The Open Handbook of Linguistic Data Management

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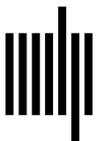
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20 Managing Conversation Analysis Data

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1 Introduction

This chapter describes how data are conventionally used in conversation analysis (CA; for overviews, see Sidnell & Stivers 2013; Clift 2016). We describe where it comes from, how it is collected and organized for analysis, and how it is distributed. Over the course of this description, we make some recommendations regarding best practices and potential improvements.

2 Data sources

CA research projects seek to uncover the orderliness of everyday social interactions often by locating *perspicuous settings*. These are everyday activities whose endogenous organizations naturally provide answers to the questions a researcher may have. For example, a researcher interested in how good/bad news is delivered may look to interactions involving cancer screenings, as these reveal the phenomenon of interest repeatedly and in perspicuous detail. Whatever the interest or setting, CA research relies on recordings of social interactions.

2.1 Recorded social interaction

The empirical basis of CA research is recorded audio/video of naturally occurring social interactions (see Sacks 1984; Mondada 2013). The use of such materials emerges from a commitment to examining the actual details of actual events, and an avoidance of data that are stipulated (imagined, recalled, intuited, and such), stimulated (staged, elicited, experimentally induced, and so forth), or otherwise produced via researcher involvement (cf. Speer 2002). The goal is to retain as much of an emic perspective as possible on activities as they are naturally organized by the participants. For this reason, recordings are preferred over field notes, interviews, and experiments, which fail to preserve the precise, embodied, temporally unfolding ways that participants concertedly organize their situated activities as ordinary, practical achievements.

Recordings offer "good enough" documentation of what transpired in an interaction. They capture not only who said what, but also things that ordinarily elude noticing and memory, such as who stops laughing first (Jefferson 1985), or the words a speaker abandons before finding a suitable replacement (Schegloff, Jefferson, & Sacks 1977). Recordings can be played repeatedly and in slow motion, which, in the case of video data, permits detailed analyses of gaze, manual action, bodily comportment, engagement with objects, and so forth, all of which are routinely consequential for interaction (Mondada 2016a).

2.2 Existing data

CA research commonly relies on existing recordings of social interaction. These primarily differ in their provenance (collected by a researcher or by another entity) and purpose (for research or for another purpose). Many data sources are online. Some research corpora are freely available, notably TalkBank[1] (MacWhinney 2007), which holds well-known materials transcribed by Gail Jefferson (e.g., Newport Beach, Watergate), the Santa Barbara Corpus of Spoken American English, and the Corpus de Langue Parlée en Interaction, among others. Other research corpora are conditionally accessible, for instance after registration, ethics training, specification of research purpose, and sometimes payment. Such corpora include SamtaleBank,[2] the Language and Social Interaction Archive,[3] the One in a Million Archive of Primary Care Consultations,[4] and the Forschungs- und Lehrkorpus Gesprochenes Deutsch (FOLK).[5] Other online resources, while not made for research purposes, may be coopted for CA inquiry (Jones & Raymond 2012). These include YouTube videos and other "found" materials such as broadcasts of interviews and debates (Heritage & Clayman 2010).

Other avenues for accessing data involve more direct exchange between the researcher and those with rights to grant access (see Broth, Laurier, & Mondada 2014). Researcher-to-researcher sharing is probably the most common method. This operates informally over professional networks, with the sharing of "classic" data being especially commonplace. Researchers may also request access to data that was collected for non-research purposes. For Raymond (2014), the author petitioned numerous police departments for their automatically recorded emergency calls until one granted access. Less frequently, an organization may contact the researcher in the hopes of getting some data analyzed. For Hoey and Stokoe (2018), a university gave the researchers a set of telephone calls related to university admissions along with some specifications of what they wanted to discover.

