

CHI2007 Workshop on Converging on a "Science of Design"  
through the Synthesis of Design Methodologies

# Design Theory and Practice

Kumiyo Nakakoji

KID (Knowledge Interaction Design) Laboratory  
RCAST, University of Tokyo

SRA Key technology Laboratory Inc., Japan



# Designing Tools for Designers

design  
research



tools  
for  
design

# Designing Tools for Designers

design  
research

theory  
practice

inform



tools  
for  
design

# Designing Tools for Designers

design  
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theory  
practice

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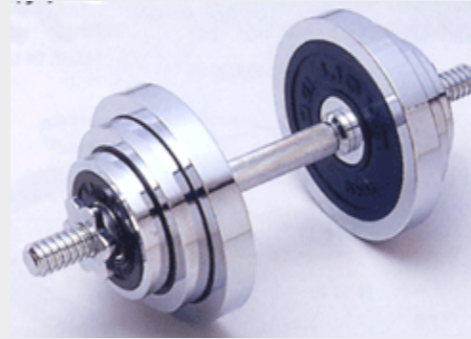


tools  
for  
design

- support a designer to do a task
- help a designer do a task
- allow a designer to do a task
- empower a designer in doing a task
- amplify a designer's ability to do a task

# How a Designer Relates with Tools?

□ dumbbells



□ running shoes

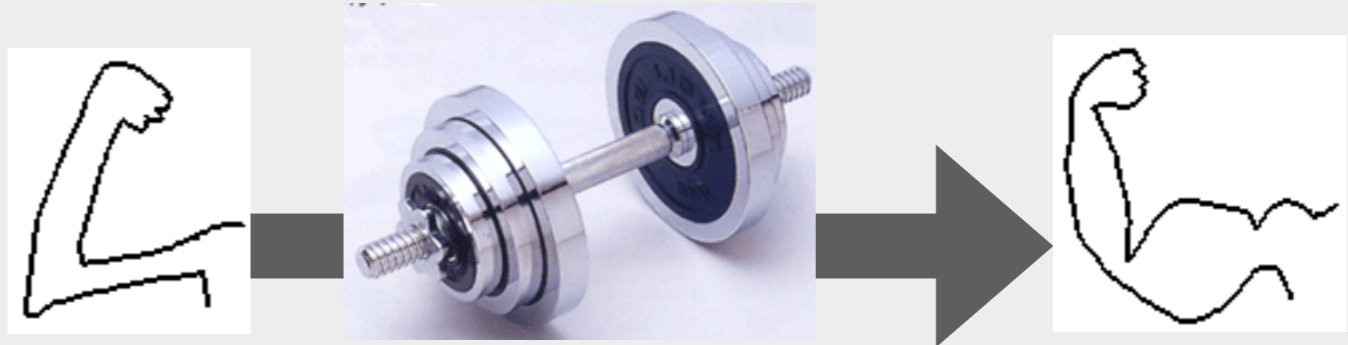


□ skis



# How a Designer Relates with Tools?

- dumbbells  
developed  
muscles



- running shoes  
faster  
running

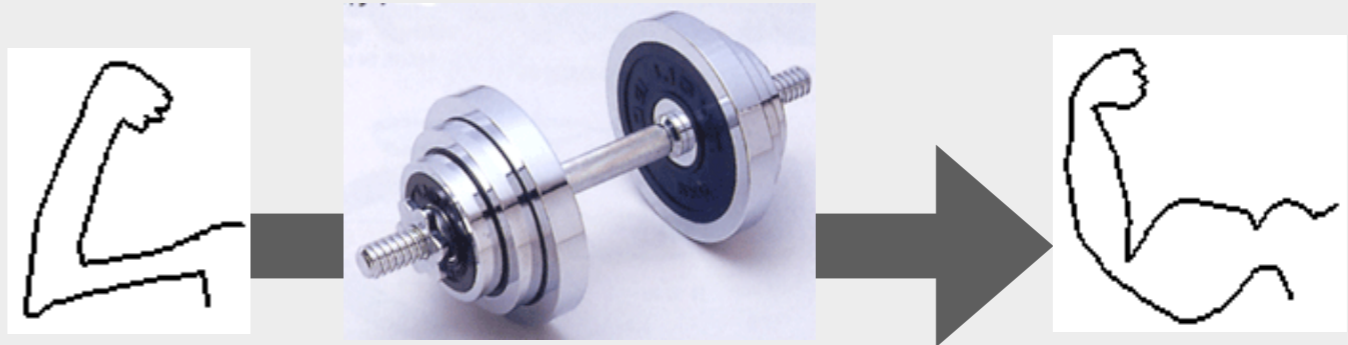


- skis  
new  
experience



# How a Designer Relates with Tools?

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**developed**  
muscles



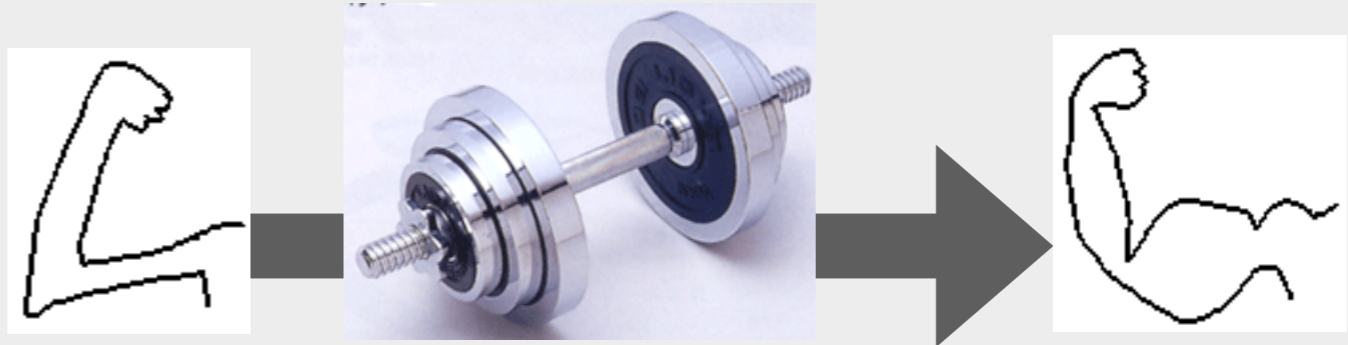
