Drawing Interactions project report

The Drawing Interactions project aims to develop new graphical techniques and tools for the transcription, analysis and illustrative presentation of research into social interaction. This report outlines the project's background and motivations and its most recent workshop/hacksession.

Background and context

Conversation Analysis is based on close attention to the detail of how people use their bodies in the production of talk and social action. Over the last half century, the field has built on Gail Jefferson's transcription conventions (Hepburn & Bolden, 2017) using typewritten texts to show emphasis, overlap and for inscribing other features of talk-in-interaction as text on a page. As part of a broader turn towards embodiment in interaction research (Nevile, 2015), these techniques have been updated and combined with graphical forms to show how bodily behavior is produced in and through talk-in-interaction (Goodwin 2000; Laurier, 2014; Mondada, 2018). For example, the transcription below is from a paper by Charles Goodwin (2000). It illustrates the use of traced video stills alongside schematic diagrams of a hopscotch grid, interleaved with lines of talk, enhanced with Jefferson-like annotations of the overlaps, prosody and intonation.

(Goodwin, 2000 p. 1494)

More often, however, transcripts of talk appear with video stills in a 'film strip' style, for example like the following example Heath, Hindmarsh & Luff (2010 p. 70). Here talk is reproduced in Jeffersonian format with verbal descriptions of bodily actions. This transcript also uses a set of conventions based on Goodwin's (1981) methods for annotating the temporal dynamics of gaze organization. In the example below dashes indicate mutual gaze (----), dots indicate one party turning towards the other (....), and commas indicate one party turning away (,,,,).


```
                                    creases pages and withdraws hand
                                         ┌─────────┐

      Dr                    glances to the         turns from
      reads records         top of the page        records to patient
        ↓                        ↓                      ↓
      ··─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─···· ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─···_____
  Dr: What's up?────────,────────,────────,────────,─────────
  P:                                            I've had a bad eye:::-in there
                  ···___,            ·___,,          ·······_____,,,,
                     ↑                  ↑                  ↑
                patient glances    glances at the doctor   turns to doctor
                at the doctor      takes in-breadth
                  └─────────┘                          └─────────┘
      patient sits and lands in chair          patient points at eye
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Extending this method even further, Mondada (2018, p. 99) has developed a fully-fledged, highly generalized transcription system for annotating bodily action in multi-party interactions. As shown below, the transcripts are visually complex since they uphold Jeffersonian's graphical metaphor of spatializing the temporal structure of interaction across a two dimensional plane.

fig.16

```
6   GUY    >pardon<+
           excuse me
    bru          ->+
7          +(0.2) %(0.5)*+ (0.7) # (0.6) % (0.8)* # (3.7)
    bru    +poses--------+pulls------------------------->>
    mic            -->*raises----------------*pushes-->>
    guy         %walks twd MIC---------%helps MIC------>>
    fig                     #fig.17          #fig.18
```
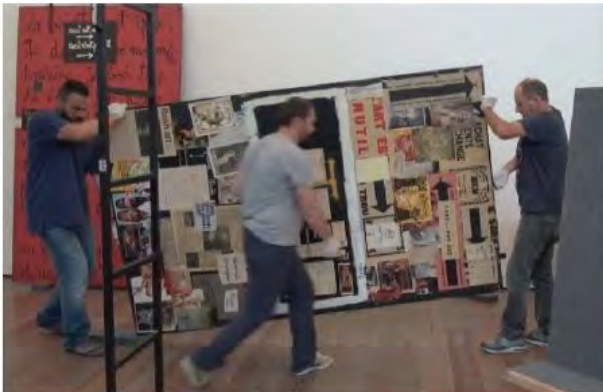

fig.17

fig.18

Since this sample of transcripts are all extracted from publications, these techniques primarily focus on presenting highly polished and research findings for journal papers and book chapters.

But what about the exploratory phases of research such as initial transcription or collaborative inspection at data sessions? There are fewer guidelines as to how to do these kinds of transcripts, although Heath et al (2010, p. 72) do describe how to use graph paper (see the image below) as an initial stage for first laying out transcripts of bodily behavior. While this form of rough transcription is clearly helpful for preparing final illustrations with a detailed, consistent timeline such as the examples shown above, this transcript is very hard to read, and it is hard to imagine that it would be informative to lay people in the way that Jefferson's transcripts can be.
