

CrossEd – Crossing interface text editor

Bibliography Review

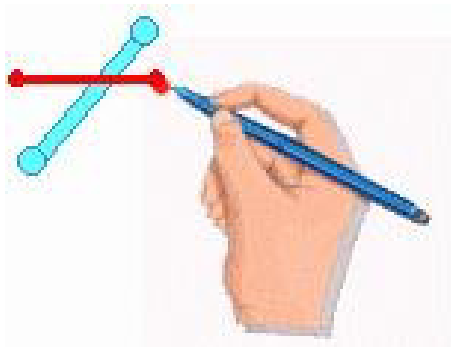
Goals

- Verify that all the interactions in traditional interfaces currently performed through point-and-click, can be achieved using crossing.
- Find points where crossing interfaces are stronger than traditional interfaces, and how to exploit them.

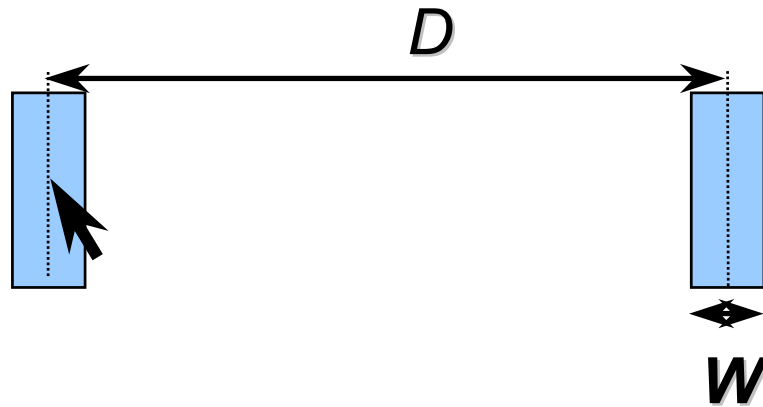
Battle Plan

- Design, implementation and evaluation of a simple application (text editor) entirely based on crossing.

Crossing vs Point-and-click

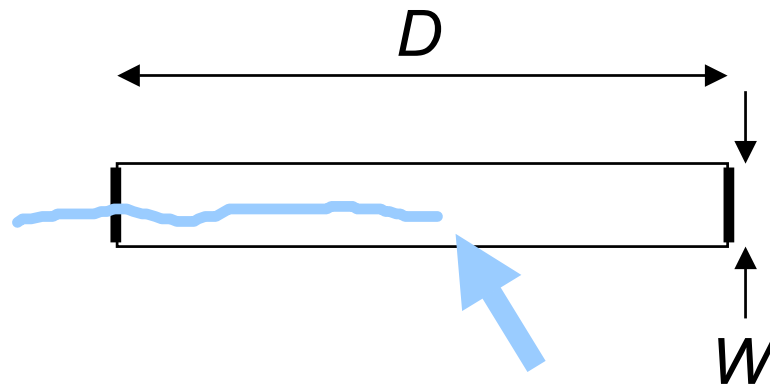


Clicking - Fitt's Law



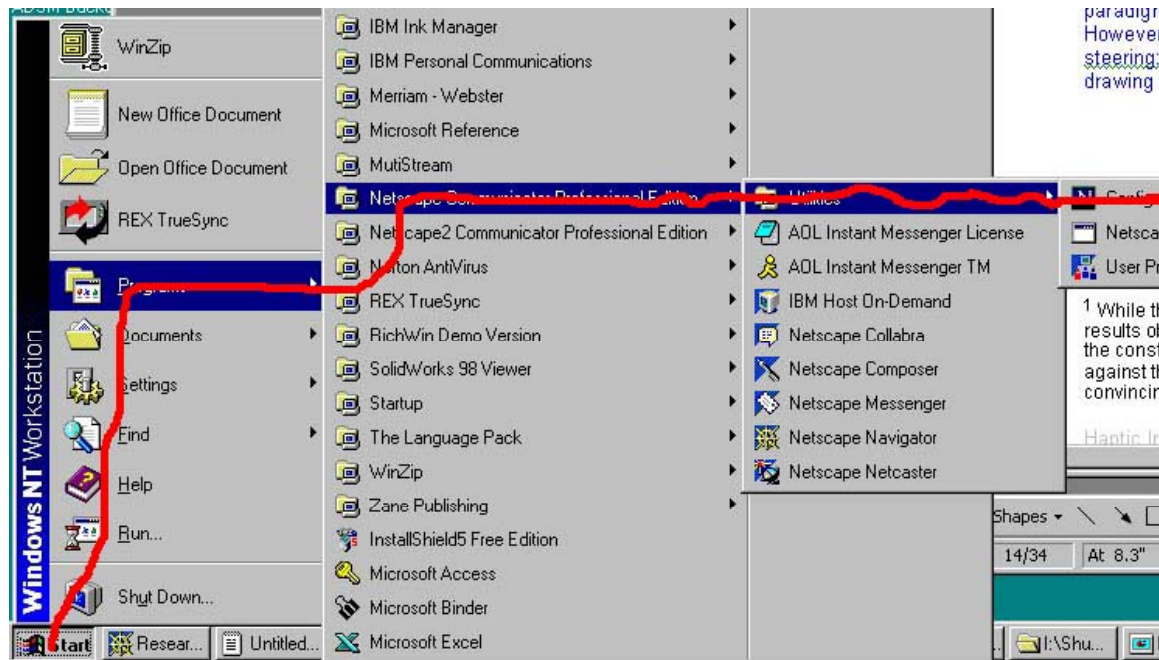
$$MT = a + b \underbrace{\log_2\left(\frac{D}{W} + 1\right)}_{ID}$$

