

A-Peel: *A source of delight for the jungle acrobats*

Design by Roos Hack

Text by Pieter Desmet

Picture this: a lush, dense rainforest in Thailand, with the deep green hues of ancient trees. You can smell the sweet scents of tropical fruits and hear the chirping of exotic birds. There, high in the treetops, reign the Gibbons – the acrobats of the jungle. Gibbons are masters of brachiation, a form of movement where they skilfully swing through the trees. With their specialized shoulder joints, long arms, and strong muscles, they swing gracefully from branch to branch. Playful and agile, they showcase their acrobatic skills with flips and somersaults. Rarely, if ever, do they descend to the forest floor; their home is high in the canopy.





Figure 1. The Jungle Acrobats

Endangered Species

Despite their remarkable adaptability, many species of gibbons are facing the threat of extinction. They endure the challenges of habitat loss, hunting, and illegal trade. Zoological institutions play a vital role conserving these magnificent creatures. Through breeding and conservation programs, research initiatives, educational outreach, and financial backing for habitat protection projects, zoos contribute significantly to gibbon preservation efforts. The ARTIS Zoo in Amsterdam is an active participant. In an attempt to enhance the wellbeing of their inhabitants, they have asked the Industrial Design faculty of the TU Delft to design a device with a dual function: supporting research endeavours while simultaneously enhancing animal welfare. Embracing this challenge, designer Roos Hack dived deep into the world of the yellow-cheeked gibbon for twenty weeks.

Animal Welfare

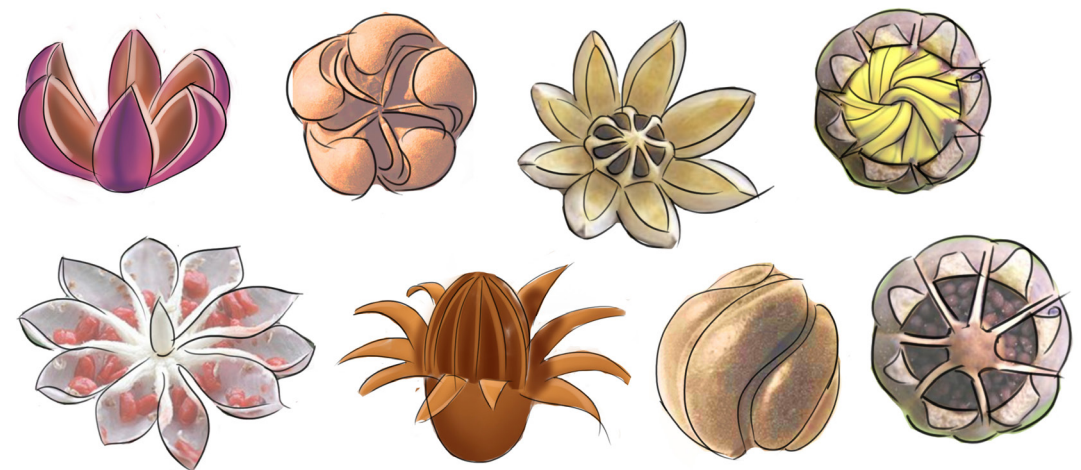
Roos' primary focus was on animal welfare. Over the past decade, attention to animal welfare in zoos has increased significantly, driven by both enhanced knowledge and improvements in laws and regulations. Zoos worldwide are now actively engaged in researching and enhancing the quality of life for their animals. Environmental enrichment is a key tool in this effort. Numerous studies have demonstrated its benefits for animals in captivity, including reduced aggression, abnormal behaviour, and passivity, as well as increased animal welfare. The design of Roos focuses on an effective form of enrichment: promoting foraging behaviour – actively seeking out food in the environment. Foraging involves searching different parts of the habitat, selecting, gathering, and consuming food.

