



# Kinetic Structures- Theo Jansen

By Colin Neeson

# Who is Theo Jansen?

- Was born in the Netherlands in 1990
- Went to the Delft University of Technology to study physics, but never finished
- Focused on fusing art and engineering
- Primary focus has been to evolve his strandbeests
- Hopes to develop “AI” for his creations to have semi-sentience



Taken by Theo Jansen, [http://media.wbur.org/wp/2015/10/1016\\_theo-jansen-1000x666.jpg](http://media.wbur.org/wp/2015/10/1016_theo-jansen-1000x666.jpg)

# Early Works

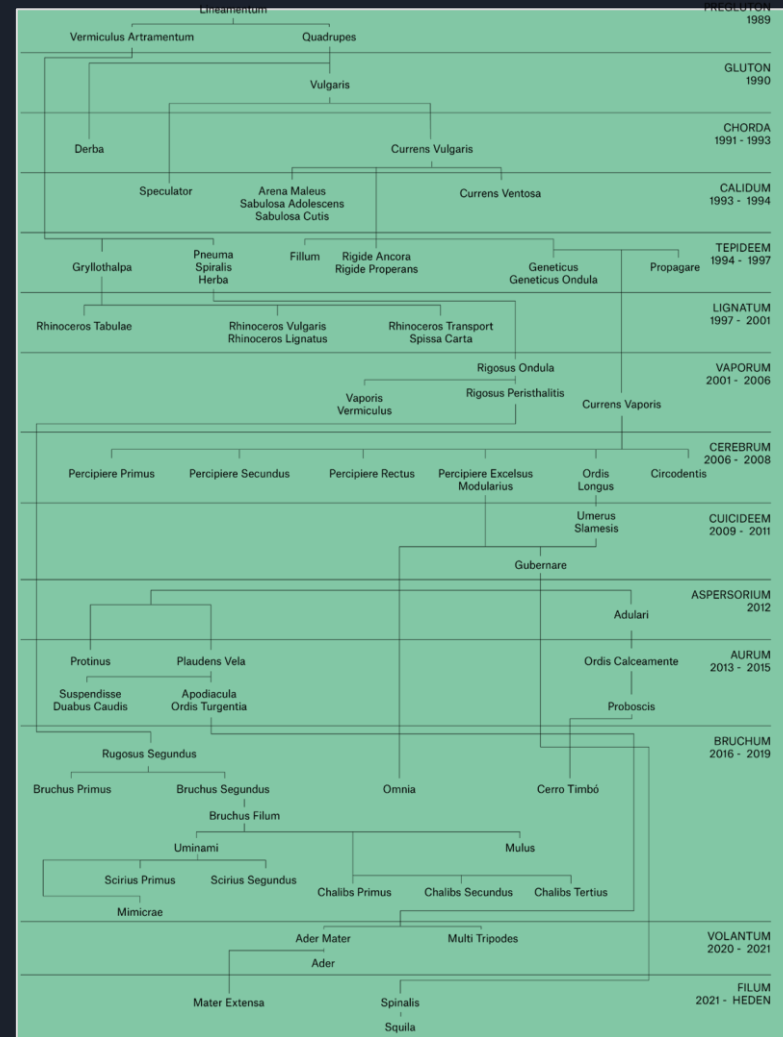
- UFO - 1980
  - Built out of PVC tubing and filled with helium
- Painting machine 1982
  - Was a light sensitive spray gun



Painting Machine,  
[https://strandbeest.com/api/uploads/large\\_img045\\_c55610088e.jpg](https://strandbeest.com/api/uploads/large_img045_c55610088e.jpg)

# Strandbeests

“Theo Jansen is engaged in creating new forms of life: the so called strandbeests. Skeletons made from yellow plastic tube (Dutch electricity pipe) are able to walk and get their energy from the wind. They have evolved since their inception in 1990 and have been divided into 12 periods of evolution. Their properties determine this period. You will find the most important types of strandbeests at geneology.” [1]



# Early Iterations

- Gluton
  - “The tape period”
  - Would use tape to make the joints
  - Couldn't walk on its own
- Chorda
  - “The strap period”
  - Used cable ties to hold the tubes together
  - First to walk
- Calidum
  - “The Hot Period”
  - Used a heat gun to link tubes
  - Created a very rigid beast
  - Became very brittle after a while





