

Equine Sarcoids: Choose your friends wisely

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Background

- Sarcoids are tumours of dermal fibroblasts which affect all equids
- Financial and **welfare** consequences
- Sarcoids are caused by **Bovine Papillomavirus types 1 & 2**
- Other factors contribute to occurrence
- Equids have previously been considered “dead end” hosts of BPV as infectious virions have not been detected in sarcoids.
- But there is anecdotal evidence of equid-eqid spread



Methods

- Data from the management and clinical database of The Donkey Sanctuary UK (1974 – 2016)
- Retrospective cohort study
- Cases identified by **text mining** with purpose made dictionary
- Case definition: Diagnosis of new sarcoid made on clinical examination and/or histopathology.
- 1,414 new sarcoid cases and 12,413 unaffected controls
- Movement/‘friendship’ records were used to map animal contact
- Risk factor analysis: **Multivariable logistic regression**
- **Adjunct observational behaviour study**
- Nearest neighbour data collected to validate Donkey Sanctuary’s recording of which animals are “friends”

Results

Risk Factor	Odds ratio	P value	95% CI
Species: Donkey/mule (ref: Horse/Pony)	2.28	0.019	1.14 - 4.53
Sex: Male (ref: Female)	1.67	<0.001	1.46 - 1.90
Animal From Ireland (ref: From GB)	2.28	<0.001	1.99 - 2.62
Age at arrival (ref: 0 – 5.6 y)			
5.7 - 12.5 y	0.47	<0.001	0.41 - 0.54
12.6 - 20.8 y	0.25	<0.001	0.21 - 0.29
20.9 - 57.3 y	0.17	<0.001	0.13 - 0.21
Time spent at Donkey Sanctuary (y)	1.02	<0.001	1.01 - 1.03
In group with new diagnosed sarcoid case	1.67	<0.001	1.27 - 1.78
In group with new possible sarcoid case	1.49	<0.001	1.24 - 1.78
Friends with animal diagnosed with sarcoid at sanctuary	1.72	<0.001	1.46 - 2.03
Only had friends without sarcoids	0.78	0.001	0.68 – 0.91

Conclusions

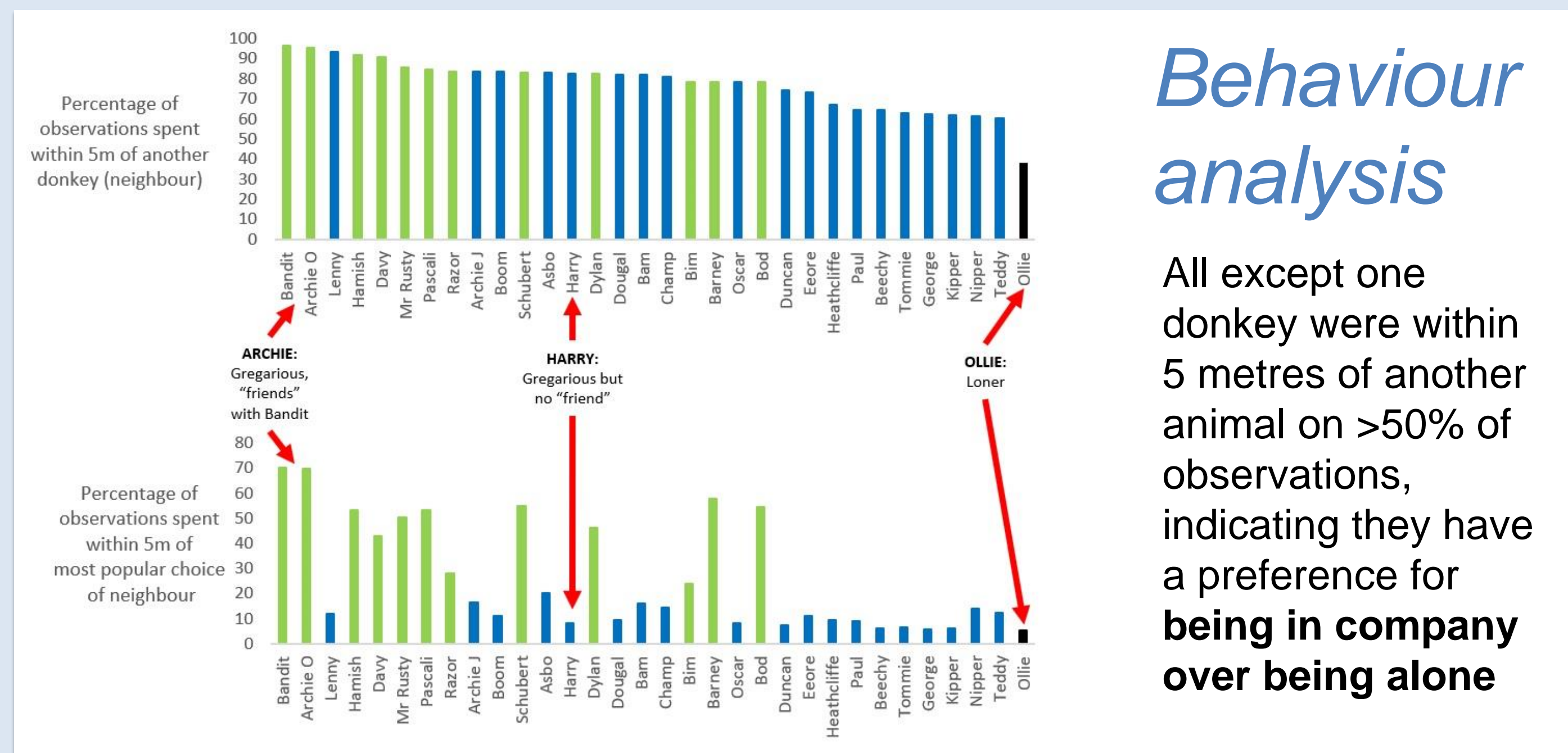
Behaviour: Donkeys are **social** where resources are plentiful and may form **pair bonds**. The Donkey Sanctuary’s recording of friendships was validated.

Sarcoid risk factors:

- **New evidence of equid-eqid disease transmission**
 - **Sharing accommodation** with a new case **AND close contact** with affected individuals are risk factors for sarcoid development
- **Animals born in Ireland** were at greater risk than animals born in Great Britain (possible genetic or environmental risk factor)

This study has also confirmed previous sarcoid hypotheses:

- **Donkeys/mules** more susceptible than horses/ponies
- **Younger** animals at greater risk than older ones
- **Males** at higher risk than females



Major risk factors

Sharing a **barn/field** with a newly diagnosed or suspected case is a risk factor



Being “friends” i.e. in close contact is an additional risk factor