Steering Law

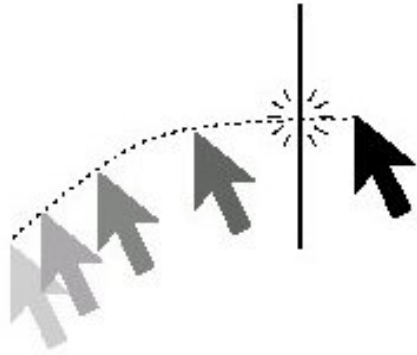


- The results demonstrated that there exists a logarithmic relationship between movement time and width of target in the goal passing task similar to the tapping task.

Steering



Crossing – more than dotting the i's



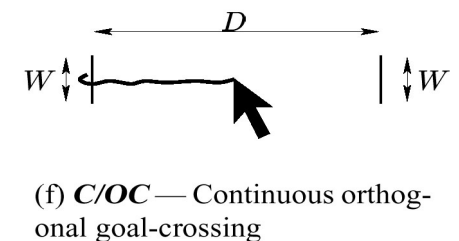
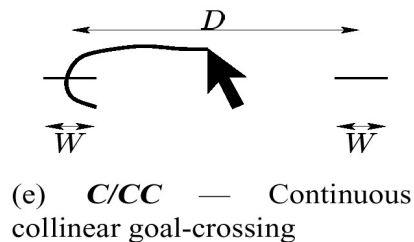
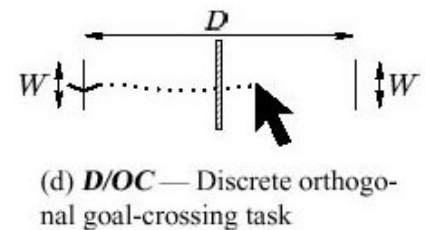
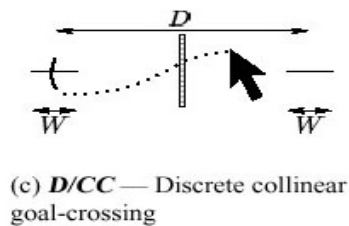
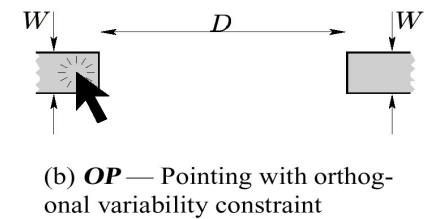
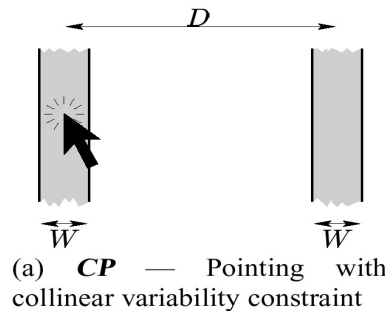
- How does crossing compare with pointing?
- What is the theoretical foundation of crossing?

Empirical study

■ *Target type:*
pointing vs crossing

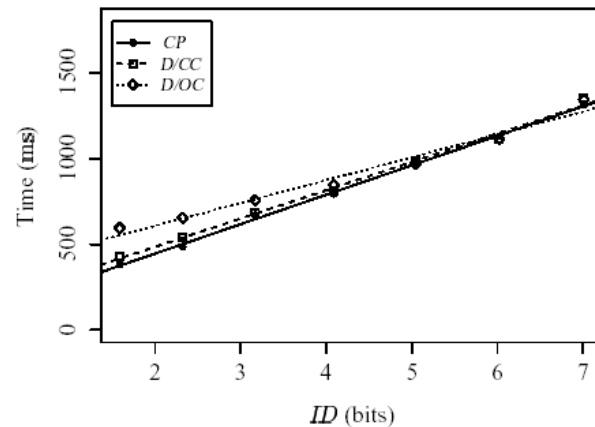
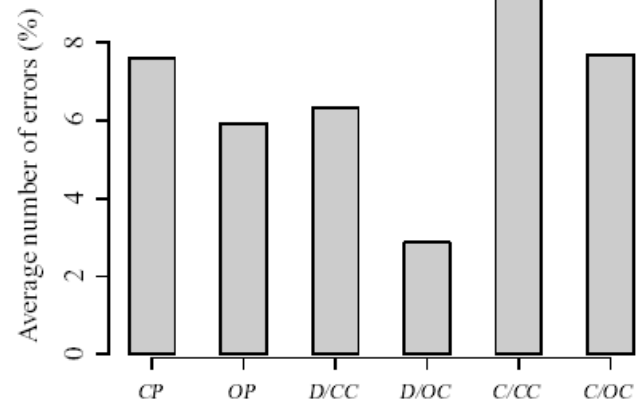
■ *Constraint direction:*
collinear vs orthogonal