# Early Iterations cont.

- Tepideem
  - “The less-hot period”
  - Just used a lower temp of heat gun
  - Less brittle
  - First herds begin
- Lignatum
  - “The wood period”
  - Switched out the electric tube with Pallet wood
  - Created larger beasts
- Vaporum
  - “The pneumatic period”
  - Created a “stomach” - plastic bottles that would be filled with air to push the legs
  - Powered by wind



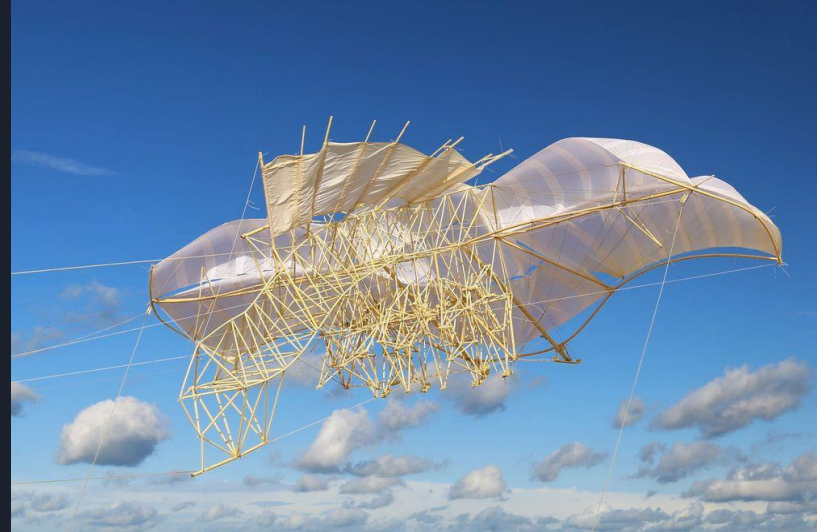
# Middle Iterations

- Cerebrum
  - “The Brains Period”
  - Attached an apparatus to feel water
  - Could change amount of air that could go to each leg
- Suicideem
  - “Period of self-destruction”
  - Changed the propulsion system, but ended up being too powerful and the beast would collapse in on itself
- Aspersorium
  - “Period of wagging”
  - Added a tail to machine, made it feel more lifelike



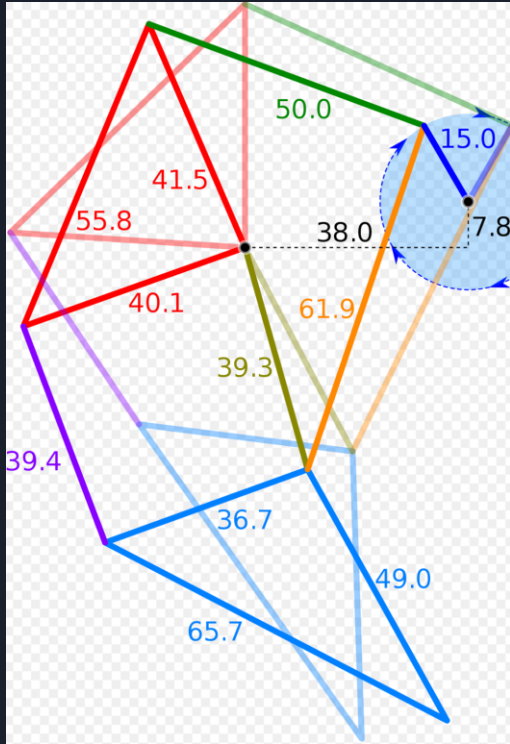
# Recent Iterations

- Aurum
  - “The period of weak wind “
  - Created large sails to catch the wind
  - In strong winds the plastic tubes could propel themselves, but in weak winds needed additional support
- Bruchum
  - “The period of caterpillars”
  - Multiple segments connected together with rope
- Volantum
  - “Period in which strandbeests could fly”
  - To escape from the sand
  - Designed like kites





# How the legs Works



By Mliu92 - Own work, from Jansen, Theo (2016). Theo Jansen&#039;s Strandbeest: leg system. Strandbeest. Retrieved on 27 July 2016., CC BY-SA 4.0.  
<https://commons.wikimedia.org/w/index.php?curid=50361566>

By Michael Frey - Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=45466051>

**STRANDBEEST EVOLUTION 2017 Video:**  
[https://www.youtube.com/watch?v=LewVEF2B\\_pM](https://www.youtube.com/watch?v=LewVEF2B_pM)



Questions?



# Work Cited

[1] Jansen, Theo. *StrandBeest*, 2022, <https://www.strandbeest.com/>.

All images used for the evolutions come from this source and were taken by Theo Jansen