6-6-2023

# Contextualizing The Role of Answerers' Gaze Orientation in Turn Taking

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by

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A thesis submitted in partial fulfillment of the
requirements for the degree of

Master of Science
in
Communication

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Portland State University
2023

**Abstract**

This thesis extends our understanding of the role of gaze orientation in turn taking, answering the following research question: When an answerer withdraws their gaze from a questioner at the completion point of the first turn-constructional unit of their answer, is this a practice for communicating that their answer-turn-so-far is *not* transition relevant (i.e., that the answerer is *not* complete with their turn and will continue speaking)? Data are videotapes of 274 information-seeking sequences drawn from 28 dyadic, mundane, English conversations between close friends. The methods are mixed, including conversation analysis and coding for statistical purposes. Data were transcribed for vocal and embodied conduct, and coded for a variety of turn-taking and gaze-related behaviors. Data were analyzed both quantitatively and qualitatively. Quantitatively, RQ1 was affirmed by a series of logistic regressions. Qualitatively, RQ1 was affirmed by analyzing coded cases that both appeared to affirm, and disaffirm, RQ1. Findings both resolve inconsistencies in, and advance findings of, prior literature.

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## 1.0 Introduction

From makeup to eyewear, culture is obsessed with eyes. As a cosmetician dusts their clients' eyelids with shimmery makeup, you are likely to hear them say: "don't forget, the eyes are the window to the soul." Most people have relatively conscious or learned values about how we organize our gaze orientation, such as how it can be used to communicate respect/attention (e.g., when listening to parents), flirtation (e.g., when chatting with romantic interests), and intimidation (e.g., when parents give their children 'the look') (for review, see Rossano, 2012). In contrast, this thesis examines more nuanced, subconscious functions of gaze orientation, specifically how it shapes turn taking in conversation.

Beyond a cultural focus, basic research about gaze behavior matters for the general public because it serves as a foundation of understanding for human behavior. The recent boom of AI technology has developers everywhere rushing to find a way to make these interactions feel more "human" (Zhang et al., 2020). With turn taking being the bedrock of human conversation, it is important that human-centered, artificial intelligence be able to mimic subconscious gaze behavior. This thesis begins to uncover the secrets that AI developers need to enhance communication. There is also a medical application to understanding what 'normal' gaze behavior looks like. Difficulty with eye contact can be a sign of autism, and having a firm grasp on a baseline of gaze behavior in ordinary conversation can aid the development of early interventions (Nummenmaa et al., 2012). This understanding can lead to individuals getting the help they need, sooner.

In order to justify my thesis project, this introduction does three things. First, I briefly summarize the importance of turn taking and one of its central rules that, I argue, can be affected by gaze orientation. Second, with reference to this rule, I present a piece of actual conversational data that is puzzling, insofar as the rule does not appear to hold. I argue that this puzzle can be solved by accounting for a systematic pattern of gaze orientation. This pattern is the foundation for my research question. Third, in order to justify my research question and its novelty, I review prior literature on gaze orientation in conversation.

**1.1 Rules for Turn Taking for Conversation**

The rules for turn taking for conversation (Sacks et al., 1974) govern who talks when and for how long. Research suggests that these rules are universal, applying to all languages and cultures (Levinson, 2020). While some have suggested that the function of communication is information transmission, in fact it is the accomplishment of social action (Schegloff, 1995). Turns of talk are vehicles for social actions, such as inviting, offering, apologizing, criticizing, agreeing/affirming, etc. Social actions can be implemented by single words, phrases, clauses, and sentences, which are fundamental units of syntax present in all languages. For example, in response to the question *Did you go to the store?*, someone might answer *Yeah* (single word), *After breakfast* (phrase), *As you asked* (clause), or *I went after breakfast* (sentence). Each of these different ways of answering implement a slightly different version of the social action of affirming (e.g., *As you asked* might also enact petulance; *I went after breakfast* might also enact defensiveness).

According to the rules for turn taking (Sacks et al., 1974), these syntactic units – words, phrases, clauses, and sentences – are called turn-constructional units (TCUs); they are the basic units humans use to construct social actions, and thus to construct turns of talk. This thesis focuses on one particular rule of turn construction, which is that, once a person begins to produce a turn of talk, they are initially entitled to produce a *single* TCU before another speaker has the right to speak next. This rule – sometimes called the single-TCU bias – was supported by Robinson et al. (2022): In a study of 475,509 turns of naturally occurring talk, using Bayesian statistics, they demonstrated that turns are significantly more likely to be composed of single TCUs (67%) than multiple TCUs (33%).

In most circumstances, the completion of one TCU marks a place where a speaker's turn is transition relevant; that is, it is relevant, but not mandatory, for a next speaker to take a turn of talk. As Robinson, Rühlemann, and Taylor (2022) suggested, there are numerous ways in which turns can come to be composed of multiple TCUs. However, these ways must be explained relative to the rules for turn taking and their single-TCU bias. For example, what strategies might speakers use to communicate that the completion of the first TCU of their turn will *not* mark a place of transition relevance? This thesis argues that one strategy involves speakers' gaze orientation.

### 1.2 A Puzzling Case Regarding the Single-TCU Bias

In this section, I present a puzzling case of actual conversation in which the turn-taking rules' single-TCU bias does not operate. I present a possible solution to this puzzle

in terms of interactants' gaze orientation. Ultimately, I end this section by posing a research question linked to the puzzling case.

Before presenting the puzzling case, I first present a 'normal' case, or one where the single-TCU bias operates. This is Extract 1, and will be used as a reference case for the puzzling case (i.e., Extract 2, below). Extract 1 begins (line 1) with Rachel asking David a question: "Is that your fri:end?"

Extract 1: Your Friend [CAS.33.12:01]

```
01  RAC:  Is that your fri:end?=
02  DAV:  =Ye:ah.
03        (.)
04  RAC:  'Kay.
```

David answers with a single TCU in the form of a single word, "Ye:ah." (line 2), which affirms Rachel's question. According to the rules for turn taking, this is the TCU to which David is initially entitled, after which Rachel has first rights to speak next. Accordingly, Rachel immediately accepts David's answer as sufficient: "'Kay" (line 4).

In comparison to David's answer in Extract 1, see Genevieve's answer in Extract 2. Hanna's question (line 1) refers to a picture on Facebook of a mutual girlfriend and her boyfriend.

