



# Outline



- Project background
- Approach
- Designer Interviews
- Ethnographic Study
- Biomechanical Testing
- Follow-up Designer Interviews
- Conclusions & Questions

# Background



- Inclusive design data and tools required
- Biomechanics offers more - it goes beyond size and strength
- Hold on. Why isn't size and strength data being used?
- Understand how and why data is currently (not) used before generating more

# Approach



Who and what :

Older Adults

+

Package Opening

# Approach



Designer Interviews

Ethnographic Study

Biomechanical Testing

Follow-up Designer Interviews

Future Work

# Designer Interviews



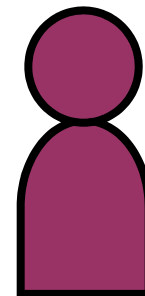
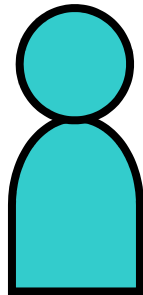
- Structured face-to-face interviews were conducted with 10 packaging designers
- Small design consultancies through to large multinational manufacturers
- Understanding, and use of Inclusive Design.
- Awareness, understanding, and use of ergonomic and biomechanical data.
- Other methods for including older adults in design

# Interview Insights

## Inclusive Design

- Rarely requested by client

*"It's never been specified by the client. The onus is on us as designers to make the client consider it"*



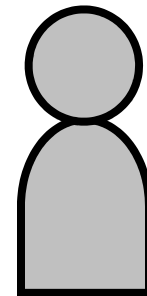
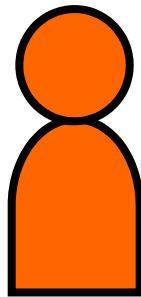
# Interview Insights

## Inclusive Design

- Little evidence of implementation  
- all anecdotal with no formal data, tools or techniques

*"Just go and speak to them. There's no better way to get good information"*

*my*

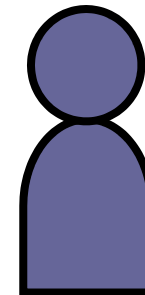


# Interview Insights

## Inclusive Design

- Even less evidence of successful implementation


*“We once tested on a group of 50-70 year olds. It was interesting, and we generated some new prototypes, but they never went into production ”*



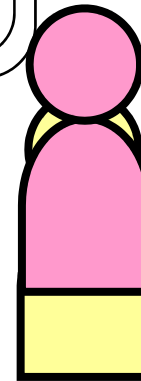
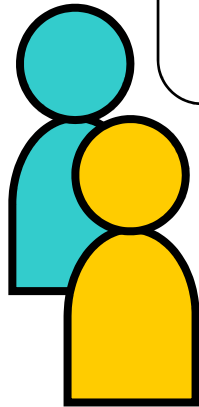
# Interview Insights

## Using Ergonomic Data

- Rarely used - misconceptions and negative experiences:



*“The more experienced you are with these types of projects, the more you just tend to go with your gut feeling”*

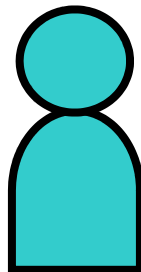


# Interview Insights

## Using Ergonomic Data

- Ethnography, user trials and focus groups preferred

*“Observation is much more valid and useful than using any sort of data”*

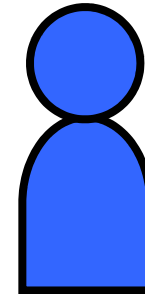


# Interview Insights

## Using Ergonomic Data

- Like to collect their own

*“It’s easier to go out straight away and start speaking to people and start testing things with them, rather than looking through piles of books of other people’s work”*



# Interview Insights

## Using Ergonomic Data

- No robust evidence of data being used successfully



# Interview Conclusions



- Ergonomic data is rarely used, for a variety of reasons.
- Presentation! Designers are designers, not scientists!

Stephen Wilcox, 2007

# Ethnographic Study



- Observer-as-participant lab. based study:



# Biomechanical Testing

- Relies on the simultaneous capture of two things:

**BODY MOTION and FORCE**





# Biomechanical Testing

## FORCE

Force sensors mounted inside jar and bottle:



