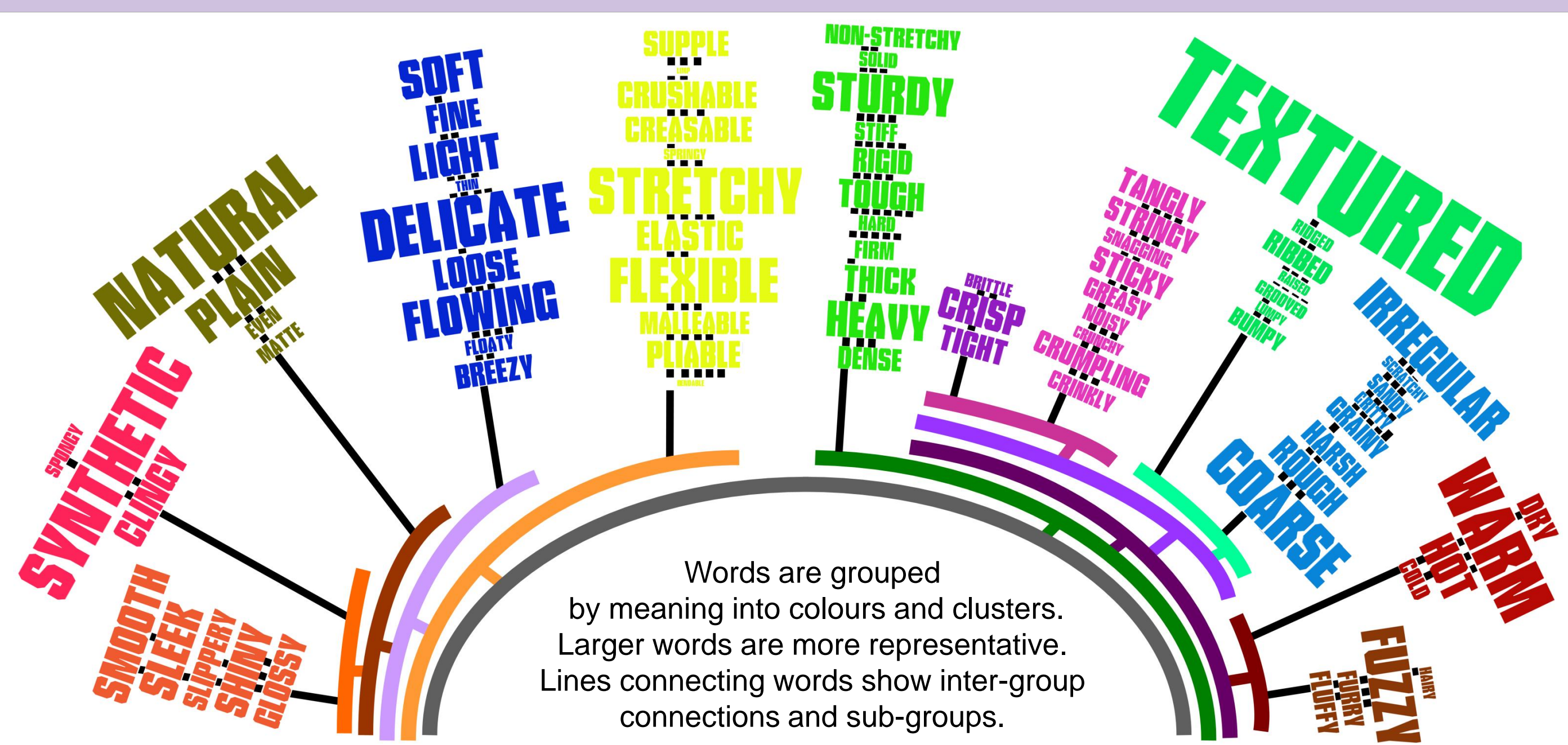


While buying textile products using a handheld device, buyers face the perceptual gap between qualities they can perceive via the interface and those sensed when handling the real product. In this research I investigate the textile qualities naive shoppers look for and the gestures they use to handle fabrics. Finally, I use movement patterns to prototype mobile touch-screen interactive-video interfaces and communicate the desired qualities better.

Perceived Textile Qualities

To design a better interface for browsing textiles, research needs a basic understanding of the qualities that need to be communicated. For that purpose studies established a taxonomy of textile related words.

