Interaction Design & Virtual Reality

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Assistant Prof.

2016.09.30

rotoscoping

Rotoscoping:: an animation technique in which animators trace over footage, frame by frame, for use in live-action and animated movies.

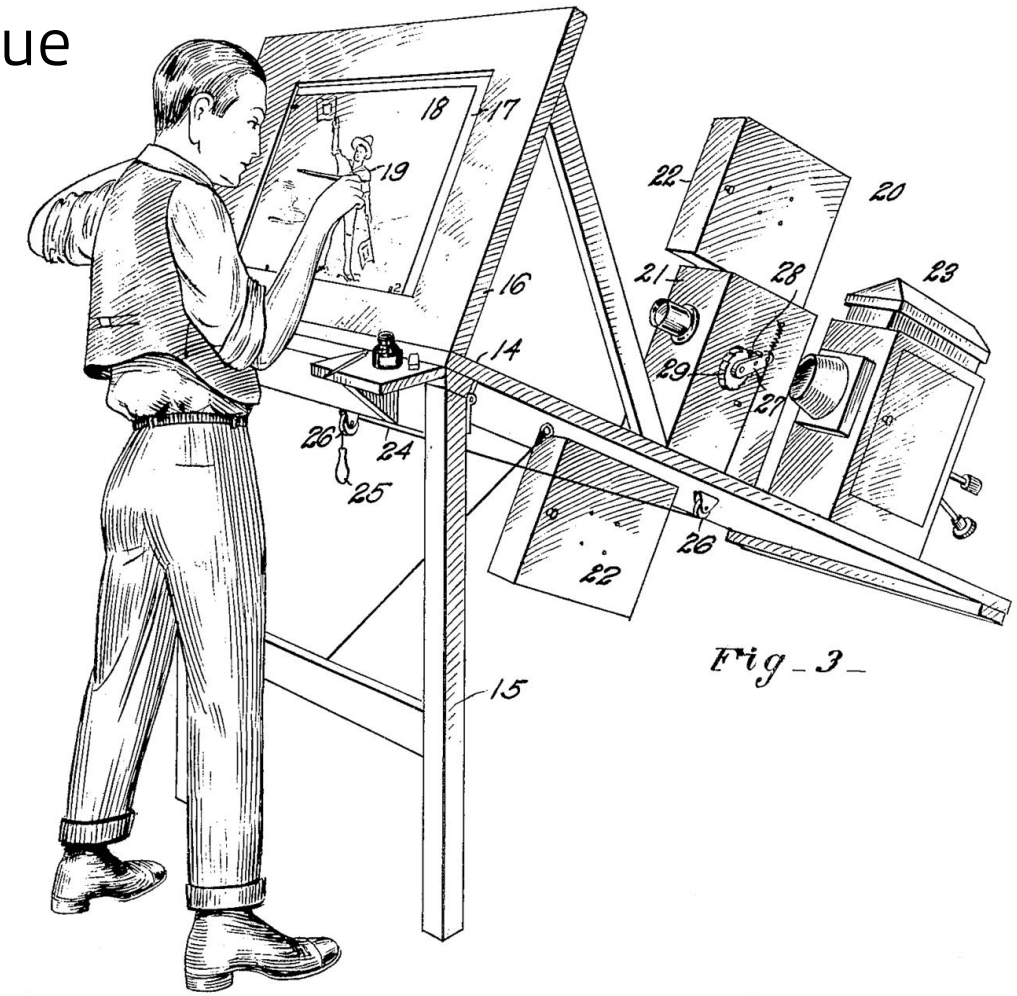
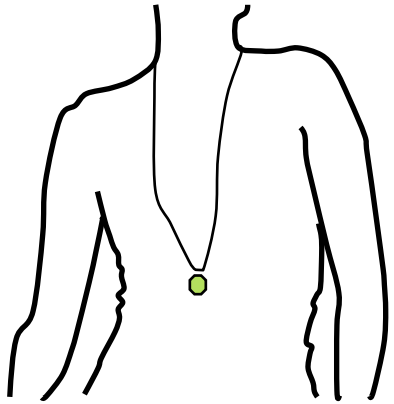