2.3 "Classic" data

One distinctive research practice in CA is its long-standing reliance on a body of "classic" recordings made in the 1960s and 1970s. These were largely transcribed by Gail Jefferson, one of the founders of the discipline, and formed the basis for many seminal studies. There are a few reasons for this practice. First, the data are convenient. Using classic data precludes the need for the researcher to undertake the laborious work of recording and transcribing new interactions, because transcriptions of classic recordings already exist and are of reliably high quality. Additionally, because these recordings predate review boards, ethics approval is not needed to use them. Second, classic data are familiar within the CA research community. Many if not most CA practitioners know these materials, either from working with them directly or by encountering them repeatedly in papers, talks, and data sessions. They embody a kind of material culture for the discipline; not only are they well known, but particular snippets have become shorthand for particular phenomena. This familiarity contributes to CA's empirical rigor. Because classic recordings enjoy widespread recognition, analyses based on them may be more readily comprehended and consequently verified/contested. It is not uncommon for reviewers to cite these data as evidence for/against the claims in a given manuscript. And third, the data remain productive. Contemporary CA research continues to be informed by these materials some half a century later. As "living documents," these transcripts are routinely a source of

novel findings on their own (e.g., Holt 2017; Raymond, submitted) and also serve to corroborate analyses that are based on newer data (e.g., Clift 2014).

The practice of relying on classic data is not unproblematic, however. From a less flattering perspective, use of these data can inhibit scientific development and exclude particular groups. An immediately recognizable problem is that they capture social interactions between English-speakers in the 1960s and 1970s. Ethnographic and emic understandings of these settings may be less evident to younger generations of scholars. Relatedly, the practice contributes to an English-language bias in CA. While this is a natural consequence of CA's historical emergence (anglophones analyzing English data), it may unduly inform what questions we ask and where we look for answers and inspiration (see Raymond, submitted). Perhaps most perniciously, such anglocentrism can have an exclusionary effect. Papers using English data will be read/cited more than ones focusing on other languages. Another way that the practice may exclude is related to the communal familiarity of classic data. The extensive use of those sources and their cultural importance for the discipline produces the appearance of communal ownership—that everyone has these recordings and transcripts. This, however, is belied by the fact that access to the classic data is not equal, but tends to be confined to those with connections to CA's historical centers of gravity such as the University of California's Santa Barbara and Los Angeles campuses.

In short, classic recordings and transcripts are not merely the materials out of which we fashion our findings. Perhaps that is what they were at the time of recording, but today they also stand as objects that mediate professional relationships and shape disciplinary culture.

2.4 New data

Researchers also commonly make their own recordings, especially for PhD projects and grant-funded research. A major advantage to this is that the researcher gains greater ethnographic understanding of the examined activities. By contrast, relying on existing recordings necessarily means that some contextual details will remain unknown, for example, relevant off-camera occurrences, aspects of participants' relationships and histories, or participants' idiosyncratic conduct. The next section addresses the process of collecting new data.

3 Data collection

3.1 Preparation

Regarding what to record, any social situation is theoretically of interest since it is assumed that every social activity exhibits "order at all points" (Sacks 1984). The selection of a particular activity will be guided by some combination of access conditions, legal and ethical considerations, institutional requirements, and researcher interests, resources, and abilities.

A prerequisite to recording is gaining access to a setting of interest and developing some ethnographic understanding of its constitutive activities. This understanding of your research site—whether mundane or institutional—will inform the data collection process later on in terms of best recording conditions, placement of recording devices, and so forth. For institutional settings (Heritage & Clayman 2010), it is essential to understand the distinct participatory roles and the division of labor that give coherence to institutional activities. For crosslinguistic and cross-cultural projects, it is helpful to identify comparable contexts before recording. Enfield et al. (2007:97) refer to "maximally informal speech events" with minimal "structural constraints" (see Drew & Heritage 1992), offering as an example "the kind of verbal activity characterizing same-sex teenagers of the same hamlet in an idle moment."

