CS-525H:
Immersive HCI

Symbolic Input

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Motivation

- ☐ Several good approaches are available for
  - ■ Selection
    - ☐ Ray casting, scaled hands, image plane
  - ■ Manipulation
    - ☐ WIM, direct manipulation, tool-based
  - ■ Locomotion
    - ☐ Treadmills, fly where you point/look, walking in place, game/VR controllers, Balance Board
  - ■ System control (menuing)
    - ☐ Tablets/Pads, pinch gloves, tabletop surfaces

Motivation (cont.)

- Symbolic input remains difficult
  - Text is tough to read in some environments
    - Outdoors
    - HMDs
  - Standard keyboard is not always available
    - Can't see it (e.g., HMD)
    - Don't want to carry it (mobile)
  - Multiple languages
  - Personal vs. Public (e.g., voice)
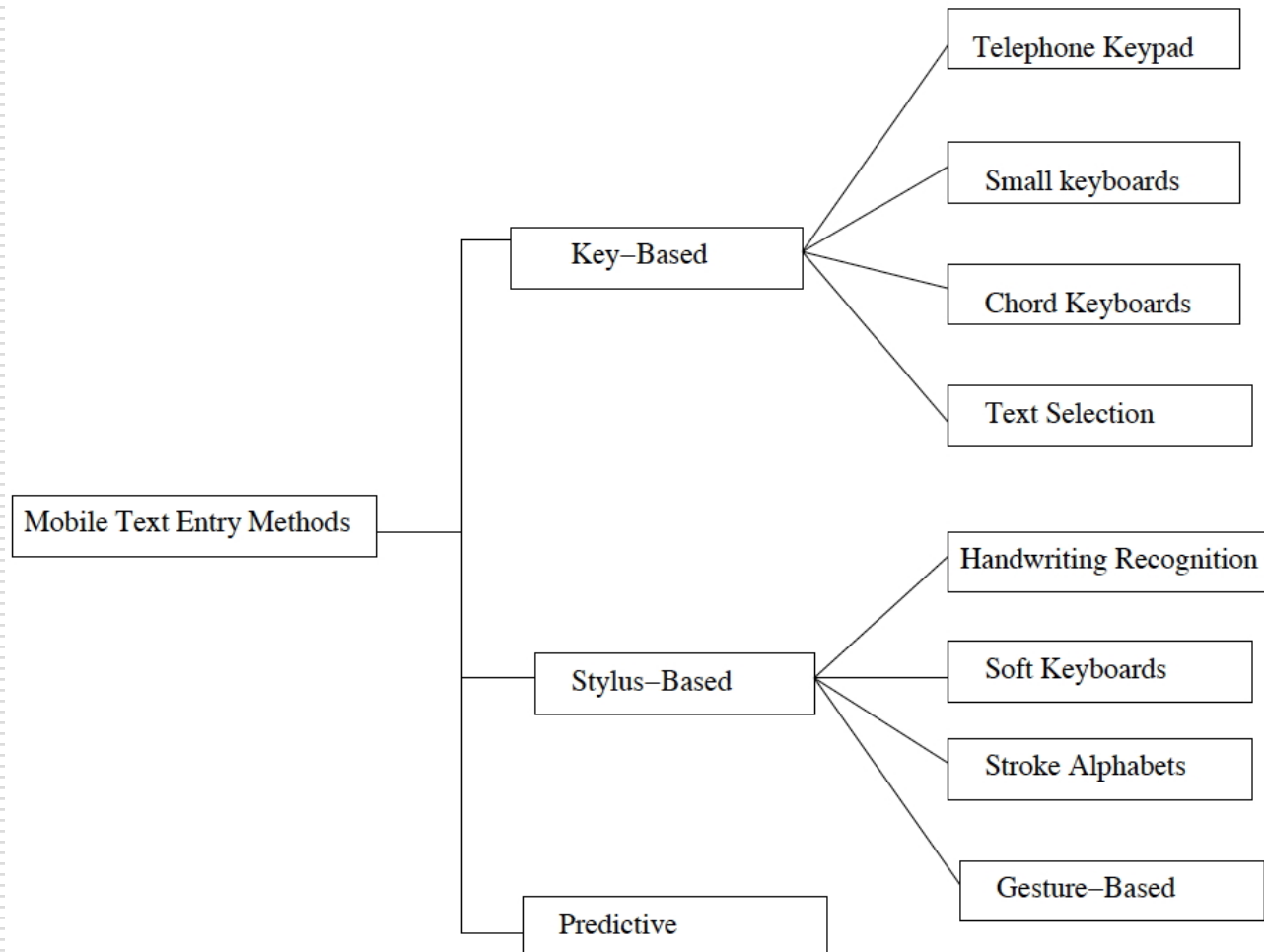 - Hands-free vs. Hand-held