Fig_3_

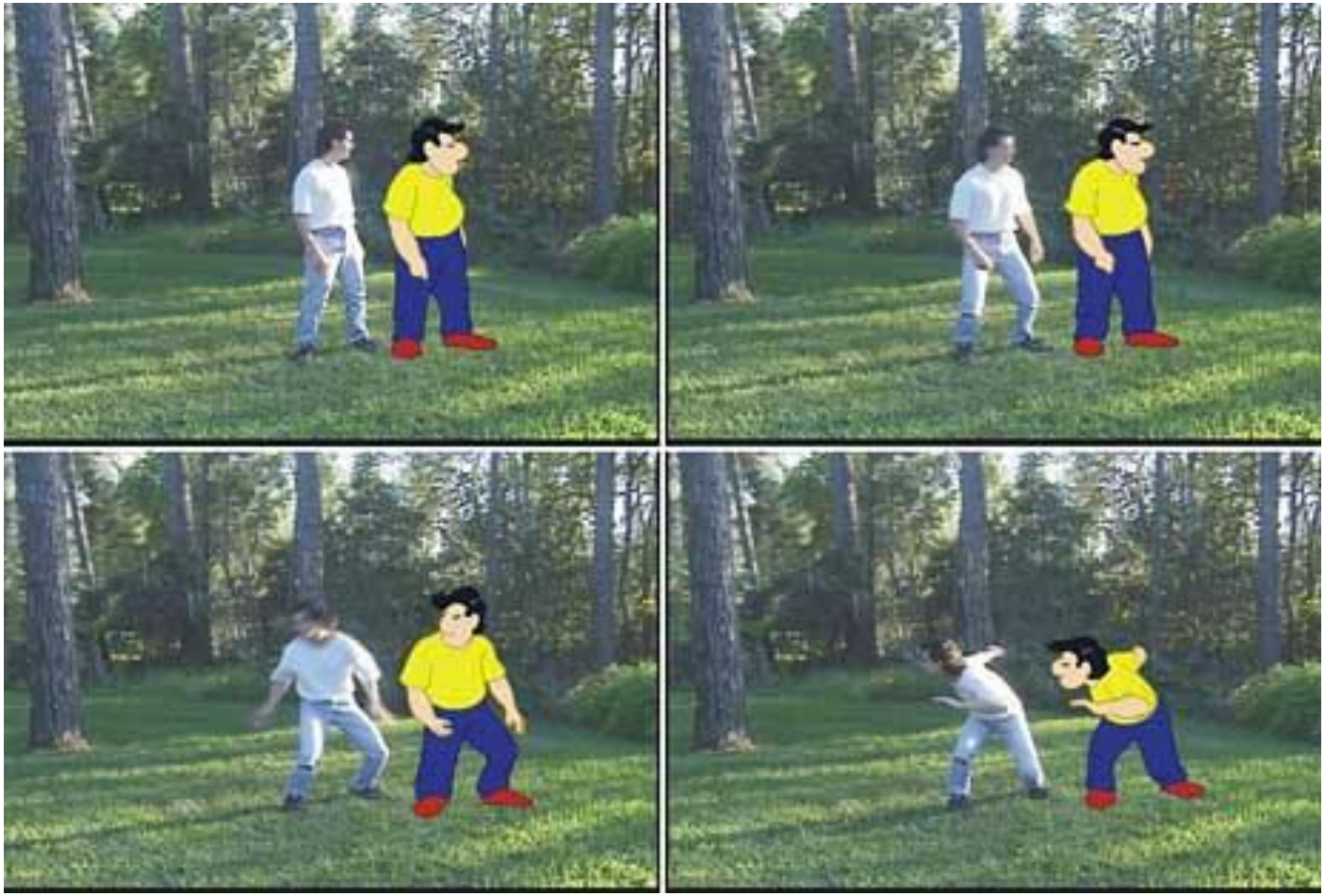
take/import photo

trace important lines

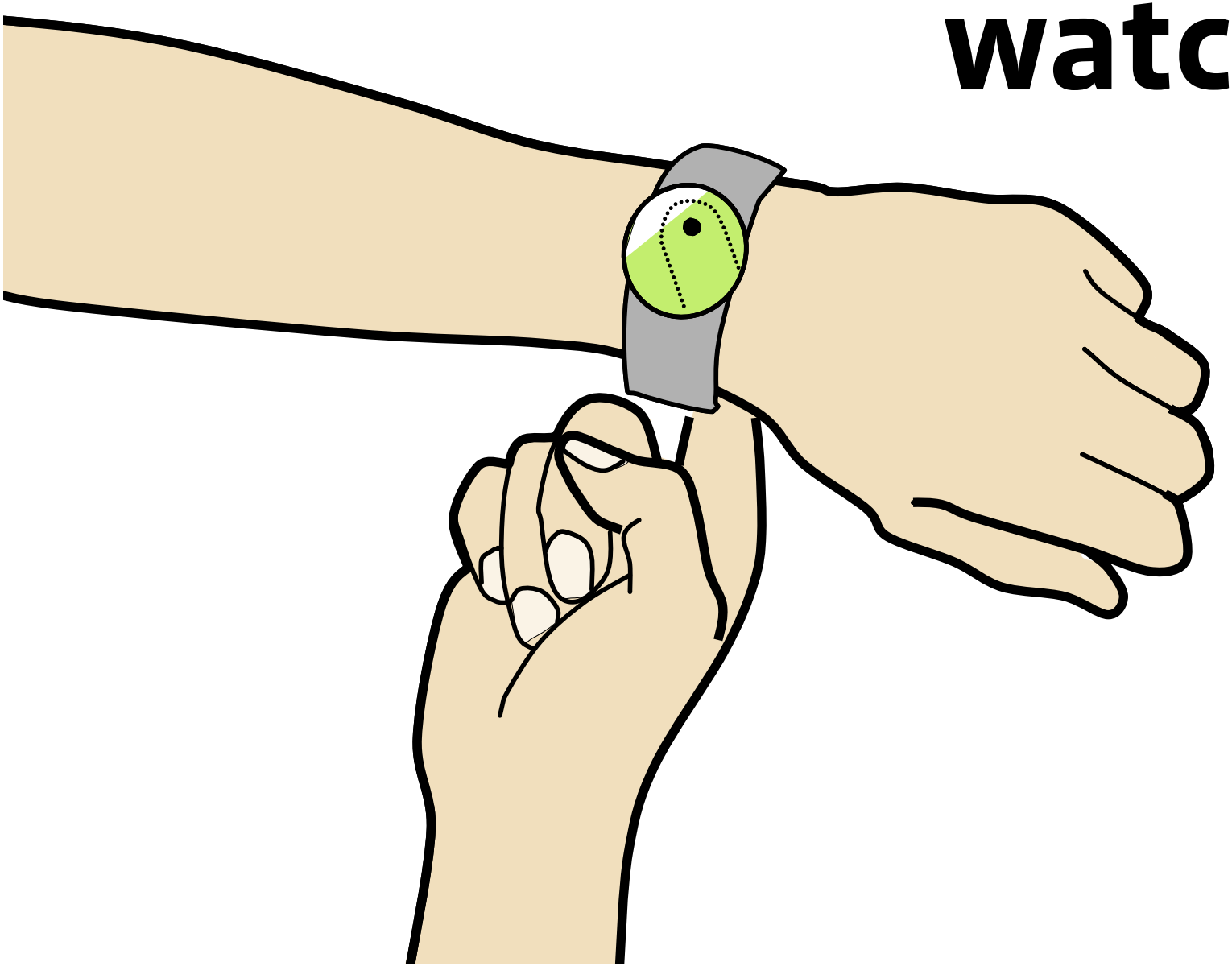
result



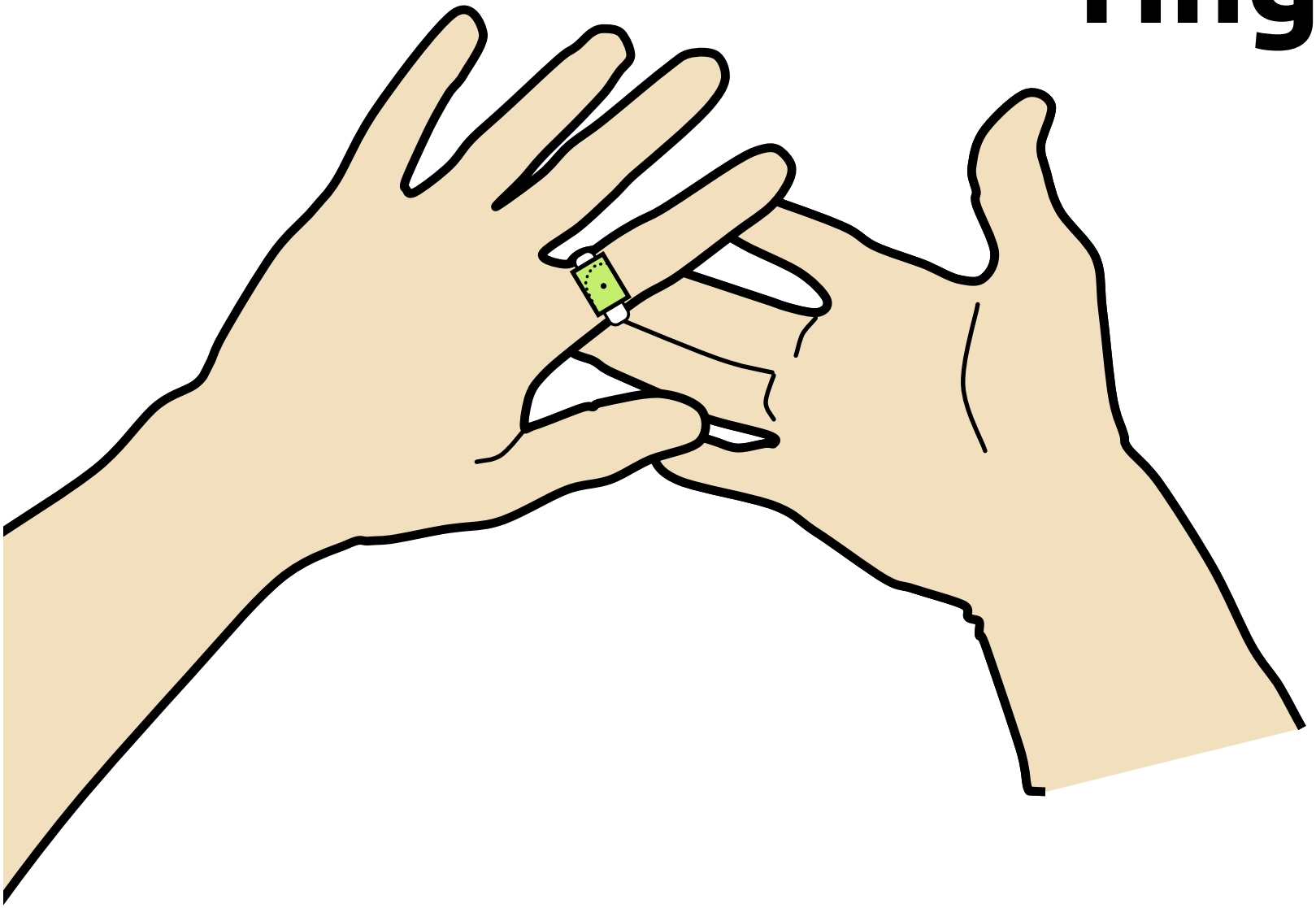
rotoscoping



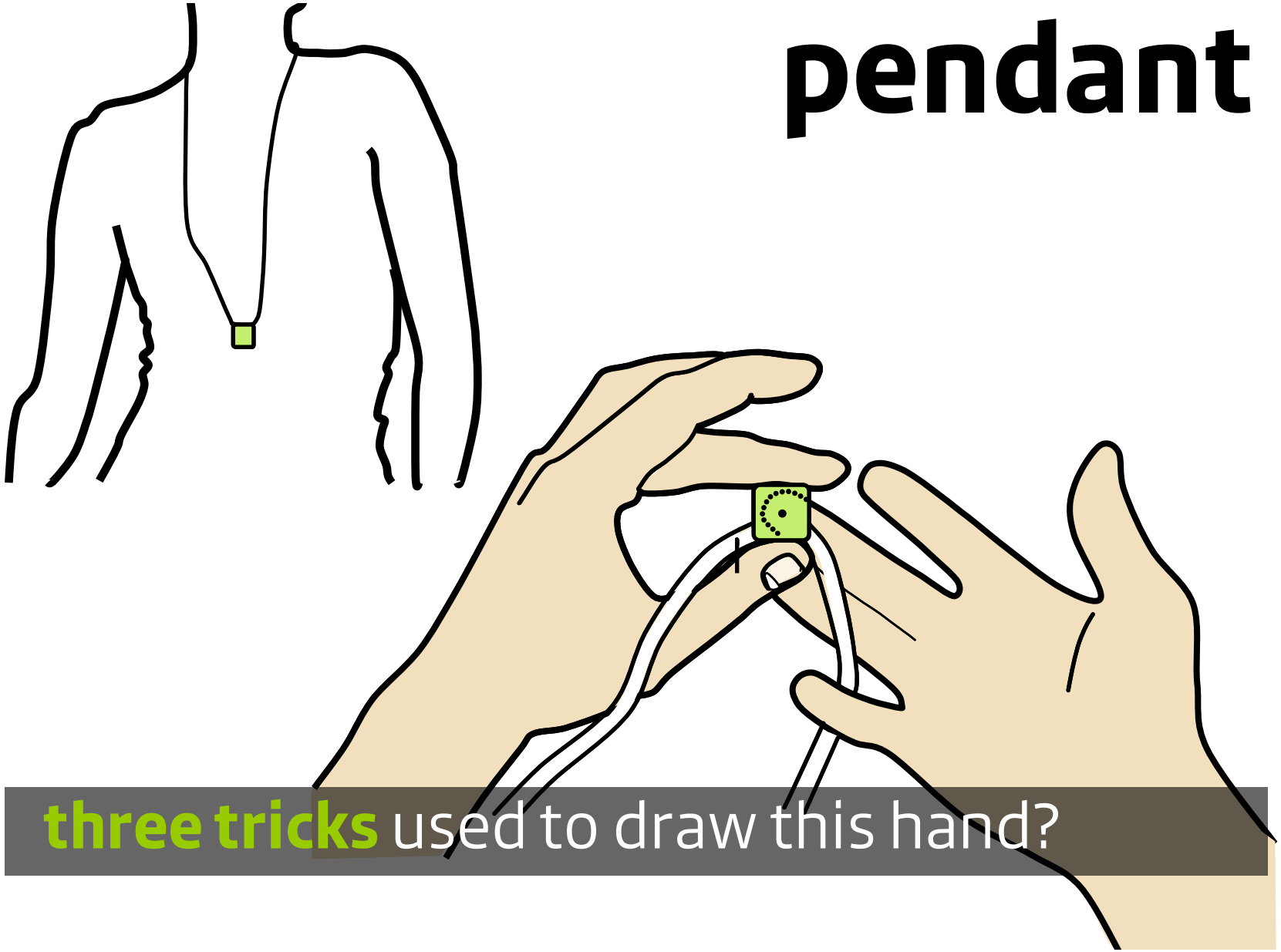
watch



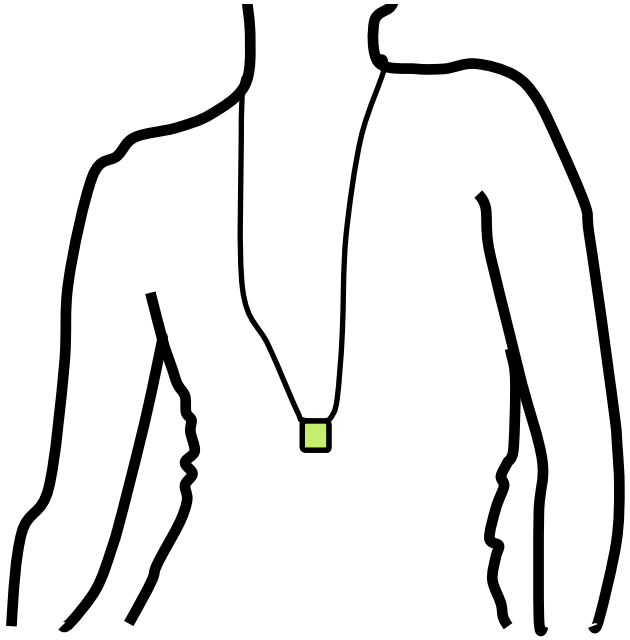
ring

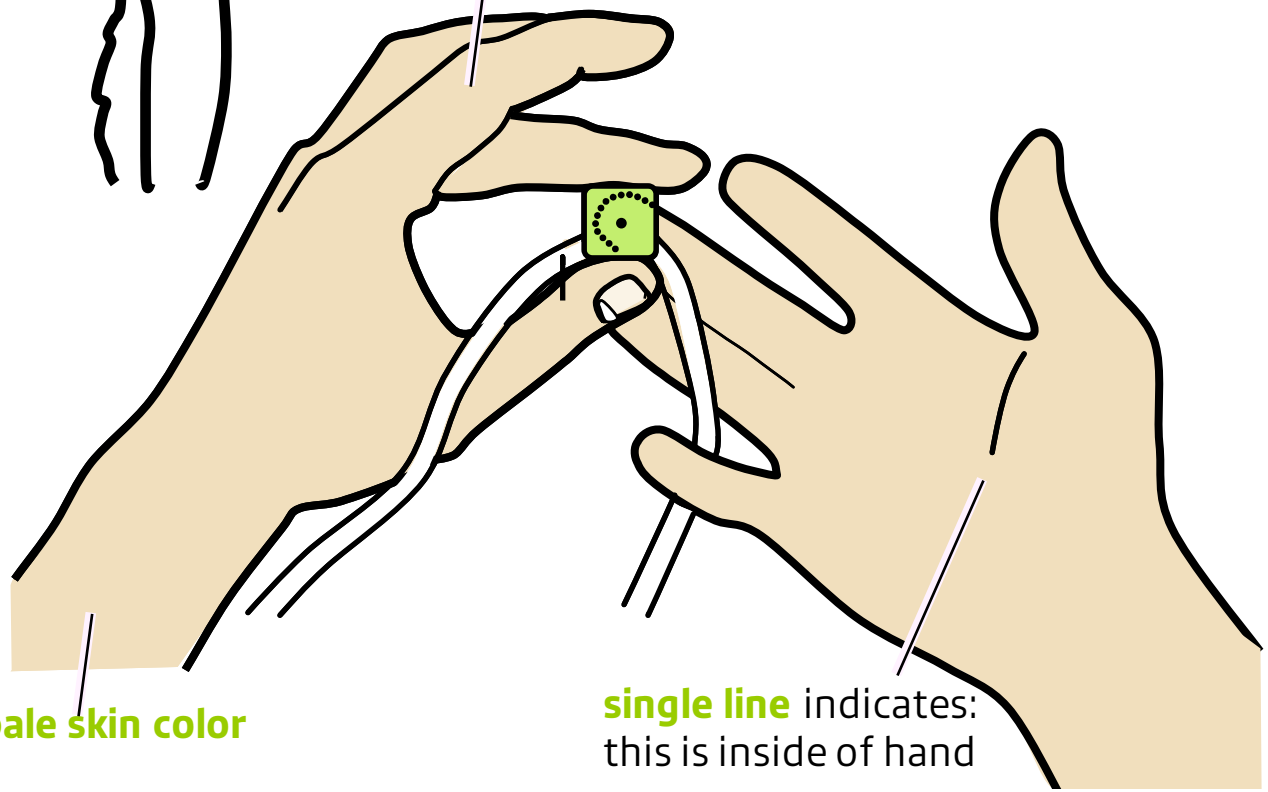


tricks in Rotoscoping


pendant
three tricks used to draw this hand?

pendant





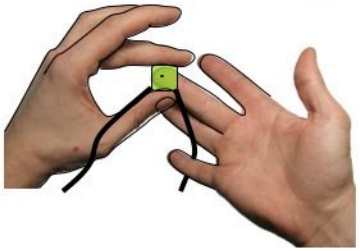
only outer lines are thick, **same line** is thin when inside the hand.

single, flat, **pale skin color**

single line indicates: this is inside of hand

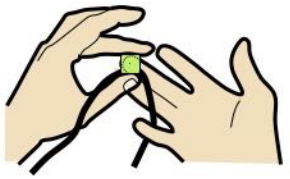
take elements separately
& matt (“freistellen”)