Time Perception

ARTIS collaborates with Professor Dr. Karline Janmaat and her students from the University of Amsterdam to gain insights into the behaviour and needs of their animals. Roos' second goal was to contribute to this research, particularly focusing on the time perception of gibbons and other

primates. This research provides novel insights into intelligence and cognitive abilities, such as understanding fruit seasons. The knowledge gained is utilized both to enhance the welfare of gibbons in captivity and to improve the conservation of the wild gibbon population.

Figure 2. Sketches Inspired by Filled Fruits



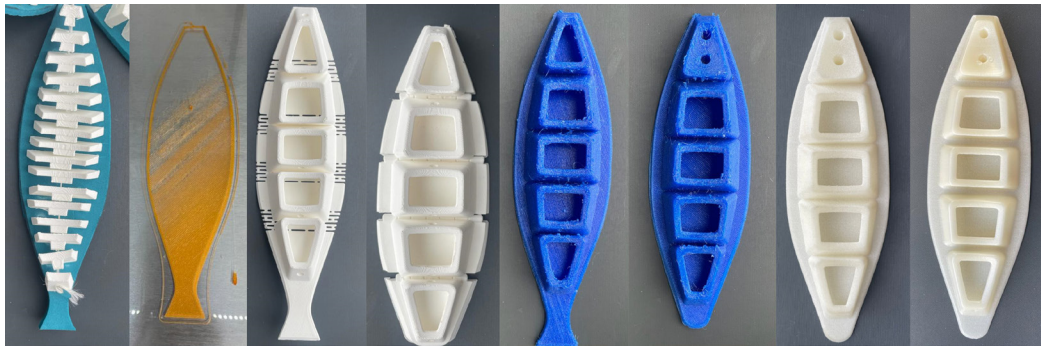


Figure 3. Sketch Designs for the Fruit Leaves

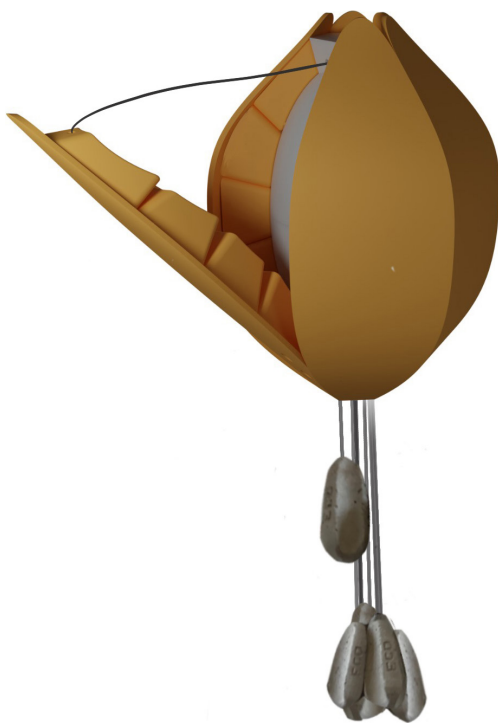


Figure 4. The A-Peel Design

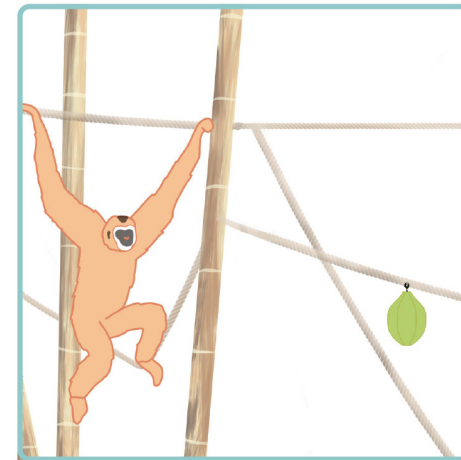
An Exotic Fruit

Based on her two goals, Roos developed A-Peel – an object that grants gibbons more autonomy over their feeding process while also stimulating their memory, decision-making, and problem-solving abilities. A-Peel is inspired by the favourite exotic fruit of wild gibbons, the *Annona Coriacea*. This fruit undergoes a unique ripening process, akin to being peeled open to access its flesh. A-Peel offers multisensory stimulation, with its texture tailored to gibbons’ preferences for soft, warm materials. Its size is adapted to their hands for comfortable use. Through electronics, A-Peel can be remotely locked or unlocked. As the leaves close via weights, opening them to access the food reward presents a challenge.