Types of Input

- Text
  - SMS
  - Comments for chatting/tweeting
  - Labels for objects
  - Entering names for things (e.g., restaurants)
- Numbers
  - Phone numbers
  - Coordinates (e.g., immersive modeling)

Text Input Classification

Mobile Text Entry Methods
- Key–Based
  - Telephone Keypad
  - Small keyboards
  - Chord Keyboards
  - Text Selection
- Stylus–Based
  - Handwriting Recognition
  - Soft Keyboards
  - Stroke Alphabets
  - Gesture–Based
- Predictive

Methods for Input

☐ Chorded keyboards
- ■ Twiddler2 (http://www.handykey.com/)

Chorded Keyboards

☐ FrogPad (http://www.frogpad.com/)
- ■ Wired
- ■ Bluetooth

Alternate Keyboards

□ Belkin Nostromo SpeedPad

- ■ Programmable
key bindings

Mobile Devices: Hard Keyboards

□ Most widely used mobile

text interface?

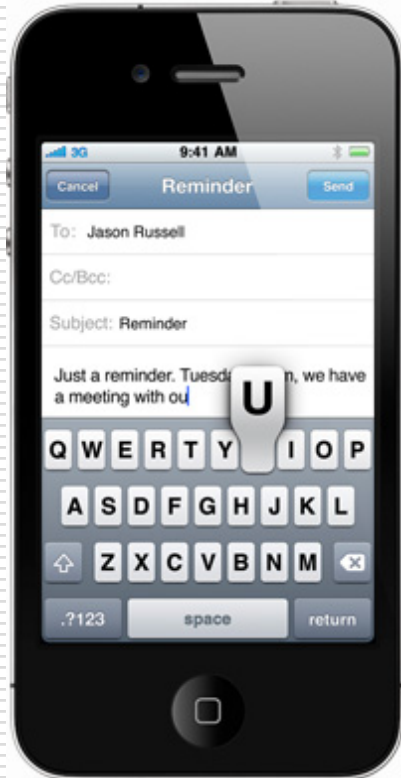# Mobile Devices: Hard Keyboards
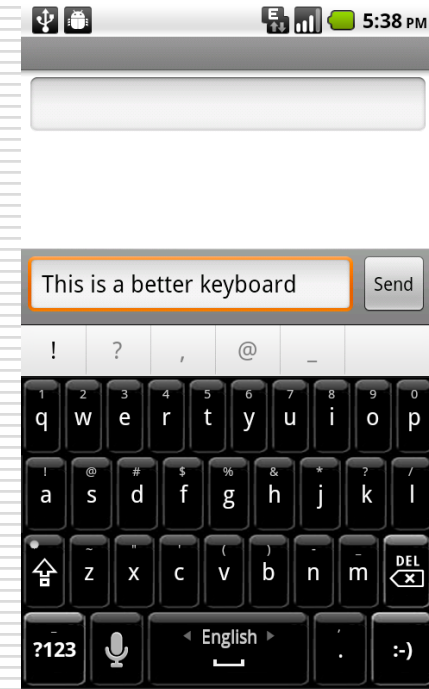
BlackBerry

Palm Centro

Motorola Droid

http://vimeo.com/8869525

Mobile Devices: Soft Keyboards

iPhone 4
(show Web)

