Ancient African savanna was like a ‘chess board’, broadening the minds of early humans as they hunted for prey

Northwestern University researchers recently discovered that complex landscapes—dotted with trees, bushes, boulders and knolls—might have helped land-dwelling animals evolve higher intelligence than their aquatic ancestors.

Compared to the vast emptiness of open water, land is rife with obstacles and occlusions. By providing prey with spaces to hide and predators with cover for sneak attacks, the habitats possible on land may have helped give rise to planning strategies—rather than those based on habit—for many of those animals.

But the researchers found that planning did not give our ancestors the upper hand in all landscapes. The researchers’ simulations show there is a Goldilocks level of barriers—not too few and not too many—to a predator’s perception, in which the advantage of planning really shines. In simple landscapes like open ground or packed landscapes like dense jungle, there was no advantage.

“All animals—on land or in water—had the same amount of time to evolve, so why do land animals have most of the smarts?” asked Northwestern’s Malcolm MacIver, who led the study.

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“With patchy landscapes, there is an interplay of transparent and opaque regions of space and long-range vision, which means that your movement can hide or reveal your presence to an adversary,” MacIver said. “Terra firma becomes a chess board. With every movement, you have a chance to unfurl a strategy.

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