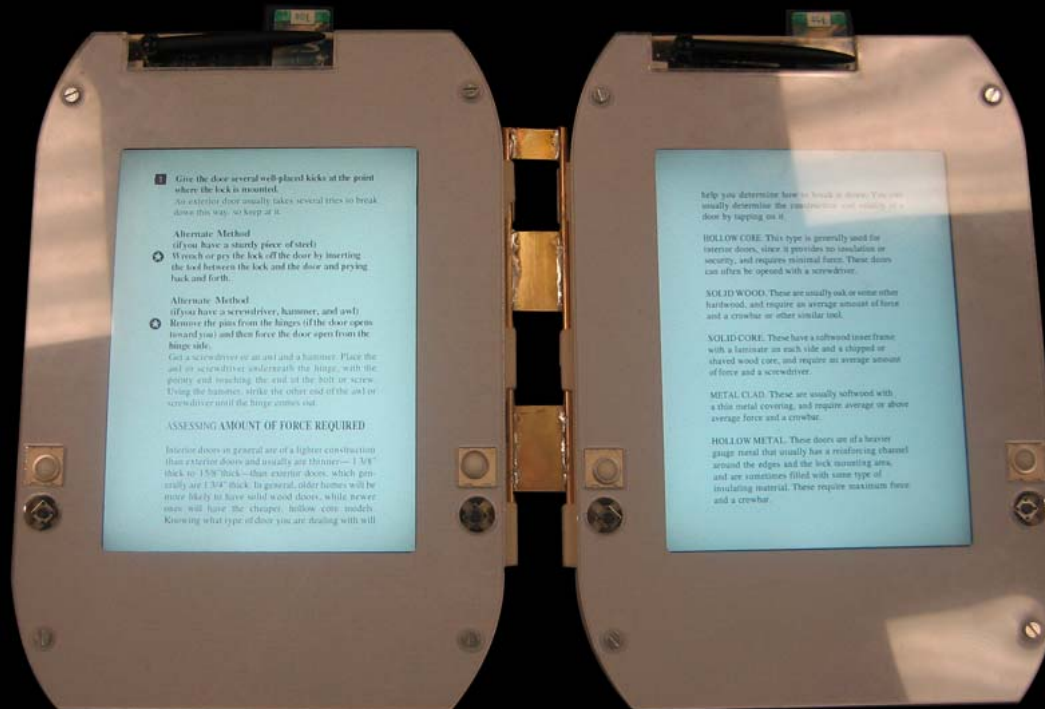


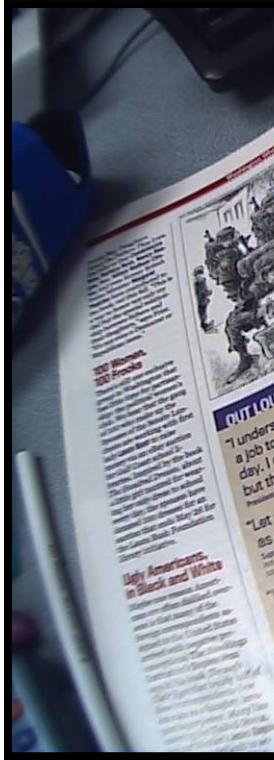
# Exploring Dual-Display E-Book Readers

Nicholas Chen, Francois Guimbretiere, Maneesh Agrawala, Cassandra Lewis