Extract 2: Have You Seen It [CAS.6.Split.2:13]

```
01  HAN:  Who's the guy she's in all the pictures with?
02  GEN:  I have no id[ea.
03  HAN:  Have you seen it?
04        (.)
05  GEN: (m)Yeah. He's got disgusting [hair.
06  HAN:                              [Hh Hih hih heh heh
```

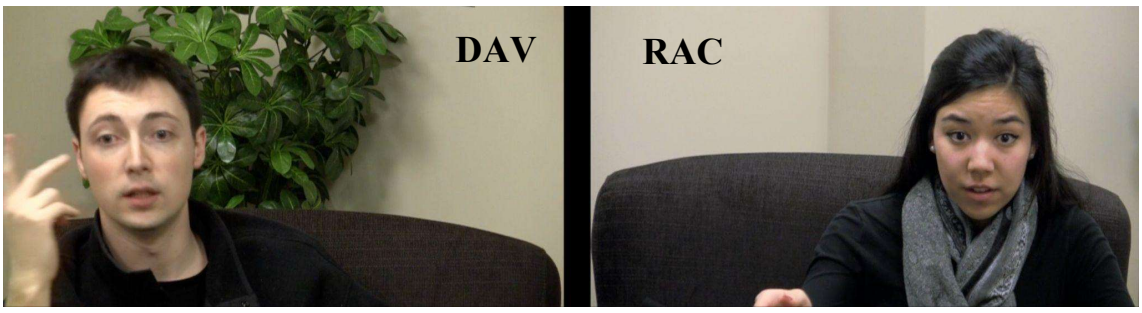
Note that, like Extract 1, Extract 2 involves a question-answer context, and Genevieve's initial answer is also a version of 'Yeah.' However, Genevieve's answer and turn contain two TCUs: (1) She affirms with a single-word TCU, "(m)Yeah." (line 5); and then (2) She negatively assesses the third-party's hair with a sentential TCU: "He's

got disgusting hair." Thus, Genevieve's answer does not reflect the turn-taking rules' single-TCU bias.

Here is the puzzle: Given the turn-taking rules' single-TCU bias, how does Genevieve (in Extract 2) secure an answer turn that contains two TCUs? Rather than assuming that Extract 2 is merely a product of error, mistake, or random statistical 'noise,' I propose that it can be systematically explained, and that the explanation involves the answerer's gaze orientation.

Let us reexamine Extract 1 (reproduced below as Extract 1') with figures depicting interactants' gaze orientation. Figures are of video stills. In transcripts, the hashtag (#) of each Figure (e.g., #Fig.1) is positioned either directly above or below the interactional moment where the video still occurs. For example, in Extract 1', Figure 1 occurs as Rachel completes her question at line 1. All Figures represent a split-screen image. Because each camera is positioned behind an interactant facing the other's face and torso, when interactants are gazing 'toward the camera' they are gazing at the other interactant. Figure 1 shows that Rachel and David are gazing at each other (i.e., they share mutual gaze).

Figure 1: (Video Frame Grab; CAS.33)

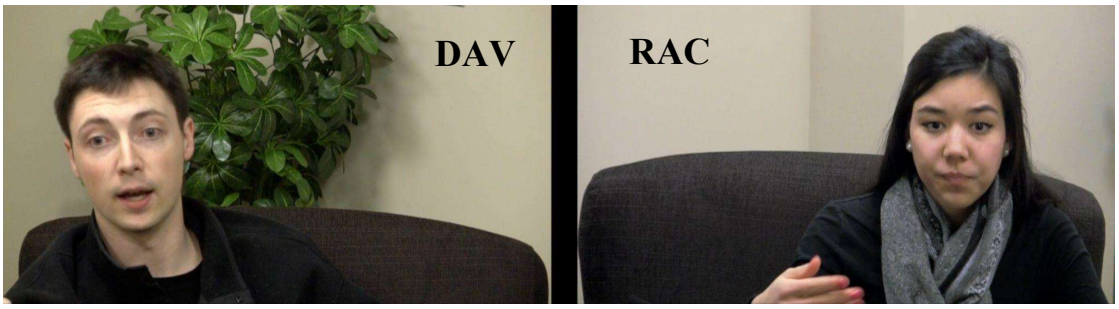


Extract 1': Your Friend [CAS.33.12:01]

```
                                #Fig.1
01  RAC:  Is that your fri:end?=
02  DAV:  =Ye:ah.
                 #Fig.2
03        (.)
04  RAC:  'Kay.
```

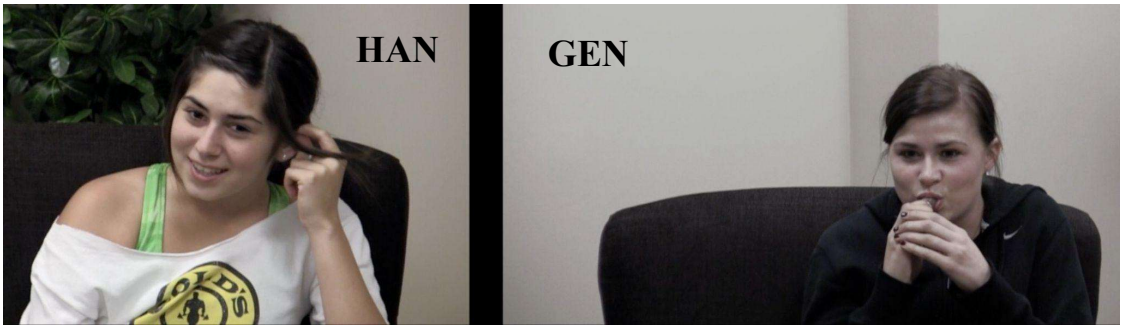
When David completes "Ye:ah." (line 2), he is gazing at Rachel (and she is gazing back; Figure 2).

Figure 2: (Video Frame Grab; CAS.33)




We can Compare Extract 1' with Extract 2', again with figures depicting interactants' gaze orientation. Similar to Extract 1, participants share mutual gaze at the end of Hanna's question (Figure 3).

Figure 3: (Video Frame Grab; CAS.6)

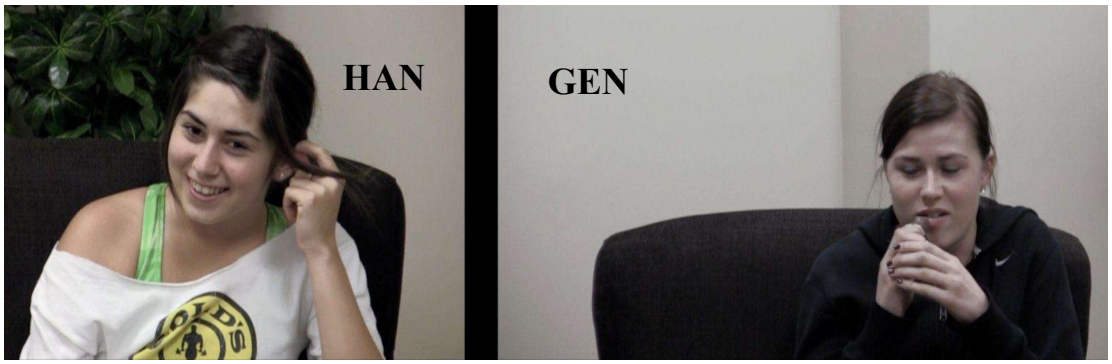


Extract 2′: Have You Seen It [CAS.6.Split.2:13]

```
                          #Fig.X
01  HAN:  Have you seen it?
02        (.)
                 #Fig.X
03  GEN:  (m)Yeah. He's got disgusting [hair.
04  HAN:                               [Hh Hih hih heh heh
```

In contrast to Extract 1', when Genevieve completes her initial answer TCU, "(m)Yeah." (line 3), she has averted her eyes from Hanna (i.e., by closing her eyes; Figure 4).

