

Accepted Manuscript

Title: ESCAPING BEHAVIOR IN GOITERED GAZELLE.

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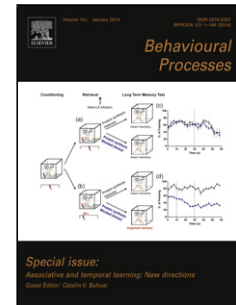
PII: S0376-6357(17)30457-6
DOI: <https://doi.org/10.1016/j.beproc.2017.12.021>
Reference: BEPROC 3570

To appear in: *Behavioural Processes*

Received date: 2-10-2017
Revised date: 3-12-2017
Accepted date: 20-12-2017

Please cite this article as: Blank, D.A., ESCAPING BEHAVIOR IN GOITERED GAZELLE. *Behavioural Processes* <https://doi.org/10.1016/j.beproc.2017.12.021>

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ESCAPING BEHAVIOR IN GOITERED GAZELLE.

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Highlights

- Goitered gazelles did pre-flight risk assessments and stopped during run for additional checking of threat when was safe
- Gazelles galloped immediately without pre-flight assessments and did not stop when risk was high
- Gazelles escaped predominantly in a perpendicular direction to predator route
- Gazelles ran upward to elevated points, toward mountains and along uphill slopes
- Goitered gazelles combined the strategies of open-habitat antelopes and mountain-dwelling ungulates

Abstract. Prey species modify their behaviors in response to predation risks to minimize their vulnerability and enhance their survival. When a predation risk arises, gregarious, open-habitat-dwelling ungulates usually increase their vigilance rate and enlarge their herd sizes, which are the two antipredator responses that are most often investigated. However, other reactive responses, as well as prey risk assessments and escape strategies depending on a predator's approach behavior, are less explored. In this paper I want to discuss the responses of goitered gazelles and their escape strategies when they encountered humans or vehicles in their natural habitat in Kazakhstan. I found that in most cases adult goitered gazelles, being more experienced and habituated to dangerous situations, usually made a preflight risk assessment and stopped in mid escape for an additional scan of their surroundings. The younger, more reactive individuals behaved this way less often and instead ran immediately instead regardless of threat level. In cases with a more obvious, direct danger, all goitered gazelles, irrespective of age, galloped immediately without stopping, and ran mainly in a sideways direction almost perpendicular to or even across the path of the approaching predator. Goitered gazelles also preferred to run upward to elevated points or toward mountain foothills, where they could get higher than the perceived threat. Furthermore, this study has shown that the goitered gazelles, preferring rough open terrain of lowlands and foothills, combined escape features found in typical antipredator strategies of both open-habitat antelopes (first

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