combine



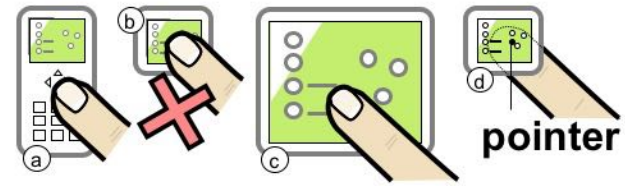
draw over

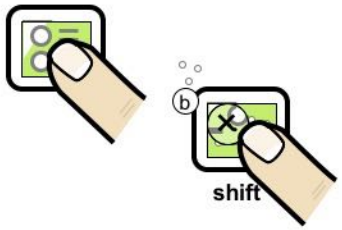
colorize

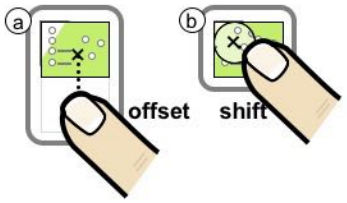


try multiple versions & keep them

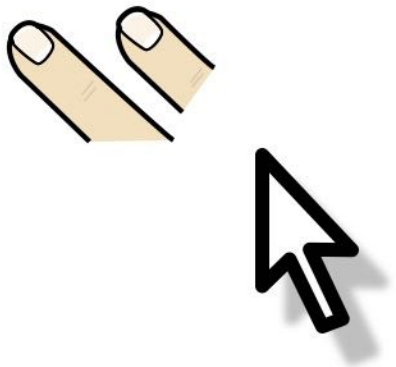
reuse





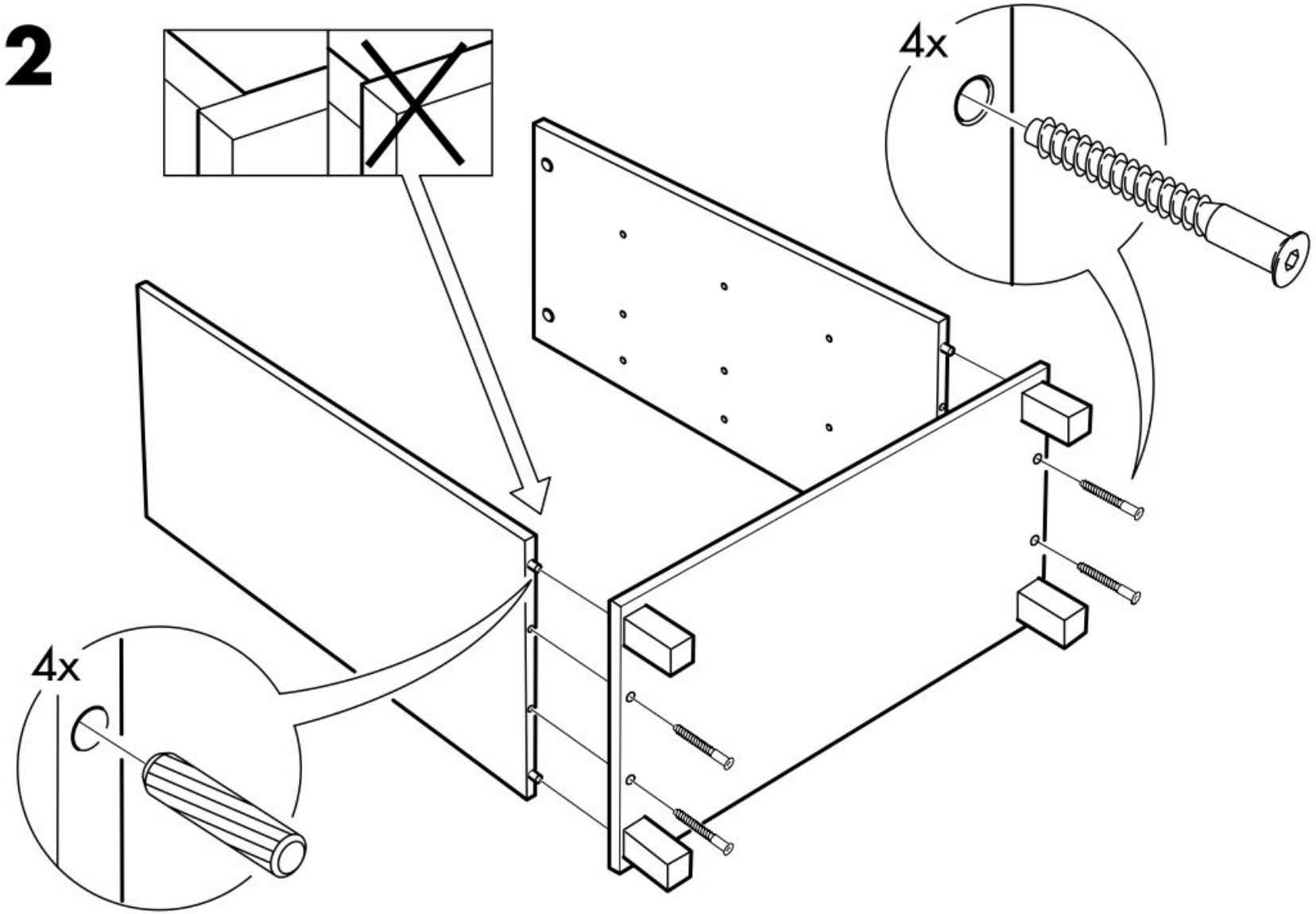


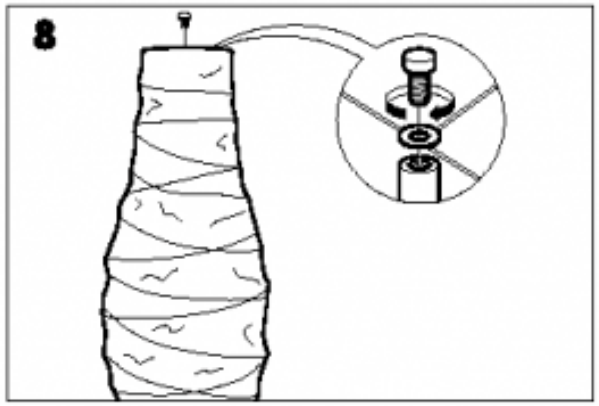
make one good finger,
pointer, device and reuse

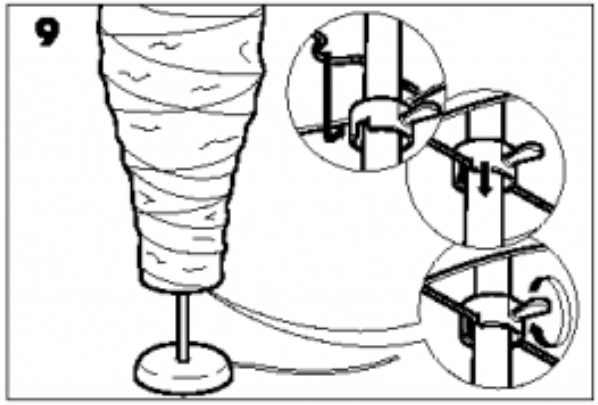


IKEA Construction Guide !!

2

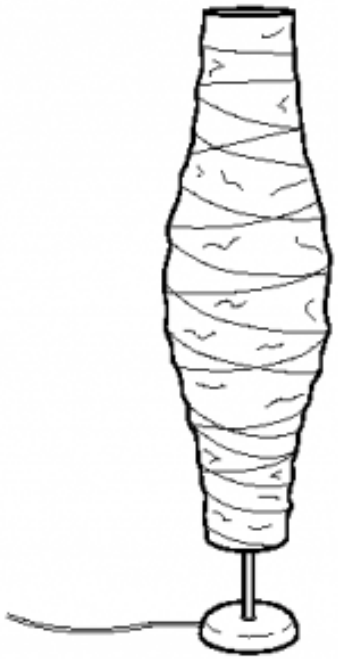






DUDERÖ

ENGLISH
FRANÇAIS
ESPAÑOL



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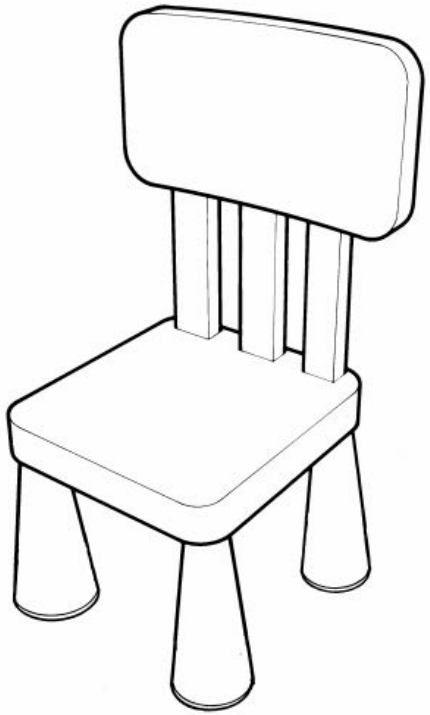
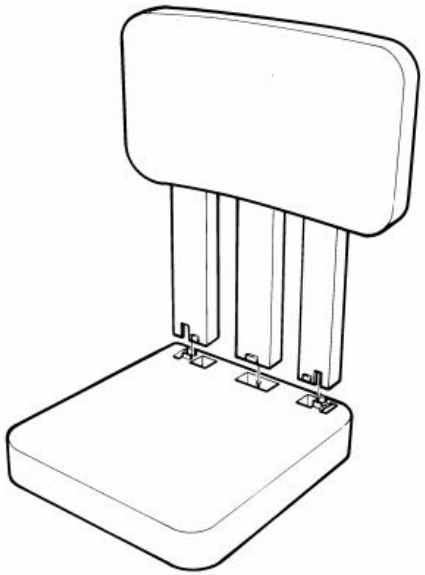
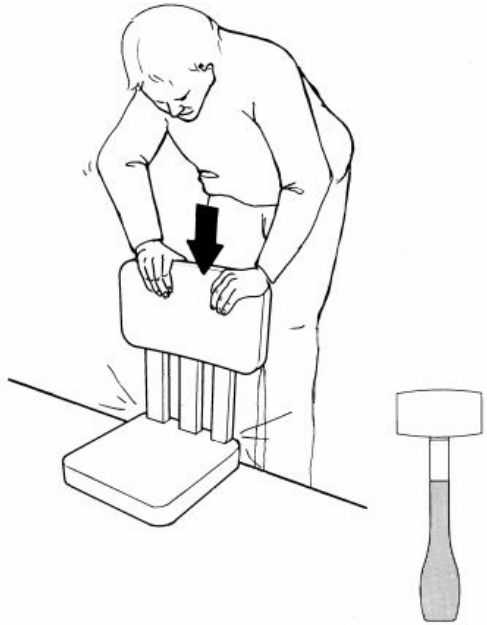
Mammut

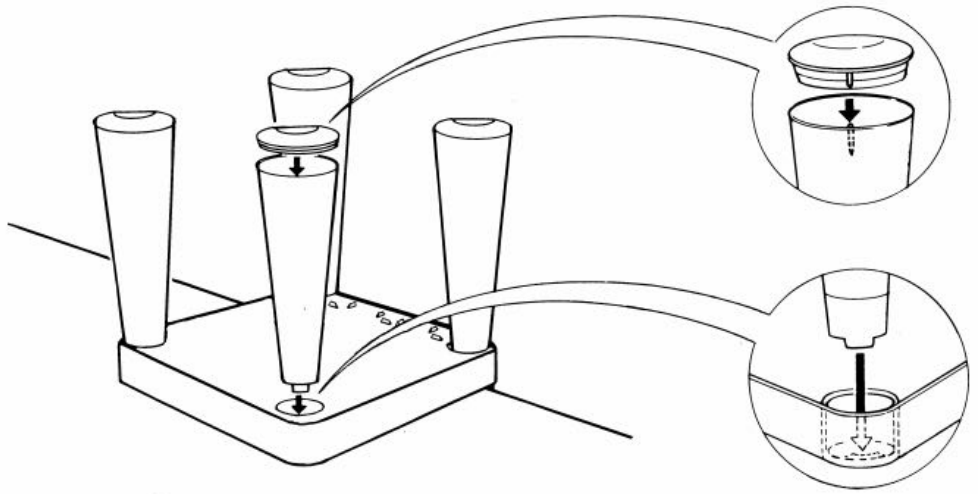


IKEA®

Design and Quality
IKEA of Sweden







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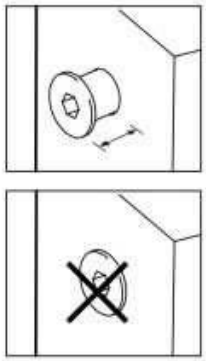
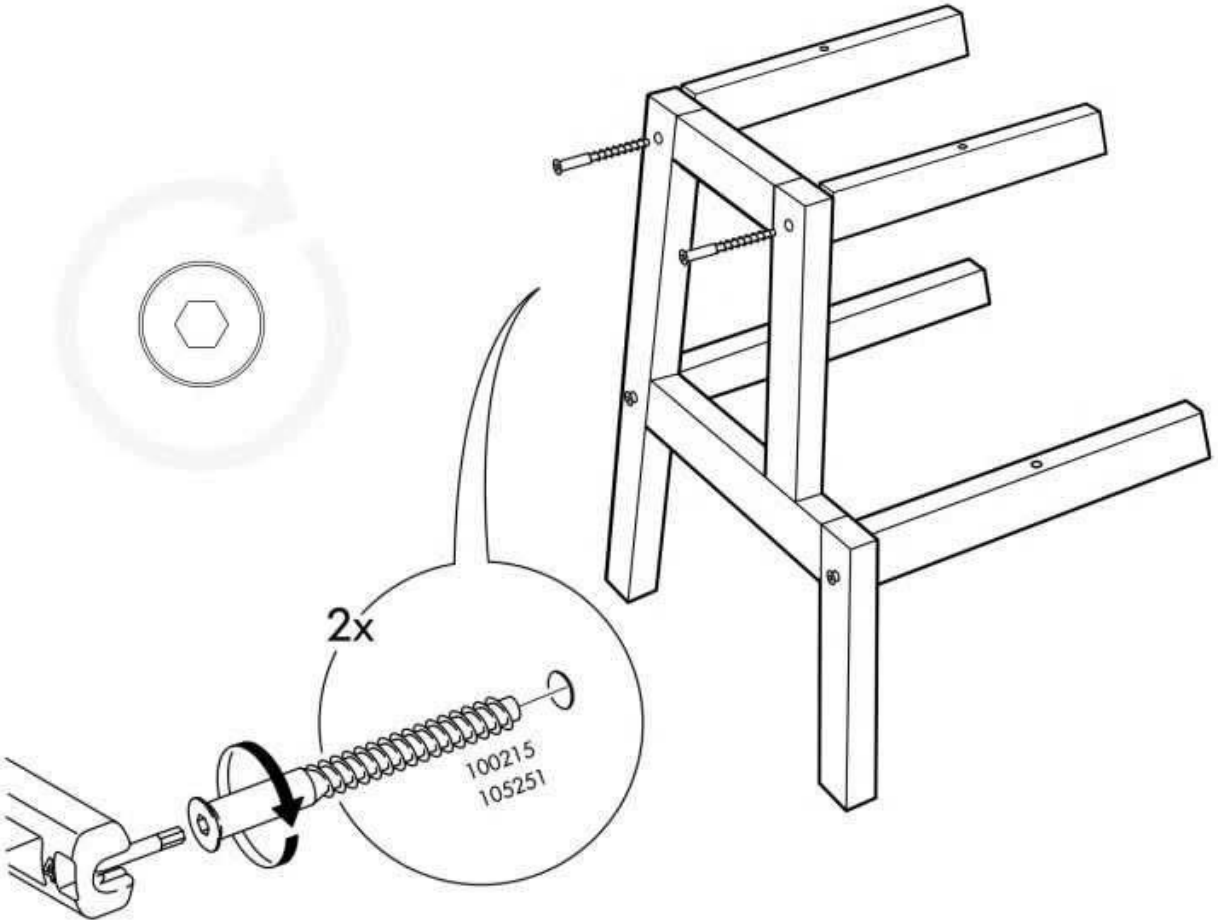
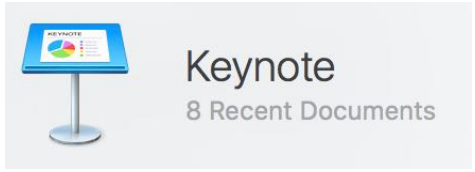
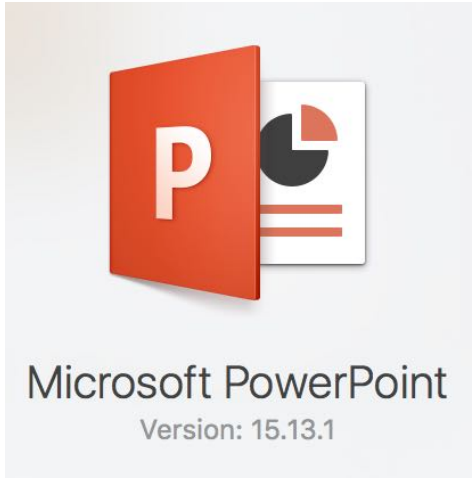
2