Lee and Ray

Roos tested her prototype for three days with Lee and Ray, two gibbons at ARTIS. They received A-Peel with great curiosity. Lee, the older gibbon, was the first to show interest. Though initially hesitant, he quickly discovered that opening the leaves yielded a food reward. When grapes were added, this reward became irresistible. Remarkably, Lee took the initiative, while Ray, the younger gibbon, observed closely and later mimicked Lee’s actions. Over time, they even collaborated, with Lee opening the leaves and Ray extracting the reward. Thus, A-Peel became a source of enjoyment and cooperation between the two clever gibbons.

Figure 5. Usage Scenario



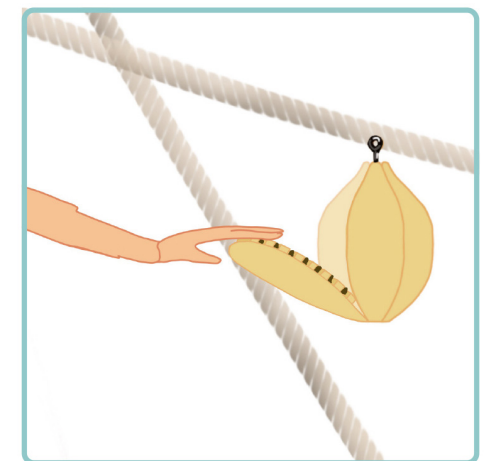
A-Peel is still locked.



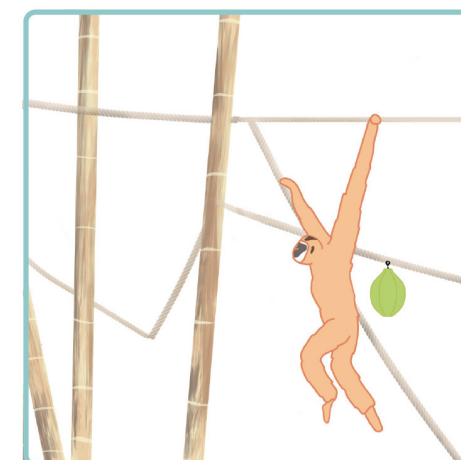
After two days, A-Peel unlocks automatically.



The gibbon recognizes this and approaches A-Peel.



Opening A-Peel with hands and feet.



Once all the food is retrieved, the leaves close.