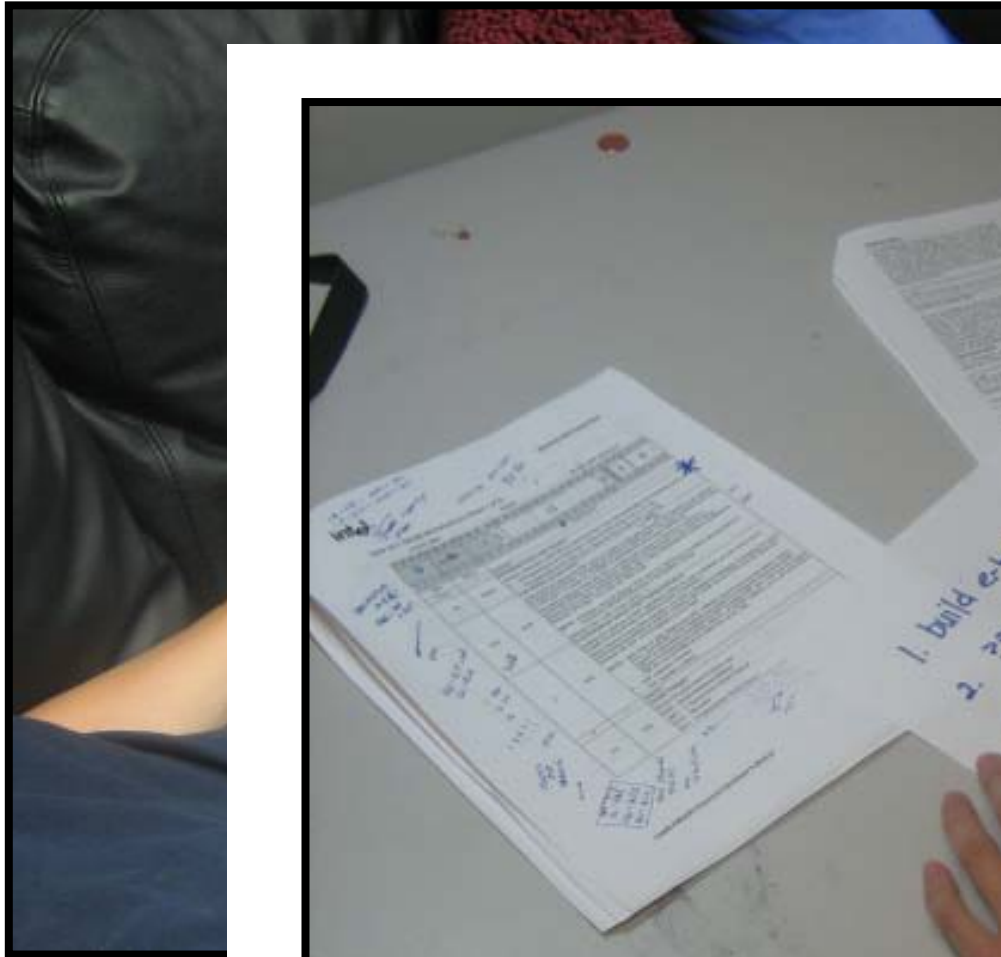




What does  
**“reading”**  
bring to mind?



Mars  
Mars



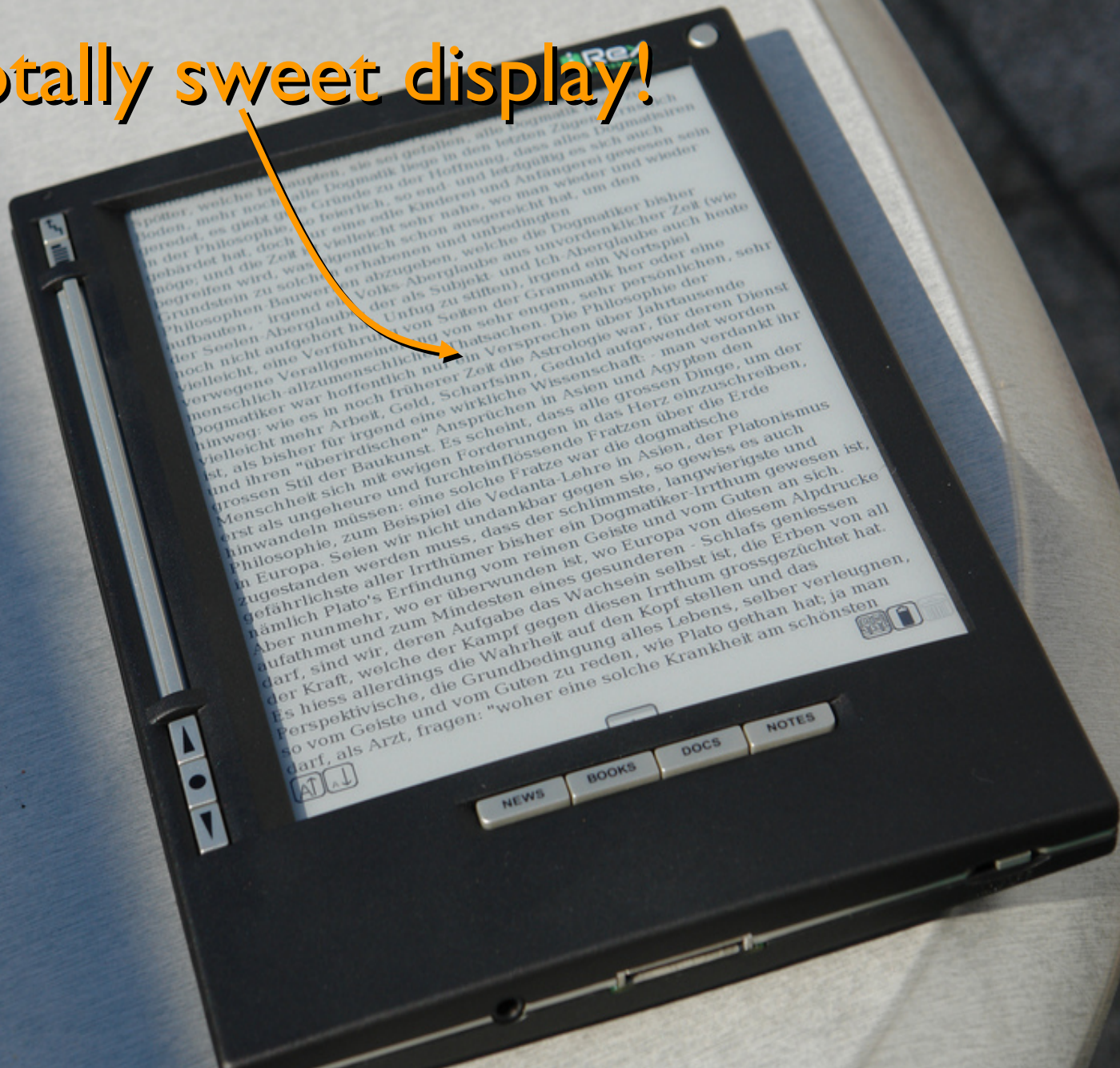
N



Adler et al. (CHI 1998), O'Hara and Sellen (CHI 1997)



Totally sweet display!