Figure 4: (Video Frame Grab; CAS.6)




Extract 2' provides grounds for my research question:

RQ1: When an answerer withdraws their gaze from a questioner at the completion point of the first TCU of their answer, is this a practice for communicating that the answer-turn-so-far is *not* transition relevant (i.e., that the answerer is *not* complete with their turn and will continue speaking)?

**1.3 Prior Research on Gaze Orientation in Conversation**

In general, the direction of someone's gaze communicates their current focus of attention and, if it is another interactant, engagement with that person (Argyle & Cook, 1976; Goffman, 1963; Goodwin, 1981; Robinson, 1999). Research has long argued that

gazing at someone is a practice for addressing them (Lerner, 2003), and thus can be a practice accomplice to selecting them as a next speaker (Auer, 2021; Bavelas et al., 2002, pp. 576-577; Lerner, 2003; Rossano, 2010; Sacks et al., 1974; Stivers & Rossano, 2010).

Kendon (1967) was the first to present data suggesting that, when speakers end their turns, they are more likely to be gazing at (vs. away from) their recipients. Kendon (1967) found (p. 36, Table 4) that, at the ends their turns (*N*=75), when speakers were gazing at their recipients, they 'responded without a pause' 71% of the time, whereas when speakers were gazing away from their recipients, they 'failed to respond or responded with a pause' 71% of the time. Kendon's findings suggested that 'gazing at' a recipient indexed the relevance of turn transition and, by implication, that 'gazing away' from a recipient indexed the irrelevance of turn transition, or that the current speaker would continue speaking.

In general, and for the most part, Kendon's (1967) findings have been supported over the last 50 years (for review, see Degutyte & Astell, 2021). While Duncan (1972) did not test the specific association between a current speaker 'gazing at (vs. away)' from a recipient at the end of a turn, he characterized 'head-direction away' (as a proxy for 'gazing away') as a turn-yielding signal. Duncan found that the use of ≥1 turn-yielding signal (although not head direction specifically) was significantly associated with turn transfer. Rutter et al. (1978) found that, in 66% of cases (N=195) where a current speaker ended their turn (defined as one having ≥10 words) and their recipient began speaking, the current speaker was gazing at (vs. away from) their recipient. Beattie (1979) found

that, at the point of turn exchange, speakers and recipients shared mutual gaze 91% of the time. Novick et al. (1996) found that, in 71% of cases where a current speaker ended their turn (a turn defined as "period of speech from one speaker without verbal contribution from the other") and their recipient began speaking, the current speaker was gazing at (vs. away from) their recipient (p. 1889). While Bavelas et al. (2002) did not examine turn endings, *per se*, they found that, when storytellers turned their gaze toward recipients, recipients somehow responded 83.1% of the time. Jokinen et al. (2009) found that, in 81% of the cases where a current speaker ended their turn and their recipient began speaking, the current speaker was gazing at (vs. away from) their recipient.

In sum, the aforementioned studies suggest that 'gazing at' a recipient at the end of a turn is a way to index transition relevance (i.e., as a 'turn-yielding' signal). However, a recent study by Kendrick et al. (2023) fails to support this general claim. Kendrick et al.'s findings can be explained by the fact that they measured speakers' gaze at the end of turn-constructional units (TCUs), as opposed to turns. While a significant number of turns are constituted by single TCUs (Robinson et al., 2022), a minority of turns contain multiple TCUs. Kendrick et al. found that, in cases where a current speaker ended their TCU (vs. turn) and their recipient began speaking, the current speaker was only gazing at (vs. away from) their recipient 48% of the time. However, Kendrick et al. did support a position implicated by Kendon's (1967) finding (reviewed above), which is that 'gazing away' from (vs. at) a recipient at the end of a TCU is significantly associated with a lack of turn transfer. Kendrick et al. found this to be the case 67% of the time.

In line with Kendrick et al.'s finding, there are at least four types of indirect support for the claim that a current speaker 'gazing away' from (vs. at) a recipient at the end of a turn is a practice for indexing the irrelevance of turn transfer. First, as thoroughly reviewed by Rossano (2012), numerous studies have found that, at least in English, conversationalists tend to look at their recipients more when listening than when speaking, suggesting that 'gazing away' from a recipient while speaking is a practice for claiming continued speakership. Second, and relatedly, recent research has observed that, when an interactant begins a turn of talk, they tend to avert their gaze from their recipient, bringing it back to them at the end of the turn (Cummins, 2012; Ho et al., 2015; Brone et al., 2017). Third, Duncan and Niederehe (1974) argued that averting one's head from a recipient at the end of a turn is one of several 'speaker-state' signals, which are generally associated with turn holding (vs. yielding). Along these lines, Kendrick et al. (2023) ultimately suggested "that gaze aversion … may be a more reliable cue for turn-taking than gaze directed at the addressee" (p.5).

Fourth, although neither Kendrick and Holler (2017) nor Robinson (2020) specifically measured answerers' gaze orientation at the end of their first turn-constructional units (TCUs), both examined whether or not answerers averted their gaze from questioners sometime prior to, or during, answering. They respectively found that answerers are significantly more likely to avert their gaze when producing dispreferred answers (e.g., 'No'-type vs. 'Yes'-type answers) and conditional answers (e.g., *No but*…, *Yeah but*…). Importantly, they found that dispreferred- and conditional-answer turns are significantly longer than preferred- and unconditional ones, respectively. Given that long

turns are typically composed of multiple TCUs, their research indirectly suggests that, when answerers are going to produce multiple TCUs, answerers are more likely to avert their gaze during or around the first TCU.

### 1.4 Moving Research Forward, Part 1: The Incomparability of Data Sets

Prior research on the role of gaze in turn taking is difficult to compare. Studies differ, for instance, in terms of whether or not: (1) participants are strangers (Bavelas et al., 2002; Ho et al., 2015; Novick et al., 1996; Rutter et al., 1978; Torres et al., 1998) or acquaintances (Beattie, 1979; Brône et al., 2017; Cummins, 2012; Harrigan & Steffen, 1983; Jokinen el al., 2009; Kendon, 1967; Kendrick et al., 2023); (2) interaction is relatively mundane/ordinary (Brône et al., 2017; Cummins, 2012; Jokinen et al., 2009; Kendon, 1967; Kendrick et al., 2023; Torres et al., 1998;) or task-focused (Bavelas et al., 2002; Beattie, 1979; Duncan, 1972; Harrigan & Steffen, 1983; Ho et al., 2015; Novick et al., 1996; Rutter et al., 1978); and (3) conversations are structured (e.g., via topic prompts) (Jokinen et al., 2009, ) or unstructured (Brône et al., 2017; Cummins, 2012; Kendon, 1967; Kendrick et al., 2023; Torres et al., 1998).

