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How animals drink and swim in fluids

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Fluids are essential for most living organisms to maintain a healthy body and also serve as a medium in which they locomote. The fluid bulk or interfaces actively interact with biological structures, which produces highly nonlinear, interesting, and complicated dynamical problems. We studied the lapping of cats and the swimming of Paramecia in various fluidic environments. The problem of the cat drinking can be simplified as the competition between inertia and gravity whereas the problem of Paramecium swimming in viscous fluids results from the competition between viscous drag and thrust. The underlying mechanisms are discussed and understood through laboratory experiments utilizing high-speed photography.