■ *Continuity:*
continuous vs discrete

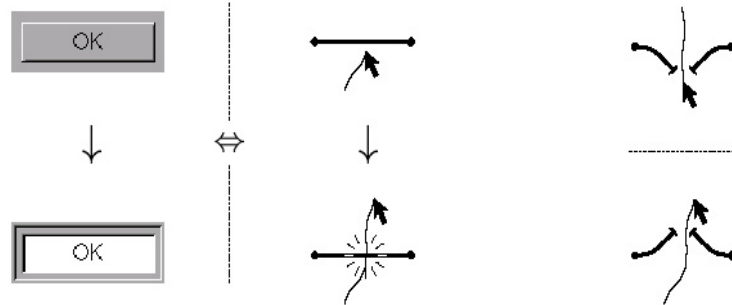


Results

- Crossing goals follows the Fitt's law, with different constants
- Crossing is less prone to error
- "Goal crossing completion time was shorter or no longer than pointing performance under the same index of difficulty"
- "There are situations where user performance in goal-crossing tasks is superior to that of target-pointing tasks."



Crossing-based widgets



Paris	10...20 C	
San Francisco	13...21 C	
San Jose	16...26 C	
Toronto	7...17 C	
Toulouse	12...19 C	

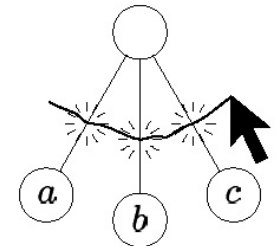
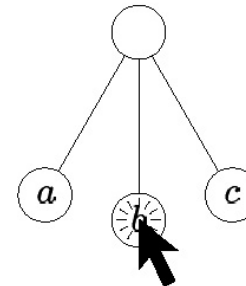
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on Threads

view

	Who	Date	Subject
	"Susan Dumais"	10/17/2001 09:08 AM	RE: Statistics and
	AirMail	10/17/2001 08:48 AM	Travel arrange
	Barton A Smith	10/17/2001 08:33 AM	Re: CHI2002
	"Saul Greenberg"	10/17/2001 08:17 AM	RE: Statistics and
✓	"Newman, William"	10/17/2001 07:21 AM	RE: Statistics and
✓	Steven Feiner	10/17/2001 06:16 AM	Re: Statistics and
✓	"Robert A. Virzi"	10/17/2001 05:40 AM	Re: Statistics and
✓	Yves Guiard	10/17/2001 04:53 AM	Re: Grant applica
✓	Angela Sasse	10/17/2001 12:36 AM	Re: 504
✓	"david r. hill"	10/16/2001 11:52 PM	Re: Fwd: CHI revi
✓	ksbooth	10/16/2001 10:16 PM	Re: Statistics and
✓	Eser Kandogan	10/16/2001 07:18 PM	letter
✓	"Mary Czerwinski"	10/16/2001 06:20 PM	RE: Reminder, TC
✓	Michael Muller	10/16/2001 06:13 PM	Re: Statistics and
✓	Chris Schmandt	10/16/2001 05:36 PM	Re: Statistics and
✓	Barton A Smith	10/16/2001 05:26 PM	ScrollPrint Misc f



Application – Elastic windows

The screenshot displays a web browser interface titled "Research Project Description". The main content area is divided into two sections: "Current Projects" and "Previous Projects (93-96)".

Current Projects:

- LifeLines for Visualizing Patient Records
- User Interface for the Library of Congress National Digital Library
- Elastic Windows for Rapid Multiple Window Management
- Dynamic Queries Interfaces for the EODSID Information System
- Baltimore Learning Communities (Video on demand)

Previous Projects (93-96):

- User interfaces for Youth Services Information Systems
- User Interfaces for the Visible Human Project
- Multiple Window Coordination for Visual Information Access in High Performance User Interfaces
- Software Engineering Methods and Tools for Graphical User Interface Evaluation

Three preview windows are shown on the right side of the interface:

- LifeLines for Vi**: Preview of the "LifeLines for Visualizing Patient Records" project.
- User Interface 1**: Preview of the "User Interface for the Library of Congress National Digital Library" project.
- Elastic Window**: Preview of the "Elastic Windows for Rapid Multiple Window Management" project.

Arrows indicate the mapping from the project titles in the "Current Projects" list to their respective preview windows on the right.

Elastic Windows: A Hierarchical Multi-Window World-Wide Web Browser. Eser Kandogan and Ben Shneiderman, *ACM Symposium on User Interface Software and Technology 1997*

Concluding Remarks

- Crossing is a new interaction paradigm worth of study.
- Experiments show that this interaction could be faster.
- It has some advantages over other paradigms like:
 - Composition of commands
 - Versatility

Our project

- Develop an application that shows how the interactions performed in a traditional click-and-point interface (a word editor) can be constructed using only crossing.
- Evaluate the performance of this interaction method over the traditional click-and-point.