1 Sensitivity to the communicative partner's attentional state: a developmental
2 study on mother-infant dyads in wild chimpanzees (*Pan troglodytes*
3 *schweinfurthii*)

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13 **Supplementary Material**

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15 *We replicated all our statistical analysis tests on a restricted sample of only single gesture and first*
16 *gesture in the sequence in Table S1, S2 and this subset sample is detailed in Table S3. All the other*
17 *tables and figures are related to the entire sample.*

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19 **TABLE S1. Parameter estimates for the tested model – GLMM with the number of silent-visual**
20 **gestures (n=76) mismatching maternal visual attention as dependent variable and age (in months)**
21 **as fixed effect.** There was a clear influence of age on unimodal matching (null model comparison:
22 X^2=12.491, df=1, p<0.001).

Parameter	Unimodal matching ~ Age					
	Estimate	**SE**	**Lower CI**	**Upper CI**	**Z-value**	**P-value**
(Intercept)	1.072	0.383	0.321	1.823	[1]	[1]
Age[2]	-0.019	0.006	-0.031	-0.009	-3.548	p<0.001

23 [1] Not indicated because of limited interpretive value

24 [2] Age: refers to the individual age of the number of unimodal matching (see methods)

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27 **TABLE S2: Summary of p-values of the statistical tests on the subset of the sample that contains**
28 **only gestures produced as either *single* gestures or as first in sequence gestures.**
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Tested modalities variation across states of maternal visual attention	Spearman rank order correlation	Fisher's exact tests'	
	Correlation with age (N=11)	*Age categories included in the statistical test*	**p-value without considering age effect**
1. Unimodal adjustment	r = +/-0.92, p <0.001	*Infant – Juvenile*	0.22
		Juvenile – Adolescent	<0.001
		Infant – Adolescent	<0.001
2. Cross-modal adjustment	Attention : r = +/-0.56, p = 0.173 Inattention: r = +/-0.78. p = 0.009	*Infant*	0.9
		Juvenile	0.13
		Adolescent	<0.001
3. *Audible-or-contact* gestures preference when the mother shows visual inattention	r = +/-0.052, p =0.819	*Infant – Juvenile*	1
		Juvenile – Adolescent	<0.01
		Infant – Adolescent	0.01

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Condition and gesture modality / Age category and signaller	Inattentive mother				Attentive mother				Total # gestures
	A	C	S	Total	A	C	S	Total	
Infant	8	16	7	31	11	4	1	16	47
Karibu	4	12	5	21	6	1	1	8	29
Klauce	4	3	1	8	2	1	0	3	11
Kox	0	1	1	2	3	2	0	5	7
Juvenile	13	29	22	64	10	10	25	45	109
Karo	3	3	4	10	2	1	4	7	17
Kasigwa	0	3	5	8	0	1	5	6	14
Night	1	12	11	24	4	5	13	22	46
Zak	9	11	2	22	4	3	3	10	32
Adolescent	12	2	0	14	13	4	21	38	52
Kumi	3	0	0	3	4	0	3	7	10
Kwezi	2	0	0	2	2	2	6	10	12
Nora	0	2	0	2	6	1	7	14	16
Rose	7	0	0	7	1	1	5	7	14
Total # gestures	33	47	29	109	34	18	47	99	208

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TABLE S4: Repertoire size, number and name of gestures produced by young chimpanzees by age category. *Grey part* indicates sum of produced gestures by age category and gesture modality.

		Infant	Juvenile	Adolescent	Total # gestures
Audible gestures		**30**	**30**	**34**	**94**
	Bigloudscratch	2	21	22	45
	Dangle	16	1		17
	Dangle:withshake	3	1		4
	Drum			1	1
	Hitobject/ground			2	2
	Leafclipping		1	1	2
	Locomote:gallop		1		1
	Objectmove	1	4		5
	Objectshake	1			1
	Stomp2-feetobject/ground	4			4
	Stompobject/ground	2			2
	Stomping2-feetobject/ground	1	1	8	10
Contact gestures		**37**	**42**	**6**	**85**
	Bite		2	1	3
	Grab	6			6
	Grab-pull	2			2
	Hitother	7			7
	Hitwithobject	1			1
	Hittingother	2	1		3
	Push	4	1		5
	Push(directed)	4	16		2
	Stomp2-feetother	3			3
	Stompother	2			2
	Stomping2-feetother	1			1
	Stroke:mouth		7	2	9
	Tapother		1		1
	Touch	2	13	1	16
	Touch:longother	3	1	2	6

