

Research Briefing N° 92

Video Technologies in the Operating Theatre

This project explores how video recordings of clinical care in the operating theatre can be used by social scientists to address theoretical, methodological and substantive issues.

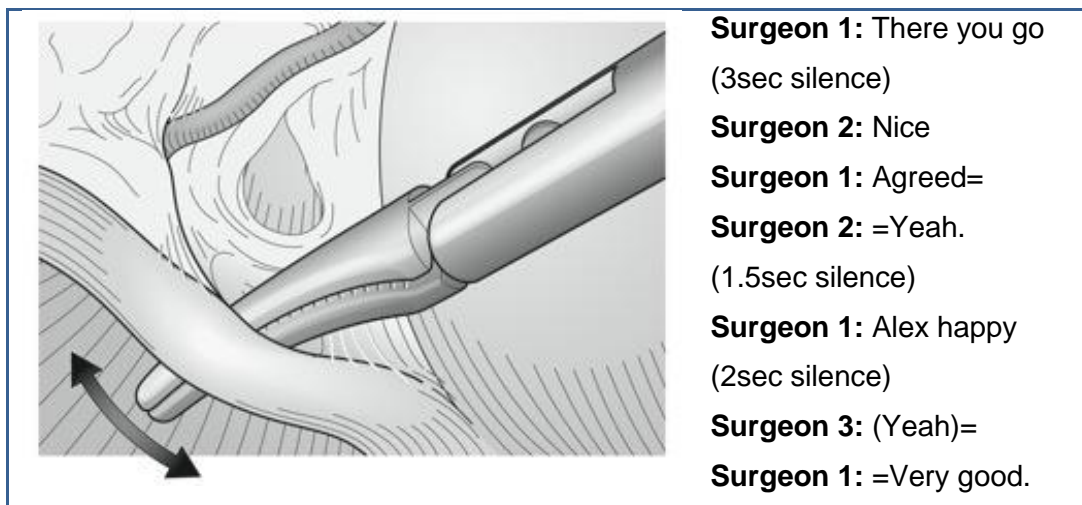


Image: A multimodal transcript of decision making

Key words: video analysis; surgery; operating theatre; surgical education; decision making

Key findings

Findings are of interest to video researchers, clinicians, and the general public.

- Video cameras used in the operating theatre produce recordings that can be analysed systematically using multimodal research methods (i.e. methods for analysing speech alongside gesture, gaze, body placement and other means of communication).
- Through multimodal video analysis of clinical care new insights can be gained in patient safety. For instance:
 - we identified strategies used by consultant surgeons to teach operating surgical trainees while managing the safety of the patient at the same time;
 - we showed how, and under what circumstances, surgeons involve their assistants when making important decisions while they are operating.
- Through multimodal video analysis of clinical care new insights can be gained into embodied, technology-enhanced forms of communication. For instance:

- we rendered visible how gesture and touch serve important functions in the communication between surgeons and nurses.

What we did

The project is part of MODE (Multimodal Methodologies for Researching Digital Data and Environments), a node of the National Centre for Research Methods (NCRM) that aims to develop multimodal research methods. It is a joint project with surgeons from Imperial College London and funded by the Economic and Social Research Council (ESRC). The following questions were addressed:

- How can video produced by cameras used in operating theatres be systematically analysed?
- How do surgeons achieve safety in a learning environment?
- How do surgeons make decisions during operations?
- How can multimodal video analysis inform theories of communication?

Findings have been written up in nine papers and book chapters. More outputs are in preparation. We have delivered a programme of impact

activities, including a public engagement event at the London Science Museum. The project also features in an ESRC Impact Film. We have presented our findings to clinicians and social scientists at 15 talks and 13 workshops and other training events.

How we did it

We did ethnographic field work in 2011 in a major hospital in London, video-recording 20 operations. Some of these operations were 'laparoscopic' operations, i.e. a camera was used to look inside the patient's abdomen. We made recordings using the laparoscope and an in-built camera that provides a 'bird's eye' view on the operating table. Surgeons wore a microphone. These recordings were 'transcribed' multimodally i.e. showing in detail how spoken interactions unfolded alongside actions performed with surgical instruments.

Further information

['How surgeons learn to operate', ESRC Impact Film](#) (YouTube)

['Digital technologies in the operating theatre – How surgeons make decisions', NCRM Podcast](#)

['Digital technologies in the operating theatre', MethodsNews, Winter 2012](#) (pdf 1.6mb)

For further details on the project see <http://mode.ioe.ac.uk/research/researchproject1/> and <http://jeffbezemer.wordpress.com/>

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This Research Briefing is related to IOE Research Briefings 91 and 93 '**Multimodal Methodologies for Researching Digital Data and Environments (MODE)**' and '**Researching Embodiment with Digital Technologies**' respectively.

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