In getting acquainted with your site of interest, you should talk with the participants whose activities you want to document. The aim of this is more than just securing formal consent; you want to ensure that participants understand what you will do and how you will use the recordings. Heath, Hindmarsh, and Luff (2010:17) suggest that participants are often willing to cooperate if you address the following: (i) the analytic necessity of recording; (ii) invasiveness of the recording equipment; (iii) commitment that the data will only be used for research and/or teaching; (iv) restricting data access; and (v) assurance that the data will not appear online, be broadcast, or used for commercial gain.

Ethical, legal, and organizational considerations are manifold, and different administrative locales, review boards, and funding agencies may have different requirements, so it is important that these inform the design of your research from the start (see Kung, chapter 8, this volume). Here are some basic considerations (n.b., these often also apply when using existing data):

- How will you brief participants when obtaining informed consent (see Holton, Leonard, & Pulsifer, chapter 4, this volume; Miller et al. 2012)? This is relevant when working with those who may not be able to give full informed consent, such as children or people with severe disabilities, or when obtaining individual consent is impractical, such as recording in busy public spaces.

- What is your plan if participants do something that may redound negatively on them? In the extreme case, you may be required to report illegal acts. In less severe cases, participants may gossip or talk in ways that are considered discriminatory or hateful. Even if "obviously" uttered in jest or irony, ethics boards will be concerned with your plan for such situations.

- How will you protect participants' confidentiality? Specify the range of sensitive objects (names, faces, logos), methods of protection (blurring, illustration, deletion), and circumstances for their use (talk/lecture, poster/slides, publication/blog).

- How will the data be kept and maintained (see Kung, chapter 8, this volume)? Consider the interrelated issues of storage medium (spinning disk hard drive, solid state flash drive), storage location (personal hard drive, institutional repository, commercial cloud service), file format (proprietary, open standard), security (encryption, password, physical lock and key), backup (number of copies, method, and frequency), and duration of retention. Ethics boards may suggest destroying recordings after a specified time. We recommend resisting such terms if possible and finding alternative means to satisfy ethics requirements without losing the data altogether.

- How will you handle access and ownership? Develop procedures for granting/declining requests from organizations, researchers, and the participants themselves; for apprising those with access of original agreements made with the participants; and for tracking who has what once you begin granting access.

3.2 Recording

In recording, the aim is to preserve the temporality, sequentiality, and ecology of the participants' activities.[6] For face-to-face interaction, video data are preferred over audio-only data. For non–face-to-face interaction (e.g., telephone, radio) audio-only data are acceptable.

Different options exist for automatically recording incoming/outgoing calls and creating audio files from radio broadcasts (see Raymond 2020).

For video, first consider what perspective(s) to capture. This should be informed by your analysis of what will best preserve the details of participants' conduct in their activity. When setting up, delimit the field so that all participants are in view. Resist privileging "active" participants over seemingly idle ones (e.g., teachers over students). Additionally, avoid directorial moves (zooming in/out, panning, following, and such) in general; using multiple recording devices usually mitigates the need for such movements. The camera(s) should also capture the participants' sites of focus (manual action, one another, a screen, and so on). For some studies, you may need to closely document material objects—such as institutional forms or records (e.g., Maynard, Freese, & Schaeffer 2010) or particular tools or technological interfaces (e.g., Heath & Luff 2000)—as these can impact participants' conduct and thus may become analytically relevant.

Regarding recording equipment and accessories, consider the affordances of the setting and activity. Stationary activities in spacious, quiet, well-lit spaces generally afford multiple cameras, tripods with large footprints, and table-top microphones. By contrast, circumstances involving mobile activities, restricted spaces, and limited visibility/audibility may require equipment adapted to such settings, such as cameras with vibration compensation, flexible "GorillaPod" tripods, lapel microphones, body cameras, wind dampeners, and so forth. These choices also intersect with analytic interests. Analyses of, for instance, phonetic detail, precise sites of gaze fixation, and computer-intensive interactions favor the use of high-quality microphones (Local & Walker 2005), eye-tracking glasses (Holler & Kendrick 2015), and screen capture software (Brown, McGregor, & Laurier 2013), respectively.

