A Bimanual Interaction Technique for Productivity Applications on Multi-touch Tablets

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The Design

Button Arch
Buttons activate quasimodes

Swipe Zone
swipe along one of the four directions to switch arches

Design Rationale
Degrees of freedom of the thumb while holding a tablet

Abduction / adduction
Flexion / extension
Resulting interaction area

Motivation
Tablets are great for browsing but inefficient for productivity
- Tablet users spend only 15% of their time on production tasks1
- Simple gestures alone do not enable complex operations
- WIMP-style widgets are inefficient in multi-touch interfaces

1 Gartner Survey Says Entertainment Accounts for Half of Device Screen Time: http://gtnr.it/KbWu2f

The Technique

Non-Dominant Hand
- Supports the tablet
- Interacts with SPad
- Activates quasimodes that affect the dominant hand

Dominant Hand
- Interacts with content
- Applies operation within the context set by the non-dominant hand

Faster Interaction

Keynote for iOS
Contextual menus & resize handles

SPad
Direct manipulation of shapes

☞ Task: Copy 3 shapes & paste them at 2 locations

15.5s

The Application

A graphical editor for creating, copying, deleting, moving and resizing simple shapes on a canvas.
The canvas can also be panned and zoomed.

Quasimodes
By pressing a button on SPad, the non-dominant hand activates a quasimode that modifies the operation applied by the dominant hand.

Press "Delete" button
 Tap shape while "Delete" is active
 Shape is deleted

Gesture Polymorphism
Using the same gesture, the user can perform different operations depending on the active quasimode.

Pan Canvas
Move Shape
Draw selection line

Watch our Video!
http://vimeo.com/81943672