Silent-visual gestures		10	54	21	85
	Beckon		1		1
	Headstand	1	1		2
	Look		1		1
	Objectinmouth	1			1
	Present(directed)	1	11	14	26
	Present:genitals		1		1
	Raisearm	1	10		11
	Reach	2	15	7	24
	Reach-palm		6		6
	Rollover		2		2
	Shakearm		1		1
	Spin:sideroulade		1		1
	Spin:somersault	2	1		3
	Swing	2	3		5
Total # gestures		77	126	61	264
Repertoire size		27	28	11	66

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45 **TABLE S5: Number of sequences and nature of them across visual condition by age category.** A=
46 audible gestures; C= contact gestures and S= silent-visual gestures; Modal dimension refers to the
47 number of incorporated modalities within the gestures sequence: only one (unimodal), two of them
48 (bimodal), all of them (trimodal).

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| Age category	Nature of the sequence	Modal dimension	Total # sequences	Total # sequences by age category
Infant (n=3)	AA	Unimodal	1	20
	AAA	Unimodal	1	
	AACA	Bimodal	1	
	AC	Bimodal	1	
	ACC	Bimodal	2	
	AS	Bimodal	1	
	AS-A	Bimodal	2	
	CAA	Bimodal	1	
	CAC	Bimodal	1	
	CC	Unimodal	5	
	CCC	Unimodal	2	
	SA	Bimodal	1	
	SC	Bimodal	1	
Juvenile (n=16)	AA	Unimodal	5	16
	AAA	Unimodal	1	
	AC	Bimodal	1	
	AS	Bimodal	3	
	CC	Unimodal	1	
	CS	Bimodal	3	
	SC	Bimodal	1	
	SS	Unimodal	1	
Adolescent (n=7)	AA	Unimodal	3	7
	AAAA	Unimodal	1	
	SA	Bimodal	3	
Total # gestures				43

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Fig. S1. Distribution of silent-visual gestures according to the maternal visual attention for each individual (N=11, ***P<0.001**).** Large black circles represent mean proportion per subject. Median (horizontal lines), quartiles (boxes), percentiles (2.5% and 97.5%. vertical lines) and outliers (small black circles) are indicated. Differential use patterns are compared from one age category to another.
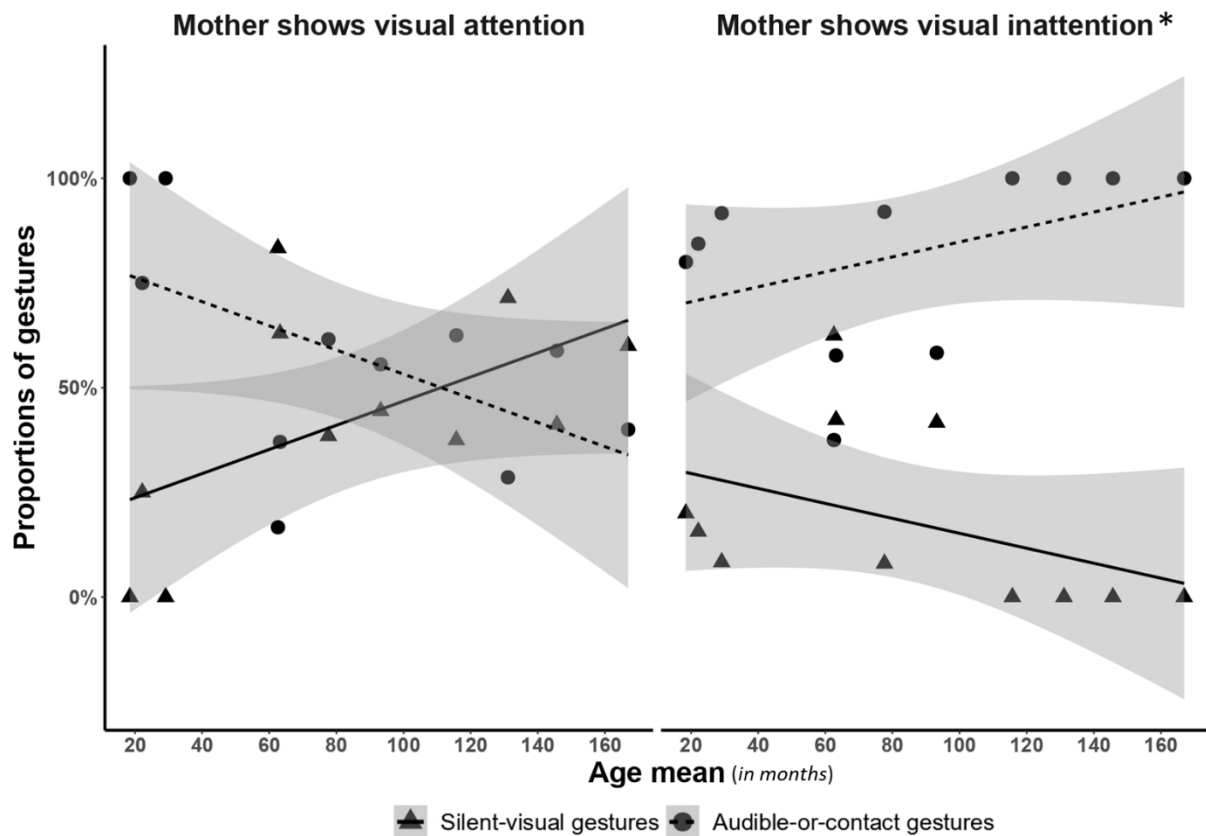
Fig. S2. Effect of age on the proportion use of silent-visual and audible-or-contact gestures according to the maternal visual attention for each individual (N=11). The effect of weighted mean age on the use of gestures type was significant when mother shows visual inattention (Spearman rank order correlation coefficient, S = 68.517, p-value = 0.039*, rho= +/-0.69) while it is not the case when she shows visual attention (Spearman rank order correlation coefficient, S = 328.25, p-value = 0.248, rho= +/-0.492).

