

The Plasticity of Ageing for Competitive ability in 'Burying beetles' *Nicrophorus vespilloides*

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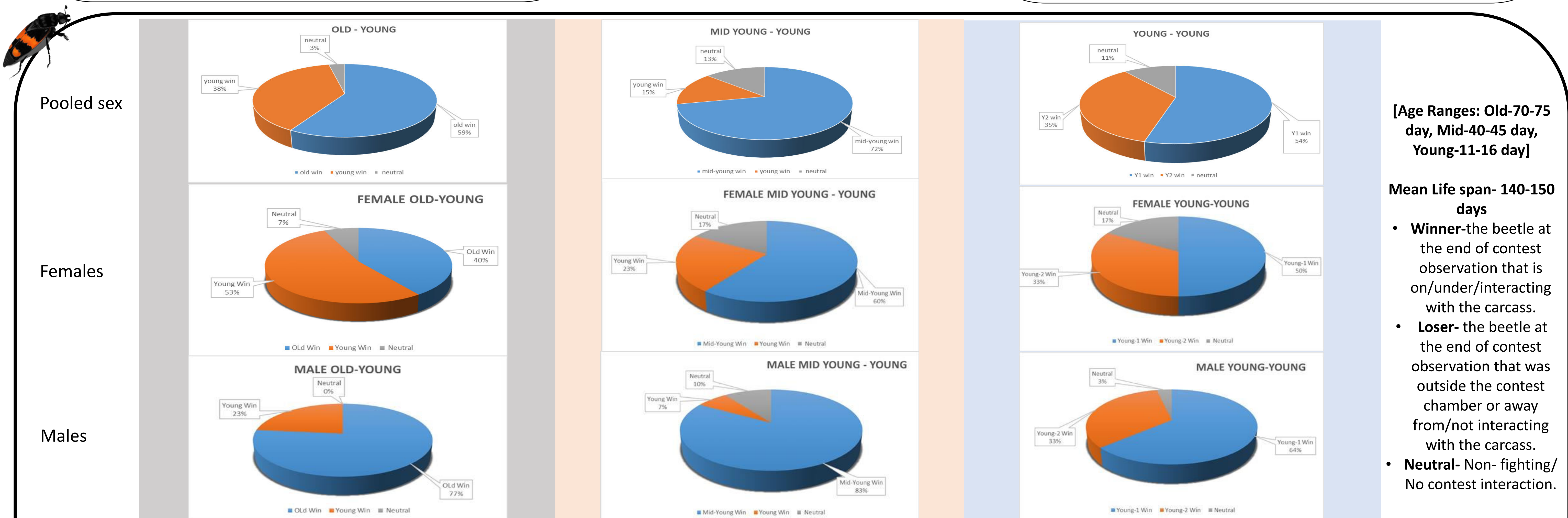
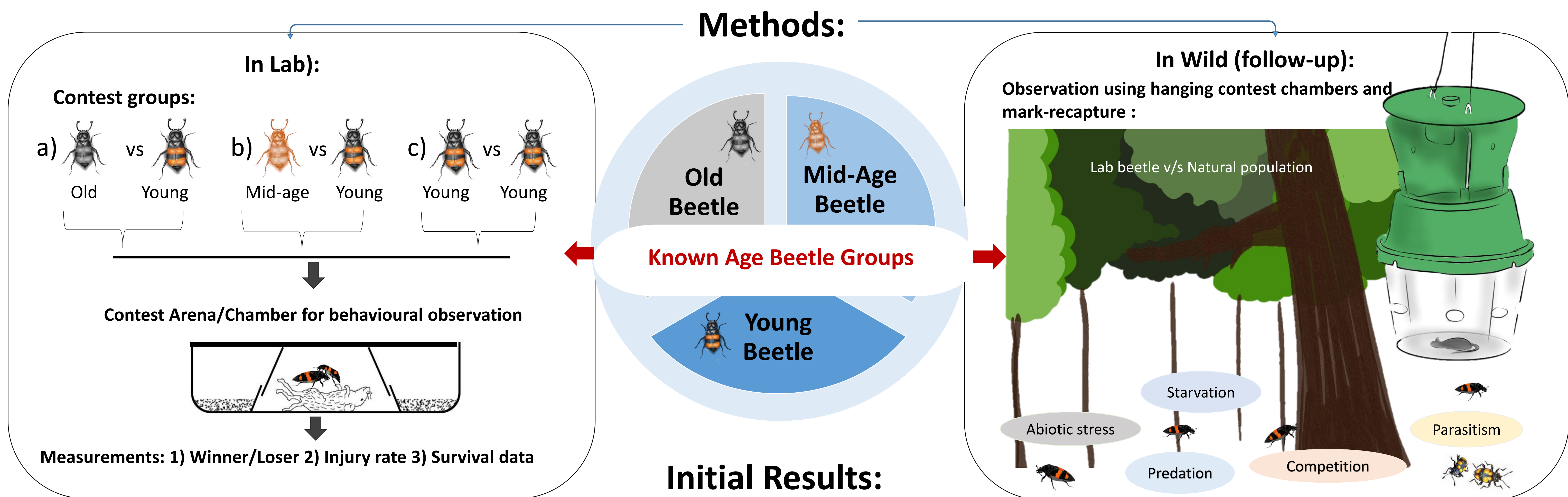
Background:

- Studies suggest the environment plays a critical role in an individual's lifespan and ageing through diverse processes. Also, the environment with **higher levels of stress** → **faster the ageing process**.
- In life-history traits, investment in competitive behaviour is important part of reproductive investment (limited by availability of resources) which can lead to trade-offs in investment, e.g. between reproduction and survival, or between different environment.
- Life-history theory: as individuals age ↑, their residual reproductive value ↓ and they should increase investment in contest behaviour. Also, the evolutionary theory of aging predicts that contest behaviour should ↓ as the age ↑. Among these conflicting predictions, therefore, this is important and interesting to observe **the effects age effects on contest**.

Objective:

- We are approaching to study variation in ageing rate, to understand how age effects on contest behaviour over an individual's lifetime, using species *Nicrophorus vespilloides*, an appropriate system to study the environmental effects on ageing, as we can work with individuals both in the laboratory and in the wild.

If Ageing is environmentally Plastic, we are expecting to get the variation in contest pattern between environments such as captive (or laboratory) versus in wild.



Key Initial Findings: The Old and Mid-aged beetles win over Younger. Also, Mid-aged beetles out-compete Young beetles better than Old.
Next Steps: It will be interesting to see this on Mid-age group v/s Old group. Also, to test this in the Wild/Field with natural population.