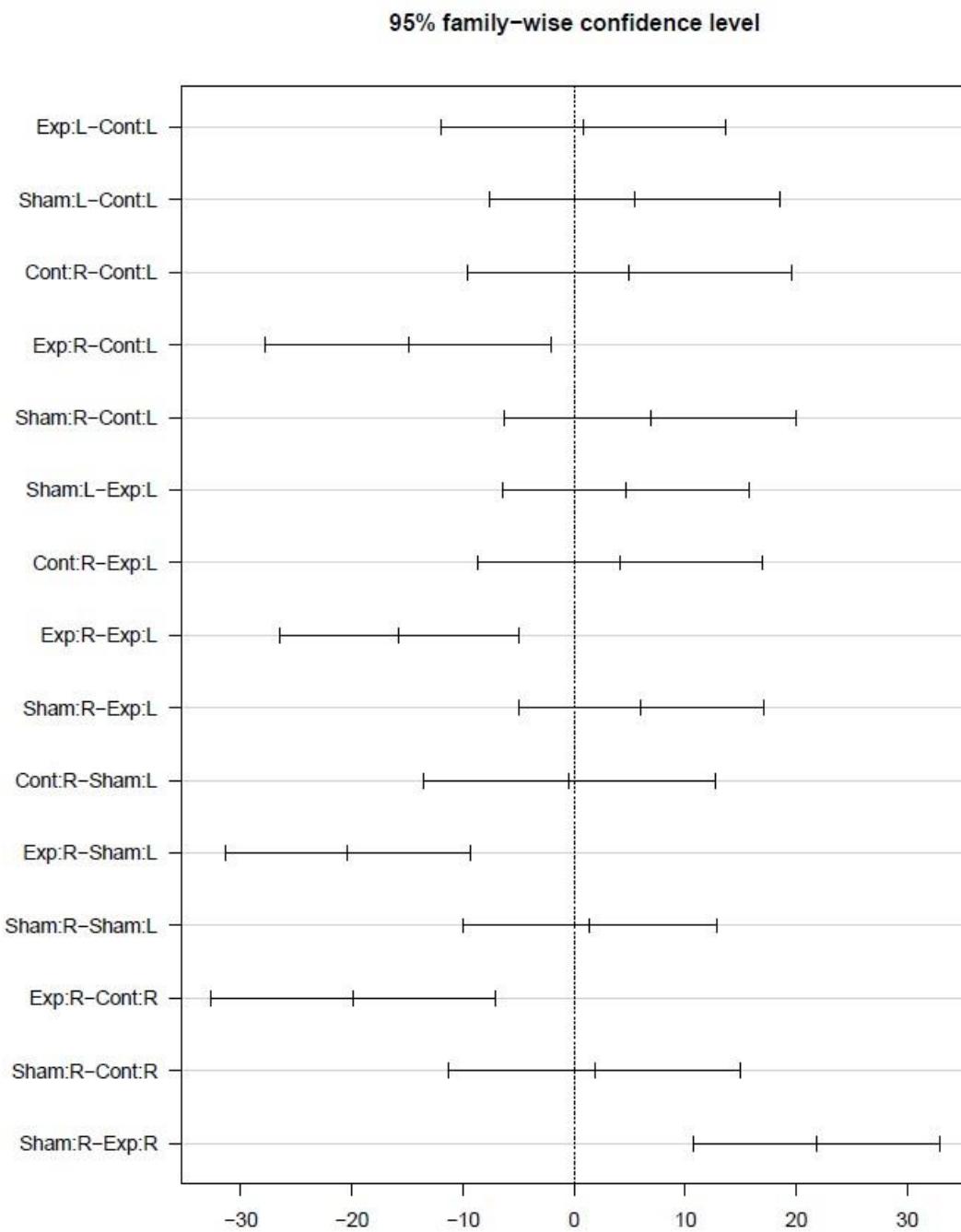
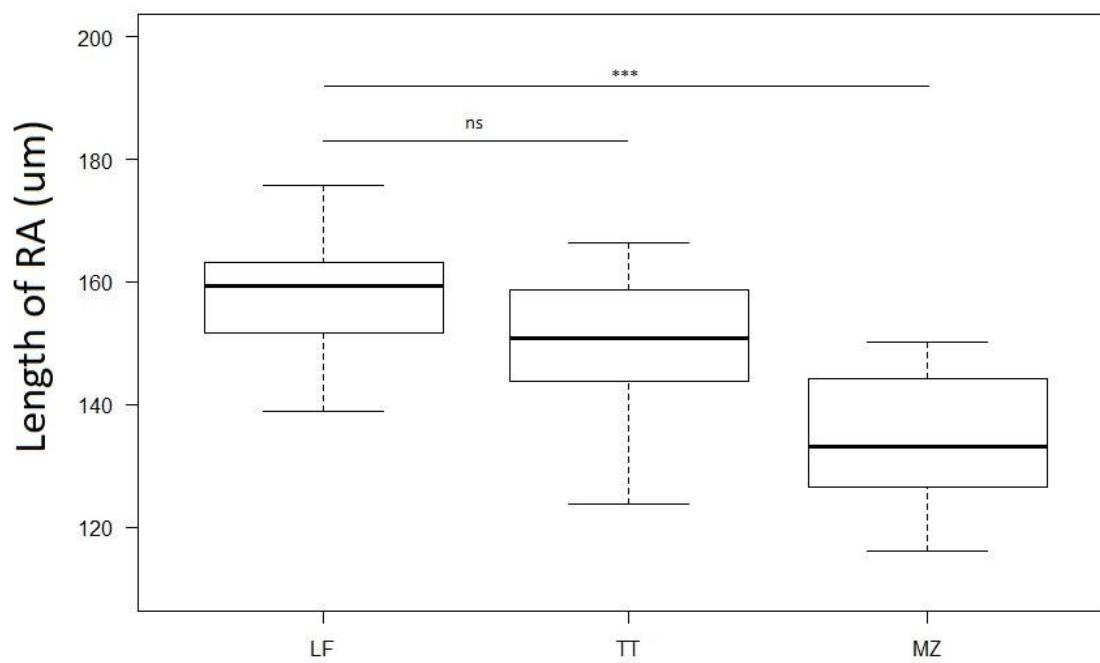