E  
INK  
PAPER  
DISPLAY

ENABLING  
TECHNOLOGY

EASY-TO-READ

REVOLUTIONARY

1

2

3

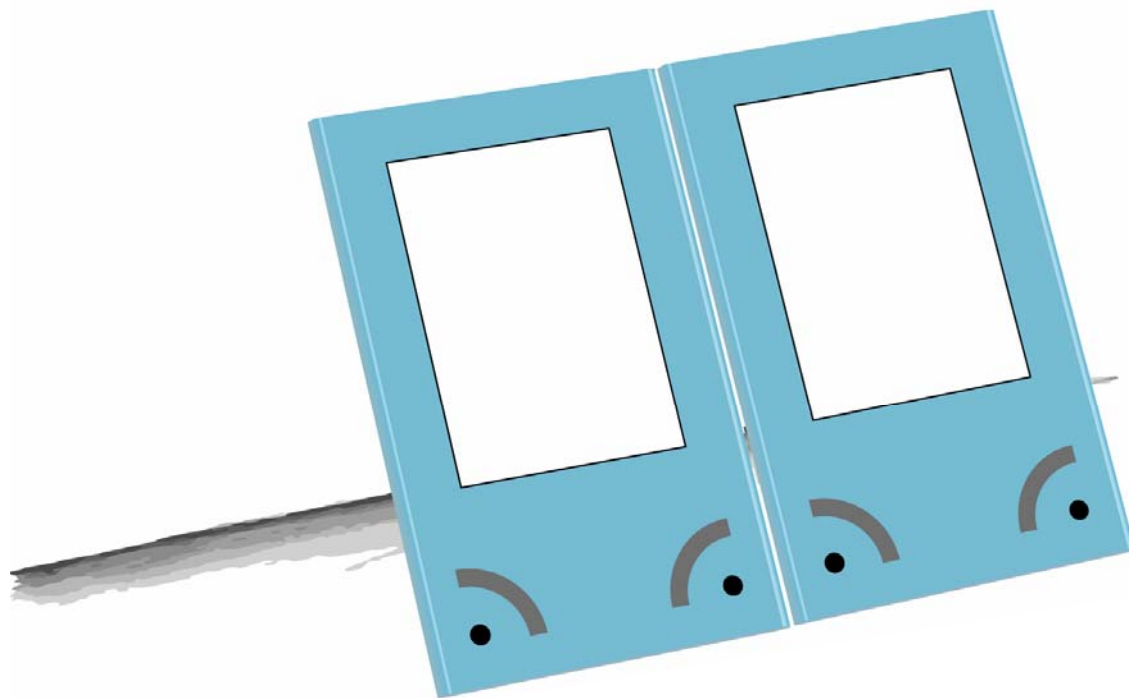
4

5

6

7

8



- 1 Give the door several well-placed kicks at the point where the lock is mounted.

An exterior door usually takes several tries to break down this way, so keep at it.

**Alternate Method**

(if you have a sturdy piece of steel)

- 2 Wrench or pry the lock off the door by inserting the tool between the lock and the door and prying back and forth.

**Alternate Method**

(if you have a screwdriver, hammer, and awl)

- 3 Remove the pins from the hinges (if the door opens toward you) and then force the door open from the hinge side.

Get a screwdriver or an awl and a hammer. Place the awl or screwdriver underneath the hinge, with the pointy end touching the end of the bolt or screw. Using the hammer, strike the other end of the awl or screwdriver until the hinge comes out.

**ASSESSING AMOUNT OF FORCE REQUIRED**

Interior doors in general are of a lighter construction than exterior doors and usually are thinner—1 3/8" thick to 1 5/8" thick—than exterior doors, which generally are 1 3/4" thick. In general, older homes will be more likely to have solid wood doors, while newer ones will have the cheaper, hollow core models. Knowing what type of door you are dealing with will

help you determine how to break it down. You can usually determine the construction and quality of a door by tapping on it.

**HOLLOW CORE.** This type is generally used for interior doors, since it provides no insulation or security, and requires minimal force. These doors can often be opened with a screwdriver.

**SOLID WOOD.** These are usually oak or some other hardwood, and require an average amount of force and a crowbar or other similar tool.

**SOLID CORE.** These have a softwood inset frame with a laminate on each side and a chopped or shaved wood core, and require an average amount of force and a screwdriver.

**METAL CLAD.** These are usually softwood with a thin metal covering, and require average or above average force and a crowbar.

**HOLLOW METAL.** These doors are of a heavier gauge metal that usually has a reinforcing channel around the edges and the lock mounting area, and are sometimes filled with some type of insulating material. These require maximum force and a crowbar.