- running shoes  
**faster**  
running



- skis  
**new**  
experience



□ dumbbells  
**developed**  
**muscles**



□ running shoes  
**faster**  
**running**



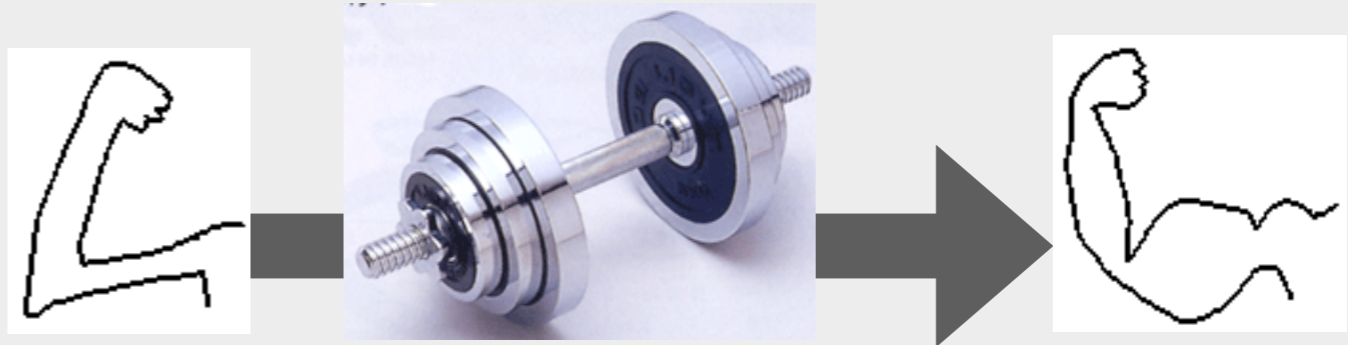
□ skis  
**new**  
**experience**





# Different Relations, Different Things to Look At

- dumbbells  
developed  
muscles



- running shoes  
faster  
running

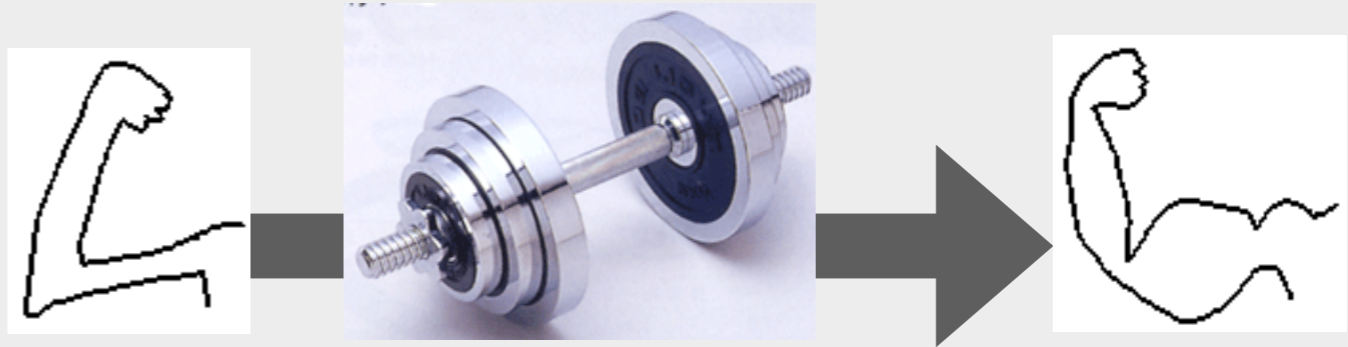


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new  
experience



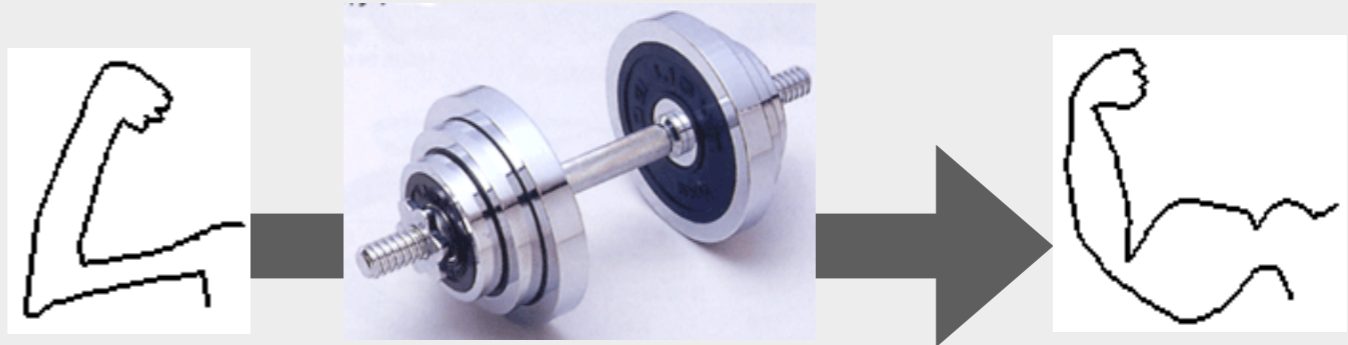
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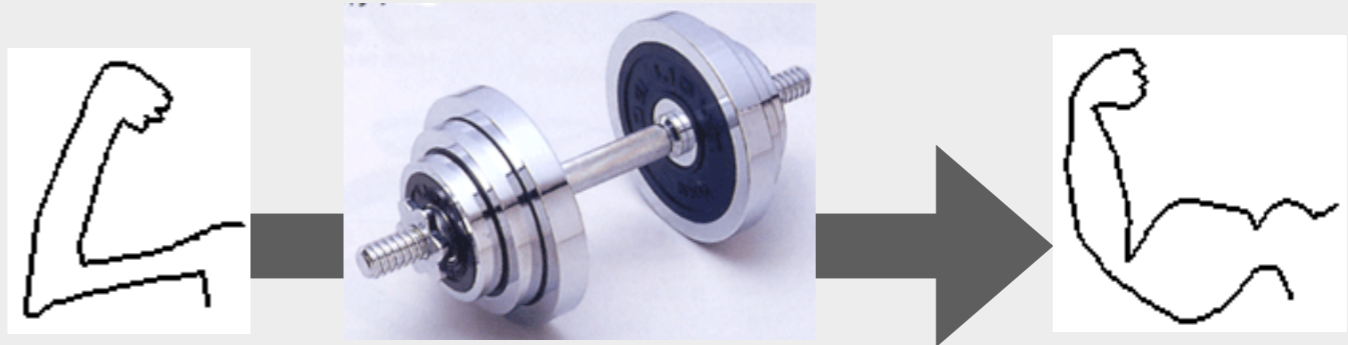
- dumbbells  
developed  
muscles