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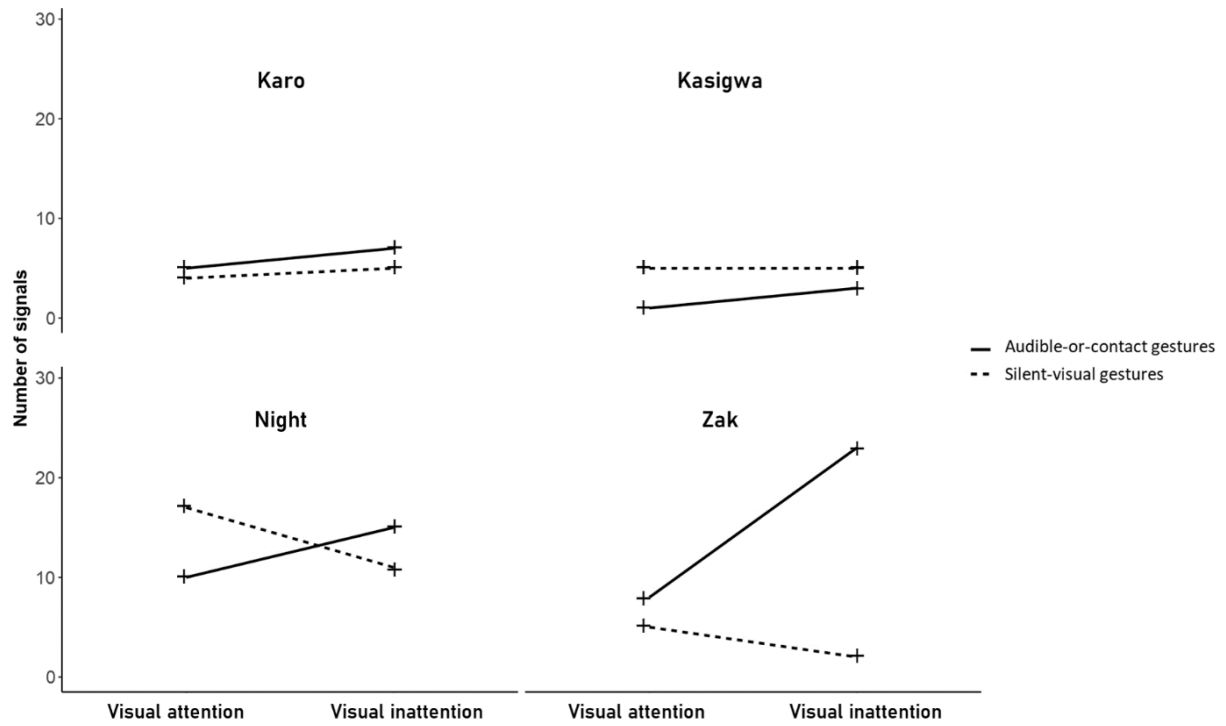
Fig. S3. Number of silent-visual gestures and audible-or-contact gestures for each individual according to the maternal visual attention for each juvenile chimpanzee (N=4). The lines illustrate individual shifts in behaviour across the two discrete levels of the attention condition.

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