# I. Local Navigation

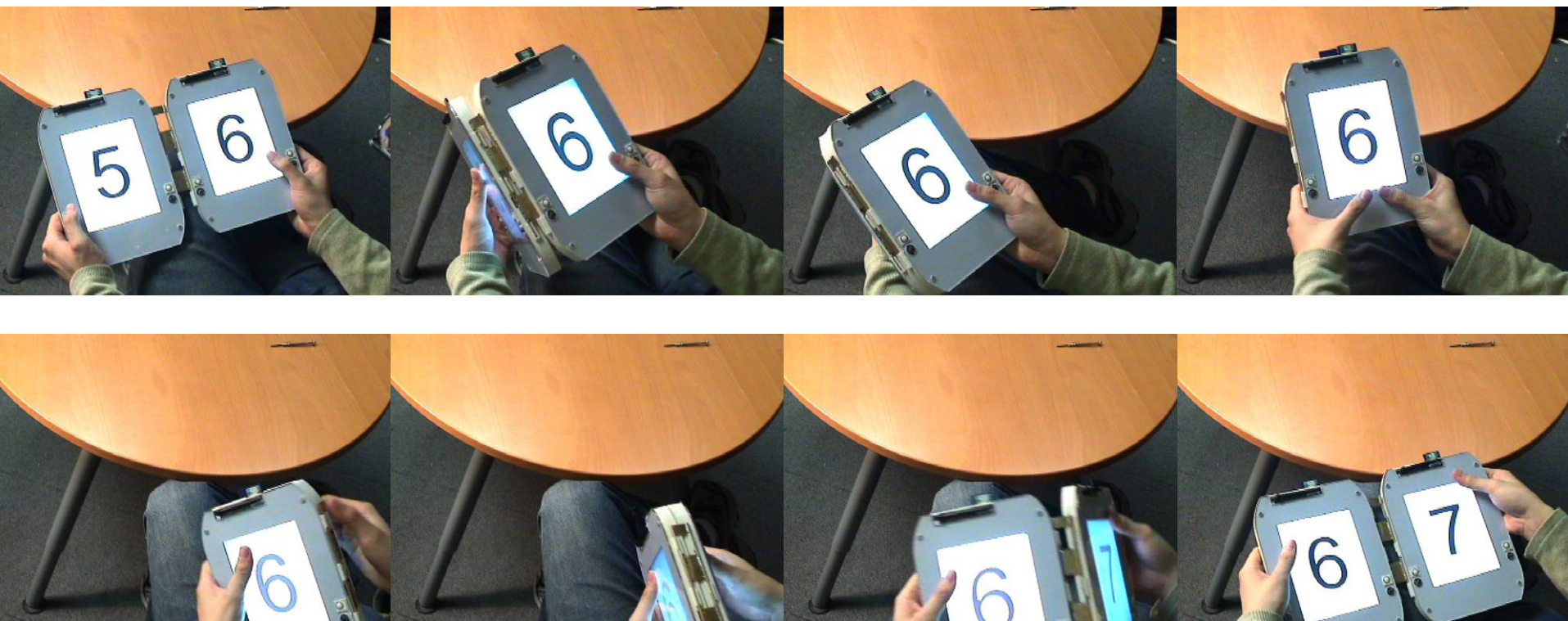


# 2. Global Navigation