For your recording devices, you must also select technical settings. In general, we recommend recording in lossless formats (e.g., .wav) over lossy/compressed (e.g., .mp3), even though this requires more storage space and more frequently swapping out storage media. We also recommend open standard file types over proprietary ones, as these maximize future usability. During data processing, you can always convert to other formats for practical purposes. That said, it is fairly standard in CA to use QuickTime 7 Pro, which uses .wav and .mov

formats and offers various listening and editing features (e.g., selecting, cropping) that subsequent versions lack. While Apple unfortunately no longer supports QuickTime 7, it remains downloadable.[7]

3.3 Data processing

If collecting data over several sessions, combine data collection with data processing (see Mattern, chapter 5, this volume). Establish a routine procedure after every session. This minimally involves transferring data from your recording devices to digital storage, checking for problems (e.g., was sound properly recorded), noting any needed modifications for the next session, and immediately creating backups. Keep the original files unconverted/uncompressed so they may be recovered in the event of data loss. It is helpful to label the folder something like "originals_DO_NOT_TOUCH." You will probably be renaming the files at this time, too. Devise a straightforward, consistent system for naming and file organization and describe that system in a text file. Create an index/spreadsheet of the data you have collected, identifying the date, time, place, activity, participants, pseudonyms, and other relevant metadata. Do not assume that you will be able to recall this information later or recover it from watching/listening to the data; you will be surprised at how much and how quickly you forget.

Postproduction is often required to get your data into a workable format (see Han, chapter 6, this volume). The originals are usually bulky, unplayable, and/or distributed across different files. Postproduction may involve some combination of file compression, conversion, and synchronization. Software such as Adobe Premiere,[8] Final Cut Pro,[9] and HandBrake[10] are commonly used for these purposes, and differ in terms of price and capability.

Once you have some workable audio/video files, the next step is usually transcription. Because this is more of an analytic activity than preanalytic, we describe it in the following section.

4 Analysis

4.1 Transcription

Transcription is one of the most flexible stages in CA research (see Mondada 2007), because different forms of transcripts are used at different points (data processing, data exploration, targeted analysis, coding, and publication/presentation). The main variable is the level of detail

put into a transcript. This is inescapably an analytic activity. Because additional details can always be added, the inclusion/exclusion of any one is theoretically motivated (see Ochs 1979). The analytic issue is empirically determining the forms of conduct that participants treat as (potentially) *relevant* for the interaction (see Mondada 2018).

CA transcripts follow Gail Jefferson's conventions for verbal/vocal behavior (Jefferson 2004; Hepburn & Bolden 2017), which seek to capture not only phonetic/prosodic features of conversational speech, but also vocalizations that are typically viewed as marginal (e.g., disfluencies, sniffs, mouth-parting clicks) as well as the duration and precise location of silences. For visible/bodily behavior, Lorenza Mondada's conventions (2016b, 2018) are now widely used. Most analysts transcribe through repeated listening, sometimes aided by transcription software (e.g., Transana,[11] Computerized Language ANalysis [CLAN],[12] ELAN[13]). Transcription services are rarely used because they tend to be costly, insufficiently granular, and orthographically prescriptive. Additionally, the act/practice of transcribing is valuable because it incorporates analyses of turn-taking and other phenomena, which often aids in the germination of ideas (see Bolden 2015).

A word-for-word transcript, while permitting, for example, text searches and a basic grasp of what's happening, would be insufficient for CA research. Minimally, CA transcripts include timed silences and the precise placement of overlaps (see Roberts & Robinson 2004). More fully developed transcripts would show, among other things, prosodic details (intonation, rhythm, voice quality, intensity), pronunciational particularities, all manner of non-lexical sounds, morpheme-by-morpheme glosses, idiomatic translations, and relevant visible behavior, perhaps including images. New transcription conventions can be invented as necessary to capture certain phenomena as well—such as for crying (Hepburn 2004) or sighing (Hoey 2014).

