

Experienced Gamers Have Super Vision

Aspen Cairn Seiver
Bellevue College

Mentor: Jillene Grover Seiver, PhD

Introduction

Motion picture and television use 30 frames per second (fps)

- At least 16 fps needed to detect motion
- 48 fps movies cause “Soap Opera Effect”

Debate over whether human eye can perceive frame rates over 30 fps

- Video consoles
 - PlayStation and Xbox mainly use 30 fps
 - Can support up to 60 fps
- PC gaming
 - Mainly uses 60 fps
 - Some systems support in excess of 144 fps

Online n=1 tests by Linus (2012)

- Test 1
 - Console player (30 fps experience)
 - 20% hits recognizing 60 vs 120 fps



- Test 2
 - PC player (>60 fps experience)
 - 100% hits recognizing 60 vs 120 fps

Current study replicates and extends Linus.

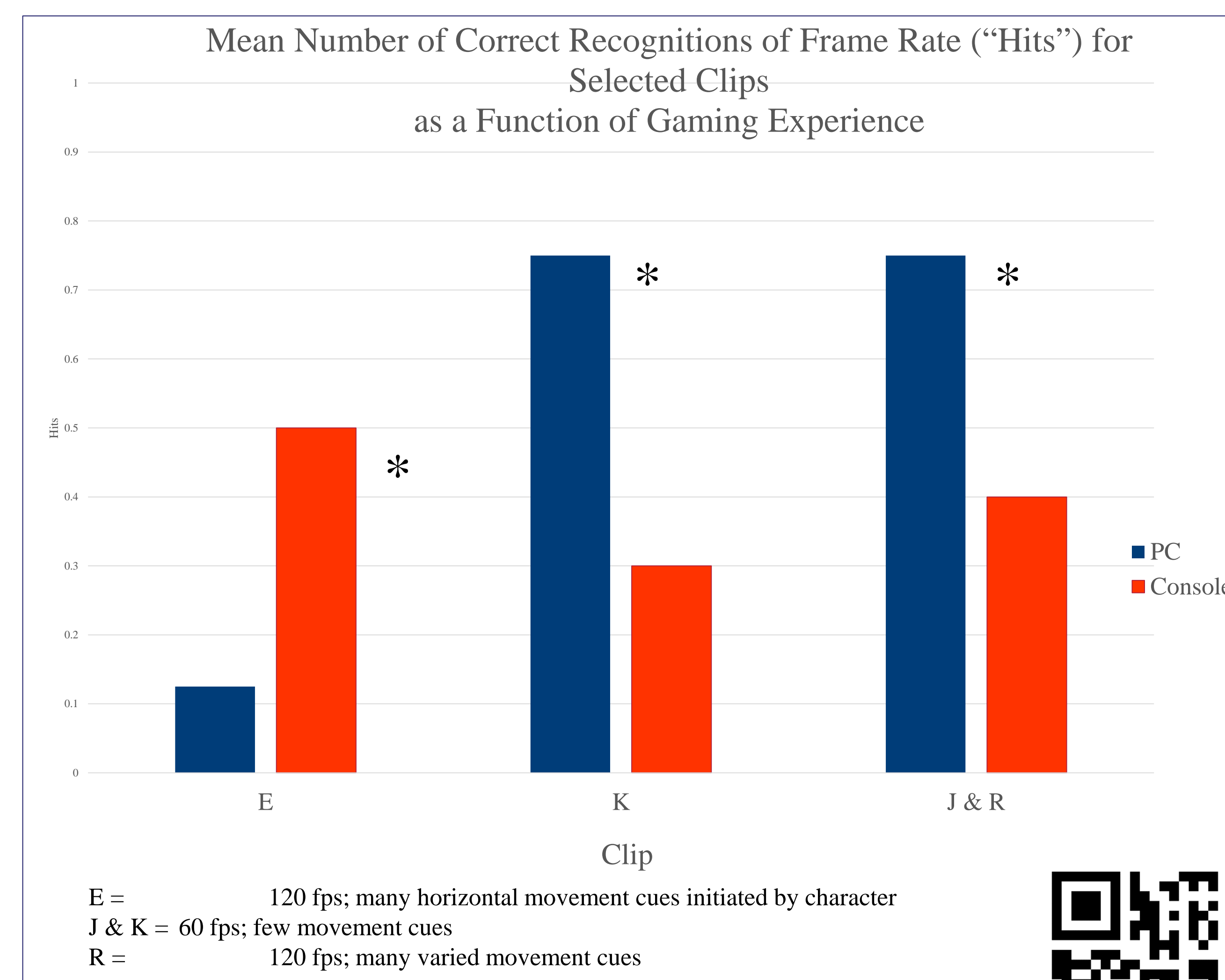
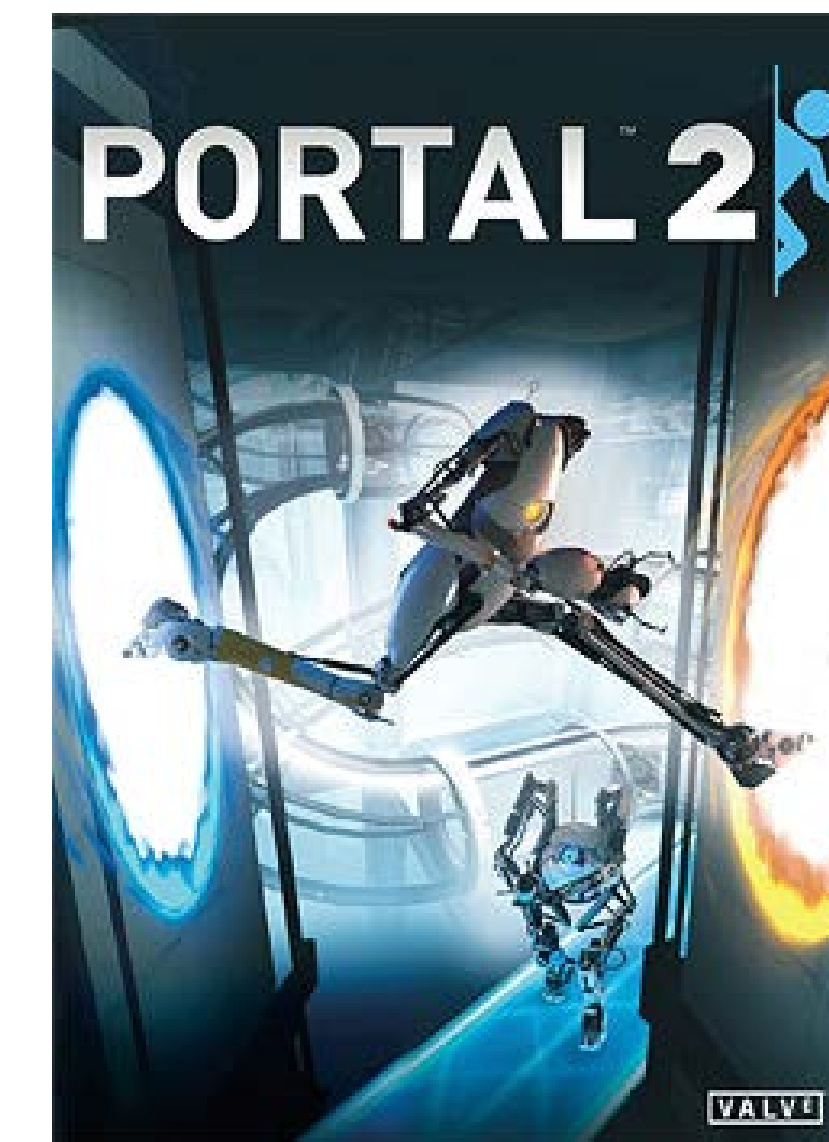
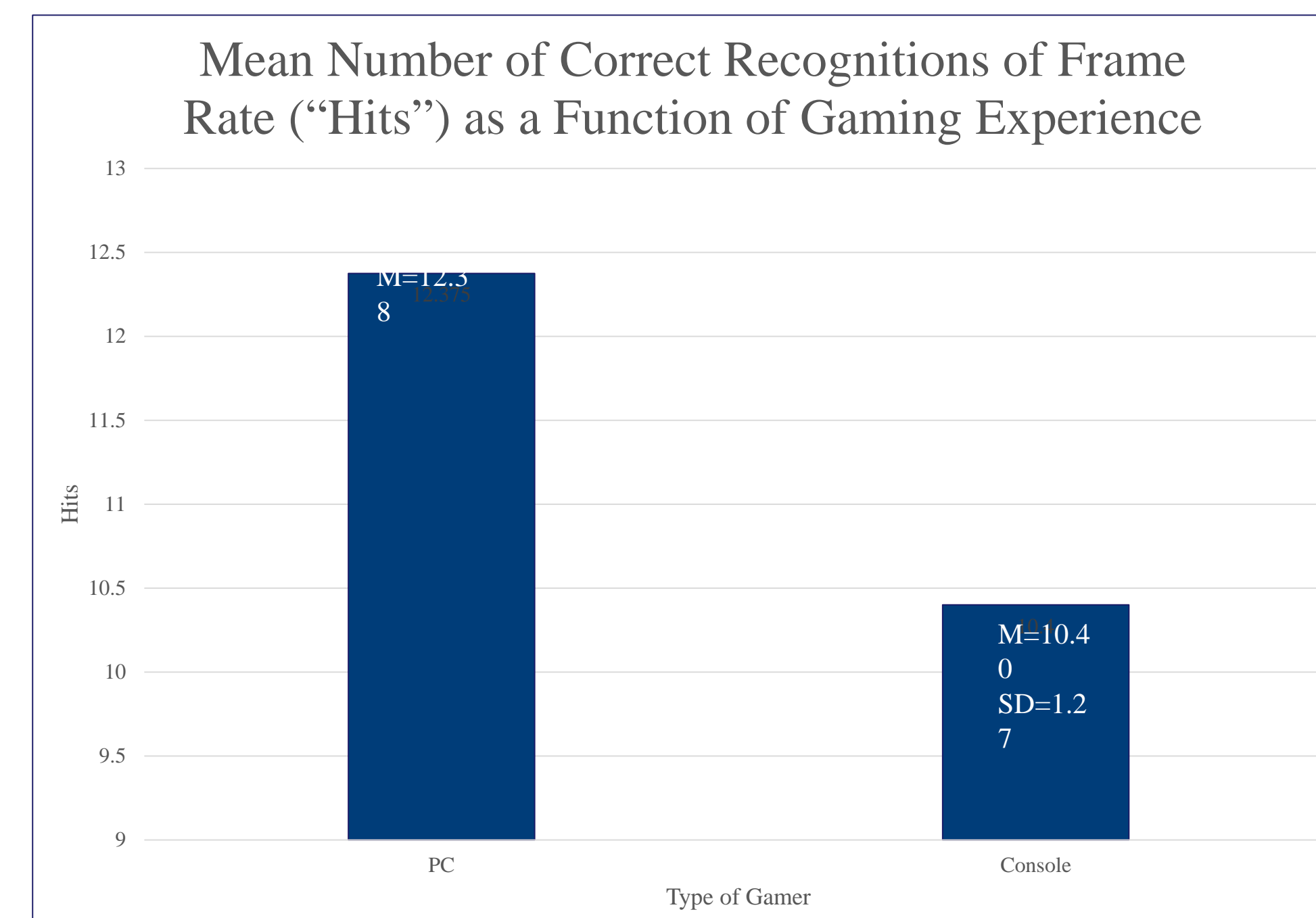
Procedure

Participants:

- 18 volunteers (6 female) from lower division psychology courses at Bellevue College.
- 10 console players (5 male)
 - 8 PC game players (7 male)

Materials:

- 10, 10-20 sec video clips of an active game of Portal2.
- Each was duplicated in 60 and 120 fps (20 total clips).
- Presented via a desktop computer equipped with
 - GTX 980 graphics card and an i7 4790K CPU
 - AOC G2460PQU 144Hz monitor.



* Significantly different at the $p < .05$ level



Results

A series of t -tests was performed.

- Overall:
 - PC gamers had marginally ($p = .08$) more hits than console players.
- Selected clips:
 - Console players were more likely to correctly recognize fps of Clip E.
 - PC players were more likely to correctly recognize fps of Clips J, K, and R.
 - There were no significant differences between player groups on other individual clips.

Discussion

These results support the findings from Linus (2012).

- PC gamers were better at recognizing fps overall than console gamers
- Some clips facilitated differentiating between groups more than others.

Future research goals:

- Use a controlled method to distinguish console players from PC players, instead of relying on self-labeling.
- A larger sample size.