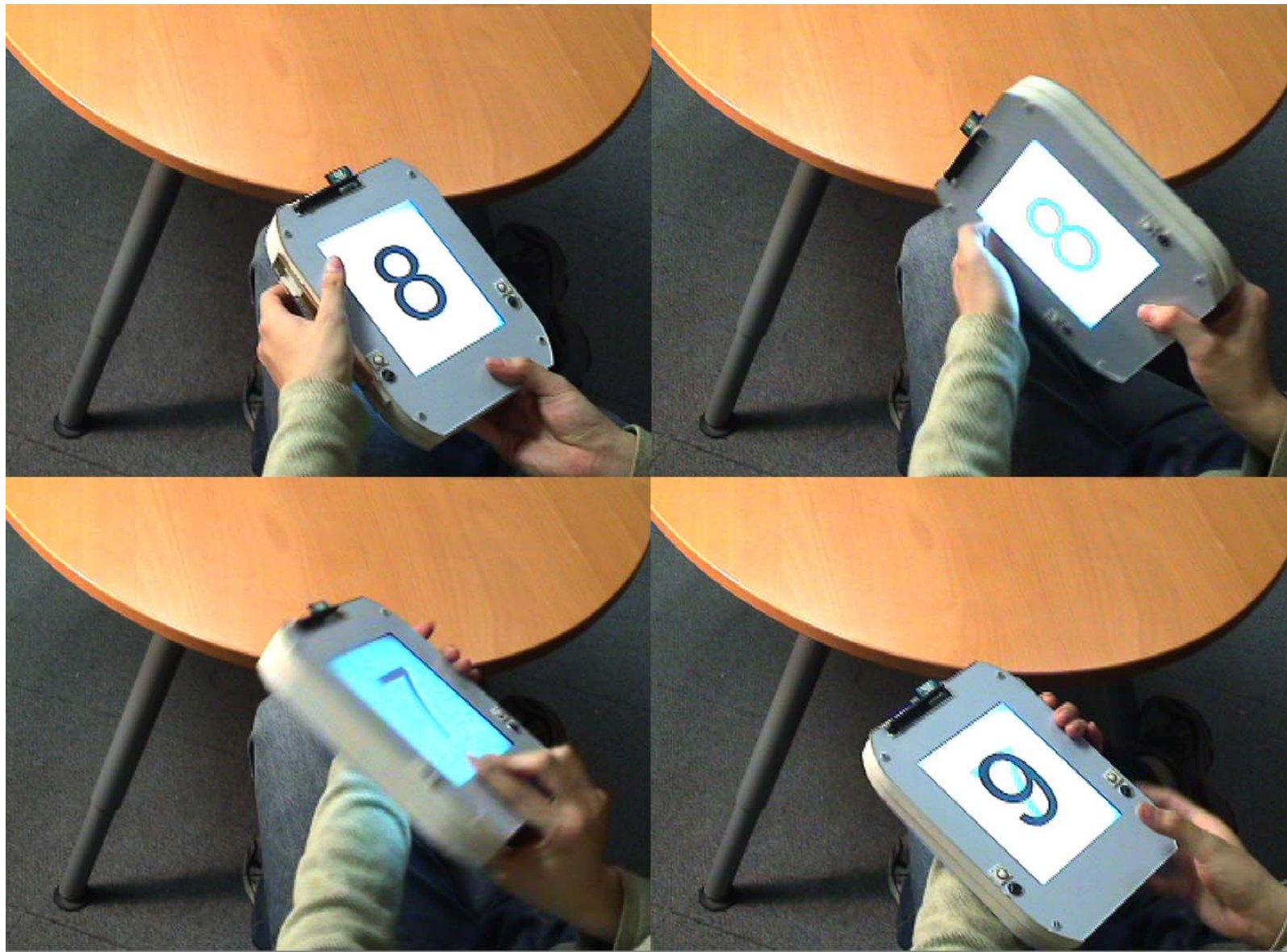


# 3. Cross Document Operations





Seamless Transition Between Modes



