UNIVERSITY OF CALGARY

Speech Filtered Bubble Ray

Improving Target Acquisition on Display Walls

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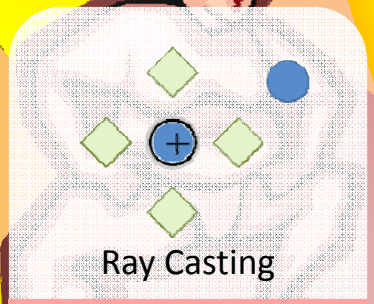
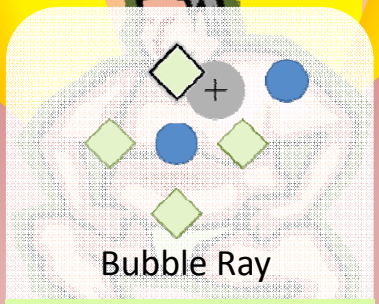
3 CONTENDERS



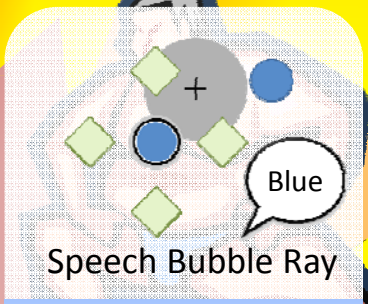
Ray Casting

Must point within the target to select



Bubble Ray

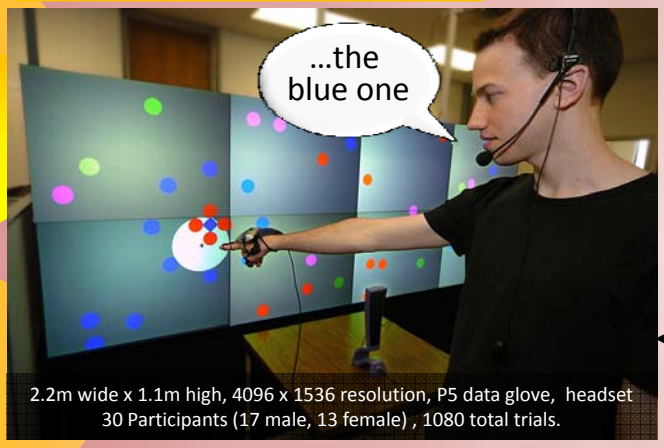
Nearest target is always selected



Speech Bubble Ray

Speech filters the nearest target selection

THE CHALLENGE

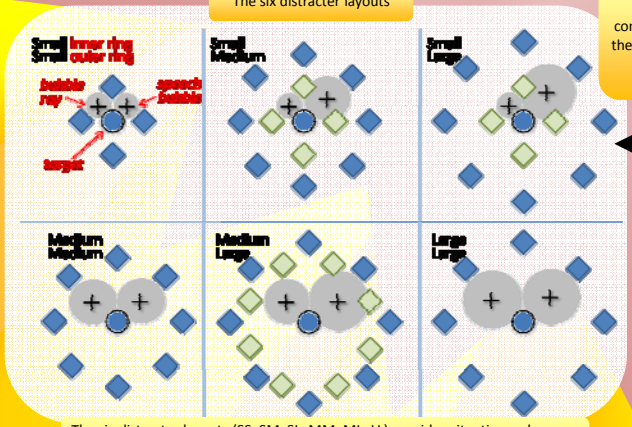


2.2m wide x 1.1m high, 4096 x 1536 resolution, P5 data glove, headset
30 Participants (17 male, 13 female) , 1080 total trials.

Participants were asked to select targets on a large wall display as quickly and as accurately as possible. They performed selections over six different distracter configurations (described below).

DISTRACTER LAYOUT

The six distracter layouts

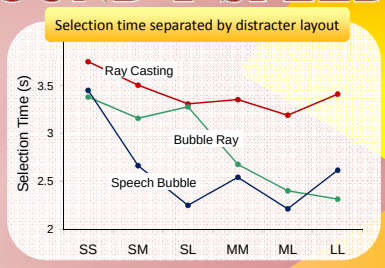


The six distracter layouts (SS, SM, SL, MM, ML, LL) provides situations where ray casting is as effective as bubble ray and speech bubble (e.g. SS).

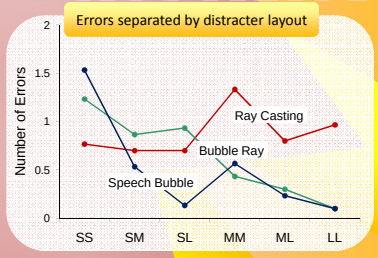
In our experiment the inner ring (different colour) constrains bubble ray while the outer ring (same colour) constrains the speech bubble size.

THE RESULTS

ROUND 1 SPEED



ROUND 2 ACCURACY



ROUND 3 PREFERENCE