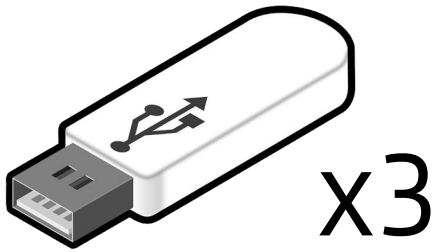


we use this today

intuitive pen tools !!

Tools for Rotoscoping

https://helpx.adobe.com/x-productkb/policy-pricing/cs6-product-downloads.html



Download this image here

Memo

Canvas size: 1280 * 1024

Create two symbols (e.g., objects) for photo and sketch

Shortcut
Ctrl+t: transform
P: pen tool
V: selection tool

thick line: 6
thin line: 3

Skin color:
250, 231, 207

TouchSense: Direct Mode Switching Using Different Areas on Users' Finger Pads

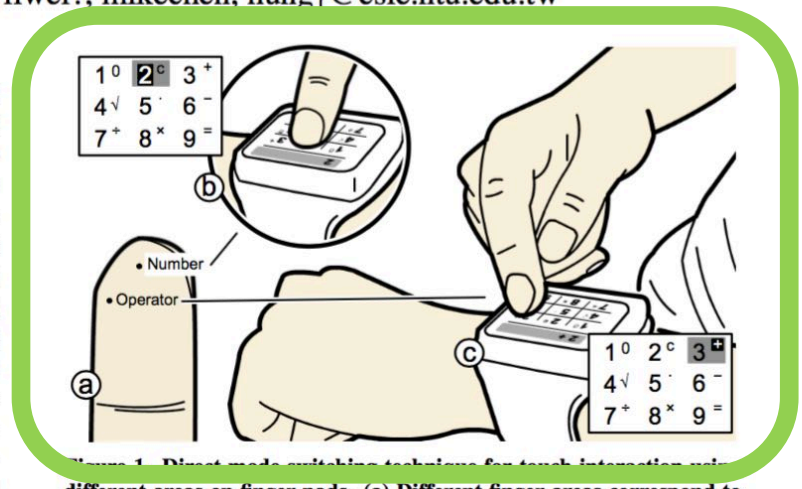
Da-Yuan Huang* **Min-Lun Tsai*** **Ming-Chang Tsai***
Liwei Chan* **Mike Chen*** **Yi-Ping Hung***

*National Taiwan University
{d99944006, r00944005, r98944021, liwei?, mikechen, hung}@csie.ntu.edu.tw

ABSTRACT
We propose TouchSense, a direct-touch interaction technique that enables *direct mode switching* using different areas on the finger pads. It enables fast switching between input modes by single tapping with different areas of users' finger pads, while requiring minimal input area. For example, when using a calculator app on a smart watch, users can tap normally to enter numbers and tap with the right side of their fingers to enter the operators. We conducted two human factors studies which showed that users can tap on a touchscreen with five or more distinct areas on their finger pads. Also, users are able to tap towards their hSense proto- lications: cal- dback from an

augmented finger input, input modality, smart watch, small screen mobile devices

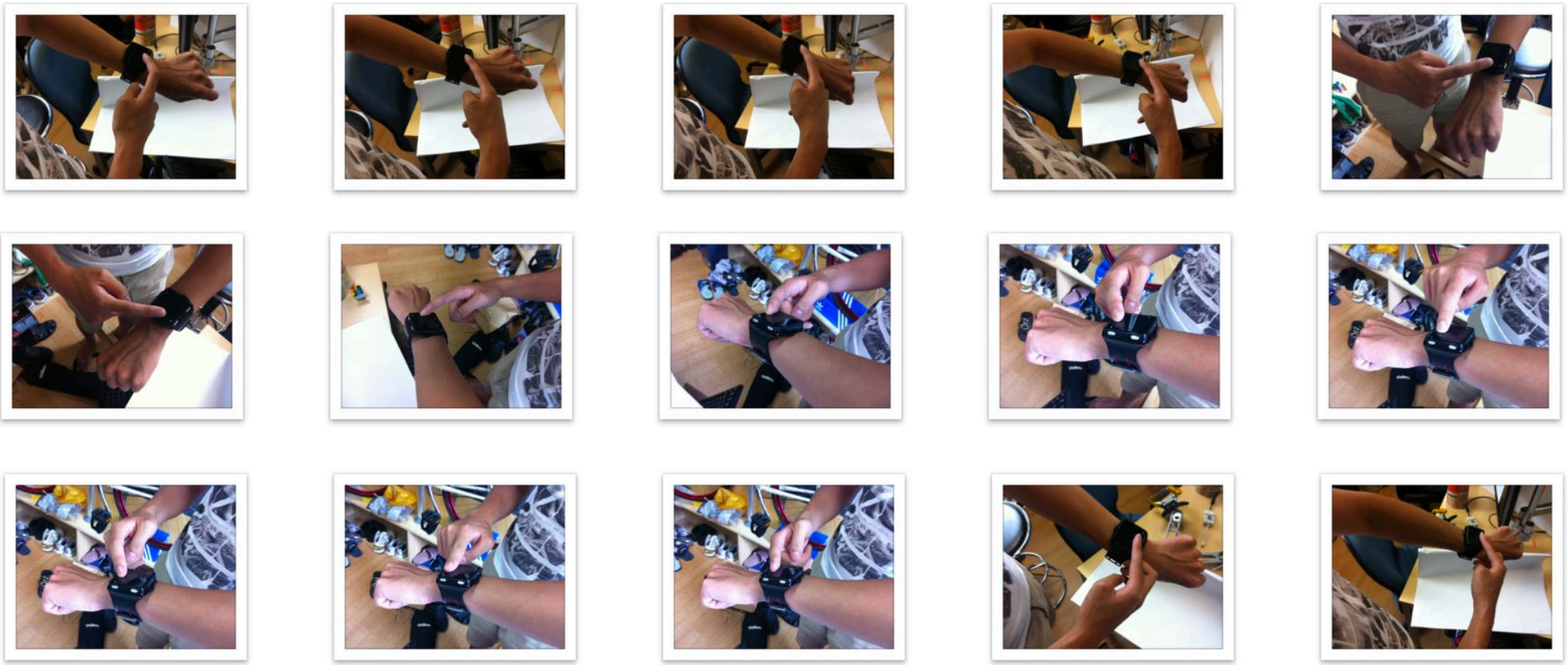
ACM Classification Keywords



different areas on finger pads. (a) Different finger areas correspond to numbers vs operators. (b) The number '2' is entered by using a normal tap. (c) The '+' operator is entered by tapping the key '3' with the right-side of the finger. The gray highlight indicates the on-screen key touched, and the black highlight indicates the mode invoked.

