Aim: To compare contrafreeloading across four enrichment feeding devices in two different captive environments, in how many species of animals ?.

1. Mixed-species aviary (or front of house; FOH) representing highly-enriched environment with opportunities for foraging and consumption of feed for other species, social inter- and intra-species interaction.
2. Back of house (BOH) single species enclosure which are generally comparatively less enriched. Included in this component are: ring-tailed lemur \*Species name/italics\* and lesser mouse deer \*Species name/italics\* .

Enrichment device criteria

* Each device must be fairly different from each other (i.e., encourage different interactions and behaviour)
* Fairly affordable
* Easy to clean and maintain, and set-up.
* Weather resistant
* Able to hold food within without it falling out immediately
* Majority of species able to interact with enrichment
* Safe for animals, keepers and guests
* Guest perception(?)

Enrichment devices list: Can start thinking about what purpose these devices have altogether, then how they differ from one another, in terms of elicited responses, husbandry procedures, cost, safety etc.

1. Feeder ball
2. Complex box
3. PVC pipe
4. Net basket (tbc)

Mixed-species aviary / FOH:

* Rotate different devices around 4 feeding locations in the biodome (randomise)
* Half food on the plate, half food in the device
* Mousedeer feed
  + Diet A: leafy vegetables such as romaine lettuce and spinach
  + Diet B: high water content vegetables such as okra, egg plant and broccoli
  + Diet C: starchy vegetables such as carrot, beetroot and sweet potato
* All were chopped into rough 1x1cm cubes and provided as a premix by the zoo kitchen.
* Animals were fed twice a day
* Other feed available – fruit (watermelon, orange, apple etc), bird seed, duck feed
* Water and browse were available *ad libitum* in troughs throughout the exhibit
* In addition, multiple plant and tree species were grown in the aviary to provide opportunities for natural foraging and grazing, and shade / refugia / shelter, and aesthetics (I don’t know how else to phrase this), resting / movement structures (think sloth and bats) , and vigilance / sentry points, and nesting grounds (see how biodome environment can be so dynamic and enriched ? To really showcase how different FOH is from BOH)
* Use of camera traps to remove the observer effect – Camera traps to record interaction for 3 hrs (as most species in the aviary were seen to feed over the course of the day)

BOH (lemurs):

* During routine weekly confinement at the BOH for weight measurement and management
* 4 devices are rotated across the weeks
* Half food on the plate, half food in the device
* Lemur feed – mixture of vegetables A(leafy vegetables such as romaine lettuce and spinach), B(chayote, cucumber and egg plant) and C(carrot, sweet potato and corn) – all were chopped into large pieces about 4x4cm and half a cup of primate dry pellets (primate diet). Twice a day
* Use of camera traps to remove the observer effect – Camera traps to record interaction for 3 hrs

BOH (mouse deer TBC):

* 3 male mouse deer in solitary enclosures to reduce inter-sex aggression in mixed-species aviary
* 4 devices are rotated across the weeks
* Half food on the plate, half food in the device
* Mousedeer feed – mixture of vegetable A(leafy vegetables such as romaine lettuce and spinach) , B (high water content vegetables such as okra, egg plant and broccoli) and C (starchy vegetables such as carrot, beetroot and sweet potato) – all were chopped into rough 1x1cm cubes and provided as a premix by the zoo kitchen. Twice a day
* Use of camera traps to remove the observer effect – Camera traps to record interaction for 3 hrs

Measured parameters TBC (depends on camera trap):

* Camera trap (triggered by movement) – count species, number of interactions
* Camera trap (Fixed interval snapshots) – count species, number of interactions
* Camera trap that records video – count species, number of interactions, duration of interaction