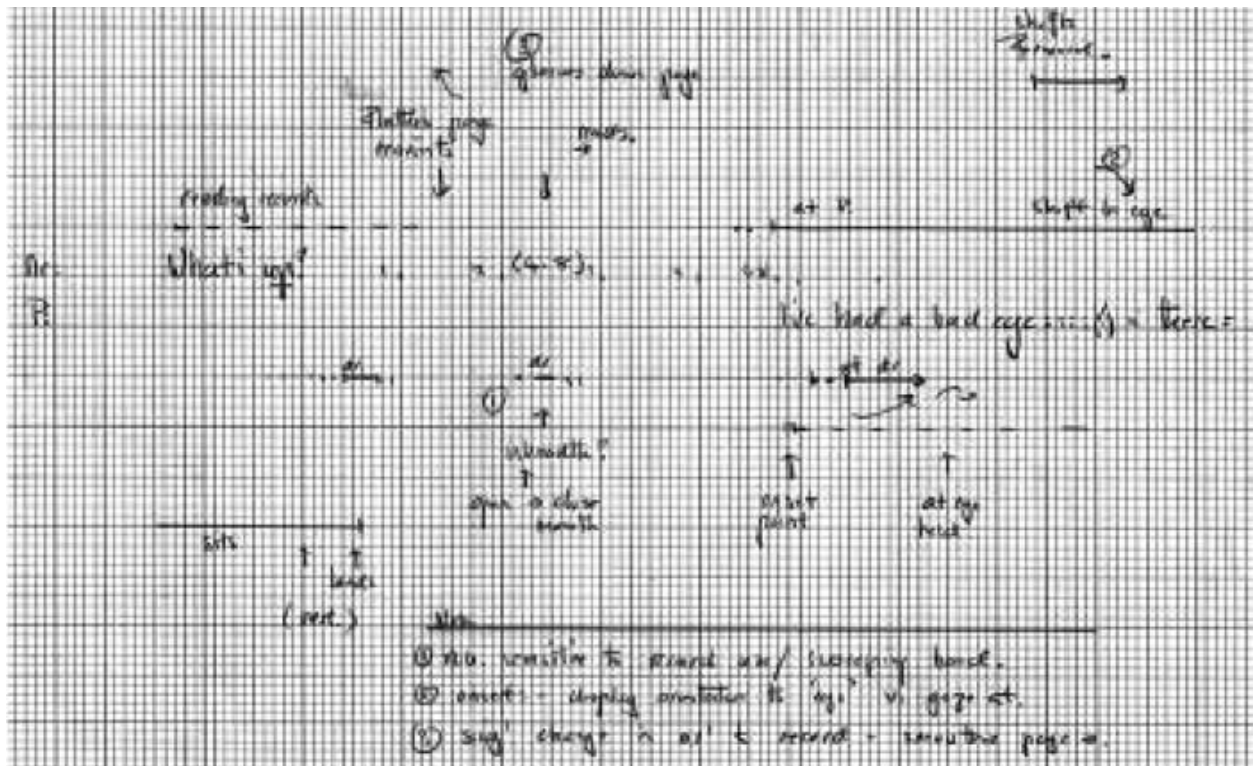
The drawing interactions project takes a new approach to transcription based on long-standing artistic and drafting skills. It uses still-life and 'figure-drawing techniques as key starting points to develop new methods and tools for transcription, analysis and presentation of social interaction.

The initial format for this workshop and some of the ideas for the software prototype were first tested at a workshop at the 39th Annual meeting of the Cognitive Science Society (CogSci 2017) titled *The Fine Art of Conversation* that explored conventional artistic methods for representing interaction in painting and sculpture (see this write-up by a participant and live tweets on the workshop's dedicated twitter hashtag).

A group of cognitive scientists and interaction analysts surveyed the history of art based looking for representations of interaction. The workshop culminated with a trip to the National Gallery in London's West End, where we found surprisingly few accurate depictions of human interaction.

The Drawing Interactions hack-session

The [Berklee](#) Newbury Comics Faculty Fellowship supported a week-long hack-session to develop a workshop format and software tools to support drawing methods for interaction researchers and students on Berklee's Interaction Psychology course. It culminated in a half day session at [Michael Mair's](#) *New Directions in Ethnomethodology* workshop in London where interaction researchers tried out new drawing techniques and gave feedback on a prototype.

The Hack-session

[Toby Harris](#), [Claude Heath](#), [Sophie Skach](#), [Pat Healey](#) [and I](#) gathered in the fabrication workshop at Queen Mary University of London's [Media & Arts Technology programme](#) to develop a series of workshop activities and materials that would provide interaction analysts with drawing techniques and approaches that they could apply to their own research and data.

Claude showed how his 'field inscriptions' could depict the kinds of interactional spaces that people produce using hand movements and patterns of gaze and body orientation while interacting.

