33	-0.01	0.87	541
		v	**0.73 ± 0.02**	0.85	**-0.93 ± 0.03**	-0.84	3.99 ± 0.36	0.43	0.90	541

Tables IIIA and IIB provide the normalized linear regression results of Eqns. 3a,b on the head- and gaze-displacement data respectively, from three individual subjects (JO, JV, TG), as well as on the pooled data of all subjects. The subjects were selected on the basis of a sufficient number of data points that satisfied both the eye position offset criterion (>10 deg) and target direction re. eye and head criterion (i.e. the angle between eye and head vectors >15 deg). As a result, subjects RK and MW did not yield enough data points to perform meaningful regressions on both motor responses.

p = normalized gain (dimensionless z-score) for the head motor error at the start of the second gaze shift.
q = normalized gain for gaze motor error at the start of the second gaze shift.
N = number of included data points for which eye eccentricity after the first gaze shift exceeds 10 deg.
R = Pearson's linear correlation coefficient between fit and data
Standard deviations in the parameters were obtained by bootstrapping the data 100 times.

Rp = partial correlation coefficient for parameter p
Rq = partial correlation coefficient for parameter q

h = horizontal response components (azimuth)
v = vertical response components (elevation)
tr = triggered double-step condition
nt = non-triggered double-step condition

Table III A: Head Displacement: $\Delta H'_2 = p \bullet GM' + q \bullet HM'$

subj	trig	h/v	p	Rp	q	Rq	R	N
jo	tr	h	**0.55 ± 0.74**	0.16	**0.42 ± 0.73**	0.12	0.97	24
		v	**0.96 ± 0.41**	0.37	**0.00 ± 0.41**	0.00	0.96	36
	nt	h	**-0.16 ± 0.07**	-0.40	**0.98 ± 0.08**	0.93	0.93	26
		v	**-0.32 ± 0.57**	-0.11	**1.25 ± 0.58**	0.40	0.93	27
jv	tr	h	**0.26 ± 0.13**	0.38	**0.72 ± 0.11**	0.79	0.92	26
		v	**0.38 ± 0.10**	0.57	**0.59 ± 0.10**	0.73	0.89	31
	nt	h	**0.39 ± 0.13**	0.60	**0.65 ± 0.12**	0.80	0.88	19
		v	**0.10 ± 0.12**	0.21	**0.81 ± 0.15**	0.81	0.86	18
tg	tr	h	**0.33 ± 0.30**	0.22	**0.63 ± 0.32**	0.37	0.94	25
		v	**0.17 ± 0.12**	0.23	**0.75 ± 0.15**	0.64	0.89	38
	nt	h	**0.35 ± 0.19**	0.33	**0.63 ± 0.18**	0.55	0.95	29
		v	**0.13 ± 0.10**	0.19	**0.80 ± 0.11**	0.75	0.89	43
all	tr	h	**0.36 ± 0.07**	0.47	**0.62 ± 0.06**	0.73	0.91	84
		v	**0.44 ± 0.07**	0.47	**0.53 ± 0.08**	0.48	0.93	135
	nt	h	**0.16 ± 0.05**	0.30	**0.78 ± 0.06**	0.79	0.89	97
		v	**0.32 ± 0.06**	0.46	**0.65 ± 0.06**	0.70	0.93	123

Note that q>p indicating that the head is predominantly driven by the head motor error.

Table III B: Gaze Displacement: $\Delta G'_2 = p \bullet GM' + q \bullet HM'$

subj	trig	h/v	p	Rp	q	Rq	R	N
jo	tr	h	**1.11 ± 0.48**	0.45	**-0.13 ± 0.46**	-0.06	0.98	24
		v	**1.31 ± 0.42**	0.47	**-0.35 ± 0.43**	-0.14	0.96	36
	nt	h	**0.61 ± 0.09**	0.82	**0.46 ± 0.10**	0.68	0.88	26
		v	**-0.20 ± 0.34**	-0.12	**1.17 ± 0.33**	0.58	0.97	27
jv	tr	h	**0.90 ± 0.09**	0.90	**0.10 ± 0.08**	0.25	0.97	26
		v	**0.77 ± 0.08**	0.87	**0.23 ± 0.08**	0.49	0.94	31
	nt	h	**0.90 ± 0.12**	0.88	**0.09 ± 0.08**	0.25	0.94	19
		v	**0.21 ± 0.22**	0.24	**0.68 ± 0.24**	0.58	0.80	18
tg	tr	h	**1.12 ± 0.24**	0.69	**-0.18 ± 0.27**	-0.14	0.94	25
		v	**0.89 ± 0.15**	0.70	**0.01 ± 0.16**	0.02	0.90	38
	nt	h	**0.88 ± 0.15**	0.74	**0.09 ± 0.14**	0.12	0.96	29
		v	**0.63 ± 0.13**	0.60	**0.32 ± 0.11**	0.42	0.91	43
all	tr	h	**1.00 ± 0.05**	0.90	**-0.05 ± 0.04**	-0.12	0.96	84
		v	**0.84 ± 0.05**	0.81	**0.13 ± 0.06**	0.20	0.95	135
	nt	h	**0.82 ± 0.04**	0.89	**0.17 ± 0.04**	0.37	0.93	97
		v	**0.67 ± 0.05**	0.77	**0.31 ± 0.05**	0.52	0.95	123

Note that p>q, indicating that gaze (= the eye in space) is predominantly driven by the gaze motor error (= the oculocentric error of the sound).