- evaluation: 40% more muscles developed after 2-week usage
- related work: push-ups

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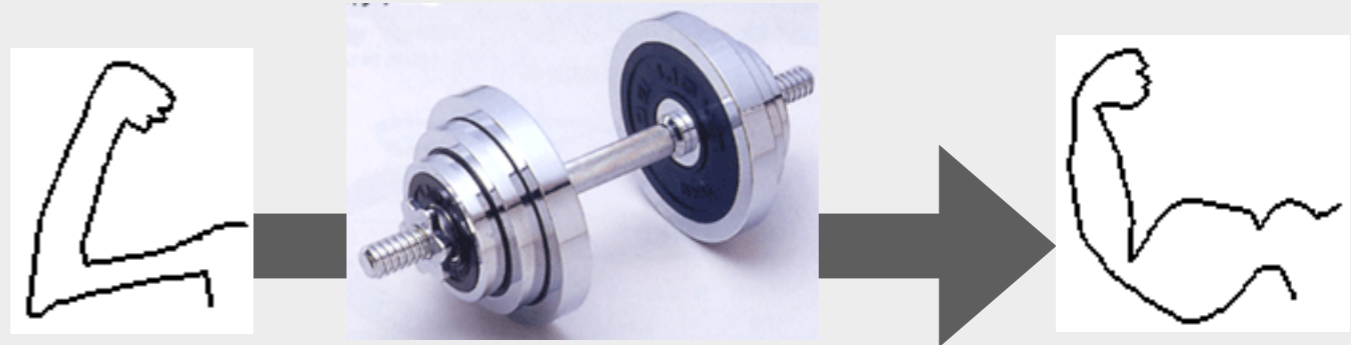
- dumbbells  
developed  
muscles



- evaluation: 40% more muscles developed after 2-week usage
- X questionnaire**
- related work: push-ups

# Different Relations, Different Things to Look At

- dumbbells  
developed  
muscles



- evaluation: 40% more muscles developed after 2-week usage  
**X questionnaire**
- related work: push-ups  
**X handset**

# Different Relations, Different Things to Look At

- running shoes  
**faster**  
running



# Different Relations, Different Things to Look At

- running shoes  
**faster**  
running



- evaluation: 5.2% faster in 100m running
- related work: other running shoes

# Different Relations, Different Things to Look At

- running shoes  
**faster**  
running



- evaluation: 5.2% faster in 100m running
- X more comfortable than barefoot**
- related work: other running shoes



# Different Relations, Different Things to Look At

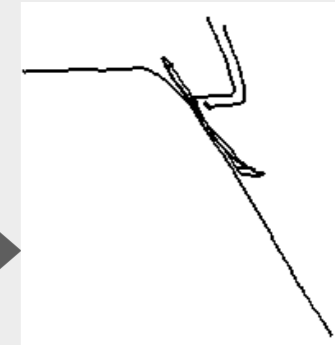
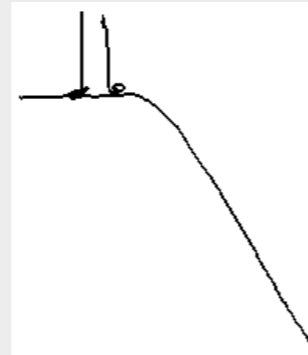
- running shoes  
**faster**  
running