Perhaps more critically – and further discussed in the next subsection (4.2, below) – studies differ in terms of how they operationalize 'the end of a turn.' Following Kendon (1967), the vast majority of studies have examined 'complete turns,' or places where current speakers stop speaking and recipients begin a next turn of talk. For example, Novick et al. (1996) studied the "period of speech from one speaker without verbal contribution from the other " (p. 1888). Even within these studies, turns are measured differently. For example, Kendon examined turns five seconds or longer, Novick et al.

(1996) examined turns 10 words or longer, and Beattie (1979) examined 30-second turns. These operationalizations are at variance with what we now know about conversation. For example, the average length of an English conversational turn is between 1.6-1.8 seconds, or 12-13 words (see Robinson & Ruhlemann, 2022, for review); the average length of a single-TCU turn, which represent roughly 67% of all turns, is 4.5 words (2022). In contrast to Kendon, but more in line with current understandings of the structure of conversation, Kendrick et al. (2023) measured TCUs (vs. turns). In order to be comparable with Kendrick et al., the present thesis focuses on mundane/ordinary, unstructured conversation between acquainted speakers, and focuses on their gaze orientation at the ends of TCUs.

### 1.5 Moving Research Forward, Part 2: The Importance of Interactional Context

In his groundbreaking dissertation, Rossano (2012) demonstrated that the organization of gaze in conversation is consequentially shaped by at least two elements of interactional context that had been previously ignored: (1) the social action of the turn in progress (e.g., Does the turn seek information, or does it 'tell' information as part of a story); and (2) the sequential position of the turn in progress (e.g., Does the turn implement a sequence-initiating action, as does a question, or rather implement a sequence-responding action, as does an answer?). For example, Rossano examined listeners' gaze behavior as speakers initiated either an extended telling (e.g., a story) or an adjacency-pair sequence (e.g., a request for information). In partial contradiction to Kendon's (1967) findings, Rossano found that listeners were significantly more likely to

gaze at speakers only when they initiated extended tellings (vs. adjacency-pair sequences).

A third element of interactional context, as discussed above, is turn-organizational context. Specifically: (1) turns are constructed out of TCUs; (2) turns can contain more than one TCU; and (3) due to the interactive nature of turn taking, the completion of most TCUs are places where turn transfer is relevant, even if it does not always occur (Sacks et al., 1974). Bavelas et al. came close to this idea in their research by focusing specifically on the 'gaze window' in the context of storytelling (2002).

Virtually all of the studies reviewed above loosely examine all turns at any point in a conversation, regardless of their social action, their position within a sequence, and their position within a turn. However, it is critical that research 'control' for these contexts, given that each of them can fundamentally alter the role of gaze orientation in turn taking (Kendrick et al., 2023; Rossano, 2012). Furthermore, 'controlling' for these contexts makes it possible to more validly compare results across studies.

# 2.0 Data and Methods

## 2.1 Human Subjects

This proposal uses secondary data, originally collected by Dr. Robinson. That data collection, including the publication of audio and video images, was approved by all relevant institutional review boards. Informed consent was obtained from all participants.

## 2.2 Data

Data were drawn from a larger corpus of 68, four-angle videotapes of completely unstructured, face-to-face, 30-40 minute interactions between dyads of native-English speaking, adult, close friends. Fifty percent of these interactions (*N*=34; about 20 hours) were randomly selected for inclusion in the present thesis. Data were collected in a university room designed to resemble a casual home living room (e.g., carpet, plants, wall pictures, cushion chairs, etc.). Interactants sat facing one another in soft chairs with a small intervening coffee table. The table contained a bowl of candy and a bottle of water for each interactant to resemble the natural condition of eating and drinking while socializing, and to provide normal objects to which interactants might otherwise attend, with their gaze, and interact with, while socializing. Participants were instructed to "talk like normal." A small, wireless, HD camera was positioned facing each side of interactants, as well as directly facing the upper torso of each interactant so as to capture their direct view of each other, especially their gaze orientation. Cameras were turned on and synchronized prior to interactants' entry.

Data only included question-answer sequences. More specifically and restrictively, data only included positively formatted (Bolinger, 1957, p. 102; Quirk et al.,

1985, p. 808), non-polarized (van Rooy, 2003), polar interrogatives (e.g., *Did he go fishing?*) that primarily implement the social action of seeking information and do so with a relatively 'unknowing' stance. The central reason for this was to hold constant the grammar and social action of the questioning action, both of which can affect the organization of answers (Schegloff, 2007), which is the central focus of this thesis. Thus, excluded were polar interrogatives that implemented other social actions, such as invitations, offers, requests, pre-tellings, and announcements, as well as polar interrogatives that were asked from a relatively 'knowing' position, such as known-answer questions, displays of astonishment, newsmarks, other-initiations of repair, and a variety of rhetorical questions that variously implement joking, teasing, criticizing, asserting, etc. Admittedly, even with these exclusion criteria, there were still subtle variations in questions' actions. After applying these exclusion criteria, data were 274 question-answer sequences.

**2.3 Methods**

The primary method is conversation analysis (Sidnell & Stivers, 2014). Data were initially transcribed in their entirety by a private transcription company. These transcripts, in tandem with video, were used to identify question-answer sequences. Focal sequences and surrounding talk were subsequently re-transcribed according to the standards of conversation analysis for both vocal behavior (Hepburn & Bolden, 2012) and embodied/visible behavior (Mondada, 2013). As per Mondada, the position of figures are denoted with hashtags (#), and this symbol should not be conflated with the hashtag symbolizing creaky voice in talk. Audio (waveforms) and video of question-answer

sequences were imported into the software package ELAN (Wittenburg et al., 2006), which was used to make timing measurements (in milliseconds), code data, and facilitate frame-by-frame data analysis.

Data were coded – in accordance with the tenets of conversation analysis (Robinson, forthcoming) – for the purpose of statistical analysis (see section 3.0, below, for descriptions of code categories). Statistics were performed in STATA (StataCorp, 2017). For each multivariate model, correlations were computed between all potential predictor variables to test for multicollinearity, none of which were intercorrelated at levels greater than ± 0.33, which warranted their inclusion in the models (Tabachnick, & Fidell, 2007). No category of any binary variable included less than 31% of its total cases for a given model, which warranted the variables' inclusion in the models (Sun et al., 2009). No logistic regression has less than 29 cases/events per independent variable (EPV), which is well above the recommended EPV ≥10 for small-sample models (Hair et al., 2010). All logistic regressions controlled for the clustering of question-answer sequences within dyads. Statistical significance was considered at a two-sided $p < .05$.