Detailed transcripts would be used, for instance, in data sessions (see section 4.2), where such details are commonly part of developing ideas and arguments about the data. Somewhere between a more minimally and a more maximally detailed transcript are those made for presentation/publication. These transcripts often retain a fair amount of detail, but dispense with those that are not crucial for the argument being made or for comprehension of the data, decisions which may also be influenced by a publication's disciplinary interests or editorial

style. Transcripts made by another conversation analyst, while usually reliable enough, should be retranscribed as a precaution, especially for analysis and presentation/publication. Retranscription is also necessary to convert transcripts made with different conventions (e.g., CallFriend on TalkBank) into Jeffersonian-style transcripts.

4.2 Analysis

Analysis in CA characteristically begins with an observation about some concrete occurrence in a piece of data, followed by the collection and curation of various cases related to that observation.[14] The initial step of noticing often originates from what is known as *unmotivated looking*, wherein "the investigator as much as possible puts aside or brackets assumptions about how a domain of human action does or could operate," endeavoring instead to focus on whatever "phenomena that interaction itself presents" (Maynard 2013:18)—in other words, an altogether inductive approach. While this approach aligns closely with CA's distinctive analytic mentality, and may be especially fruitful in initial explorations, researchers can also be informed by prior work and guided by specific analytic interests (Clayman & Gill 2004:596–597).

Initial observations frequently originate in *data sessions*, where expert and novice CA practitioners gather to examine fragment(s) of data together. The data session is as much a method of developing analytic skills as it is a pedagogical exercise (Stevanovic & Weiste 2017), a form of live, informal peer review (Albert & de Ruiter 2018), and an arena for data exploration. Data sessions can also be seen as hypothesis-generating exercises. One or two observations in a data session can be used to form hypotheses that researchers can then assess by collecting additional cases afterward.

The main analytic objects in CA research are *cases* and *collections*. A case is an observation and analysis of a particular part of a transcript/recording. Cases are gathered across various recordings in the process of building a *collection* of cases. An intermediate step that targets all *candidate* cases may be relevant in assembling a collection. In investigating the syntactic and prosodic realization of "modular pivots,"[15] for instance, Clayman and Raymond (2015) first identified possible *candidate* cases based on syntactic criteria (clearly visible in transcripts), and then each candidate instance was subjected to auditory/acoustic analysis to determine whether its phonetic/prosodic packaging qualified it for inclusion in the core collection

of "true" modular pivots. This serves as a reminder that transcripts, while clearly essential in analyses of data, should always be used in conjunction with—and not as a substitute for—the actual recordings themselves.

The assembly and organization of cases into various collections is the primary analytic activity of CA research (see Clift & Raymond 2018; Hoey & Kendrick 2018). Most researchers use some combination of text documents, folders, and spreadsheets in organizing various transcripts, (clips of) recordings, (sub)collections, lists, outlines, analytic observations, and manuscript drafts (White 2018). Spreadsheets are especially useful when dealing with numerous cases: They provide for a synoptic view of the collection(s), sorting/filtering/ordering cases along various features of interest, and coding and basic quantification (see Stivers 2015). This process is often supplemented or aided through various software programs for analytic activities such as mind-mapping (NVivo[16]), phonetic analysis and manipulation (Audacity,[17] Praat[18]), annotation (ELAN), and statistical analysis (RStudio[19]).