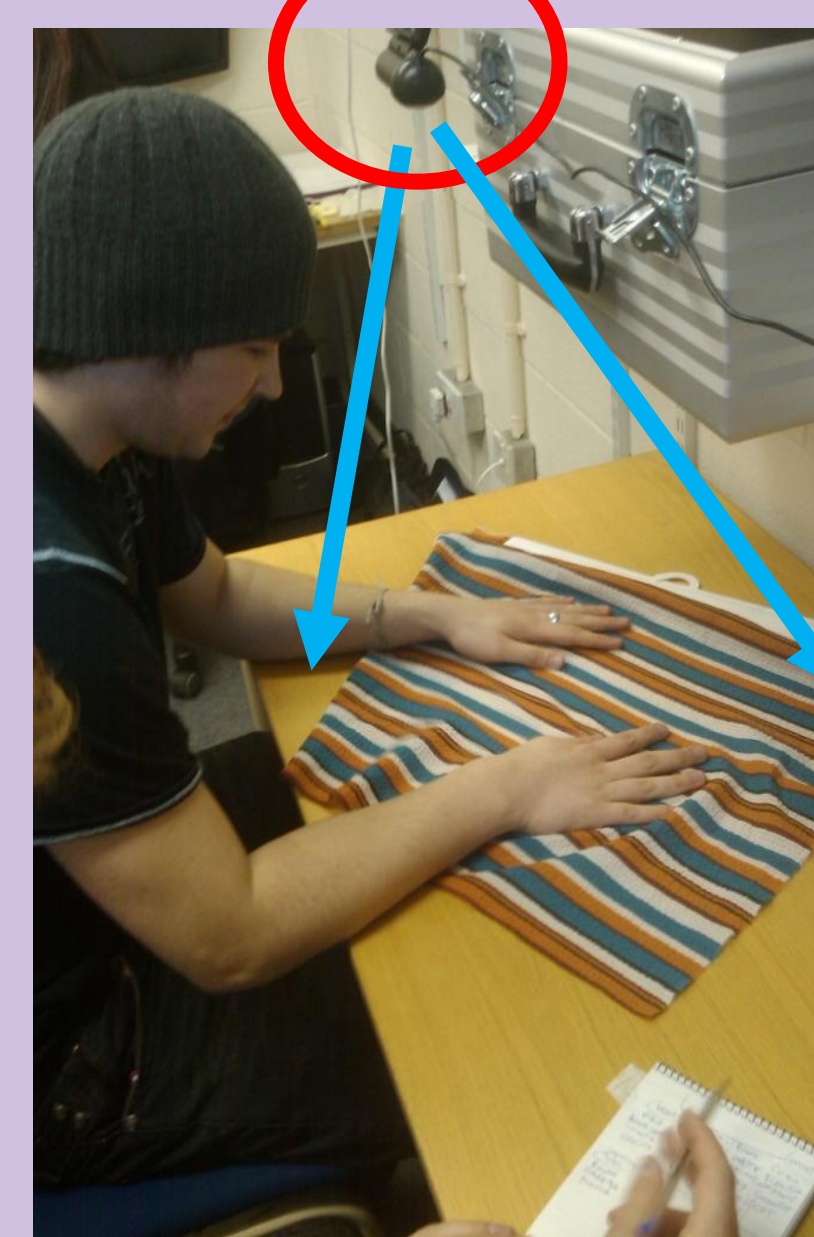


So far 117 online participants have grouped the dictionary of textile related words, also highlighting the most representative ones in each group. Data from this ongoing study can be presented as a word palette (above). Once the data is refined further, the resulting taxonomy will be used to assess how new mobile interface compares with other textile browsing methods.

The research space consists of: communication of qualities (above), gestures interaction (right) and mobile presentation (below)

Gestures Inspired by Textile Handling

Gestures performed when touching textiles can be used to design touch interfaces which communicate the qualities identified previously. The dictionary of gestures was derived from video recordings and integrated into a mobile device interface.



