California Sea Lion (Zalophus californianus) Ethogram & Handedness Study

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INTRODUCTION

Importance
Laterized Behavior is a visible measure of brain function thought humanly unique BUT is a core behavior to many organisms & their life histories.
• Vital care info for caretakers, ecologists, and conservationist – foraging/hunting, enclosure design, engagement, etc.

Subjects
• Captive male California sea lions – Boulder, Nipper, & Lou

Goals
• Examine the time budget (how time is spent)
• Assess asymmetrical swimming preference

RESULTS

[Hyposthesis 1] Time budget spent differently

<table>
<thead>
<tr>
<th>Behavior Type</th>
<th>Boulder</th>
<th>Nipper</th>
<th>Lou</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locomotion</td>
<td>43.4%</td>
<td>43.8%</td>
<td>58.8%</td>
</tr>
<tr>
<td>Social</td>
<td>43.4%</td>
<td>13.8%</td>
<td>12.5%</td>
</tr>
<tr>
<td>Eating</td>
<td>0%</td>
<td>2.5%</td>
<td>0%</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>13.2%</td>
<td>40%</td>
<td>28.8%</td>
</tr>
</tbody>
</table>

RESULTS: Each subject spent most of their time on locomotion, but individuals differed in the time they spent on other activities.

LOCOMOTION
BRE = head breaks surface
TUR = turn (L or R)
SUT = swim to belly down
SDT = swim to belly up
SUA = swim off belly down
SDA = swim off belly up
SOT = swim over tunnel
DIV = dive into pool

SOCIAL
FLP = complete flip
SPN = spin upright
BUB = blow bubbles
IWP = interact with people
IWS = interact with sea lions
EATING
FWV = visible water feeding
MISCELLANEOUS
OOS = out of sight
EXC = excretes in pool

RESULTS: Each subject expressed statistically significant swimming preference for right or left.

Chi-Square | P-value | Significant
Boulder   | 24.44   | <0.0001 (p-value<0.05) = Y
Nipper    | 9.23    | 0.00240 (p-value<0.05) = Y
Lou       | 40.41   | <0.0001 (p-value<0.05) = Y

DISCUSSION

[Prediction 1] Time budgets will vary between each individual sea lion
Supported: More analysis needed

[Prediction 2] Individuals will show lateral preference
Supported: Yes

Future Studies
i. Preference – under solitary conditions
   • Social effects on swimming preferences
ii. Preference – between sexes
   • Sex effects on swimming preferences

REFERENCES
• Wells et al., Lateralised swimming behaviour in the California sea lion, 2006.

ACKNOWLEDGEMENTS

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