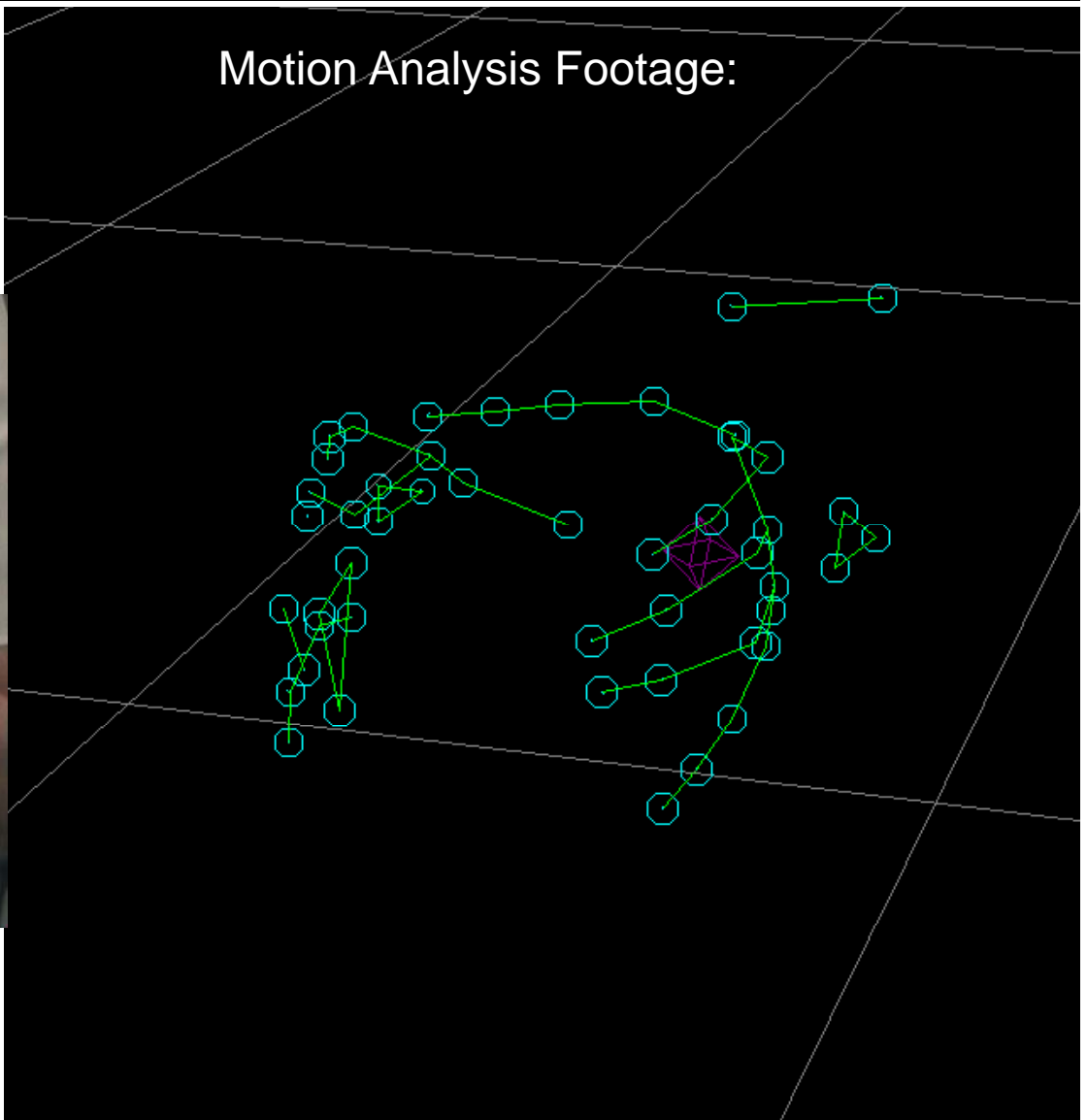
# Biomechanical Testing – Motion Analysis + Video Footage



Video Footage:



Motion Analysis Footage:



# Follow-up Designer Interviews

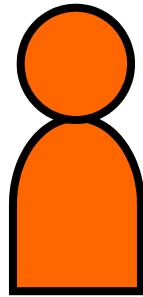


- Same interviewees from previous work (8 in total)
- Semi-structured, informal interview style
- Presented data; ethnographic and biomechanical

# Follow-up Results

- Not too much detail:

*"I just need to know the conclusions from these sorts of test, not the fine detail of the techniques and formulae used to derive them"*

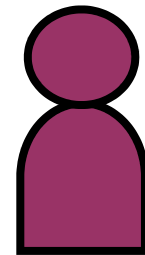
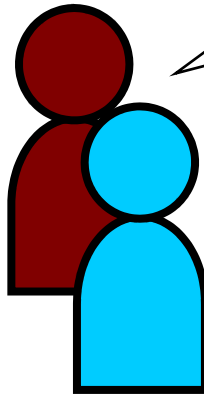


# Follow-up Results

- The need for the human touch:

*"Motion analysis seems to remove all the*

*"I would much rather see the person in their natural home environment"*



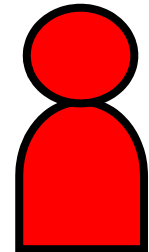
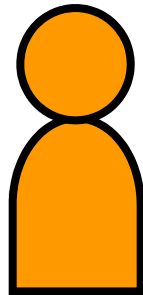
# Follow-up Results

- Combine data with pictures, diagrams and video



*"If you're going to show me a graph or a*

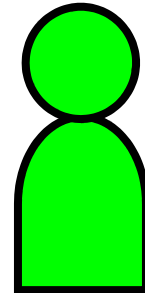
*"The combination of the 2 moving images  
is far more interesting"*



# Follow-up Results

- Concerns over the lab environment being unnatural

*“Our whole remit as a business is to get [our testing] as real as possible and this feels just like measuring to a high level of accuracy something which is hugely inaccurate”*





# Future Work

- Researchers need to be more proactive in generating solutions:

**Ethnography of designers?**