Fabric handling experiment and camera setup

Stroke	28%	
Pull	16%	
Rub	30%	
Crunch	15%	

Frequency of annotated gestures

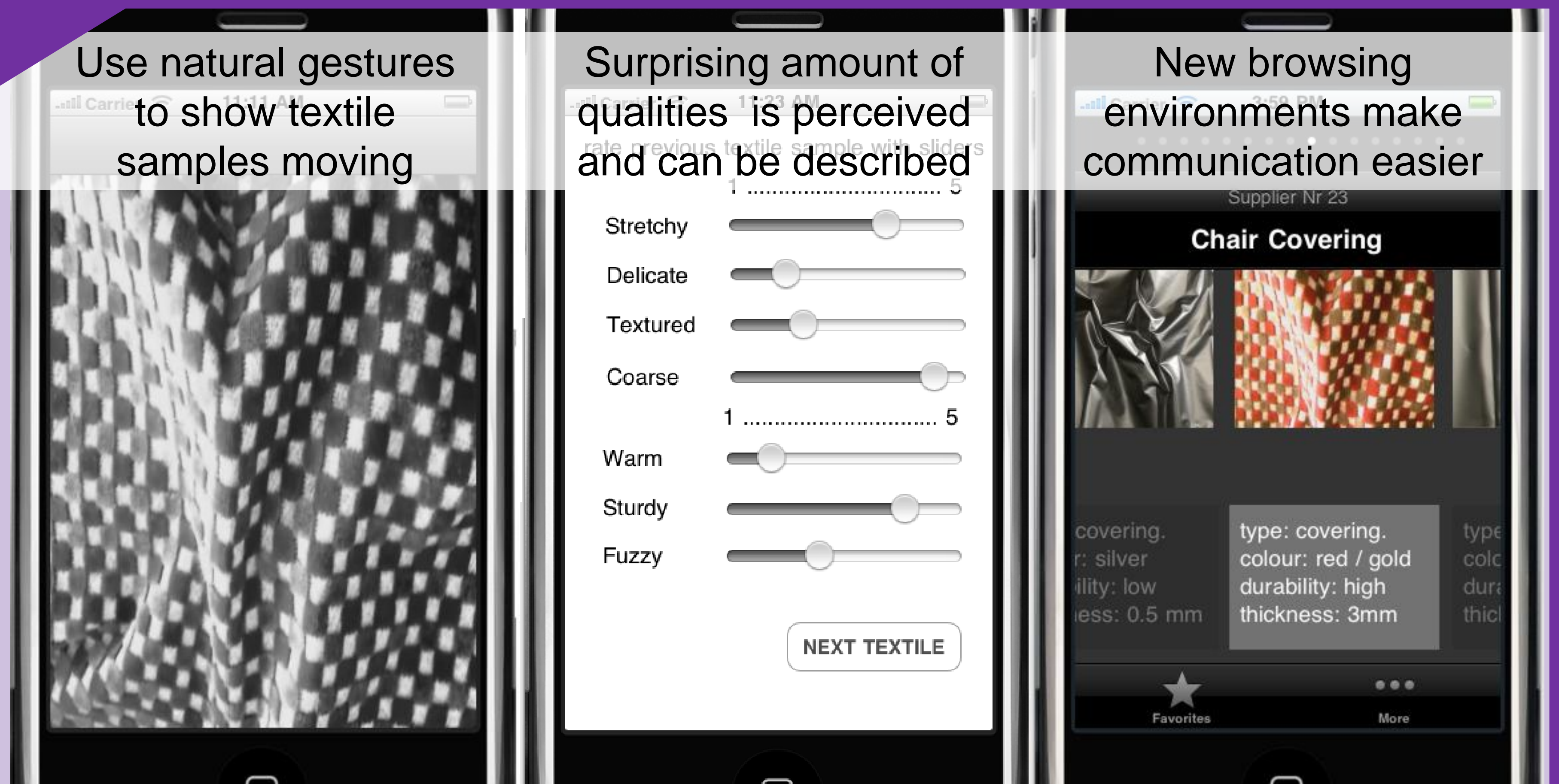
Over 400 minutes of video from 19 participant was analysed and 4 main gesture clusters were discovered (above). Stroke, Pull and Crunch can be easily ported to multi-touch device, however, Rub requires new modality, possibly vibration or sound.

Presentation on Handheld Device

Displayed media controlled with gesture interface might prove to communicate textile qualities better.

Perception of the most important qualities could be more uniform than when using traditional still images for browsing textiles.

Such solution will not replace handling physical object but can significantly narrow down selection.



Future work: next I need to establish whether digital presentation can help subjects achieve common understanding of textile qualities. There might be connections between some gestures and qualities (e.g. stretching fabric to estimate flexibility). The ultimate goal is to use handheld devices to empower buyers with new tools for participating in a supply chain.