Supplemental Figure 1. Lateral view of a 6dpf (stage 17) LF larva showing the location of the surgical incisions. White dotted lines showing the interopercle-mandible ligament (IOPL) and part of the Meckel's cartilage (RA: retroarticular process). Red line represents the experimental incision made on the anterior half of the interopercle-mandible ligament. Green line represents the sham incision made on tissue anterior to the RA.



Supplemental Figure 2. 95% family-wise confidence interval (Tukey's HSD test) showing differences in mean RA length for the IOPL surgery experiment. Exp: IOPL surgery group; Sham: sham surgery group; Cont: control group (anesthetized, no surgery); L: left side (intact side); R: right side (surgery side, if any). X axis unit: μm .



Supplemental Figure 3. Length of the RA in 10 dpf larvae of LF, TT and MZ. ***: statistical significance ($p<0.05$), Tukey's HSD. For more statistical details, see supplementary Table 3.

	Degree of freedom	Sum of squares	Mean square	F value	P value	eta-squared	partial eta-squared
Species	2	321041	160520	166.773	2.00E-16	0.41733359	0.48228036
Age	4	15462	3865	4.016	0.0034	0.02194107	0.04668893
Species*Age interaction	8	52487	6561	6.816	2.74E-08	0.07448251	0.14255491
Residuals	328	315702	963				

Supplemental Table 1. Summary table of ANOVA of gaping frequency among LF, MZ and TT.

	Degree of freedom	Sum of squares	Mean square	F value	P value	eta-squared	partial eta-squared
Treatment	2	4499	2249.6	12.612	1.07E-05	0.15345143	0.17369245
Side	1	746	746.1	4.183	0.043015	0.0254479	0.03368518
Treatment*Side interaction	2	2671	1335.3	7.486	8.63E-04	0.09108581	0.11093135
Residuals	120	21404	178.4				

Supplemental Table 2. Summary of ANOVA on RA length in the IOPL surgery experiment.

	Degree of freedom	Sum of squares	Mean square	F value	P value	eta-squared	partial eta-squared
Species	2	5828	2914.1	25.65	1.48E-08	0.4871494	0.4871494
Residuals	54	6136	113.6				

Supplemental Table 3. Summary of ANOVA on RA length in 10 dpf larvae of LF, MZ and TT.

Supplemental Movie 1. stage 17, 6dpf cichlid larvae showing the gaping behavior.