The Roving Eye: 
Ageing vision and Perceiving Motion

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Fundamental visual problems

Eyes static

Eyes following

Research questions
1) Age and eye-movement control
2) Age and motion perception
Eye-movement control

Deliberate

Reflexive
Eye-movement control

Deliberate

Reflexive

‘follow’

‘stare’
Eye-movement control

Deliberate

Reflexive

‘follow’

‘stare’

Young & old equally accurate and equally precise (!)
Judging speed
Judging speed
Judging direction
Judging direction
Judging direction

**Eyes static**

**Eyes following**

- **Base direction**
- **Smallest direction difference**

- Older (61-80yrs)
- Younger (16-28yrs)
What this tells us
What this tells us

image motion sensors
What this tells us

Eye muscle commands

Image motion sensors
Future directions
Future directions
Future directions
Future directions
Judging speed

Judging direction

+ ‘eyes static’ and ‘eyes following’ conditions

Judgements
- Younger need smaller differences
- Speed: less age difference when ‘eyes following’

Eye control
- Older observers less accurate (!!!)