The techniques he has been using and developing correspond to the way artists are taught to focus on negative spaces when doing still life drawing. This technique stops the focal objects in a composition appearing to float off the page - a sign of inexperience with drawing.

Sophie focused on how traditional approaches to drawing the human figure and learning about its core anatomical structures could inform research field notes and sketches.

Especially when working with video, where conventional approaches to 'tracing' figures from the screen could become quite flat, she showed how artists and fashion designers techniques of sketching lines and circles could add weight and volume to a body.

I then ran a data session where we looked at how interaction analysts work with video using video data from the fantastic Learning How to Look and Listen website. We were able to look at how experienced analysts collaborate when studying the same short video of a classroom interaction. We studied that original video for ourselves, then we looked at how the analysts worked to control the video, how they noticed, studied and worked to describe aspects of what they saw people doing on the screen.
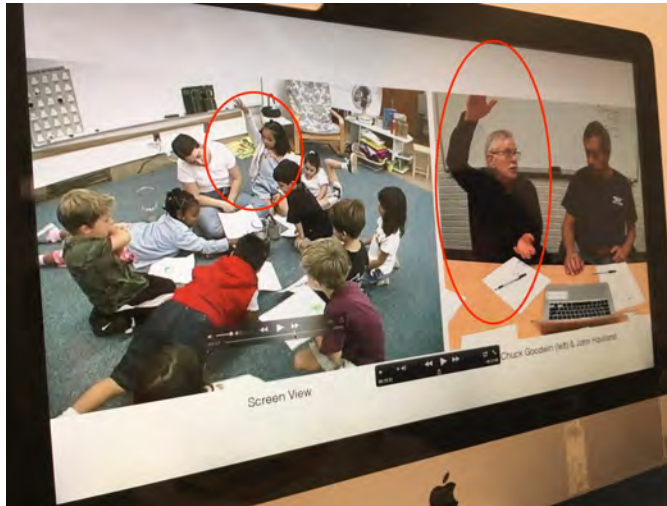
It was especially striking to see Charles Goodwin using the same gesture he sees in the video while describing it, then to see how we also found ourselves having to use a similar gesture to talk about it.
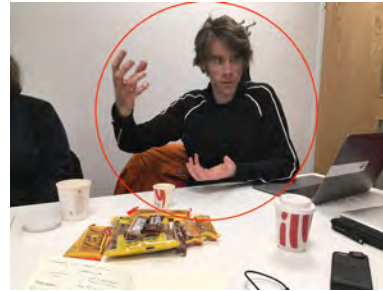
This process of of 'reenactment' as a way of analyzing interactional behavior, first documented by Tutt & Hindmarsh (2011) involves analysts repeatedly playing, discussing, then demonstrating a move or gesture and its variations to one another. The routine parts of this analytic process provided a starting point for the various affordances we built into the software. The initial software prototype Toby developed supported the use of 'field inscriptions', figure drawing, and a mutually visible video navigation system.This video navigation system enabled analysts working together to control the video in mutually visible way so each could see how the timeline was being paused, started, shuttled moved forwards, backwards, and by how much.

The Prototype

By the end of the week we were ready to run the workshop and the software prototype had its basic features in place, which we intended to show to the workshop participants for feedback. The video preview of the application was uploaded to vimeo to showcase the following features.

1. Visible manipulation of the timeline

One of the things we saw researchers struggling with in the data sessions we analyzed on the Learning How to Look and Listen website was the single-user mode of moving around in the video timeline. The analyst who was not controlling the video would not necessarily have insight into or control over the video viewing process. This seemed to lead to one analyst (controlling the video) being more able to direct attention towards specific issues and features of the interaction. This asymmetry is not necessarily problematic for a data session where the 'owner' of the data can choose to direct analytic attention in this way. However, it was clear that in this situation, where the data was commonly shared amongst all analysts, that the analyst who was not controlling the video made fewer contributions. We decided that the interface should be mutually visible, and should provide both analysts with access to manipulating the timeline. Toby used a running film-strip overlay that could be moved to avoid masking what was on the screen, and where either analyst could tap the screen to pause, scrub, and review any section of video.

2. Drawing onto the paused timeline

Claude's field inscription techniques have a direct antecedent: according to Reynolds, (2017, note 1) Gail Jefferson herself used to trace over stills on a video monitor to capture the details of bodily interaction, so we decided to add this feature directly to the software. This supported the method many interaction analysts already use when they trace figures in video stills using various standard graphics software packages such as Photoshop or Illustrator. In the Drawing Interactions app, tracing with a stylus would create a corresponding mark on the video timeline, creating multiple traces at separate points in the video is highlighted in the navigable 'film strip'.