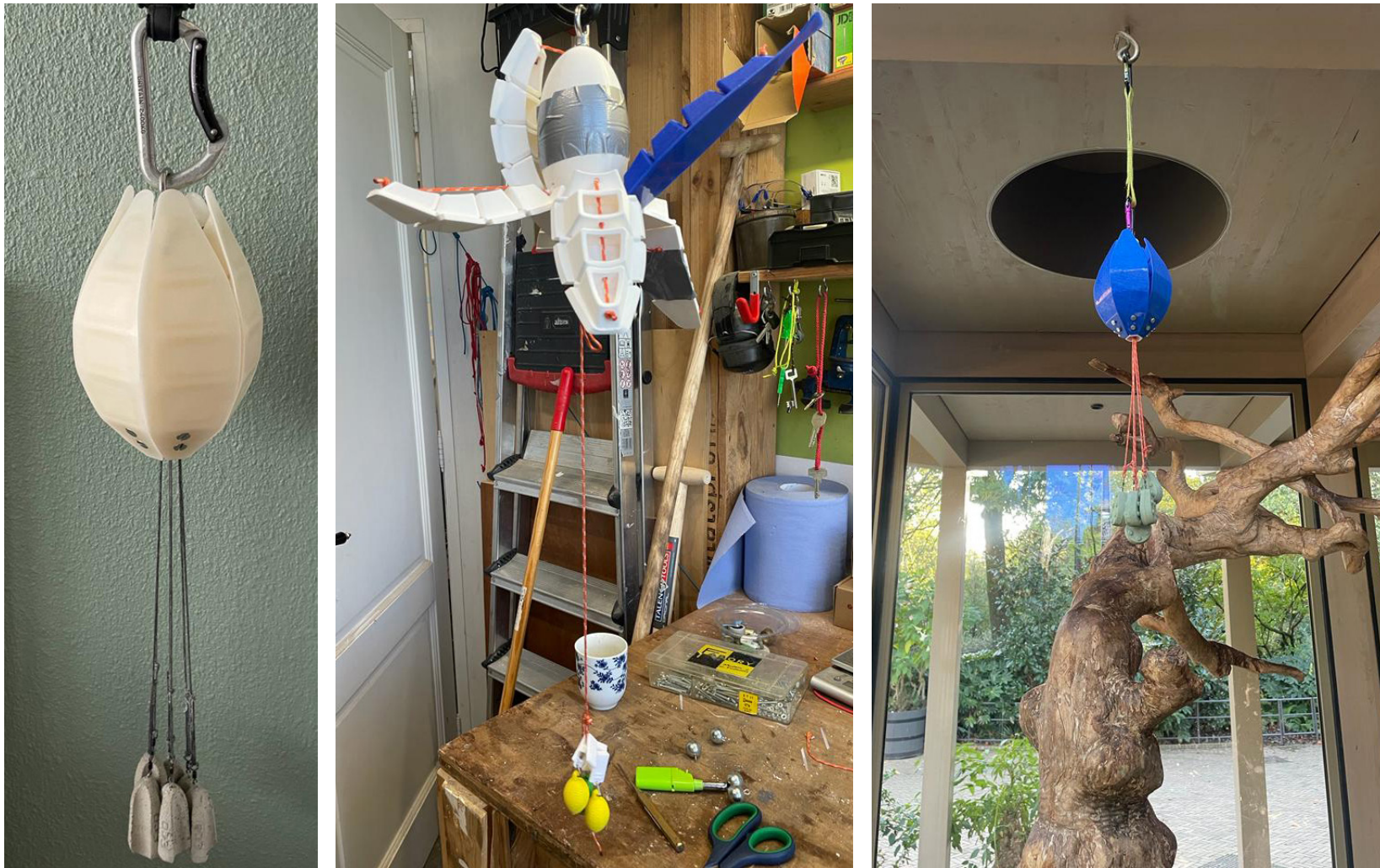


Figure 3. Sketch Designs for the Fruit Leaves

Posthumanism

Roos' project exemplifies a significant development within the design field closely intertwined with the rise of post-humanist ideas. Traditional design, long dominated by anthropocentric views, has gradually shifted towards a more inclusive approach rejecting human superiority and emphasizing the importance of equality between humans and non-humans. This perspective situates humans within a broader

ecology of relationships, blurring the boundaries between human and technology, human and animal, and human and nature. Roos' design is a prime example. It acknowledges the needs and dignity of gibbons as equal to those of humans, highlighting the significance of a holistic and inclusive design approach that considers the complex dynamics of life on our planet.

Roos Hack (photo) developed A-Peel in 2023 commissioned by ARTIS as her graduation project for the master's program in Integrated Product Design. Supervisors were Rick Schifferstein and Govert Flint (TU Delft) and Karline Janmaat (ARTIS). Currently, Roos works as a project engineer at the technical design firm BPO in Delft.



Colophon

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Reference

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