FLIP PHILLIPS, SKIDMORE COLLEGE, NEUROSCIENCE & PSYCHOLOGY

TRAVELS IN THE UNCANNY VALLEY
BUKIMI NO TANI GENSHŌ (不気味の谷現象)
IMITATING PHYSICAL REALITY — PHOTOREALISM

BOULEZ CONDUCTS ZAPPA

The Perfect Stranger
and other chamber works performed by the
ENSEMBLE INTERCONTemporain
and the
BARKING PUMPKIN DIGITAL GRATIFICATION CONSORT
“If you want photorealism, use a camera.”

–CRAGH GOOD, C.A. 1988
SIMULATING PHYSICAL REALITY — MODELING

Turner Whitted, 1980
INSPIRED BY PHYSICAL REALITY - REFERENCE

"Sleeping Beauty"

MODELS STAGE
CAPTURING PHYSICAL REALITY — ROTOSCOPING
THE 12 RULES OF ANIMATION

1. Squash and Stretch
2. Anticipation
3. Staging
4. Straight Ahead / Pose to Pose
5. Follow Through / Overlap
6. Slow in, Slow Out
7. Arcs
8. Secondary Action
9. Timing
10. Exaggeration
11. Solid Drawing
12. Appeal
THE EXPERIMENTS

• Explore the effects of two parameters —
  • Physical — COR
  • Hyper-physical — Exaggeration (Squash and Stretch)
• Explore the effect of ball depiction
<table>
<thead>
<tr>
<th>Sport</th>
<th>COR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowling</td>
<td>0.53</td>
</tr>
<tr>
<td>Baseball</td>
<td>0.62</td>
</tr>
<tr>
<td>Tennis</td>
<td>0.79</td>
</tr>
<tr>
<td>Table Tennis</td>
<td>0.92</td>
</tr>
</tbody>
</table>
IS THE DISTORTION DETECTABLE?
Squash and Stretch

-0.3 -0.2 -0.1 0 0.1 0.2 0.3
“Ball”
“Bowling Ball”
WHAT DOES THIS MEAN?

- Physical fidelity isn’t necessarily paramount - phenomenological fidelity is.
- The more specific the depiction, the greater the interaction between the real and hyper-real components.
- One possibility is that a ‘real’ ball can’t physically act like an exaggerated one unless you somehow add energy to the ball — ‘animation’ — ‘life.’
WHAT DOES THIS MEAN FOR V/AR?

- Exaggerating away from the uncanny valley may help.
- Moving away from reality to slightly hyper-real?
- Physical fidelity isn’t necessarily paramount - phenomenological fidelity is.
ACKNOWLEDGEMENTS

GEORGE CHAKALOS

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FULBRIGHT

PIXAR

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