VRthreat Toolkit for Unity

Unity-based Virtual Reality Platform for design of behavioural experiments involving responses to threat

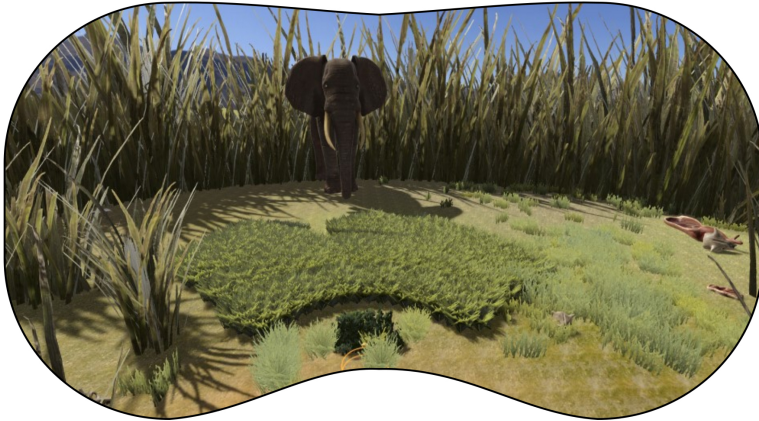**Category**

Software/Human Behaviour

Authors

Prof Dominik Bach

Jack Brookes

Samson Hall

Product Specification

Unity-based Virtual Reality Platform for design of behavioural experiments involving responses to threat.

Description

An immersive VR toolkit for the Unity engine that allows assessing threat-related behaviour in single, semi-interactive, and semi-realistic threat encounters.

- The toolkit contains a suite of **fully modelled naturalistic environments**, interactive objects, animated threats, and C#-scripted systems.
- These modelled environments can arranged by the user to **create experiments**, in the form of a series of independent "episodes" in immersive VR.
- Several specifically designed tools aid the design of these episodes, including a system to allow for pre-sequencing the movement plans of animal threats.
- Episodes can be built with the assets included in the toolkit, but also easily extended with **custom scripts, threats, and environments** if required.
- During the experiments, the software **stores behavioural**, **movement, and eye tracking data**.

The current version contains the following animated threats: hand-fighting human, stone-throwing human (conspecific); bear, panther, crocodile (predatory); elephant, viper, wasp (self-defending feral); bull, dog (self-defending domestic); spider, scorpion, rat (disgust-eliciting);

falling rocks, collapsing bridge (inanimate); time bomb, robot (artificial).

Sample experiments generated with the VRthreat Unity Software can be found here:
https://osf.io/2b3k7/

Credits

This project uses content provided by the following individuals and companies:

Visual assets:

- Textures.com: One or more textures on the 3D models in this project have been created with photographs from Textures.com. These photographs may not be redistributed by default; please visit www.textures.com for more information
- BBC: One or several assets in this project contain sound from bbc.co.uk - copyright BBC.
- Turbosquid.com
- Daz3D.com
- Substance-share (substance3d.com):

1. URL to license agreement: https://www.substance3d.com/legal/substance-share-license-agreement/
2. https://share-legacy.substance3d.com/libraries/1748 relased by Allegorithmic
3. https://share-legacy.substance3d.com/libraries/1769 relased by Allegorithmic
4. https://share-legacy.substance3d.com/libraries/1773 relased by Allegorithmic
5. https://share-legacy.substance3d.com/libraries/2369 released by jhon117x
6. https://share-legacy.substance3d.com/libraries/192 released by Loic Anquetil
7. https://share-legacy.substance3d.com/libraries/3194 released by Playdoh
8. https://share-legacy.substance3d.com/libraries/4270 released by pphyciek

- Mixamo
- Zbrush (pixologic.com)

Acoustic assets:

- Zurich Emotional Voices (ZEMOV) data base created by Sascha Frühholz
- Feslyanstudios.com
- Zapsplat.com
- Iwan Gabovitch: Broken Magic Spell under CC-BY 3.0 License
- djlprojects on freesound.com: Video Game SFX Positive Action Long Tail under CC-BY 3.0 License
- bennstir on freesound.com: Door slam 2.wav under CC-BY 3.0 License

If you use this software, *the license agreement requires you to credit the creators in any ensuing publication* by including the following statement and citing the reference given below:

"This research used the VRthreat Toolkit for Unity created by Jack Brookes, Samson Hall, and Dominik Bach at University College London."

Reference: Brookes J, Hall S, Frühholz S, Bach DR (2023). Immersive VR for Investigating Threat Avoidance: the VRthreat Toolkit for Unity. Under review at Behavioural Research Methods.

Placing an order on XIP

To license this product, please select the **appropriate licence option** on the right-hand side of this page. Terms can be previewed from the "Preview terms" link.

To place an order, please locate the Sign-in or Register options on the top right side of this page. You can either sign in to your existing account or register for a new now. **Please note that your account should be created using your academic/ institutional e-mail address.**

Before completing an order and accessing the material, each order requires prior authorization, with processing times varying depending on the product.

For additional guidance on how to create an account and place an order, refer to the **FAQs**.

References

1. Sporrer JK, Brookes J, Hall S, Zabbah S, Serratos Hernandez UD, Bach DR(2023) , Functional sophistication in human escape, iScience