## 3.0 Coding and Variables

### 3.1 The End of a Question

The 'end' of a question was operationalized as the offset of the final sound of the question's final point of transition relevance (Sacks, Schegloff, & Jefferson, 1974).

### 3.2 The Beginning of an Answer's Initial TCU

The beginning of an answer's initial TCU was operationalized as the onset of either its initial sounds (not including *Uh(m)* or inhalation) or, if earlier, the onset of head nodding or shaking (Kendrick & Holler, 2017; Robinson, 2020; Stivers & Rossano, 2010).

### 3.3 The End of an Answer's Initial TCU

The end of an answer's initial TCU was operationalized as the offset of the final sound of that TCU's final possible-completion point (Sacks et al., 1974) prior to the beginning of a next TCU or turn. Possible completion included both syntactic and pragmatic elements (Ford & Thompson, 1996).

### 3.4 The Delay of an Answer's First TCU Relative to the Question

The delay of an answer's first TCU relative to the question was operationalized as the amount of time (in milliseconds) between the end of the question and the beginning of the answer's first TCU (Mean = 280 ms., Median = 198 ms., SD = 497 ms., Range = –945 to 2256, Skewness = 1.0, Kurtosis = 5.7). Offset times ranged from negative to positive (i.e., for answers occurring either before, or after, the ends of questions, respectively). For example, in Extract 4, the offset time was +216 ms. In contrast, in Extract 6, the offset time was –242 ms.

### 3.5 Total Number of TCUs in an Answer

This binary variable represented the total number of TCUs in an answer turn, including one vs. more than one. For the first of several examples, in Extract 3, Ben's answer consists of one TCU: "Yeah." (line 7).

```
Extract 3: Old People Do [CAS.17.Split.2:30]
01  BEN:  I'm not eighty yet.
02        (0.9)
03  SAR:  Hm?
04  BEN:  Said I'm not eighty yet I'm not try'n=a live onna golf course
05  BEN:  in like a gated community=
06  SAR:  Is that what eighty- is that what old people do?=
07> BEN:  =Yeah.
08        (0.7)
09  SAR:  Hm.
```

In Extract 4, Lydia's answer consists of two TCUs, "N:o:" and "but she made like this crown out=a paper:" (line 8).

```
Extract 4: Cape And Stuff [CAS.55.Split.3:49]
00  LYD:  I swear=to=God I thought she was go(h)nna wear
02  LYD:  her un-yellow underwear on the outsi(h)de
03  LYD:  o(h)f h(h)er leggi((giggle))ngs but
04  LYD:  she din't tha[(h)nk go(h)d]
05  KIM:               [awww       ]
06  KIM:  An' so does she have a cape an' stuff too:?
07        (.)
08> LYD:  N:o: but she made like this crown out=a paper: an'
09  KIM:  An' she wore it?
```

In some cases, an answer's TCUs were separated by longer-than-normal transition spaces (e.g., gaps of silence). In Extract 5, Sara's answer consists of an initial TCU, "#Yeah#" (line 2), followed by a long gap of silence (line 3), followed by a second TCU, "Her kid's (.) almost four." (line 4).

```
Extract 5: Was Like Sixteen [CAS.17.Split.26:52]
01  BEN:  D' she give birth when >she was like< (.) sixteen?
02> SAR:  #Yeah#
03        (2,018 ms.)
04> SAR:  Her kid's (.) almost four.
05              (1,684 ms.)
06  BEN:  °°Dang.°°
```

### 3.6 Number of TCUs in an Answer Before Turn Transition

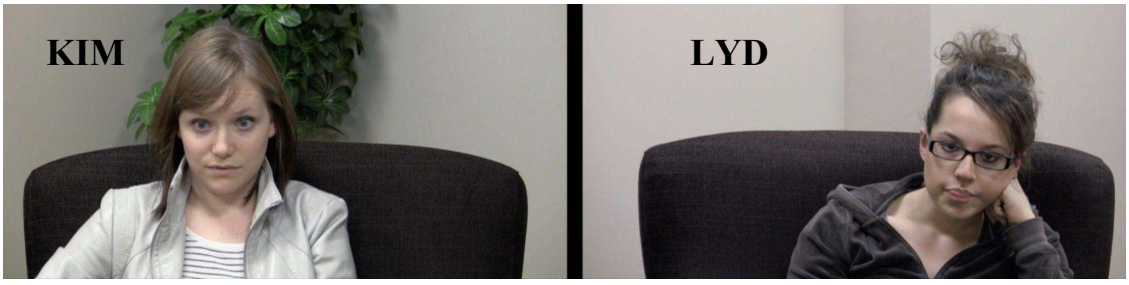
In many cases in dyadic conversation, the rules for turn taking provide a questioner with the right to take a turn after an answerer produces their first TCU (see introduction). This occurrence is (with some exceptions) evidence (from questioners' perspectives) that answerers' turns are transition relevant. This binary variable represented the total number of TCUs in an answer *prior to turn transfer*, including one TCU vs. more than one TCU. For example, in Extract 3 (above), Ben answer (line 2) consists of a single TCU prior to turn transfer (line 4). In Extract 4 (above), Lydia's answer (line 3) consists of two TCUs prior to turn transfer (line 4).

This variable distinguishes itself from that of 'total number of TCUs in an answer' (Section 3.5, above) in cases such as Extract 6. At line 2, after completing her first TCU ("I do::n't."), Lydia is gazing at Kim (Figure 5).

Extract 6: Have To Go In [CAS.55.Split.16:07]

```
01  KIM:  Do you have to go in someti[:mes? ]
02> LYD:                              [I do::]n't.
                                                  #Fig.5
03        (170 ms.)
04> LYD:  [No:. ]
05  KIM:  [Okay.]
06  KIM:  So there's no like...
```

Figure 5: (Video Frame Grab; CAS.55)



After a normal transition space (line 3), Lydia (i.e., the answerer) produces a second TCU: “No:.” (line 4). However, simultaneously, Kim (i.e., the questioner) takes a turn and produces an acknowledgement token: “Okay.” (line 5), accepting Lydia’s initial answer and proposing sequence closure (Beach, 1992; Schegloff, 2007). In this case, while Lydia’s answer contains a total of two TCUs (“I do::n’t.” + “No:.”), her answer *prior to turn transfer* only contains one TCU (“I do::n’t.”).

A questioner was considered to have taken a turn even if an answerer continued to produce a next TCU *and started that TCU prior to the questioner’s turn*; in all of these cases, questioners started their turns within one word of the answerer’s next TCU. For example, in Extract 7, Lars begins his responsive turn, “Yeh” (line 5), after Sofia has begun her second TCU with “‘cause...” (line 4).