Flipping





Fanning

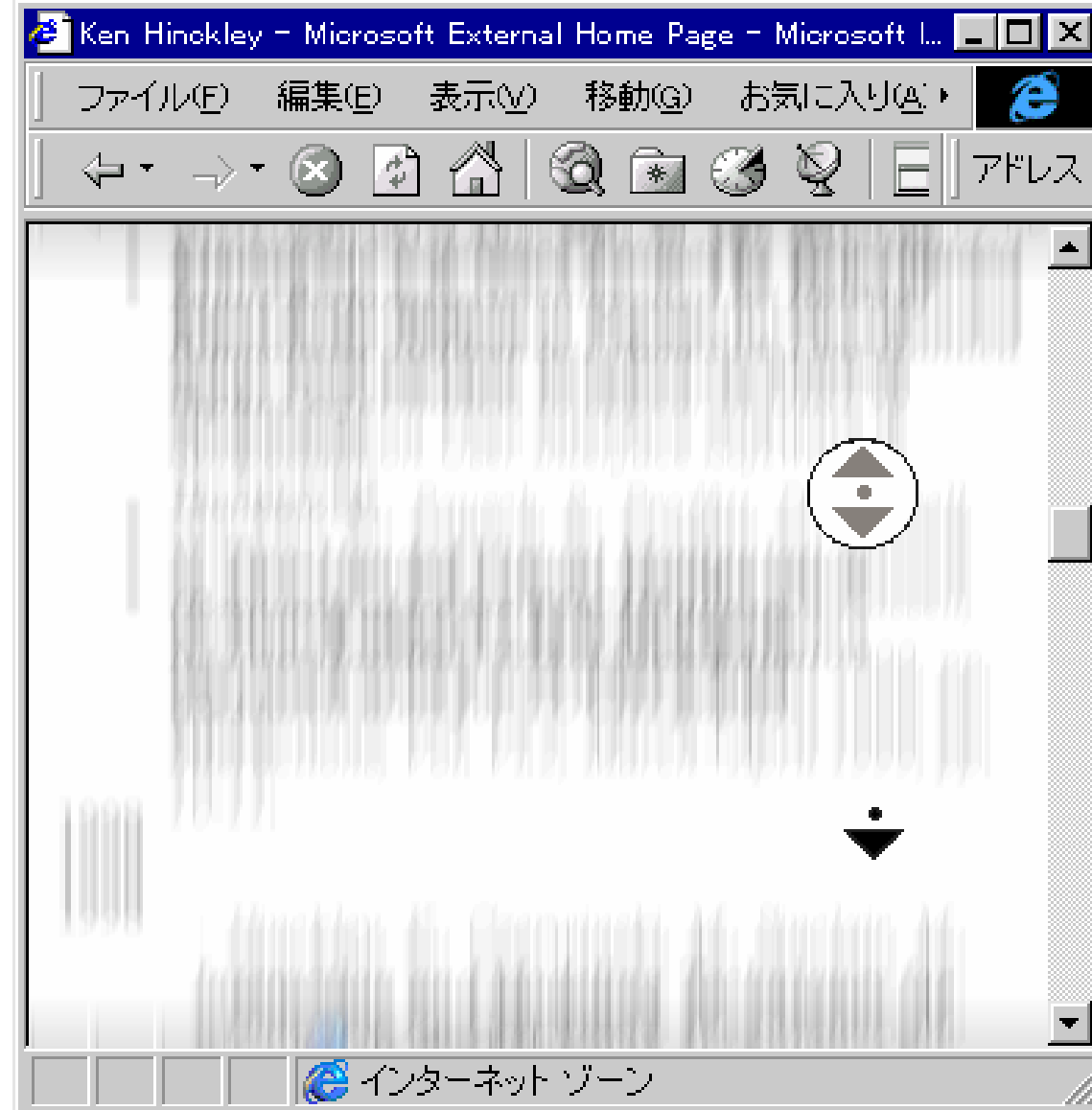
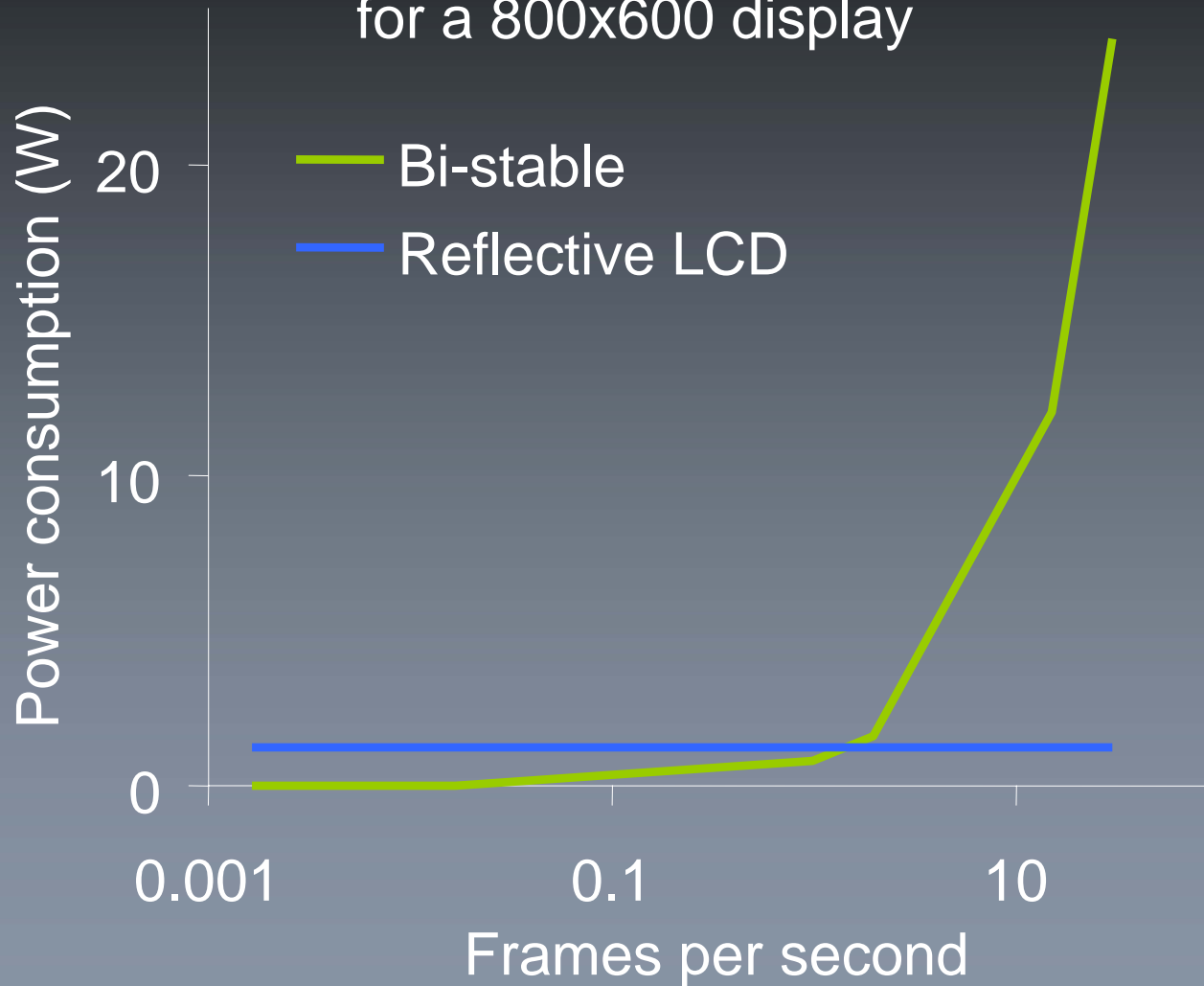