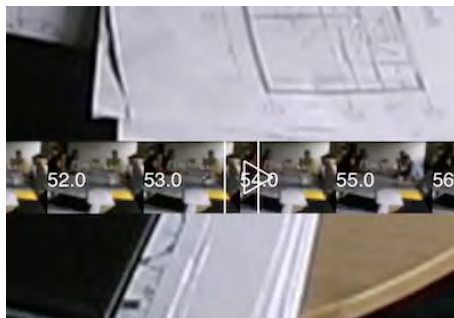
The key difference between this approach and the use of other software packages is that the drawings are linked to a timeline. This means they could be treated as annotations, included in a file format (e.g. ELAN/CLAN, both of which support including images or video stills in transcripts). This facility would require an 'export' function, and use or development of a custom file format for these drawings, which we did not have time to integrate into the software prototype (although it is on the longer term todo and feature request list).

2. Drawing highlights onto the moving timeline

The final feature tested in this iteration of the prototype was the ability to draw highlights onto a moving timeline, based partly on existing paradigms of TV sport/weather graphics telestrators. Here, the timeline could be scrubbed or played while also tracing a gesture or moving object on the screen, creating a kind of 'spotlight' effect highlighting that particular feature of the video.

This seemed like a promising way to support the kind of 'reenactment' gestural analysis we had witnessed in the professional data sessions, where analysts emulate the trajectory and dynamics of a particular movement seen in the video with their hands while talking about it.

At this point we halted development until after the workshop, where we anticipated being able to guide further development by gathering feedback from other interaction analysts specializing in ethnomethodology and conversation analysis. All the software source code so far was placed in a publicly accessible repository and licensed using a minimally restrictive public MIT license. The intention is to continue to work on outstanding bugs and the proposed enhancements outlined after testing the software with participants at the workshop.

The Workshop

We presented the Drawing Interactions project in the context of the *New Developments in Ethnomethodology* workshop organized by [Michael Mair](#) - a gathering of around 40 researchers from around the world at the London campus of Liverpool University. Although the event was focused on ethnomethodology as a whole (not interaction/conversation analysis in particular), all the researchers involved specialized in various forms of discourse/conversation/video analysis.

The workshop started with a short presentation by [Sylvaine Tuncer](#) and [Barry Brown](#) looking at novel methods they have been developing to present interaction analysis for publication. They showed recent work they've been doing with graphic designers to explore how to standardize the presentation and analysis of video for various phases of research, analysis and publication.

Drawing interactions

After introducing the Drawing Interactions project, we distributed art materials to the workshop participants who had brought their own laptops and (previously analyzed) video clips to work on.

I also presented a brief introduction to our prototype and the background work we did on how to support research practices we had observed on the Learning How to Look and Listen website.

The figure drawing workshop

Designer and researcher Sophie Skach ran an introduction to figure drawing for beginners, showing analysts how to use lines to show postures and circles to depict bodily volumes.

She also demonstrated these techniques live using Pat and Toby as life models, and getting the workshop participants to use these techniques to do a series of one minute figure sketches.

These techniques functioned as 'field notes' rather than tracings or inscriptions of video data. The exercises not only loosened people up and gave them the confidence to draw, they also showed analysts how to rely on their embodied knowledge of human anatomy, muscular/skeletal structure and perspective to infer how the bodies they are observing work, what they are doing, and crucially - what they might (projectably) do next at any point in time.

The field inscriptions workshop

Artist and researcher Claude Heath then ran a short workshop on how to use video, drafting and tracing to depict the emergence of negative spaces and bodily configurations via interaction.

Claude's method of *field inscriptions* involves using multiple layers of acetate taped on top of laptop screens, then playing and pausing the video at key moments and sketching lines of sight, bodily organization and shared spaces. The cumulative effect on multiple layers of acetate shows the emergence of interactional spaces, while allowing many degrees of freedom to the transcriber/analyst as to how to draw the visible phenomena that are specific to their own data.

This technique corresponded to functions of the software prototype, so it also helped to inform the workshop participants as to how they might imaging using the software in their research.

Prototype demo and future possibilities

After trying out these drawing techniques, [Toby Harris](#) demonstrated the prototype, showed the various functions outlined above, and discussed the possibilities for integrating video of [interactional motion capture data](#) to review a scene from each participants' perspective.