Extract 7: Did You Go [CAS.46.Split.30:39]

```
01  LAR:  .tch Did you go?
02        (424 ms.)
03  SOF:  We like we walked through really fa:st?
04              (056 ms.)
05        ‘cause [I- ] (.) she had tuh do something
06  LAR:         [Yeh]
07  SOF:  at her wo:rk?
```

In a small number of cases (18/274; 07%), questioners took solely embodied turns. Twelve of these cases involved questioners nodding. While, in some (but not all of) these cases, nods were ‘continuers’ (e.g., nodding can also enact agreement or confirmation), which Schegloff (1982) described as less-than-full turns orienting to prior speakers’ possible continuation, they nonetheless displayed questioners’ orientations to the relevance of turn transfer (ibid.). In six cases, questioners embodied other responsive actions. For example, in Extract 8, Amanda answers that one of her favorite foods during

a Thanksgiving meal is the ‘rolls’ (line 3). In response, Sky embodies vomiting as a negative assessment of ‘rolls.’

```
Extract 8: Something Specific [CAS.47.Split.14:17]
01     SKY:  Do you like like something specific?
02           (1.2)
03     AMA:  I like thuh ro:lls.
04           (684 ms.) @(502 ms.)
04.1   sky:             @begins ‘vomit’ enactment>>
05     AMA:  @I love bread. Oh yeah, you hate bread.
05.1   sky:  @--------------#---------------------->>
             #Fig.6         #Fig.7
```

Figure 6: (Video Frame Grab; CAS.47)

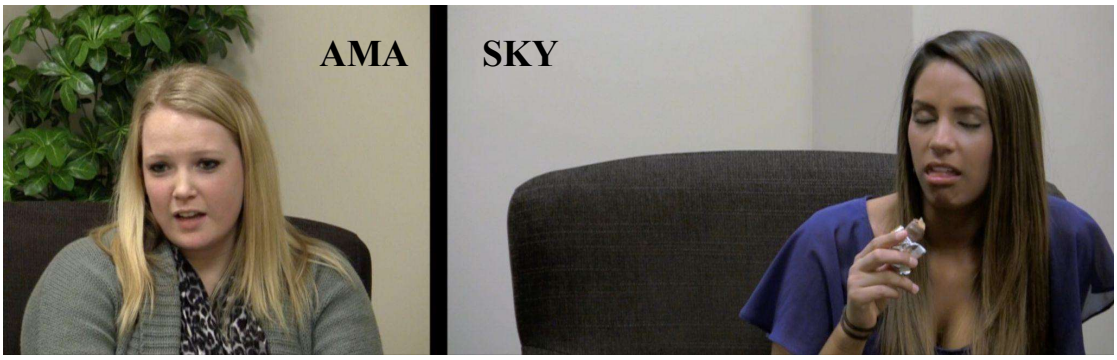



Figure 7: (Video Frame Grab; CAS.47)


### 3.7 Type-Conformity of an Answer’s First TCU

This binary variable represented whether or not the answer’s first TCU was a type-conforming answer (Raymond, 2003). Type-conforming answers included verbal tokens representing either ‘Yes’ (e.g., *Yeah*, *Yes*, *Uh huh*, *Mm hm*) or ‘No’ (*No*, *Huh uh*,

*Mm mm*). Non-conforming answers included verbal tokens representing marked affirmation (e.g., *Absolutely*), qualified affirmation (e.g., *Maybe*), marked disaffirmation (e.g., *Never*), qualified disaffirmation (e.g., *I don't think so*), repeats (e.g., *Did you go -> I went*), versions of *I don't know*, and others, such as Bob's "On thuh east side." in Extract 9 (line 4), and Jack's "Dad's movin' duh New York." in Extract 10 (line 6).

Extract 9: West Side [CAS.4.Split.3:41]

```
01  BOB:  I[t's another] do[g (.) thing,]
02  GAV:   [Is that-   ]   [Is  that  on] thuh west side?
03              (672 ms.)
04> BOB:  On thuh east side.
05  GAV:  East side.
```

Extract 10: Stay In Alaska [CAS.29.Split.33:55]

```
01  JAC:  My da:d's retiring.
02              (0.4)
03  ETH:  [Are they gunna sta:y] in Alaska?
04  JAC:  [It's weird         ]
05        (186 ms.)
06> JAC:  Dad's movin' duh New York.
07        (476 ms.)
08  ETH:  Oh.
```

**3.8 Answerer's Gaze Orientation at the End of the Answer's First TCU**

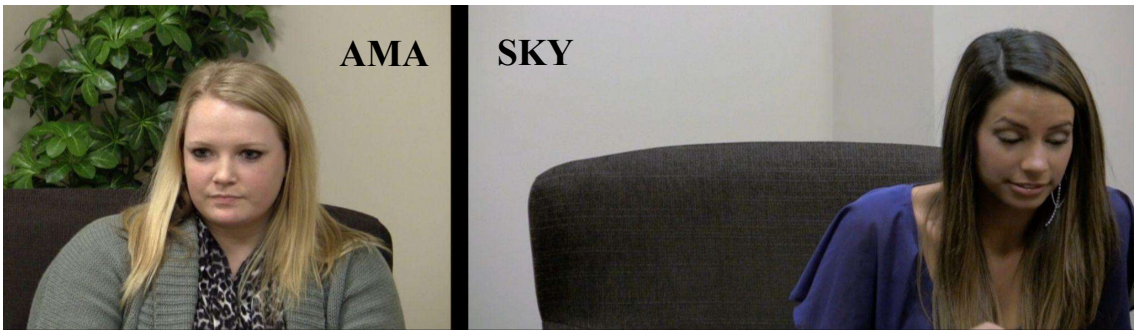
This binary variable represents whether or not an answerer is gazing at (vs. away from) a questioner at the end of the answer's first TCU. For example, in Extract 6 (above), upon possible completion of Lydia's first answer TCU, "I do::n't." (line 2), she (the answerer) is gazing at Kim (see Figure 5).

Gazing 'away' includes cases where answerers avert their eyeballs from questioners by either shifting them or blinking, with or without answerers shifting their heads. For example, in Extract 11, upon completion of her first TCU, "Yeah." (line 3), Sky adverts both her head and gaze from Amanda (who is gazing at Sky; Figure 8).