Image: Igarashi and Hinckley. Speed Dependant Automatic Zooming

# Typical Global Navigation



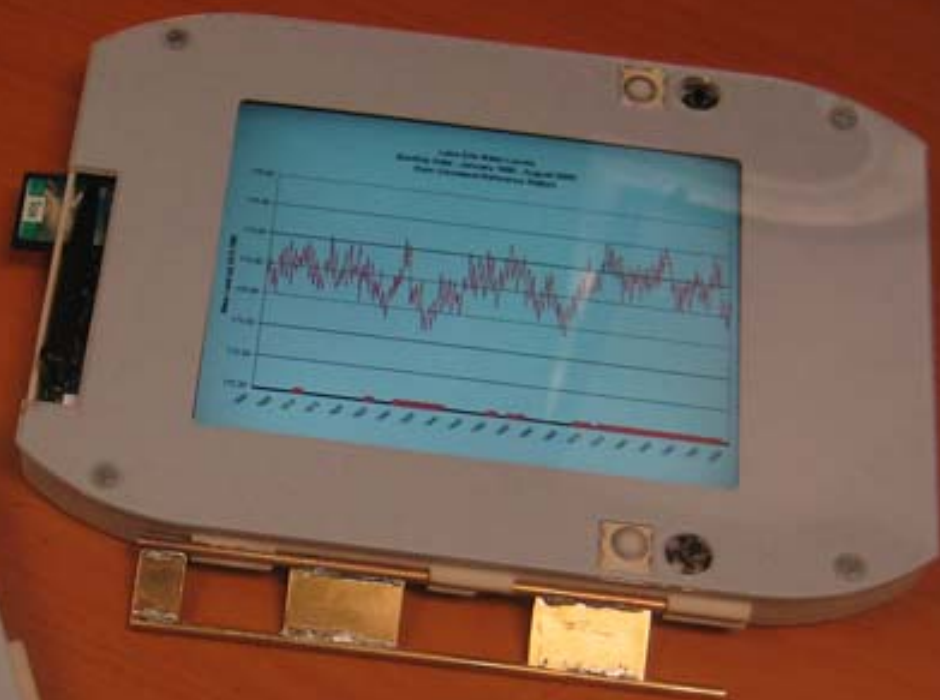
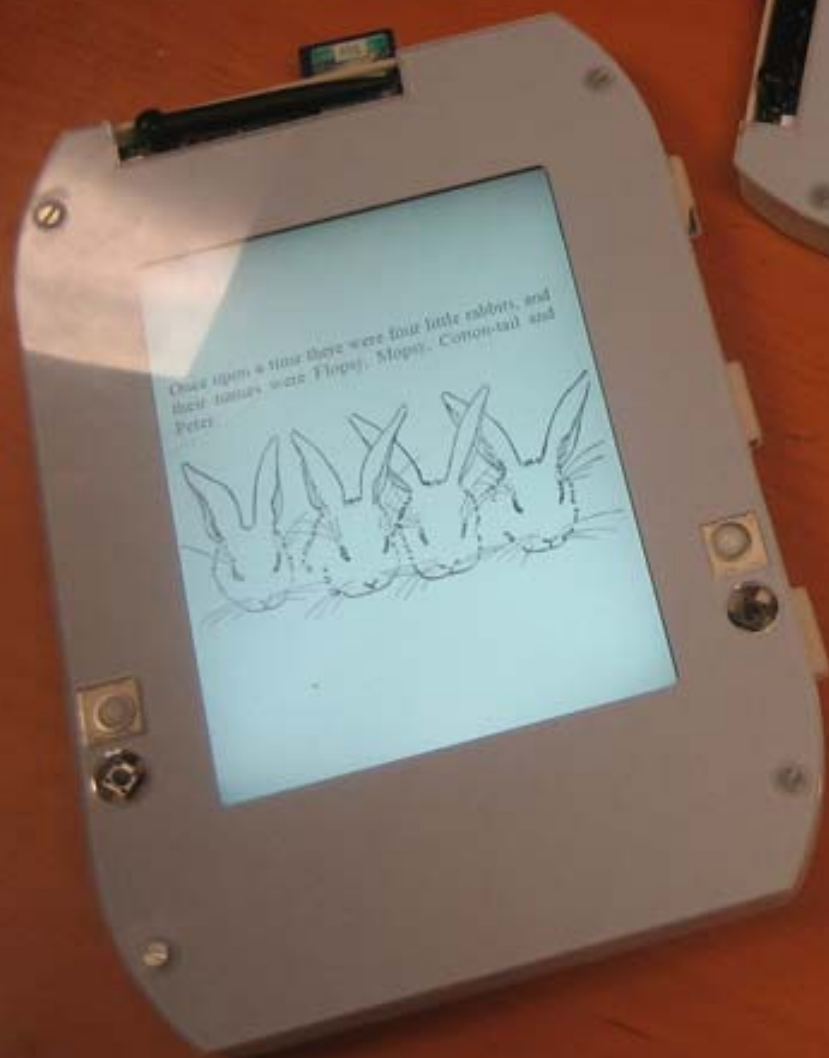
# Estimated power consumption for a 800x600 display