Sometimes collection building is done with students and/or research assistants. This is feasible for phenomena that are fairly frequent and easy to spot. For example, lexical items such as turn-initial particles (e.g., English *oh, well*; Finnish *siis*, *eli(kkä)*; Heritage & Sorjonen 2018) or reference forms (e.g., Enfield 2007; Fox 1987; Raymond 2016), morphosyntactic practices such as clausal markers (Ford & Mori 1994) or *do*-constructions (Raymond 2017), and embodied behaviors such as taking a drink (Hoey 2018), can be found in casual scanning of transcripts and recordings. Other phenomena, however, such as "fourth-position repair"[20] (Schegloff 1992), are relatively rare, which increases the time needed for collection, and/or are structurally more complicated, which means they may evade the notice of inexperienced analysts.

5 Distribution

5.1 Presentation

The data that are presented at scientific meetings, in academic publications, and other research outlets typically take the form of transcripts, sometimes accompanied by still images and audio/video clips. Regarding anonymization of these data, participants' consent forms and general ethical guidelines should be followed. For transcripts, identifying information such as the names of people, places, and employers is almost always pseudonymized.

For audio, software such as Audacity may be used to obscure (pitch shift, reverse, or otherwise garble) individual words/phrases. For images, it is common to blur or pixelate faces or logos (using, e.g., Adobe Photoshop[21]). A higher level of protection can be gained by graphically reproducing an image as a sketch or line drawing, either manually or automatically through programs such as AKVIS Sketch.[22] Anonymizing video recordings is more complicated because every frame must be edited, but it is possible (see Heath, Hindmarsh, & Luff 2010). When especially sensitive data are shown (e.g., police interviewing children suspected of abuse; Fogarty, Augoustinos, & Kettler 2013), presenters should take greater care to protect the participants by, for example, requesting that transcripts be returned after the talk, and/or that no pictures be taken or posted on social media.

Practices surrounding the citation of data sources (see Conzett & De Smedt, chapter 11, this volume) are not quite standardized in CA, but some conventions have emerged. This is clearest when the data do not belong to the researcher. In this case, an acknowledgment may appear in a footnote/endnote, such as, "I am grateful to Candy and Chuck Goodwin for allowing the use of the tapes and the accompanying transcripts I have used for this article" (Fox 1999:58). The body of the paper often has a basic description of the data specifying the activity recorded, setting, corpus/collection size, and how the data were collected. For example, "The database consists of 30 videotaped conversations with aphasic Finnish speakers collected by Minna Laakso in speech therapy sessions and at home" (Helasvuo 2004:5). If no specific entity is named as the data collector, it is usually assumed that the data are drawn from a body of semicommunal classic data (see section 2.3) or some other corpus of everyday/mundane conversation. For instance, "[the data come from] transcribed telephone conversations recorded in both Britain and America" (Holt & Drew 2005:39).

Apart from prosaic descriptions of data sources, transcript titles may also disclose identifying information. Some titles specify a great deal about the recording, such as "Holt:X(C)85:1:1:1:6" (Holt & Drew 2005:36), which, while opaque to the outsider, refers to the corpus collected by Elizabeth Holt, recordings from Christmastime of 1985, tape 1 of those recordings, side 1 of that tape, call 1 from that side, and transcript page number or page range. This level of detail tends to be the exception,

however. More commonly, transcript titles are informative only to the researcher who collected the data, such as "RCE25, 21:48" (Hoey 2015:445), which references a file that the researcher has access to and a time stamp within that recording. Even less informative are titles such as "extract 3," which only make sense within the context of that article. When a data extract is taken from an already published paper, a regular in-text citation is given, for example, "Example (29) from Sacks et al. (1974:733)" (Lindström 2006:83).

5.2 Sharing and accessibility

CA is a research tradition whose approach to data is grounded in empiricism and transparency. We have already mentioned some forms of data sharing and accessibility in CA. There is the widespread practice of researcher-to-researcher data sharing, especially classic data. Researchers already make use of published transcripts as if they were public, usable, and freely reproducible, and many corpora and transcripts are available for download in online databases. Intertwined with these practices is the presentation of data extracts in the form of transcripts, images, and clips of recordings in papers and presentations. Though not substitutes for full access to the data, these make the data sufficiently available so that others may check—and, in principle, replicate—an analysis. Indeed, the use of detailed transcription conventions is in part directed toward closing the gap between those with access to the data and those without.

