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Introducing delays between two lateral line stimuli alters choices by African clawed toads

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African Clawed Toads Response to the Choice of Lateral Line Stimuli

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Abstract

African clawed toads (*Xenopus laevis*) use their lateral line system to detect prey. The African clawed frog can determine the distance of the origin of a surface wave. This allows the frog to differentiate which stimulus is more important for prey capture. The African clawed toads were put into a glass basin which was filled with water. Above the water basin are four rods that are controlled through a computer program which allow the rods to touch the surface of the water. After recording, each frame was examined in the videos to determine the turn angle and stimuli distance of the frog. When testing responses to two stimuli, the frog responds more when there are two stimuli than one stimulus. During the experiment, a prediction was that the frog will respond to the nearest stimuli than the farthest stimuli when two stimuli are present. For one stimulus, the frog responded better at the back than the front. Like the single stimulus, the double stimuli had more responses towards the back of the frog than the front of the frog. When there are two stimuli, the frog's response frequency is greater than the response frequency for one stimuli. Multiple stimuli will allow the frog to obtain more stimuli choices which will increase the response frequency.