Extract 11: Get It Done [CAS.47.Split.12:02]

```
01  AMA:  Did you get it do:ne?
02        (106 ms.)
03  SKY:  Yeah. (115 ms.) at two in thuh morning.
04            #Fig.8
05  AMA:  Was it due today?
```

Figure 8: (Video Frame Grab; CAS.47)

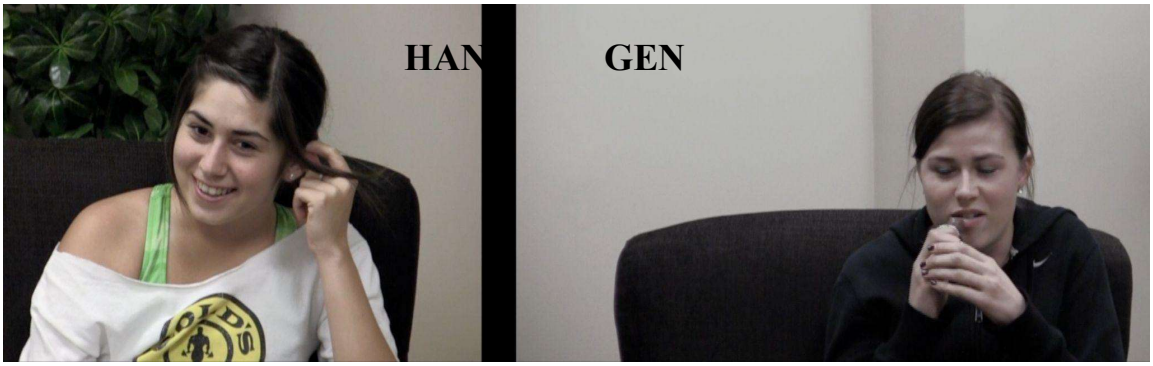



In Extract 2, Genevieve maintains her head oriented toward Hanna, but Genevieve averts her gaze by closing them after "(m)Yeah." (line 3) (Figure 9; Hanna is gazing at Genevieve).

Extract 2: Have You Seen It [CAS.6.Split.2:13]

```
01  HAN:  Have you seen it?
02        (.)
                #Fig.9
03  GEN:  (m)Yeah. he's got disgusting [hair.            ]
04  HAN:                               [Hh Hih hih heh heh]
```

Figure 9: (Video Frame Grab; CAS.6)



In Extract 12, Nia maintains her head oriented toward Kia, but Nia averts her gaze by shifting her eyeballs down and to her left after "No" (line 3) (Figure 10; While Kia's head is oriented slightly downward, her eyes are up, gazing at Nia).

Extract 12: And Then Curls [CAS.72.Split.16:57]

```
01  KIA:  Is i:t She:a, (270 ms.) Miss Jessies an' then Curls?
02        (768 ms.)
           #Fig.10
03  NIA:  No i's (.) Sh:ea Moistures an' then >Cantu Shea Butter.<
04        (841 ms.)
05  KIA:  Oh. really,
```

Figure 10: (Video Frame Grab; CAS.72)


**3.9 Questioner's gaze orientation at the end of an answer's first TCU**

This binary variable represents whether or not a questioner is gazing at (vs. away from) an answerer at the end of the answerer's first TCU. Operationalizations of gazing 'at' versus 'away' were similar for questioners and answerers (see above for description and examples).

## 4.0 Results

The Results section includes subsections for: (1) descriptive statistics; (2) the main statistical results; (3) a statistical sensitivity analysis; and (4) qualitative analyses.

### 4.1 Descriptive Statistics

Table 1 shows the coded characteristics of the 274 question-answer sequences.

Table 1: Coded Characteristics of Question-Answer Sequences (*N*=274)[1]

| Characteristic | Description |
|---|---|
| Total number of answer TCUs | |
| 1 TCU | 32% (N=87)$^{\Psi}$ |
| >1 TCU | 68% (N=187)$^{\Psi}$ |
| Number of answer TCUs before turn transfer | |
| 1 TCU | 56% (N=154)$^{\infty}$ |
| >1 TCU | 44% (N=120)$^{\infty}$ |
| Delay of answer's first TCU (ms.) relative to question | N=274<br>Mean = 280 ms.<br>Median = 198 ms. |
| Type-conformity of answer's first TCU | |
| Type-Conforming | 64% (N=176)$^{\lambda}$ |
| 'Yes'-type | 55% (N=96) |
| 'No'-type | 45% (N=80) |
| Non-Type-Conforming | 36% (N=98)$^{\lambda}$ |
| Questioner's gaze direction at end of answer's first TCU | |
| Gazing at answerer | 91% (N=248)$^{\nabla}$ |
| Gazing away from answerer | 09% (N=26)$^{\nabla}$ |
| Answerer's gaze direction at end of answer's first TCU | |
| Gazing at questioner | 68% (N=185)$^{\Omega}$ |
| Gazing away from questioner | 32% (N=89)$^{\Omega}$ |

[1] Proportions with similar superscripted symbols are significantly different from each other via a binomial probability test ($p$<.000 for $\Psi, \lambda, \nabla, \Omega$; $p$<.05 for $\infty$).

Table 2 shows the cross-classification of an answerer's gaze distribution at the end of their first TCU (i.e., 'at,' or 'away from,' the questioner) against the *total* number of TCUs produced by the answerer (i.e., 'one,' or 'more than one').

Table 2: Cross-Classification of Answerer's Gaze Orientation and Total Number of TCUs in Answer ($N$=274)[1]

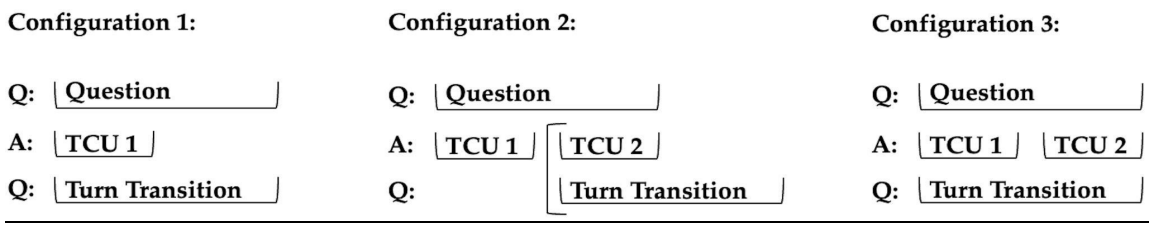
| Gaze of Answerer at end of First TCU | Total Number of TCUs in Answer | | Total |
|---|---|---|---|
| | 1 | >1 | |
| At Questioner | 78 (42%)$^{\infty}$ | 108 (58%)$^{\infty}$ | 186 (100%) |
| Away from Questioner | 9 (10%)$^{\Psi}$ | 79 (90%)$^{\Psi}$ | 88 (100%) |
| Total | 87 | 187 | 274 |

[1] Proportions with similar superscripted symbols are significantly different from each other via a binomial probability test ($p$<.05 for ∞; $p$<.000 for Ψ).

While Table 2 suggests a positive association between answerers' gazing at questioners at the end of answerers' first TCUs and answerers going on to produce N$^{th}$ TCUs, Table 2 is deceptive in terms of determining how answerers' gaze orientation indexes the (ir)relevance of turn-transition. This is because, in many cases, the rules for turn taking provide questioners with the right to take a turn of talk after answerers' first TCUs (Sacks et al., 1974), and Table 2 does *not* reflect this occurrence, that is, when questioners begin to take a turn (virtually) simultaneously with answerers' production of N$^{th}$ TCUs. This occurrence is (with some exceptions) evidence (from questioners' perspectives) that answerers' turns were transition relevant. This occurrence was described in Section 3.6 (above) with reference to Extract 6 (above).

