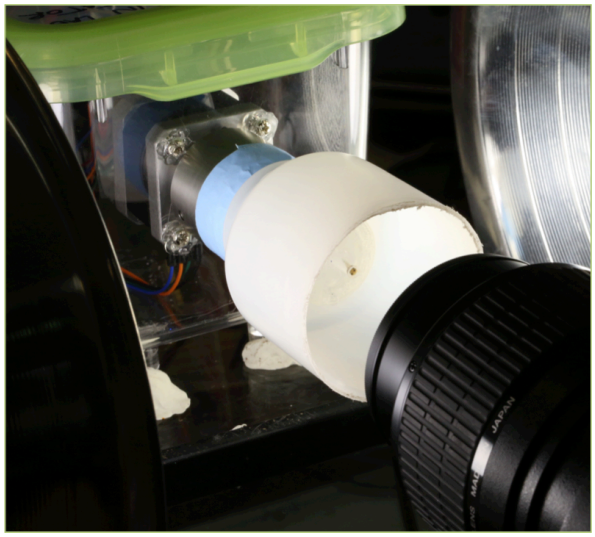


Fig. S1. Measuring the vestibulo-ocular reflex (VOR) with a custom-made tadpole rotator. The hatchling was placed in a tube, within a light diffusor, attached to the rotator shaft and facing a MPE-65 mm macro lens and camera.

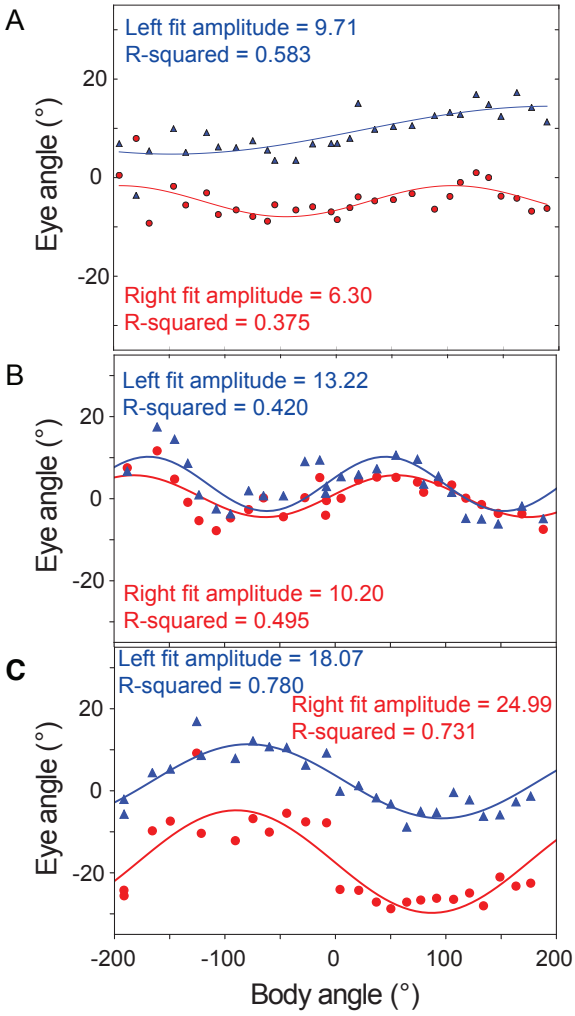
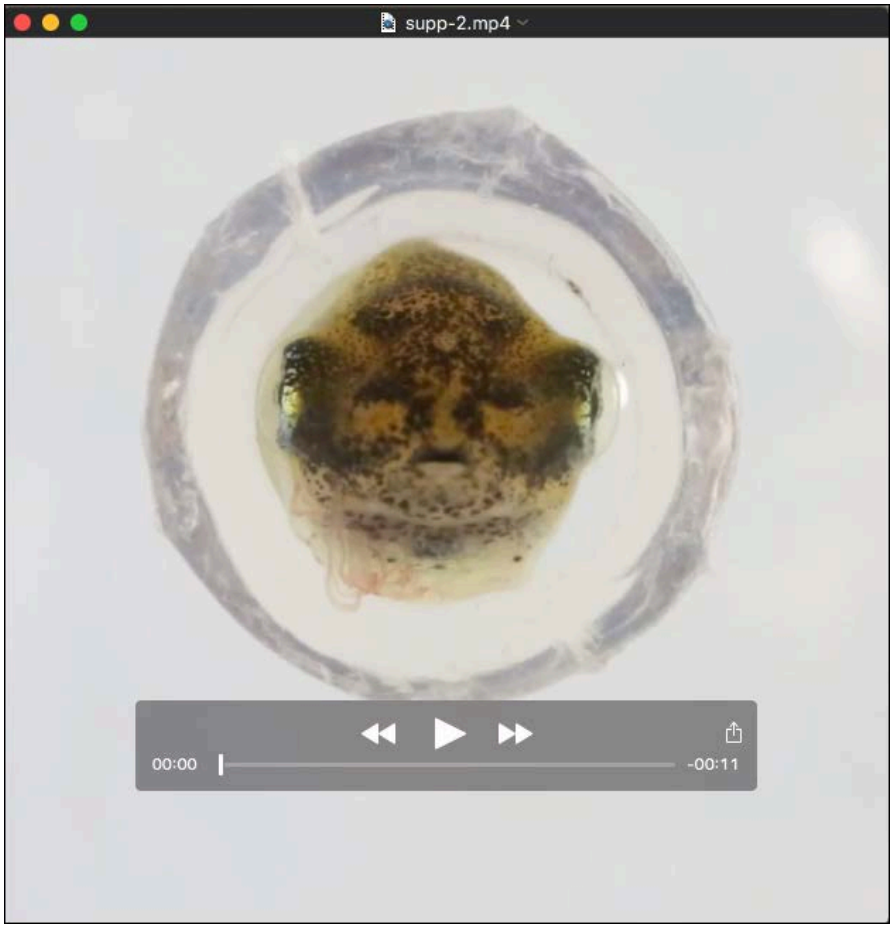