the devices [7, ?, ?]. While these techniques provide a richer

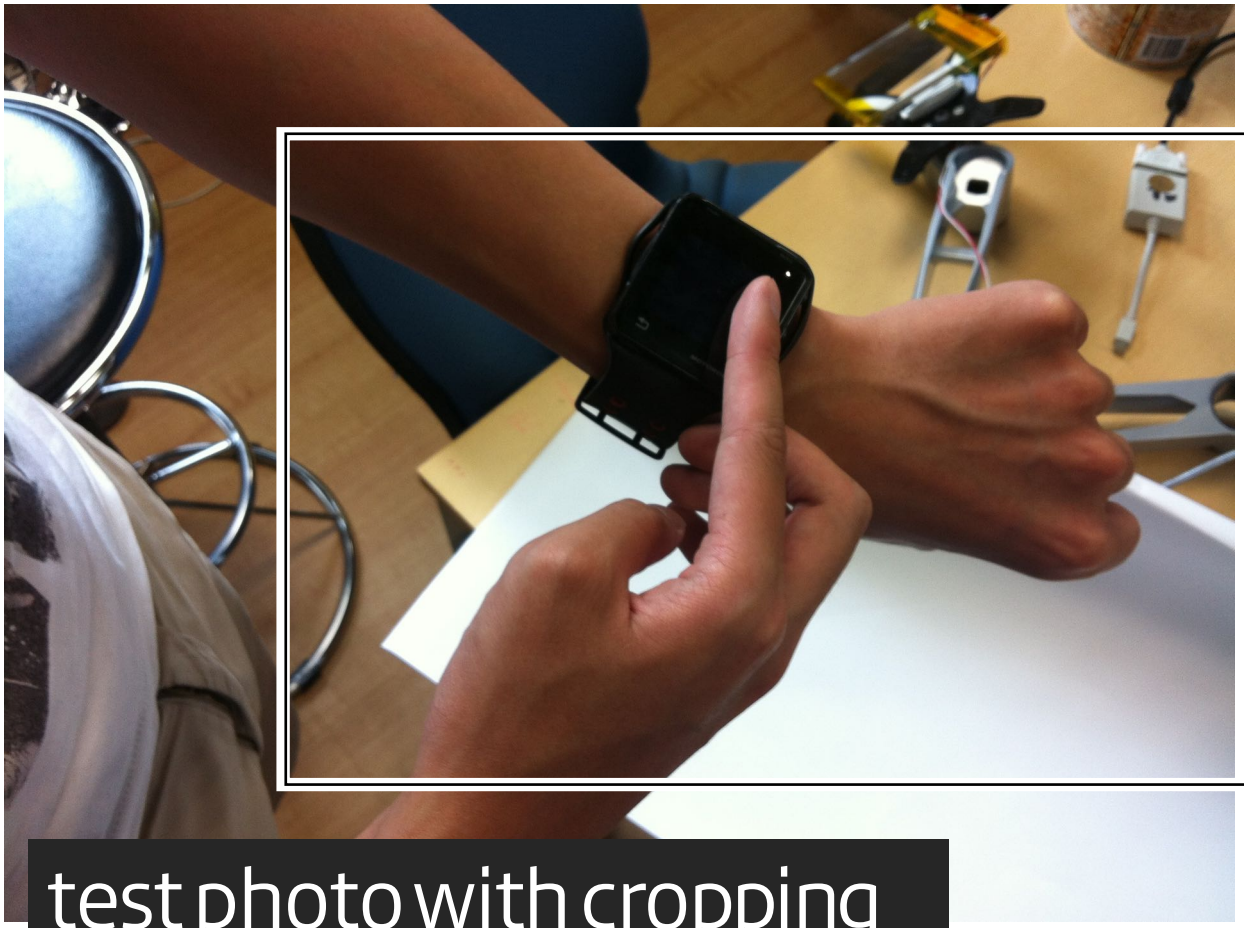
Rotoscoping –
a walkthrough example



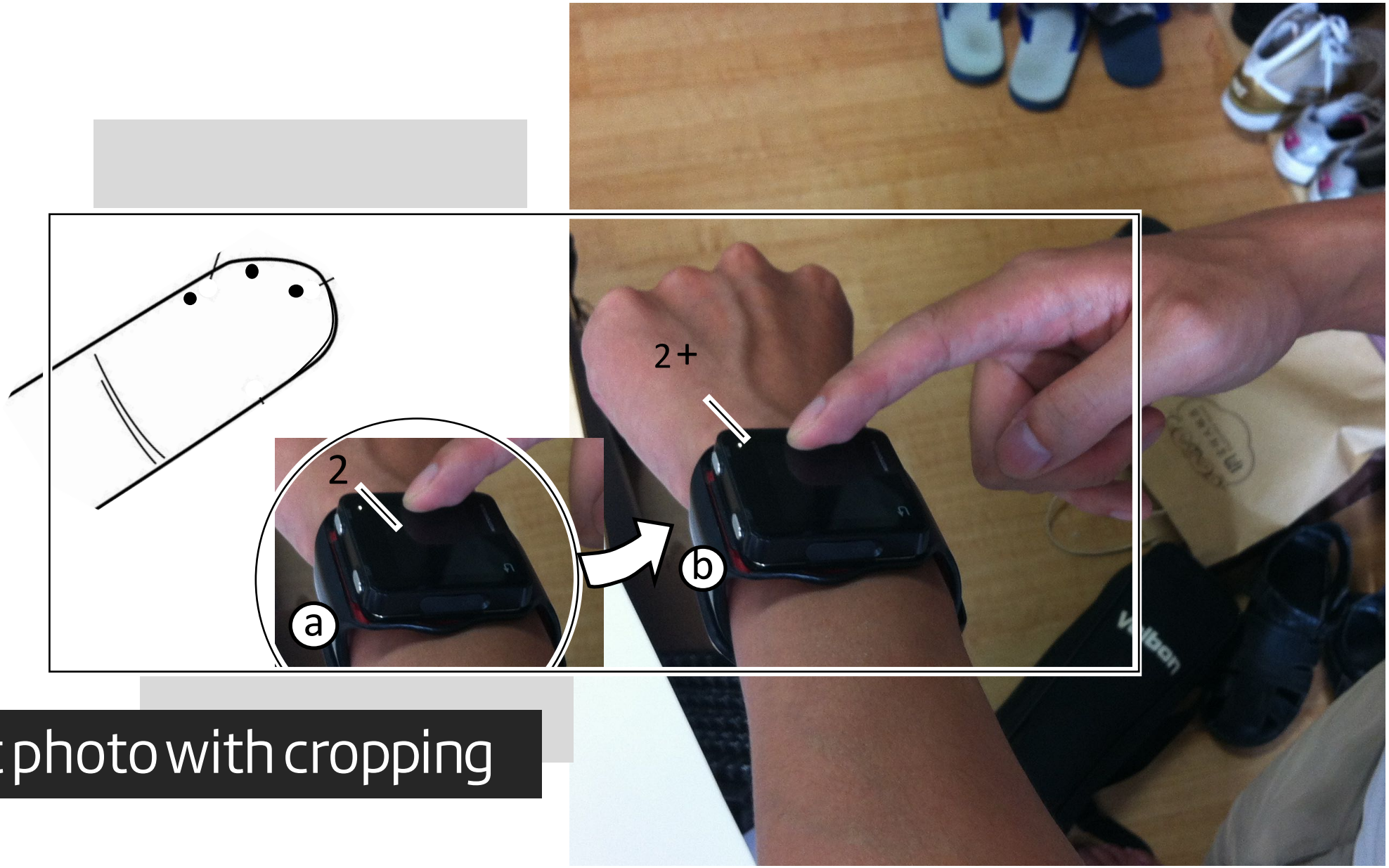
- Take many photos
- Search possible angles which describe context the best
- Image quality / lighting is not important in this stage


Velbon


RULES R O E DETERMINE



test photo with cropping



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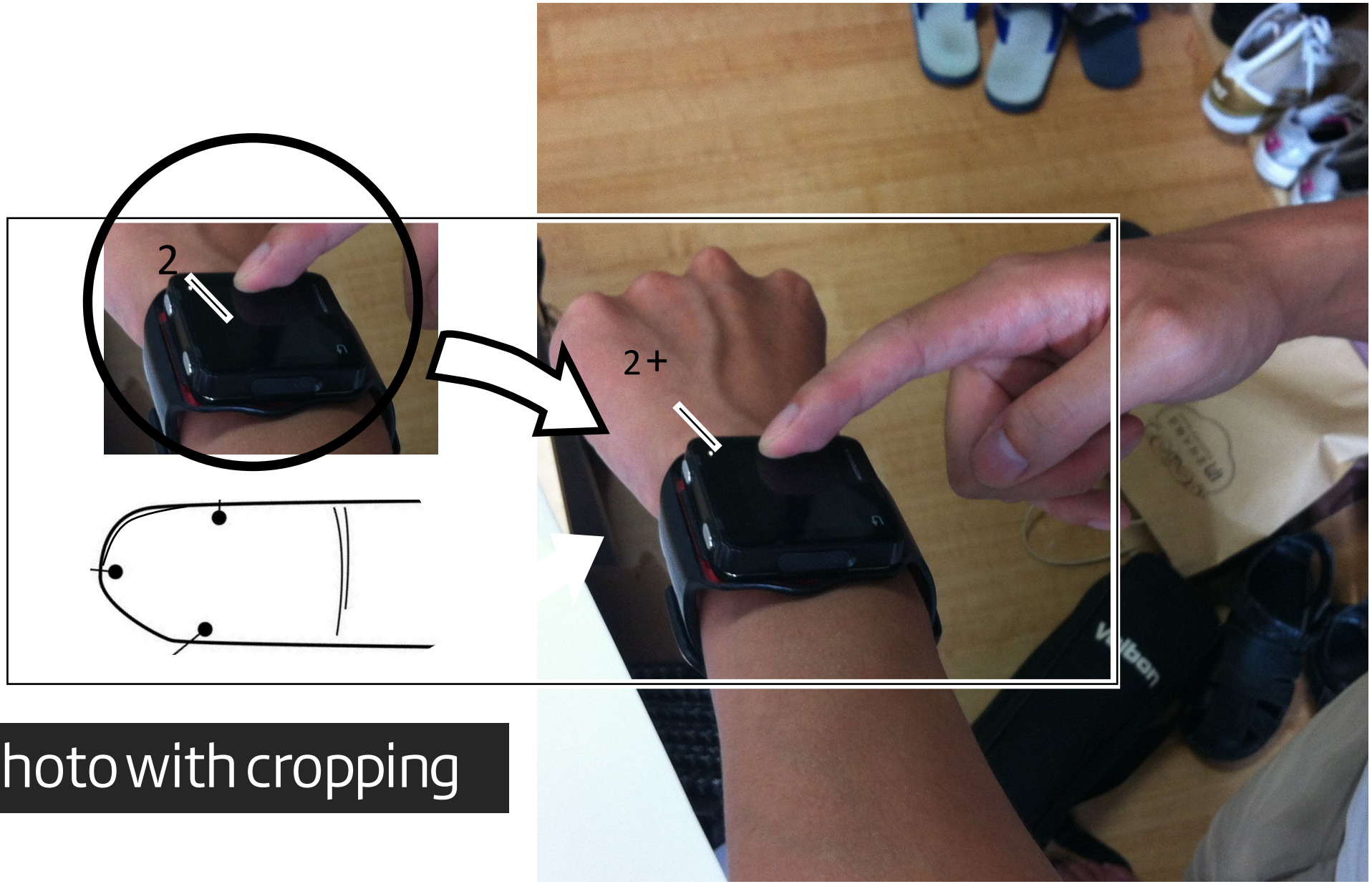
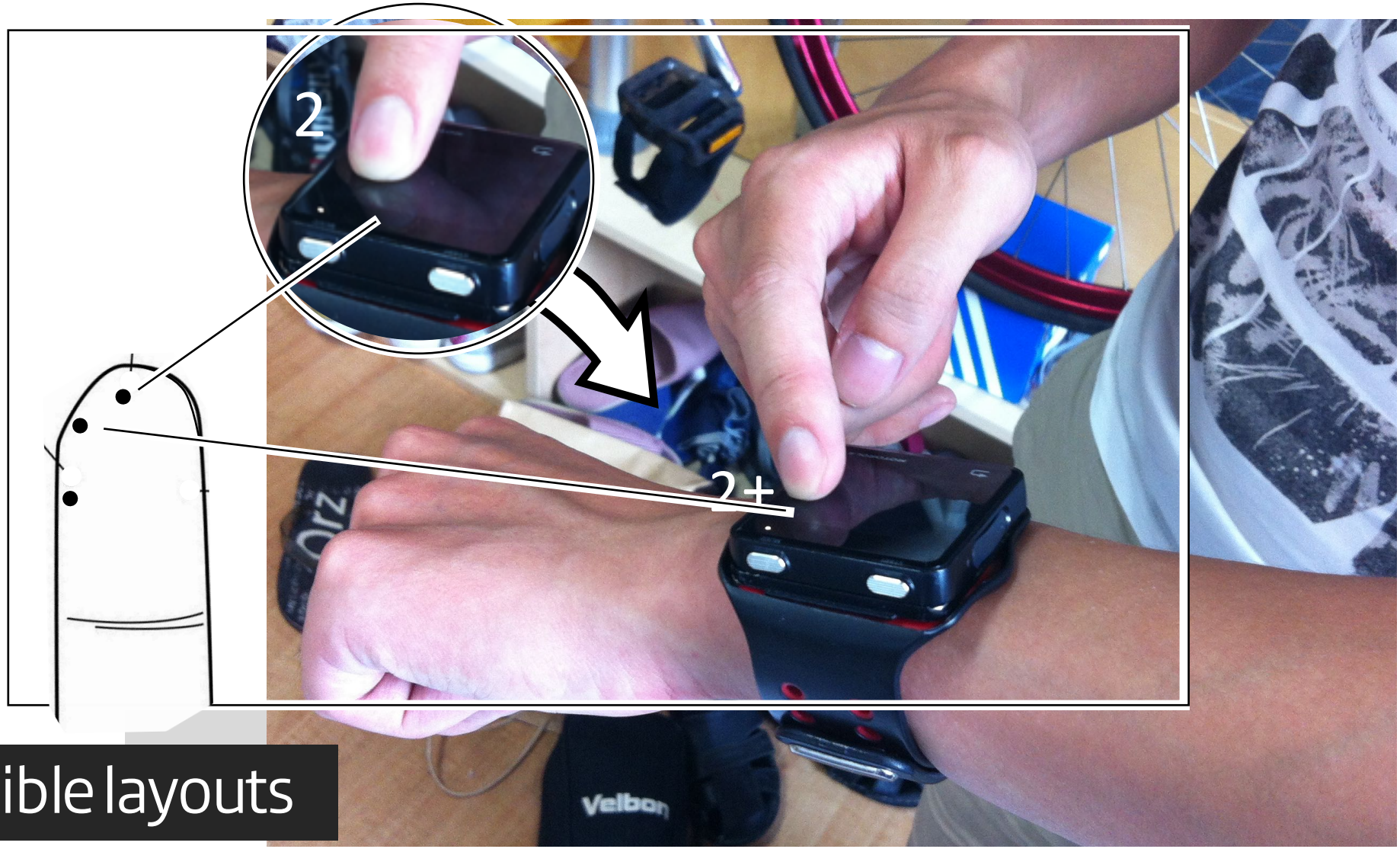