- evaluation: 5.2% faster in 100m running
  - X more comfortable than barefoot
- related work: other running shoes
  - X beach sandals

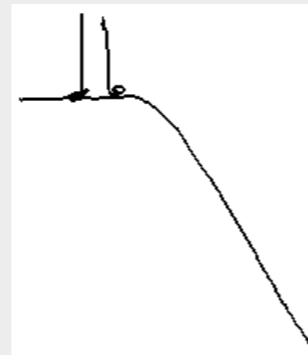
# Different Relations, Different Things to Look At

- skis  
new  
experience



# Different Relations, Different Things to Look At

- skis  
new  
experience



- related work :

walking?

tennis?

sliders?

# こと もの “koto” versus “mono”

□ enabling a new experience



□ better things for the experience



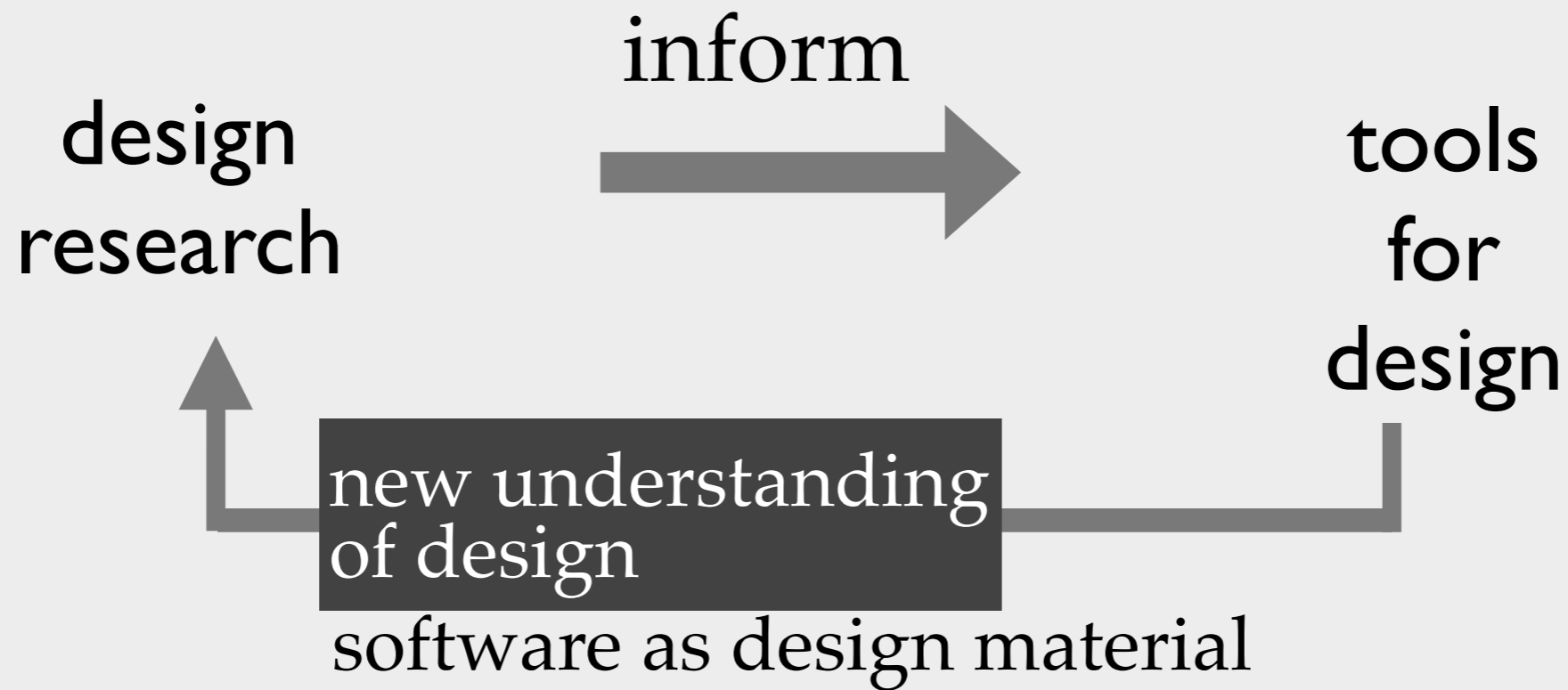