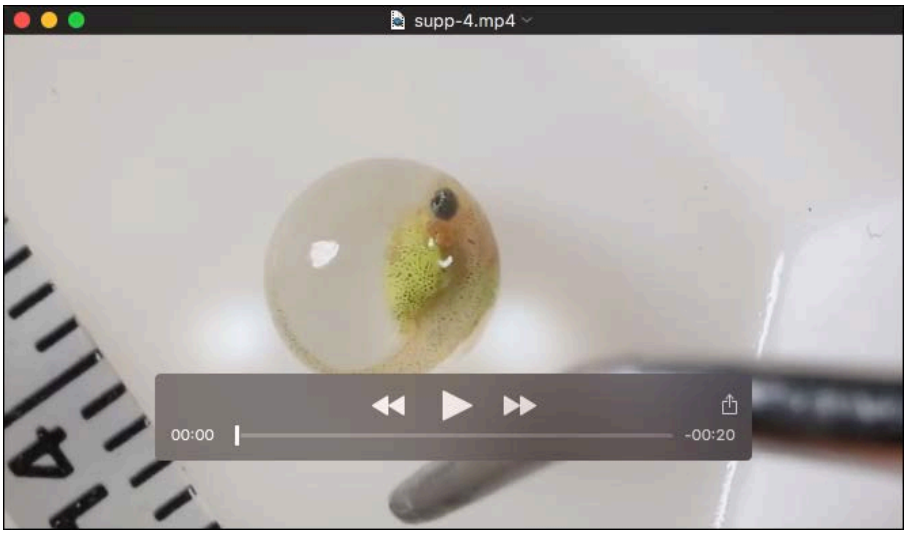
Fig. S2. *Agalychnis callidryas* hatchlings' eye movements unrelated to the vestibulo-ocular reflex (VOR). Example measurement series of eye and body angles demonstrate non-VOR eye movements with a measurable amplitude exceeding that of small but clear VOR. We considered VOR amplitude to be zero when a hatchlings' curve fit showed (A) different wavelengths or offset waveforms causing non-parallel lines for each eye, (B) wavelengths too short or too long for VOR curves, or (C) an upside down sine curve, relative to VOR curves, indicating eye rotation that magnified rather than reduced the effect of body rotation.

Fig. S3. ***Agalychnis callidryas*** **egg clutch set up for vibration playback**. Clutches were mounted vertically, then a set of blunt metal tines connected to a shaker were inserted among the eggs to deliver the vibrational stimulus.



Movie 1. Measuring the vestibulo-ocular reflex (VOR). The clip shows a frontal view of an *Agalychnis callidryas* hatchling within the tadpole rotator, as it is rotated through a series of 15° rotational increments. This individual shows eye rotation opposite to body rotation, demonstrating a VOR. The video was recorded using an MPE-65 mm macro lens.

Movie 2. Vibration playback to a 4-d old *Agalychnis callidryas* egg clutch. The vibrational stimulus was presented through an array of blunt metal times inserted among eggs. The clip shows a series of ten 0.5 s vibration pulses, separated by 1.5 s silent intervals, and then the beginning of a longer silent gap during which two embryos hatch from the left side of the clutch.



Movie 3. Manual egg-jiggling stimulus. Individual *Agalychnis callidryas* eggs were jiggled with a blunt metal probe, alternating 15 s of stimulation and 15 s of rest for 5 min or until the egg hatched. The clip shows 5 s of stimulation, after which the embryo begins shaking motions – indicating the start of the hatching process – and the experimenter ceases stimulation. Then the embryo hatches.