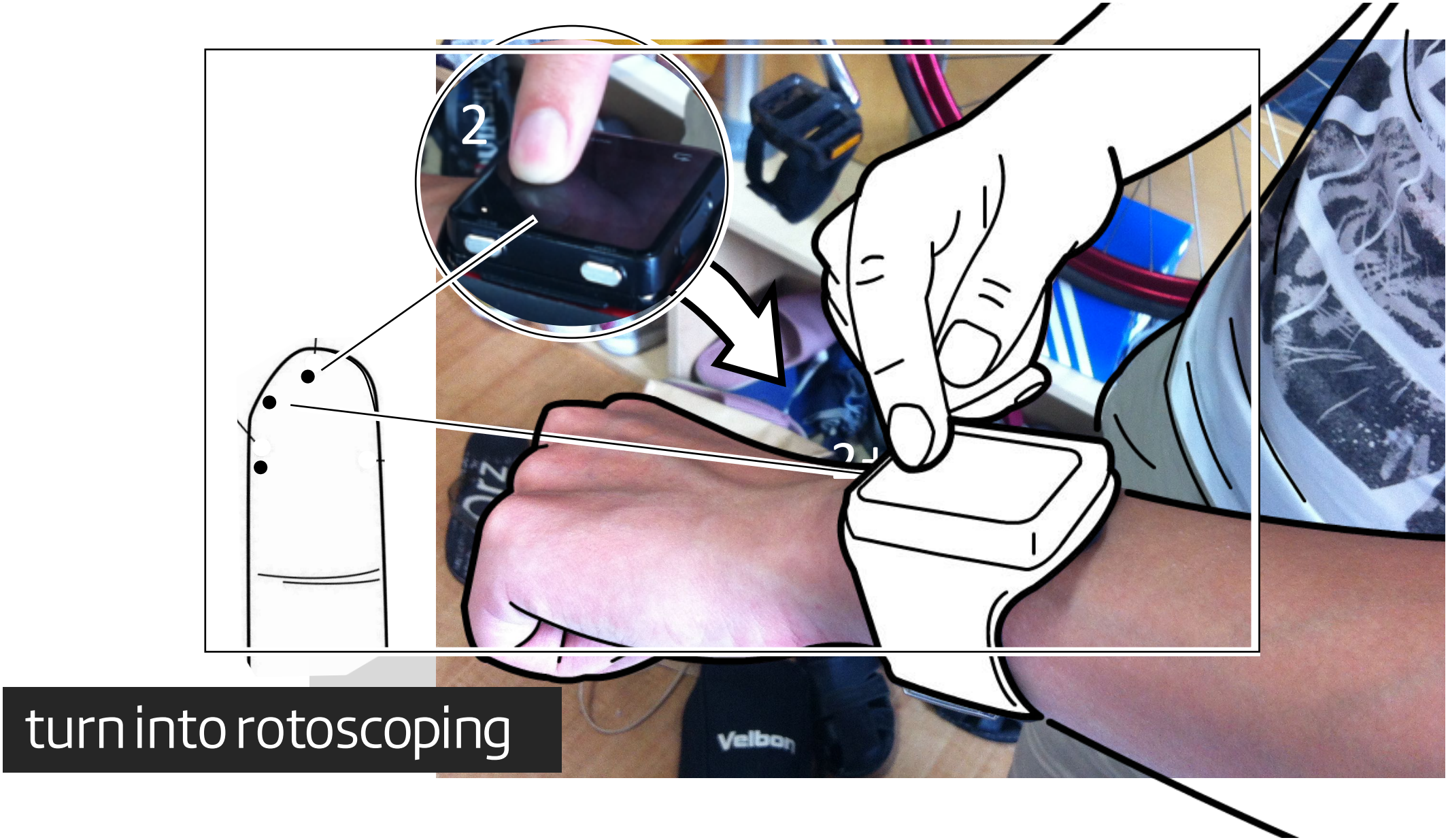
test photo with cropping

test photo with cropping

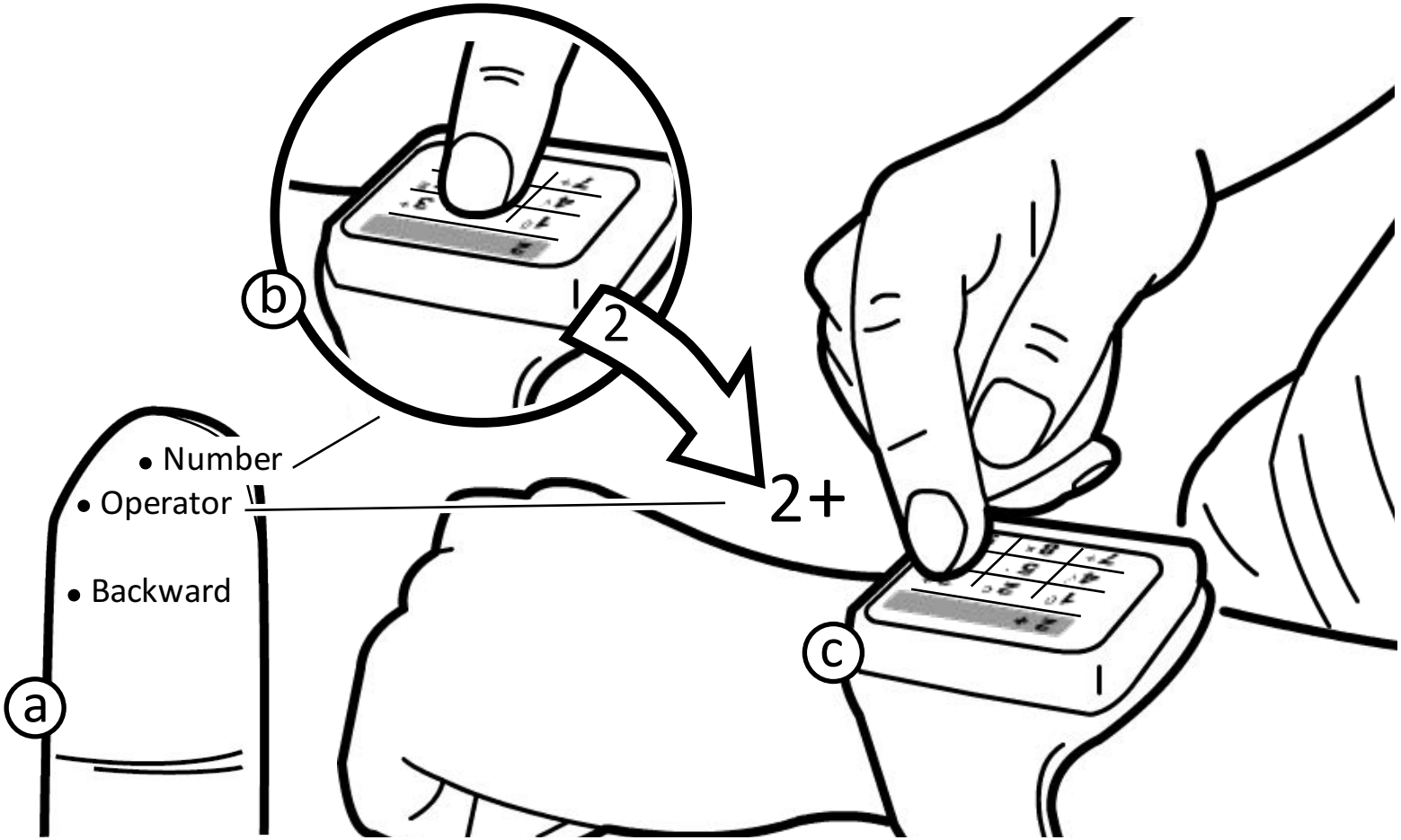
try possible layouts



try possible layouts



turn into rotoscoping



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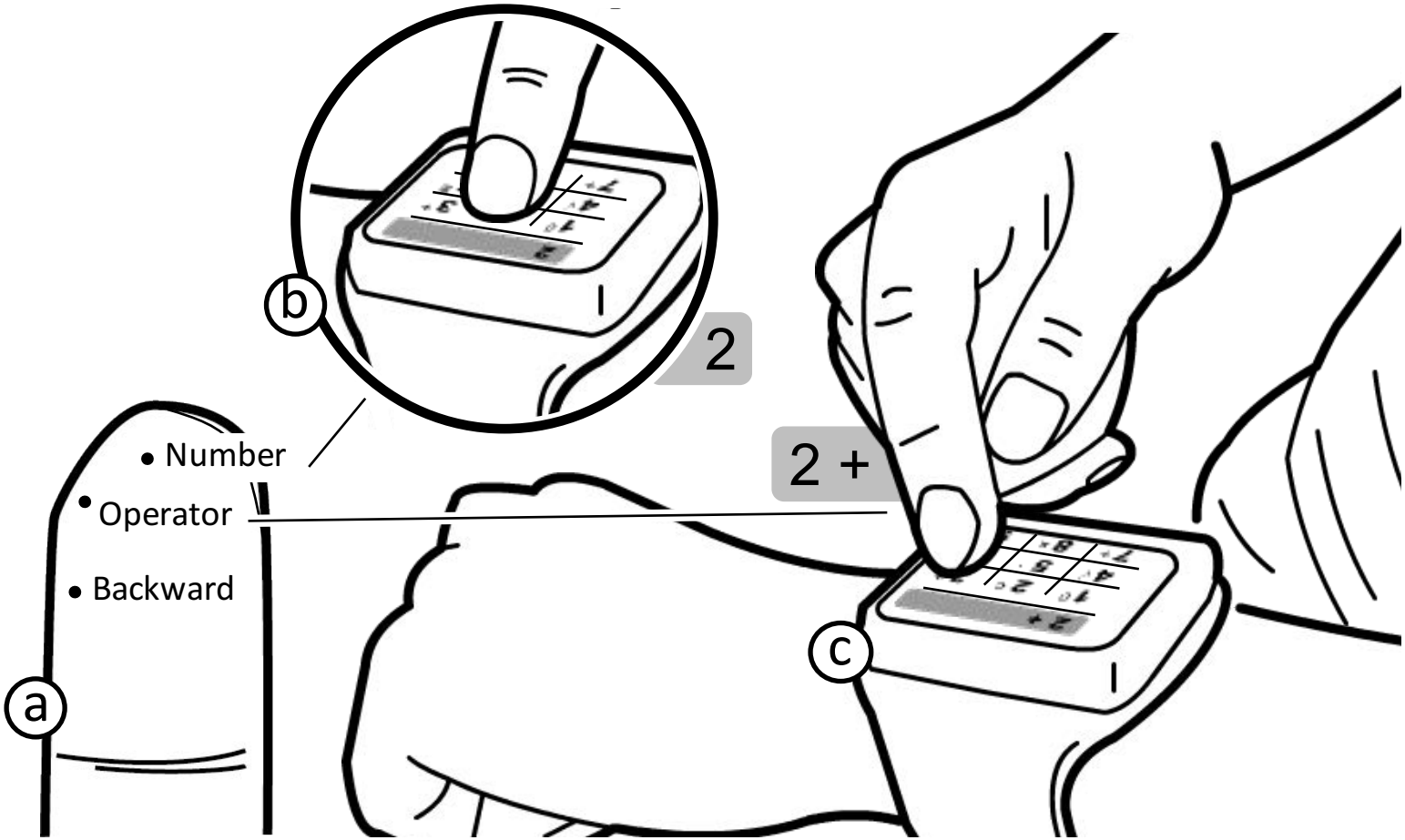
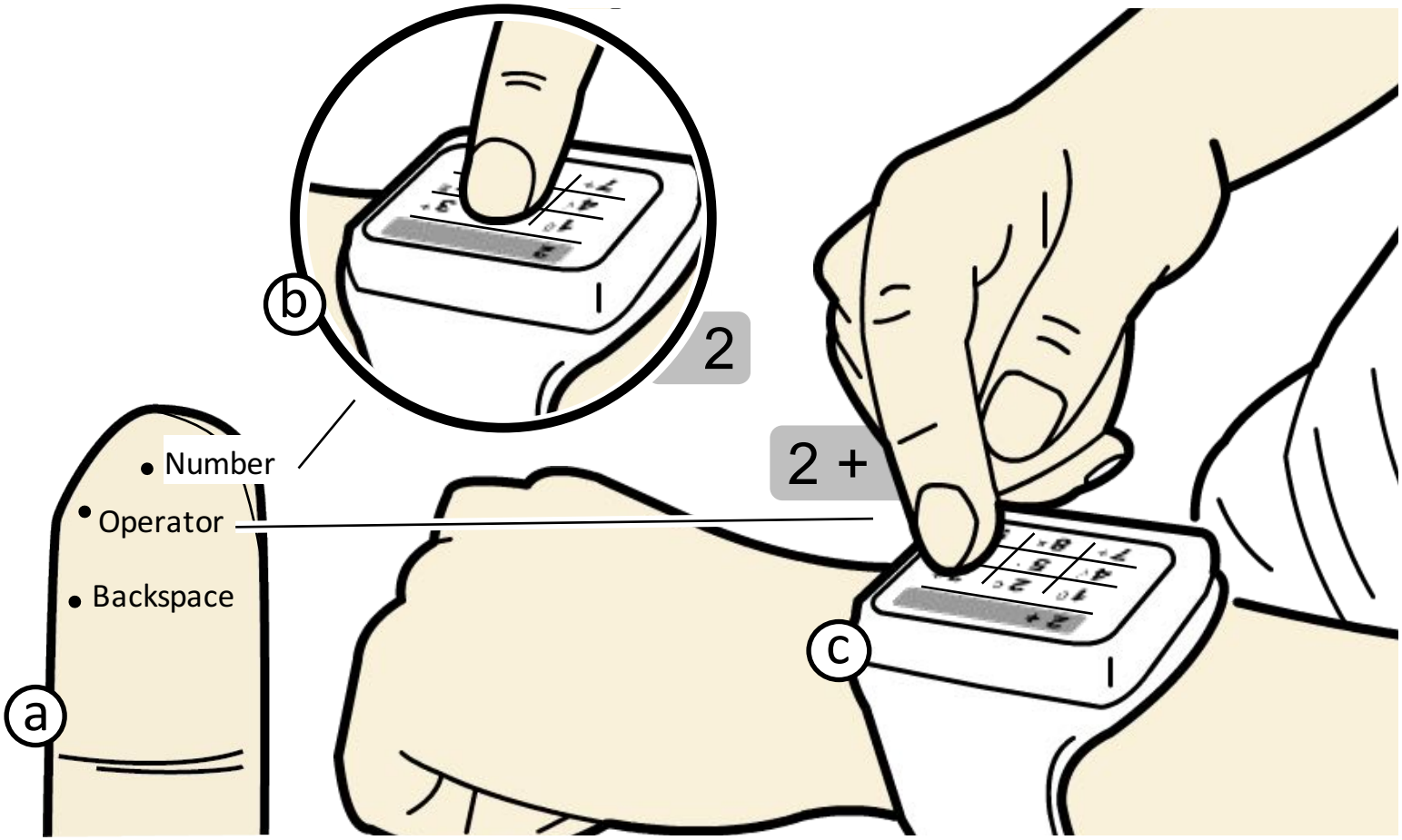
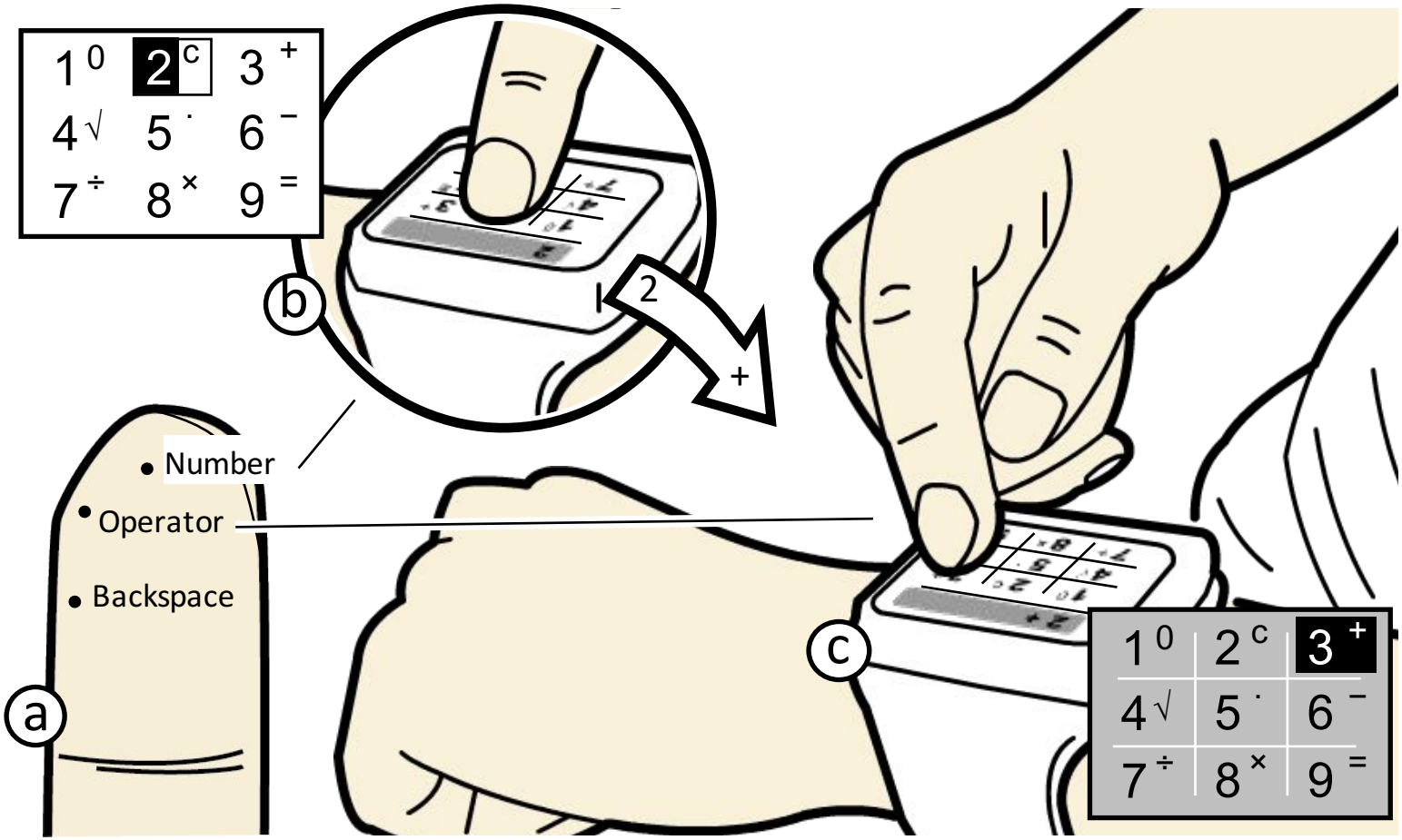