# Designing Tools for Design Processes

design  
research

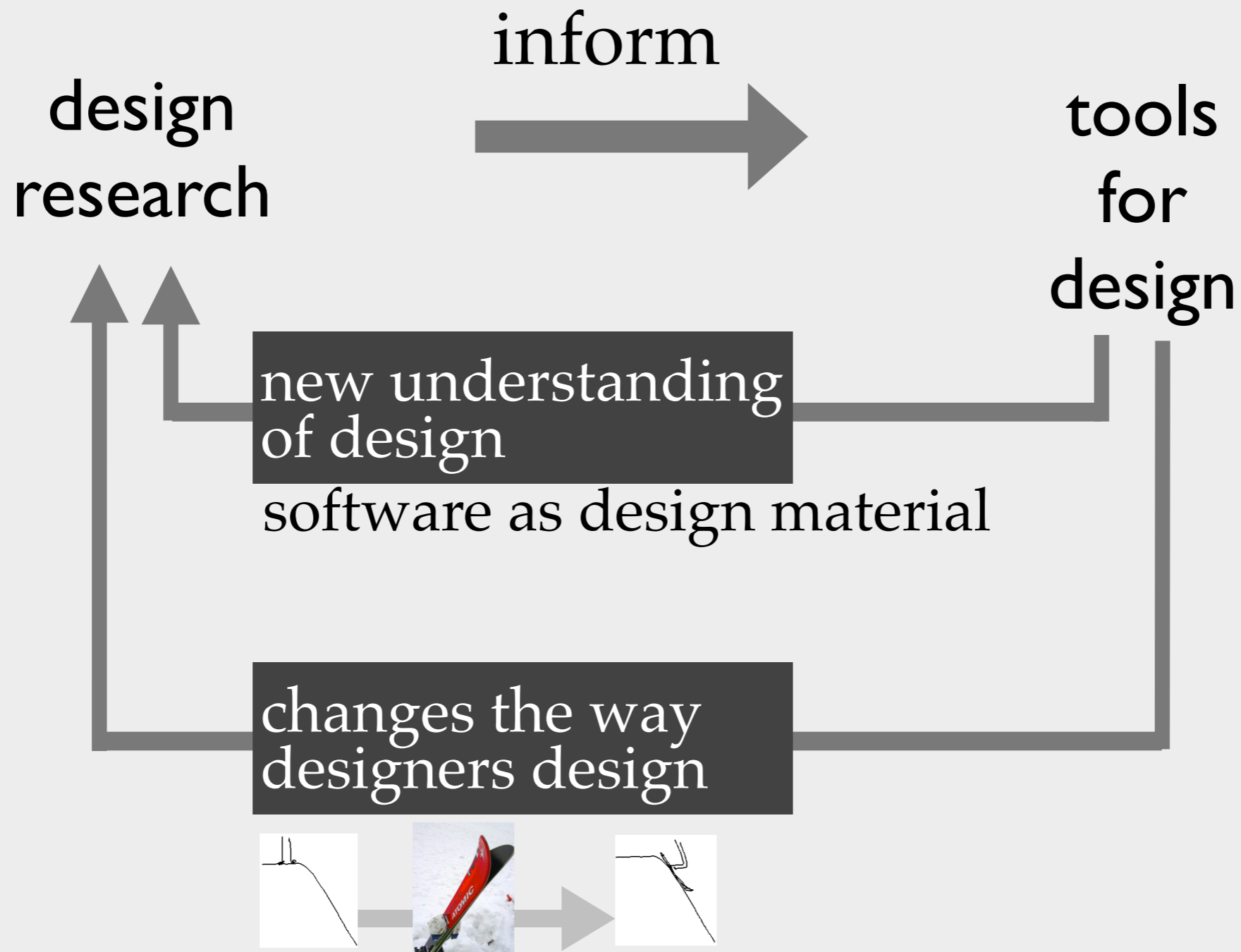


tools  
for  
design

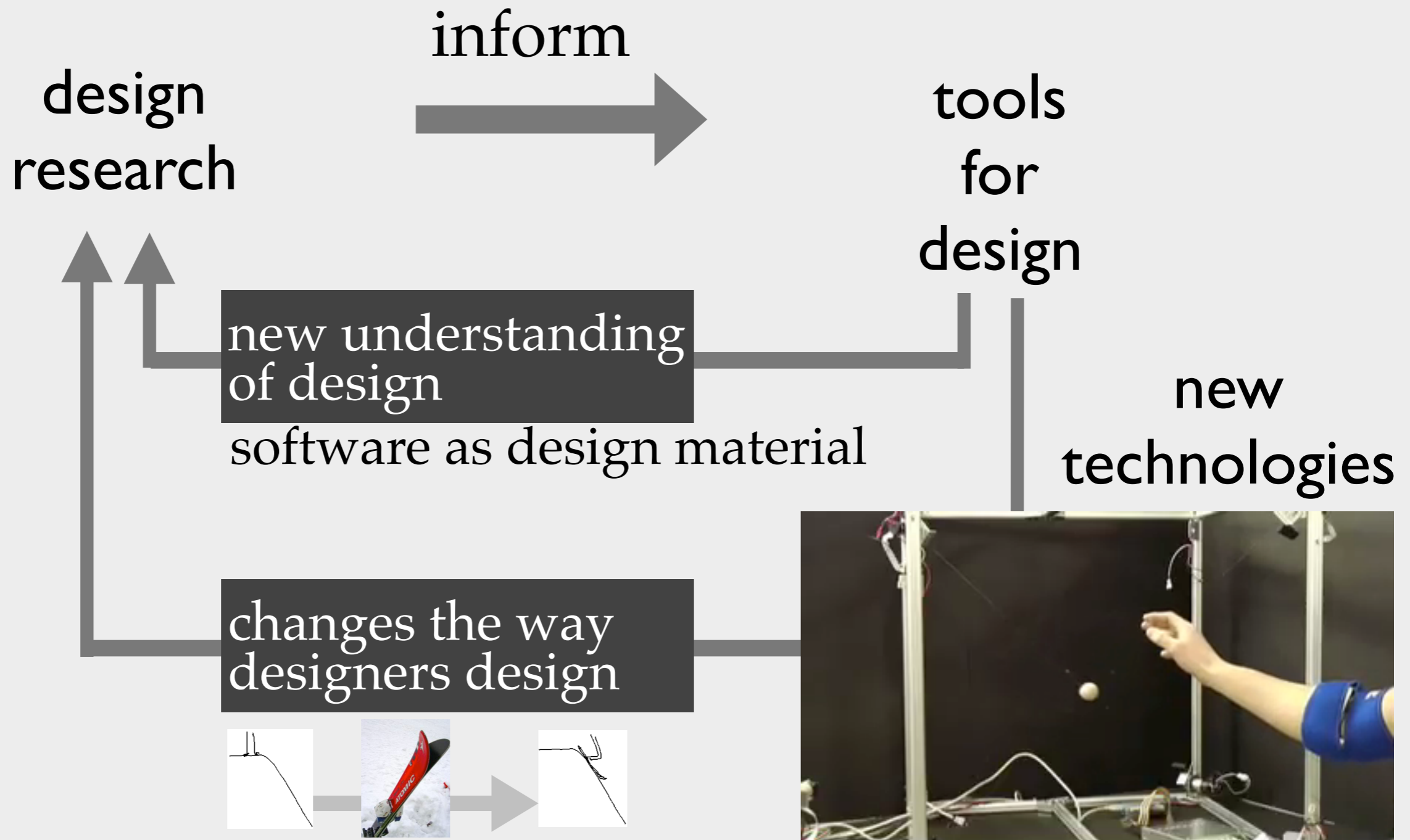
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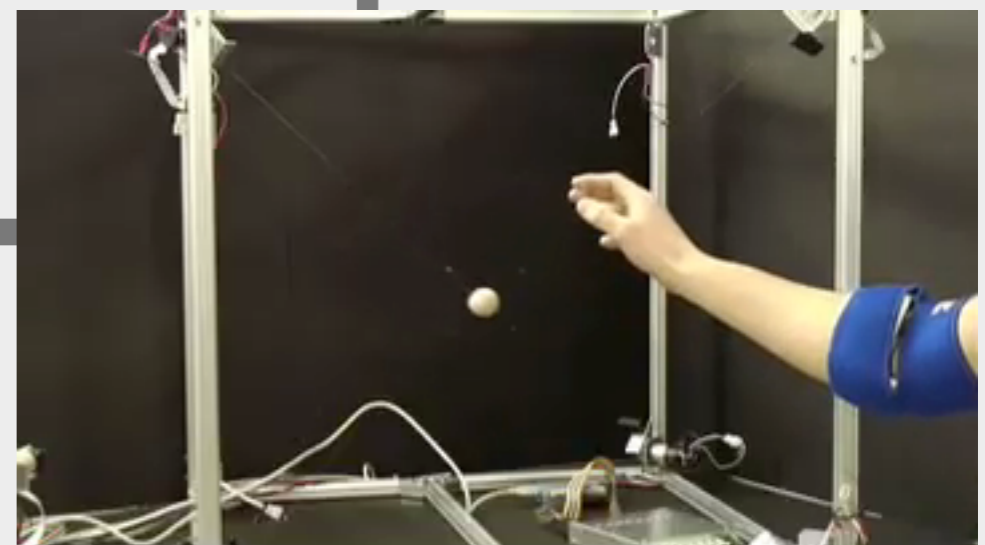
tools  
for  
design