iPad

BetterKeyboard
for Android
(show clip)
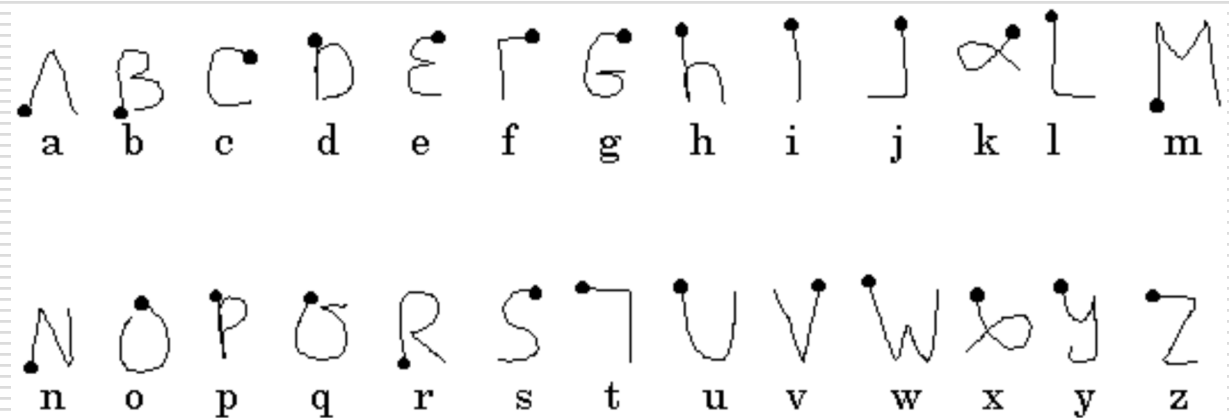(show Web)
http://vimeo.com/8869525

Stroke Alphabets

□ Used for stylus input (e.g., Palm)
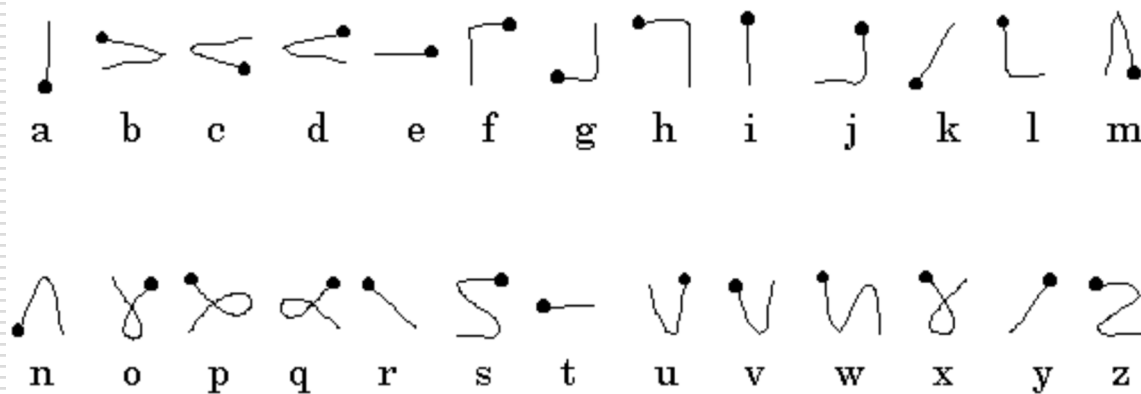
Unistroke

Graffiti

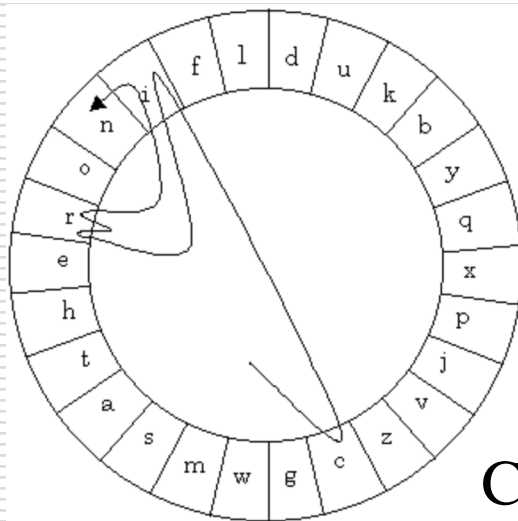# Stroke Alphabets (cont.)

MDTIM

Jot

Stroke Alphabets (cont.)

☐ Stoke on top of keyboard
- Swype (show clip)
- SlideIt (show clip)

☐ Alternative strokes

Cirrin

Virtual Keyboards

- ☐ **My Work**
  - ■ (show clip)

- ☐ **Jian Chen & Doug Bowman**
  - ■ (show clip)

Other Methods

- Voice
  - Android voice control

- Gestures
  - ASL