finetune



coloring (use minimal colors)



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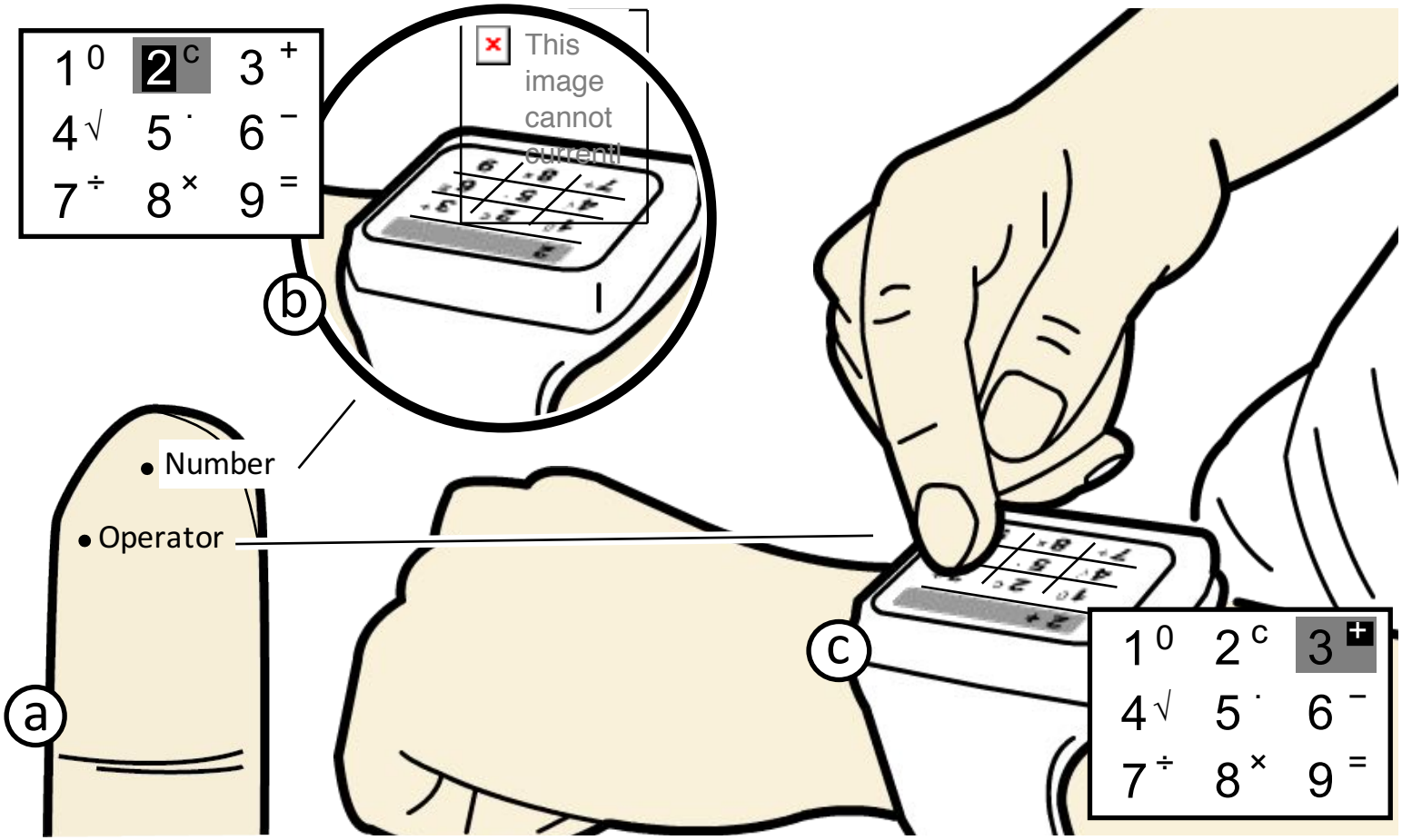
1 0 2 C 3 +
4 √ 5 . 6 −
7 ÷ 8 × 9 =
This image cannot currently
b
Number
Operator
a
c
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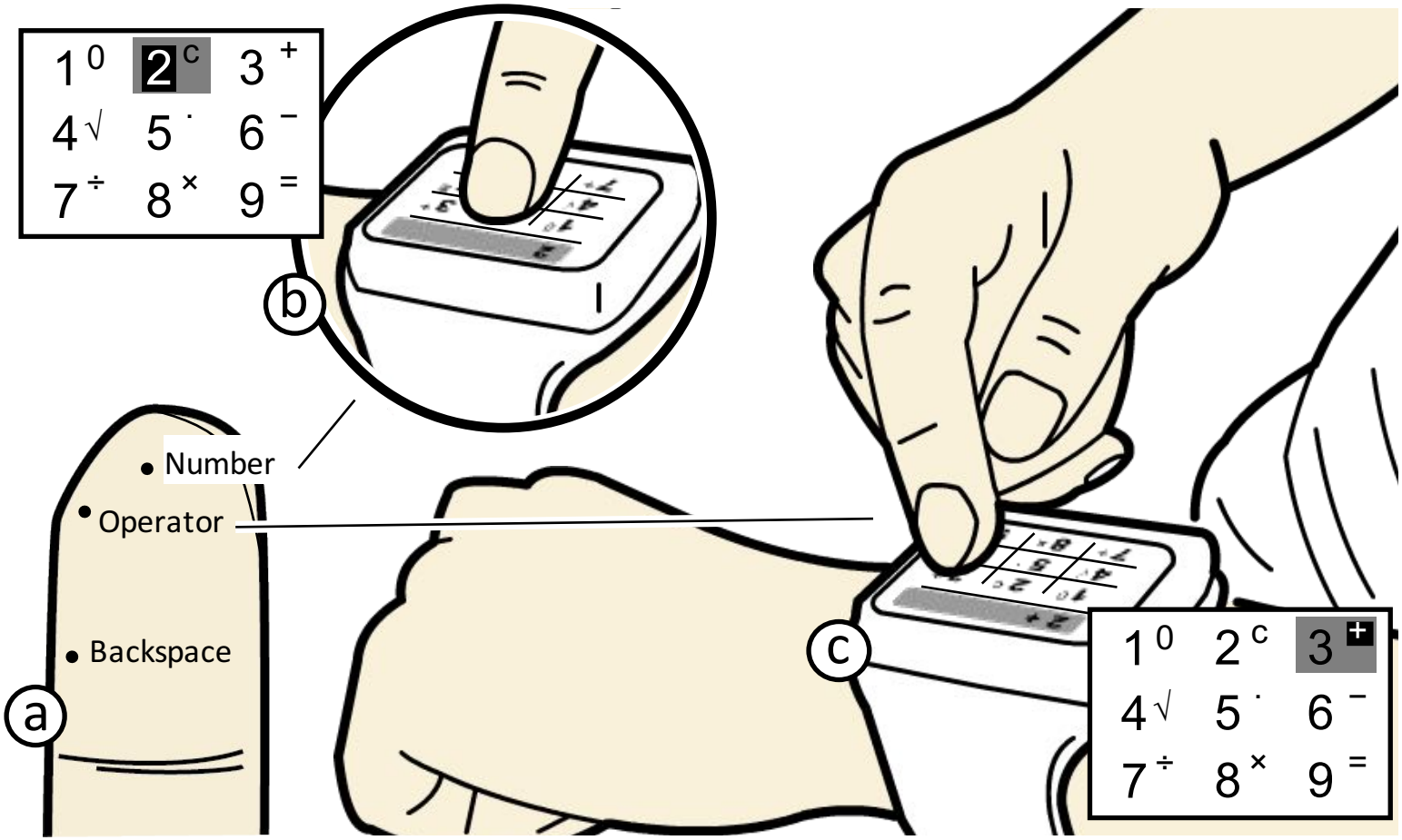
7 ÷ 8 × 9 =

finetune



finetune

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Author Keywords
augmented finger input, input modality, smart watch, small screen mobile devices

ACM Classification Keywords

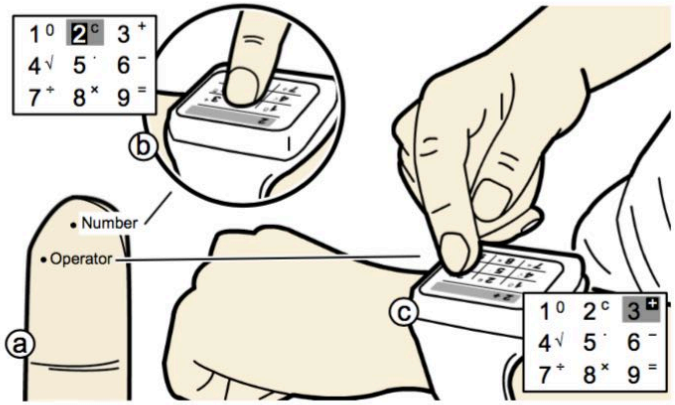

Figure 1. Direct mode switching technique for touch interaction using different areas on finger pads. (a) Different finger areas correspond to numbers vs operators. (b) The number '2' is entered by using a normal tap. (c) The '+' operator is entered by tapping the key '3' with the right-side of the finger. The gray highlight indicates the on-screen key touched, and the black highlight indicates the mode invoked.

