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**Innovative behaviours and
personality traits in captive kea
(*Nestor notabilis*) as a model for the
emergence of kea strike in wild
populations**

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of the requirements for the degree of
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Abstract

The personality traits of seven captive kea (*Nestor notabilis*) were investigated in terms of neophobia, problem solving ability, and innovation. The first objective was to compare the personalities of the birds and assess these in relation to demographic factors including age and sex, as well as looking at the effect of isolated versus group housing. Kea are known to require high standards of enrichment and sociality, so this information can be used to determine the effect their captive housing may have on important wild traits. The second objective was to observe whether particular personalities or demographic factors made a kea more innovative, or in this case more likely to attack a sheep. Kea strike is a phenomenon whereby kea attack sheep, which often die as a result. This conflict has led to approximately 100,000 kea being shot by farmers in retaliation, and as a consequence there has been a dramatic decline in the wild kea population.

In order to assess each individual's relative neophobia or neophilia, novel objects were presented to the kea and their reactions observed. Problem solving ability was measured by using a Multi-Access Box, which required the birds to use one of four different access routes to retrieve a food reward. To observe levels of innovation and the likelihood of kea strike emerging, a mechanical sheep analogue was used. This was made to resemble a sheep, and contained a food reward for the kea to find. The juveniles in this study were much more neophilic and adept at problem solving than the adults, and this is thought to be because juveniles are still learning about their environment and these traits are therefore highly beneficial to them. Only one juvenile successfully completed the sheep analogue task, and she was the most neophilic and adept at problem solving. This suggests that highly neophilic and explorative kea are more likely to develop innovative behaviours such as kea strike. Understanding the drivers behind kea strike is important if tools are to be developed to minimise the conflict in the future.

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Table of Contents

| | |
|--|------------|
| Abstract | ii |
| Acknowledgements | iii |
| List of figures and tables | vii |
| Chapter 1: Introduction and literature review | 1 |
| 1.1 Introduction | 2 |
| 1.2 Avian intelligence | 5 |
| 1.2.1 Brain size | 6 |
| 1.2.2 Specialisations of avian cognition | 8 |
| 1.2.3 Exploration-avoidance and neophobia | 11 |
| 1.2.4 Problem solving | 14 |
| 1.3 Effect of past housing on behaviour | 15 |
| 1.3.1 Stereotypic behaviour | 16 |
| 1.3.2 Loss of wild behaviours | 18 |
| 1.4 Human-wildlife conflict | 19 |
| 1.5 Aims of research | 21 |
| Chapter 2: Exploration–avoidance and neophobia | 23 |
| 2.1 Introduction | 24 |
| 2.2 Methodology | 26 |
| 2.3 Results | 28 |
| 2.4 Discussion | 33 |
| Chapter 3: Problem solving via a multi-access box | 39 |
| 3.1 Introduction | 40 |
| 3.2 Methodology | 42 |
| 3.3 Results | 44 |
| 3.4 Discussion | 50 |
| Chapter 4: Sheep Analogue | 54 |
| 4.1 Introduction | 55 |
| 4.2 Methodology | 57 |

| | |
|--|-----------|
| 4.3 Results | 59 |
| 4.4 Discussion | 65 |
| Chapter 5: Discussion of findings and implications for kea conservation | 70 |
| References | 79 |
| Appendix 1: Wellington Zoo kea information | 88 |

List of Figures and Tables

| | |
|--|----|
| Table 2.1 Brief demographic and housing information for each bird | 27 |
| Table 2.2 Frequency of trials during which an approach (considered a success) was made for each bird. Birds are shown in order of descending approach frequency, and this is used as an indicator of increasing neophobia | 28 |
| Figure 2.1 The mean time in seconds for each bird to approach the novel objects over all trials. Error bars represent one standard error. The birds have been ordered by increasing latency to approach using this factor as an indicator of increasing neophobia (baseline arrow) | 29 |
| Figure 2.2 The mean time in seconds each bird spent interacting with the novel objects over a ten minute period for all trials. Error bars represent one standard error. The birds have been ordered by decreasing interaction length using this factor as an indicator of increasing neophobia (baseline arrow)..... | 30 |
| Figure 2.3 The rate of different interaction types (touch, grab, chew) over all trials for each bird. Rate is defined as the total sum of the frequency of interaction over the number of trials | 31 |
| Figure 2.4 The mean time in seconds each bird spent chewing the novel objects across trials | 32 |
| Figure 2.5 Relative ranking of seven captive kea on the neophobia/neophilia spectrum using the combined results of the novel object trials | 33 |
| Figure 3.1. The multi-access box designed by Auersperg et al (2011). A similar apparatus (built by Clio Reid, unpublished study) was used in this study..... | 44 |
| Table 3.1 Frequency of trials during which an approach was made for each bird. Birds are shown in order of descending approach frequency, and this is used as an indicator of increasing neophobia..... | 45 |
| Figure 3.2 The time in seconds for each bird to approach the Multi-Access Box across all trials..... | 46 |
| Figure 3.3 The proportion of each trial that each kea spent interacting with the Multi-Access Box | 47 |
| Table 3.2 Information for each trial on how the Multi-Access Box was solved, by which bird, and which routes were available to them. Trials 1-12 were undertaken on the first day, and 13-24 on the second day..... | 48 |
| Figure 3.4 Time taken in seconds for the three juveniles to solve the Multi-Access Box | 49 |

| | |
|---|----|
| Figure 3.5 Relative ranking of seven captive kea in regards to neophobia level and problem solving ability using the combined results of our Multi-Access Box trials..... | 50 |
| Table 4.1 Frequency of trials during which an approach to the sheep analogue was made for each bird and therefore accepted as a successful trial for inclusion in the study. Birds are shown in order of descending approach frequency, which will be used as an indicator of increasing neophobia | 59 |
| Figure 4.1 The mean time in seconds for each bird to approach the sheep analogue. Error bars represent one standard error. The birds have been ordered by increasing latency to approach using this factor as an indicator of increasing neophobia (baseline arrow). Isolated 2 and Familyfemale have been removed | 60 |
| Figure 4.2 The mean proportion of time each bird spent interacting with the sheep analogue per trial. Error bars represent one standard error. The birds have been ordered by decreasing interaction length proportion, which is used as an indicator of increasing neophobia (baseline arrow) | 61 |
| Figure 4.3 The mean rate of different interaction types (touch, grab, chew) per trial. Rate is defined as the total sum of the frequency of the interaction over the number of trials | 62 |
| Figure 4.4 The mean proportion of time each bird spent chewing the sheep analogue per trial | 63 |
| Figure 4.5 The time taken in seconds for Familyjuv1 to solve (retrieve the food reward) each trial. Trials 1 and 2 are excluded, as they were not solved | 64 |
| Figure 4.6 The time taken in seconds for Familyjuv1 to solve (retrieve the food reward) each trial, with trial 18 (a possible outlier) removed | 64 |
| Figure 4.7 Relative ranking of seven captive kea based on interactive they were towards a mechanical sheep analogue | 65 |