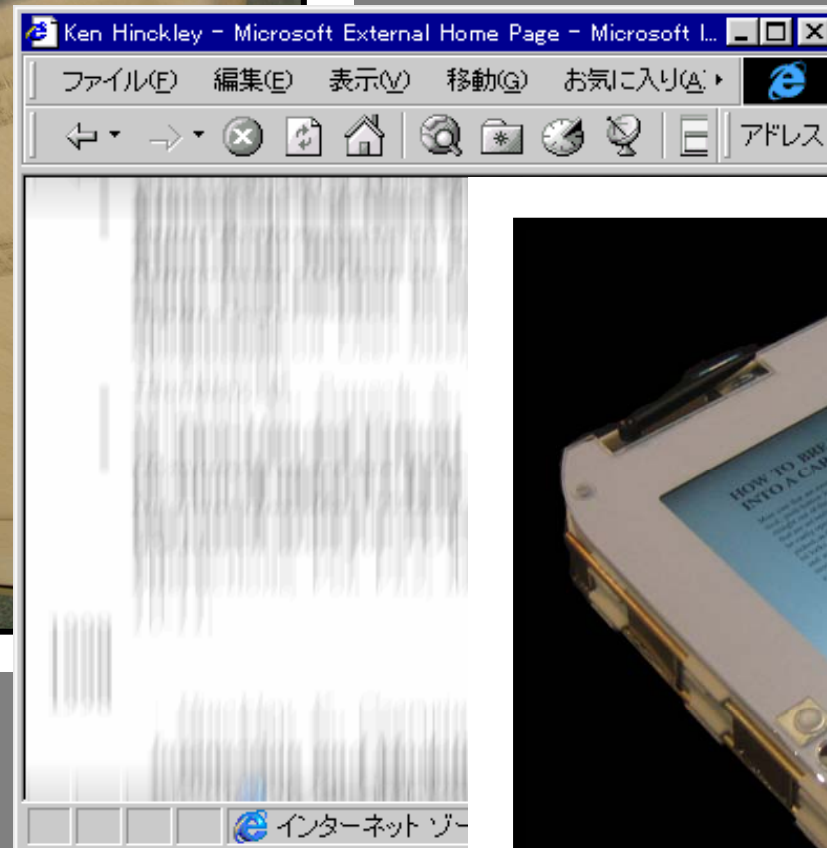
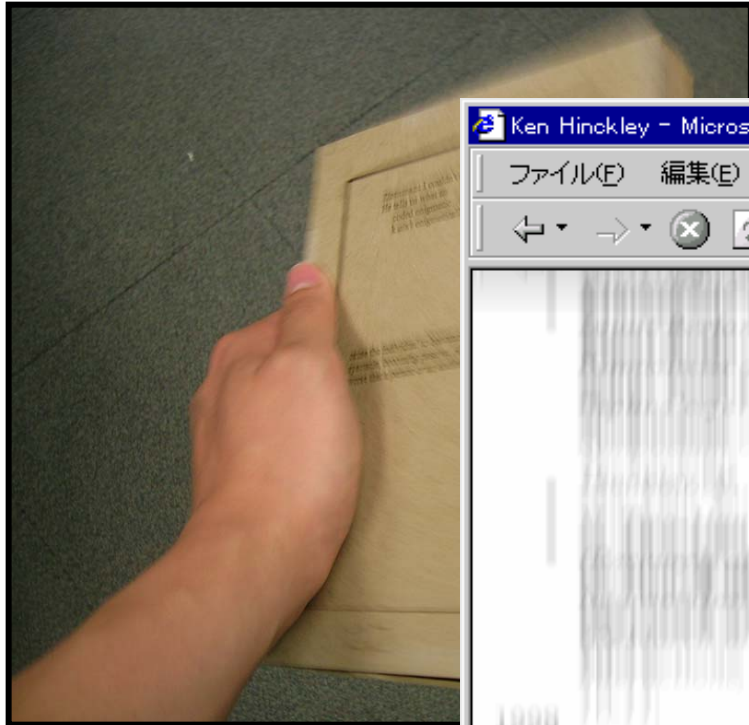


# Bookmarks + Comparisons





# Design Lessons





# Future Work and Conclusions

- Good evidence that two displays will improve reading
- Thinner, lighter, and more robust prototypes
- Develop new interactions

# Acknowledgements



- David Vescovi
- Farzam Yazdanseta
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Project page: <http://www.cs.umd.edu/~nchen/ebook>





## HOW TO BREAK INTO A CAR

Most cars that are newer than ten years old have one lock, push-button locks. These are locks that come straight out of the top of the car door and most make the car automatically unlock the door. These locks are for entry only and will not work if the car is in a parking lot, as described below. However, you can break into a car with a lock that is not a push-button lock. These are locks that are attached to the car's body and are more difficult to manipulate without a special tool. You can also be picked.

### HOW TO BREAK INTO A CAR WITH A HANGER

1. Take a wire hanger and bend it into a long 11/2 x 2 inches wide (see illustration).
2. Remove all the buttons of the 1 to the square in the window and the weather stripping.
3. Slide the hanger into the door between the window and the weather stripping. Open the door by foot and by this and close. Test for the end of the bottom rod and, when you have it, pull it up to open the lock.