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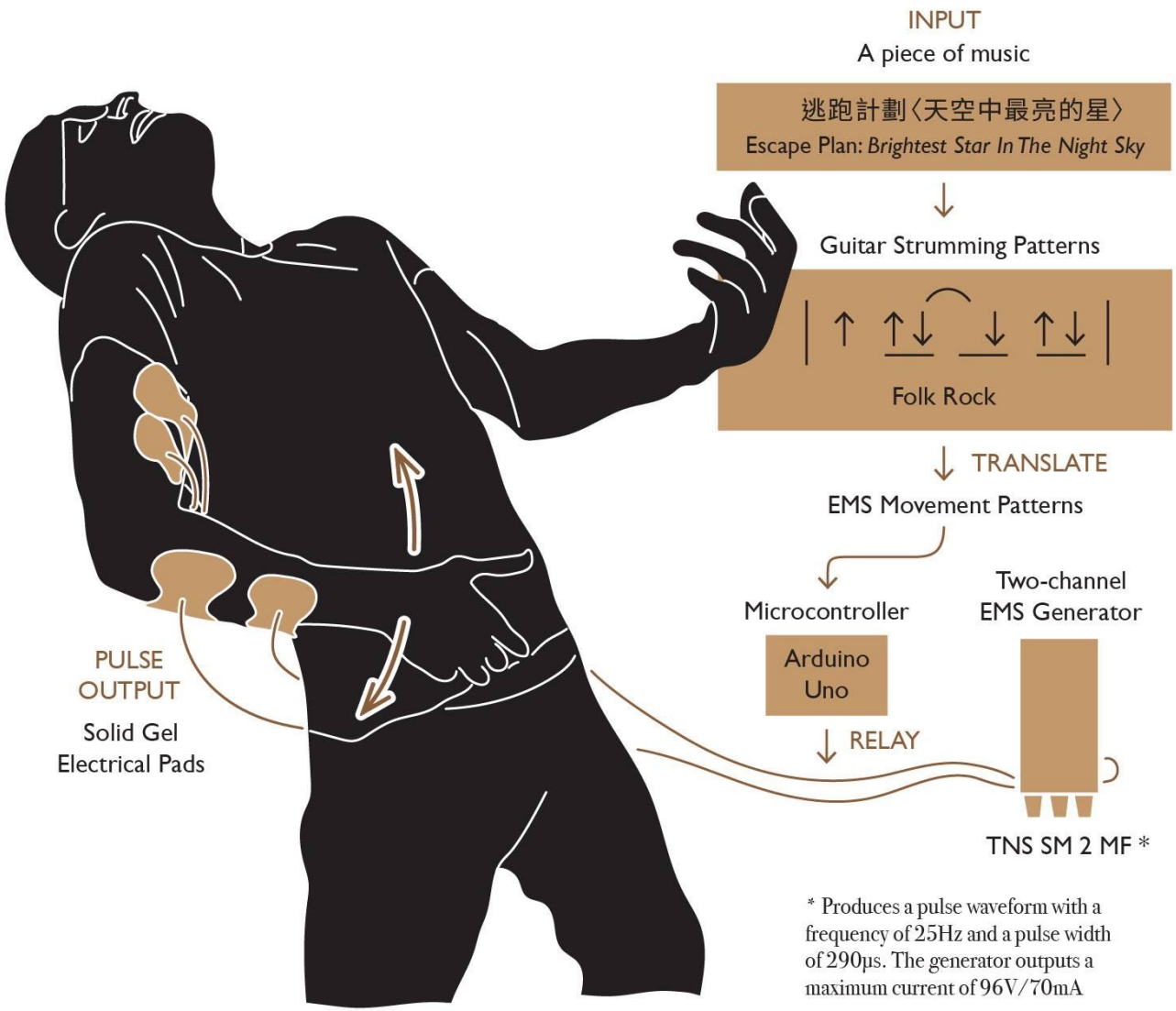


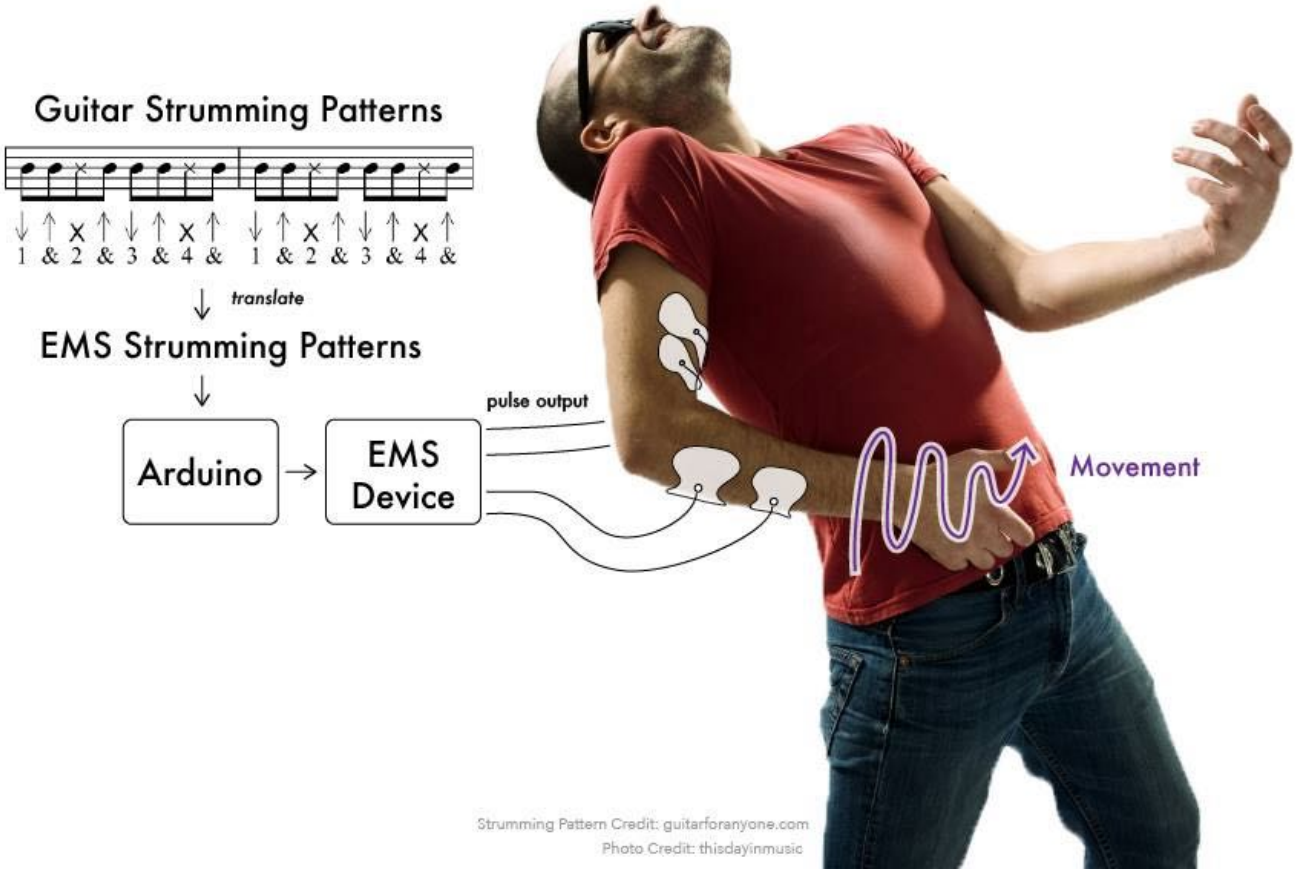
Illustration modified from Getty Images (Credit: SensorSpot)

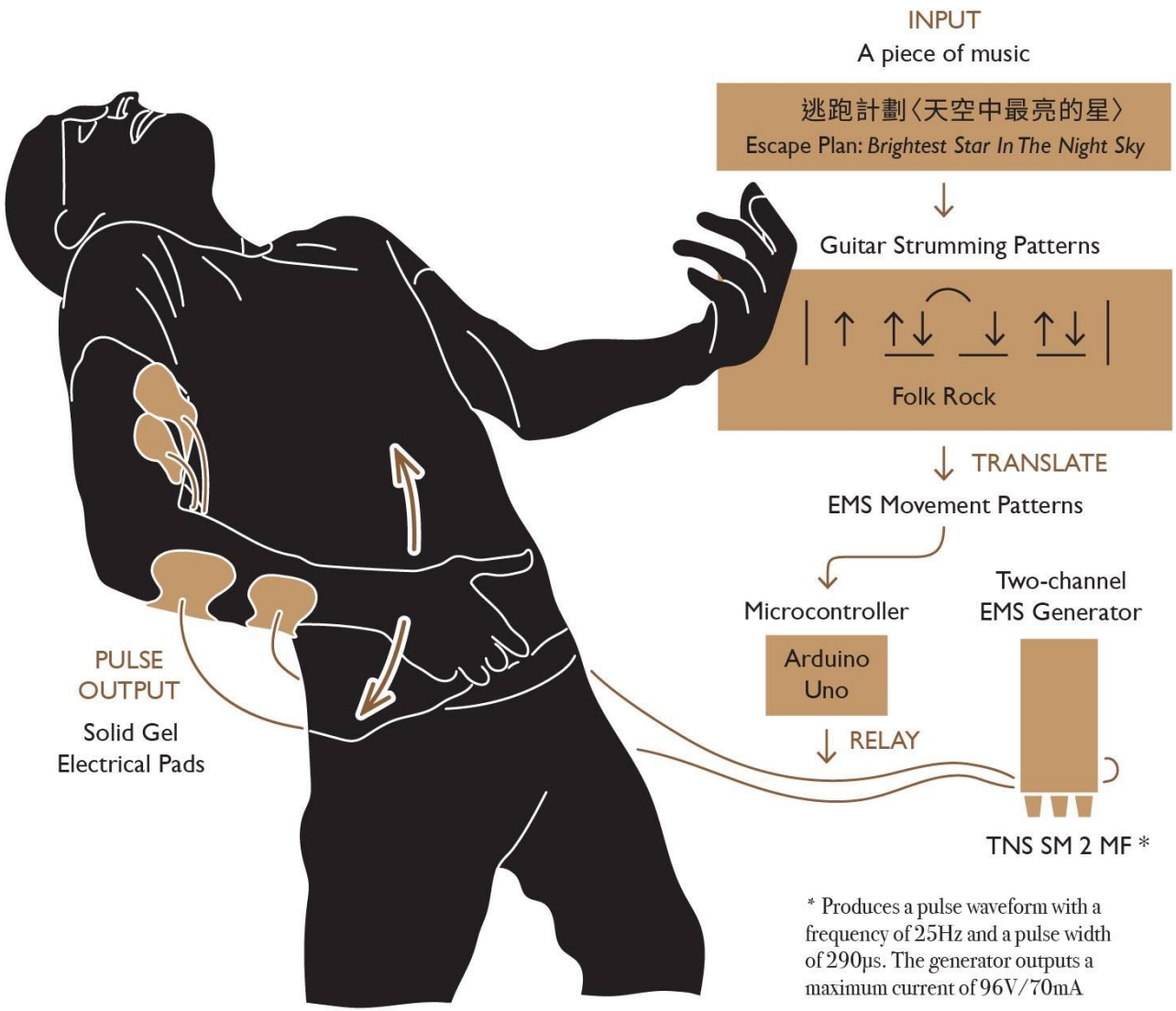
* Produces a pulse waveform with a frequency of 25Hz and a pulse width of 290μs. The generator outputs a maximum current of 96V/70mA

UIST Student Innovation Contest 2016:
Feeling the virtual with muscle stimulation!

EMS Air Guitar

National Taiwan University





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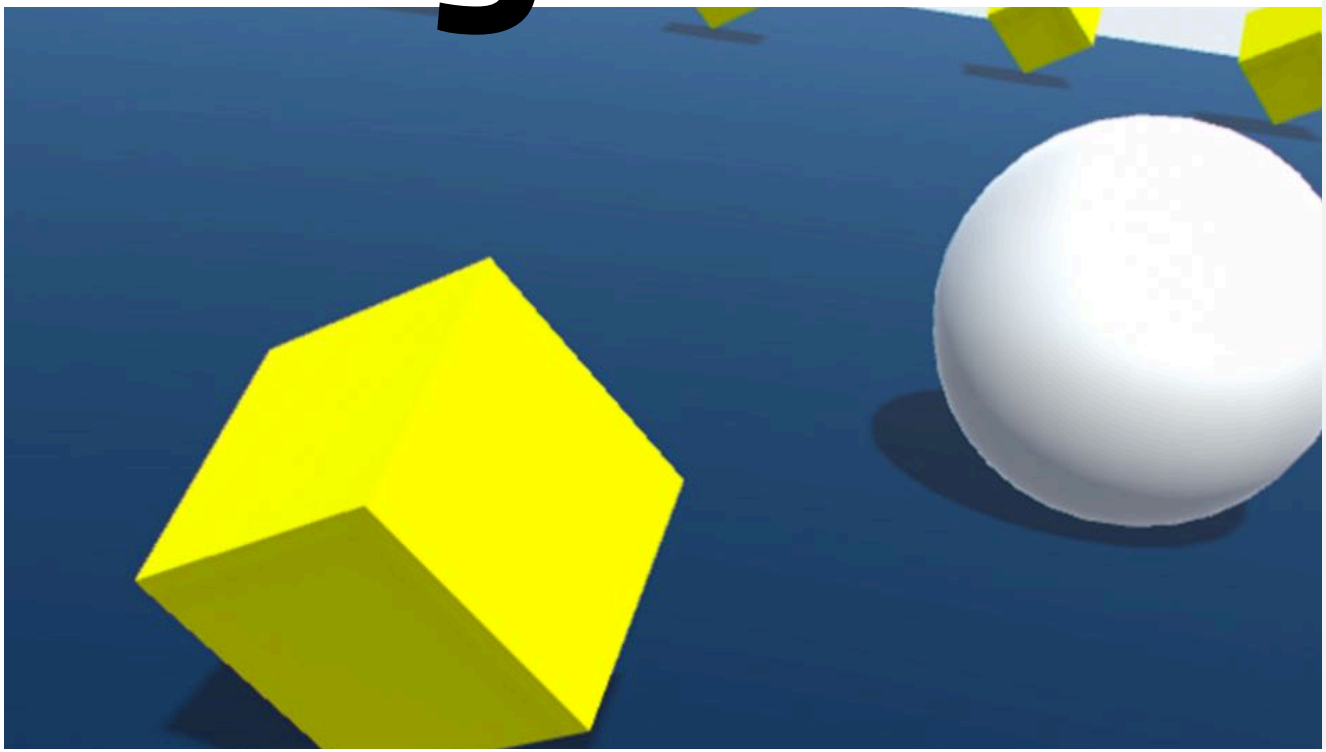
assignment



1. Complete your Rotoscoping. Grading based on aesthetic quality.

2. Complete Unity Tutorial of Rolling-A-Ball, and submit your result by screen-recording.
   - Embed your name in the game in some (interactive) way.
   - Grading based on creativity and uniqueness of the embedding method.
   - Have to be discoverable.

- Upload Rotoscoping, source code and the video to E3

- Both due by **10/11** (next Monday) **11:59PM.**