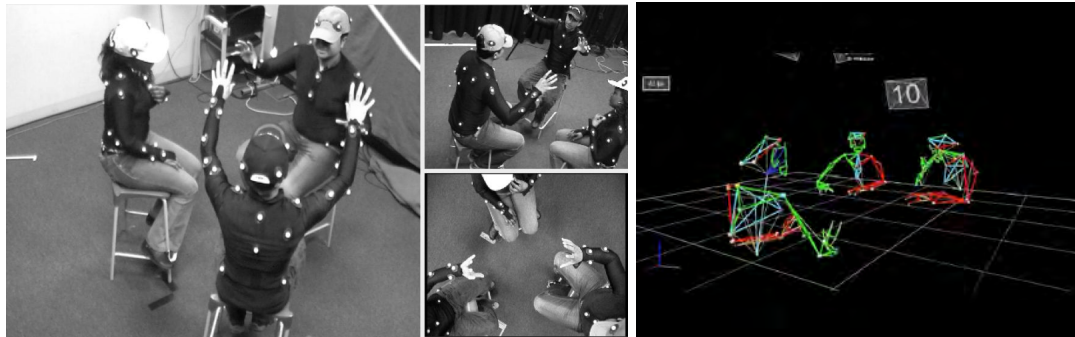
Finally, [Pat Healey](#) talked about his and [Sophie's work on the use of visualizations of sensor data](#) for interaction research. For example, He showed how Sophie's fabric-sensor-embedded trousers highlight non-visible activities such as the weight/postural shifts of seated interlocutors.
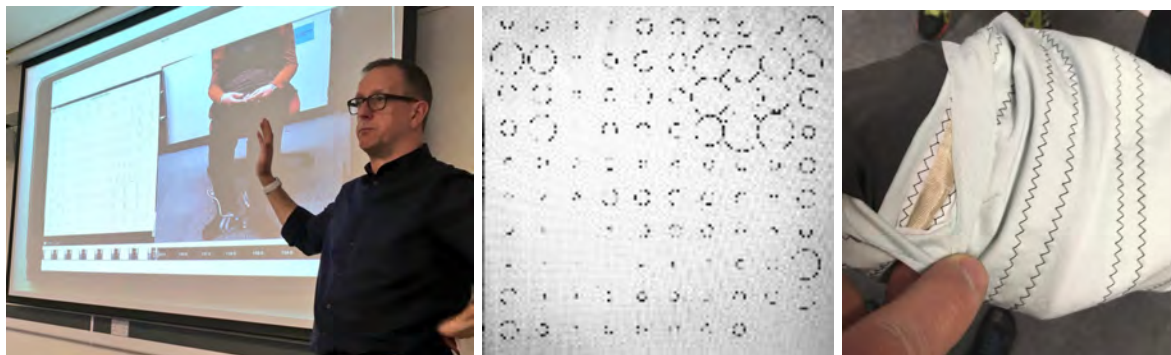
Finally, we handed out feedback forms requesting people's contact details, inviting them to join a potential future user testing group, and asked participants to answer the following questions:

1. What experience do you have of transcription (who trained you, in which methods etc.)
2. What did you learn from each workshop activity (if anything)
3. What have you noticed about your data by doing this (if anything)
4. Can you imagine using it in your own research. If so, how? (within you existing workflow)
5. Any further comments/suggestions (about the software, the workshop etc).

The narrative responses were overwhelmingly positive, and many expressed a clear interest in being involved in the ongoing development of the software and drawing methods. About two thirds of the group thought they would use this type of software/technique in their own work, and several suggested that the workshop ought to have been longer to give people more practice.

Working with students at Berklee

The workshop materials and methods were immediately put to use in a drawing session in my Human Interaction Psychology class at Berklee College of Music. I showed students how to use the Sophie's figure drawings and Claude's field inscriptions to illustrate their final paper transcripts.

The 15 week course includes a research component where students gather video data and learn to use Jeffersonian transcription and conversation analytic methods very quickly. In previous years, they have often struggled to focus on bodily behaviors other than talk in their final projects, which often involve very interesting embodied practices of music-making. This 2 hour class helped them visualize and document the bodily behaviors they could see in their video data.

Several students who had struggled with writing detailed descriptions became far more involved with this drawing activity. As a teaching tool, the most valuable aspect of drawing interactions is that it provides students with a sustained focus on and engagement with with their data. This workshop will be integrated into the next iteration of the syllabus from the outset, which will now start with illustrating bodily behaviors rather than focusing initially on talk. The key learning outcome is that students understand that *talk is also an embodied action*, and one that can't be described or represented outside of embodiment as a whole.

Acknowledgements

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