Technological advancements in the digitization of recordings and international telecommunications infrastructure have opened up new possibilities for CA research. Transcripts may be supplemented by the recordings themselves. Notably, Emanuel Schegloff, one of the most important figures in CA, has endeavored to make available on his web site all the clips he has analyzed in his publications. More recently, a new journal *Social Interaction: Video-based Studies of Human Sociality* was created in part to allow video data to accompany its papers.

CA's historical record offers a strong foundation for further progress to be made in the archiving, accessing, and sharing data. Specifically, we believe that the CA community would be open to creating an institutionalized repository for recorded materials and transcripts and a protocol for archiving data in that repository. We support efforts by professional bodies such as the International Society for Conversation Analysis for undertaking such an endeavor, as they have the representation, visibility, and membership fees to support it.

The promotion of open science in this way would serve several needs. First, while there is the sense that "everyone" has access to certain classic recordings, their actual distribution is unequal, with potentially exclusionary effects. Archiving these classic recordings in the repository and making them available would do much to resolve this tension. Second, while some organizations provide their researchers with the resources to responsibly archive, maintain, and share their materials, not all do. The repository and protocol would address this lack. Those who wish to put up the recordings for their papers may do so—both for those papers already published and those that are forthcoming. Complete data sets could also be added for research and teaching purposes. Particularly for languages that are underrepresented in CA research, a communal database would offer enhanced opportunities for research and collaboration, which would both address the field's current English-language bias, as well as facilitate crosslinguistic, cross-cultural studies. Finally, researchers would be able to rely on an institutionally legitimated archive and its procedures in specifying and justifying plans for data collection/management, which would aid in the production of things such as grant applications, research proposals, and ethics permissions.

Acknowledgments

Notes

1. https://ca.talkbank.org/.

2. https://samtalebank.talkbank.org/.

3. http://www.sfsu.edu/~lsi/.

4. https://data.bris.ac.uk/data/dataset/l3sq4s0w66ln1x20sye7s47wv.

5. http://agd.ids-mannheim.de/folk.shtml.

6. For further reading on technical and practical aspects of video recording (equipment, technical specifications, framing, placement, and such), see, e.g., Derry et al. (2010); Heath, Hindmarsh, and Luff (2010); Luff and Heath (2012); and Mondada (2013).

7. https://support.apple.com/kb/DL923.

8. https://www.adobe.com/products/premiere.html.

9. https://www.apple.com/final-cut-pro/.

10. https://handbrake.fr/.

11. https://www.transana.com/.

12. https://talkbank.org/software/.

13. https://tla.mpi.nl/tools/tla-tools/elan/.

14. For in-depth discussions and practical guides to the analytic process in CA, see Heritage (2011), Sidnell (2013), Clift and Raymond (2018), and Hoey and Kendrick (2018).

15. Something like the address term *Jen* in the following sentence acts as a "modular pivot" between the potential ending of one turn and the contingent beginning of the next: *You don't look it Jen I must be honest* (Clayman & Raymond 2015:391).

16. https://www.qsrinternational.com/nvivo/home.

17. https://sourceforge.net/projects/audacity/.

18. http://www.fon.hum.uva.nl/praat/.

19. https://www.rstudio.com/.

20. Schegloff (1992:1321) provides the following instance of fourth position repair (line 4):

01	Marty:	Loes, do you have a calendar,
02	Loes:	Yeah ((reaches for her desk calendar))
03	Marty:	Do you have one that hangs on the wall?
04	Loes:	Oh, you <u>want</u> one.
05	Marty:	Yeah

21. https://www.adobe.com/products/photoshop.html.

22. http://akvis.com/en/sketch/index.php.

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