new understanding  
of design

software as design material

new  
technologies

changes the way  
designers design



# Thank you.

Acknowledgments to: Yasuhiro Yamamoto (U. Tokyo), Mark Gross (CMU), Kazushi Nishimoto (JAIST), and Gerhard Fischer (U. Colorado)

Thanks to: [shop.goo.ne.jp/store/shapeshop/image/H-8495.gif](http://shop.goo.ne.jp/store/shapeshop/image/H-8495.gif), [i6.photobucket.com/albums/y245/kyou2000/airmax.jpg](http://i6.photobucket.com/albums/y245/kyou2000/airmax.jpg), [i6.photobucket.com/](http://i6.photobucket.com/), [image.space.rakuten.co.jp/lg01/59/0000200859/25/img6ab625c3e8yfy0.jpeg](http://image.space.rakuten.co.jp/lg01/59/0000200859/25/img6ab625c3e8yfy0.jpeg), [plaza.rakuten.co.jp/hikaaka/](http://plaza.rakuten.co.jp/hikaaka/), [www.yomiuri.co.jp/e-japan/yamagata/kikaku/083/3.htm](http://www.yomiuri.co.jp/e-japan/yamagata/kikaku/083/3.htm), [web.hakuba.ne.jp/iwatake/snow/img/xc2.jpg](http://web.hakuba.ne.jp/iwatake/snow/img/xc2.jpg), [www.midnightsunsports.com/images/Torino/ski%20jump.bmp](http://www.midnightsunsports.com/images/Torino/ski%20jump.bmp), [www.explorenewengland.com/travel/explorene/specials/ski/blog/IMG\\_0996.jpg](http://www.explorenewengland.com/travel/explorene/specials/ski/blog/IMG_0996.jpg), [homepage2.nifty.com/p-palette/skilife/skiplates.jpeg](http://homepage2.nifty.com/p-palette/skilife/skiplates.jpeg), [www.apls.gr.jp/lease/img/top.jpg](http://www.apls.gr.jp/lease/img/top.jpg)



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# Designing Tools for Design Processes

## meta-design research

theory  
practice

design  
research

inform



tools  
for  
design

new understanding  
of design  
software as design material

changes the way  
designers design