In the data, there are three possible configurations of turn transition relative to answer turns, depicted in Figure 11.

Figure 11: Three Configurations of Turn Transition After Answer Turns




Extract 6 in Section 3.6 (above) is represented by configuration two in Figure 11. Table 2 (above) includes cases represented by *both* configurations 2 and 3 from Figure 11. In terms of the relationship between answerers' gaze orientation and turn transfer, Table 2 is deceptive because cases represented by configuration 2 (Figure 11) should 'count' as answerers producing a single TCU before turn transfer.

Compared to Table 2 (above), Table 3 (below) more accurately represents how answerers' gaze orientation might index the (ir)relevance of turn-transition. Table 3 shows the cross-classification of an answerer's gaze distribution at the end of their first TCU (i.e., away from, or at, a questioner) against the number of projectably complete TCUs produced by the answerer (i.e., one, or more than one) *before turn transition* (i.e., before questioners take a next turn). In Table 3, the '1 TCU' column includes configurations 1 *and* 2 from Figure 11.

Table 3: Cross-classification of answerer's gaze orientation and number of TCUs in answer before turn transfer ($N$=274)[1]

| Gaze of Answerer at end of First TCU | Number of TCUs in Answer before Turn Transition | | Total |
|---|---|---|---|
| | 1 | >1 | |
| At Questioner | 132 (71%)$^{\Psi}$ | 54 (29%)$^{\Psi}$ | 186 (100%) |
| Away from Questioner | 22 (25%)$^{\lambda}$ | 66 (75%)$^{\lambda}$ | 88 (100%) |
| Total | 154 | 120 | 274 |

[1] Proportions with similar superscripted symbols are significantly different from each other via a binomial probability test ($p$<.000).

In Table 3, it is the case that both: (1) an answerer gazing *at* (vs. away from) a questioner at the end of the answer's first TCU is significantly associated with an answer being constituted by a single TCU (vs. multiple TCUs) prior to turn transfer (i.e., a binomial probability test shows that the proportion of 71% vs. 29% is significant; $p$<.000), and thus contributes to indexing that the answer's first TCU is transition relevant; and (2) an answerer gazing *away from* (vs. at) a questioner at the end of the answer's first TCU is significantly associated with an answer being constituted by multiple TCUs (vs. a single TCU) prior to turn transfer (i.e., a binomial probability test shows that the proportion of 25% vs. 75% is significant; $p$<.000), and thus contributes to indexing that the initial answer TCU is transition *irrelevant*.

**4.2 The Main Statistical Analysis**

The inferences made about Table 3 (above) are supported by a logistic regression, performed for the binary, dependent variable 'number of answer TCUs before turn transfer' (0=1 TCU; 1=>1 TCU). There were three independent variables, each of which

prior research suggests is associated with the dependent variable: (1) 'Answerer gaze at end of TCU 1' (0=Away from questioner; 1=At questioner; Kendon, 1967); (2) 'Type-conformity of TCU1' (0=Is not type-conforming; 1=Is type-conforming; Raymond, 2003); and (3) 'Delay of TCU 1 relative to the question' (ms.; Kendrick et al., 2017). Results are displayed in Table 4.

Table 4: Logistic regression analysis for factors associated with number of TCUs in answer before turn transfer (*N*=274)[1]

| Predictor | Odds Ratio | Robust Std. Err. | *z* | *p* | 95% Conf. Interval |
|---|---|---|---|---|---|
| Answerer gaze at end of TCU1[2] | .139 | 0.038 | –7.24 | 0.000 | 0.081 – 0.237 |
| Type-conformity of TCU1[3] | 1.31 | 0.480 | 0.75 | 0.456 | 0.642 – 2.686 |
| Delay of TCU1 re. question (ms.) | 1.00 | 0.003 | 1.78 | 0.075 | 0.999 – 1.001 |

[1] 0=1 TCU; 1=>1 TCU; Wald $Chi^2$=65.60; $R^2$=.15
[2] 0=Away from questioner; 1=At questioner; converted OR=7.2
[3] 0=Is not type-conforming; 1=Is type-conforming

Table 4 indicates that 'answerer gaze at end of TCU 1' is significantly associated with 'number of answer TCUs before turn transfer.' Specifically, when an answerer gazes away from a questioner at the end of the answer's first TCU (or, alternatively, when an answerer gazes toward a questioner at the end of the answer's first TCU), answers are 7.2 times more likely to contain more than one TCU before turn transfer (or, alternatively, 7.2 times more likely to contain a single TCU before turn transfer). There were no significant associations regarding either 'type-conformity of TCU1' or 'delay of TCU 1 relative to the question.'

### 4.3 A Statistical Sensitivity Analysis of Cases Beginning with Type-Conforming Answers

A significant number of answers' first TCUs are type-conforming (vs. non-type-conforming; Table 4, above). The logistic regression reported in Table 4 (above) only grossly accounts for type-conformity. Thus, a sensitivity analysis was performed restricted to cases in which answers begin with type-conforming TCUs (*N*=176). For this restricted set of cases, Table 5 (below) shows the cross-classification of an answerer's gaze distribution at the end of their first TCU (i.e., away from, or at, a questioner) against the number of projectably complete TCUs produced by the answerer (i.e., one, or more than one) *before turn transition* (i.e., before questioners take a next turn).

Table 5: Cross-classification of answerer's gaze orientation and number of TCUs in answer before turn transfer when first TCU is type-conforming (*N*=176)[1]

| Gaze of Answerer at end of First TCU | Number of TCUs in Answer before Turn Transition When First TCU is Type-Conforming | | Total |
|---|---|---|---|
| | 1 | >1 | |
| At Questioner | 80 (70%)$^{\Psi}$ | 35 (30%)$^{\Psi}$ | 115 (100%) |
| Away from Questioner | 15 (25%)$^{\lambda}$ | 46 (75%)$^{\lambda}$ | 61 (100%) |
| Total | 95 | 82 | 176 |

[1] Proportions with similar superscripted symbols are significantly different from each other via a binomial probability test ($p$<.000).

For this sensitivity test, a logistic regression was performed for the binary, dependent variable 'number of answer TCUs before turn transfer' (0=1 TCU; 1=>1 TCU). There were three independent variables: (1) 'Answerer gaze at end of TCU 1'

(0=Away from questioner; 1=At questioner); (2) 'Delay of TCU 1 relative to the question;' and (3) 'Type-conforming answer type' (0='No'-type; 1='Yes'-type), which research suggests may affect answer length (e.g., if 'No'-type answers are dispreferred; Kendrick et al., 2017; Sacks et al., 1974; cf. Robinson, 2020). Results are shown in Table 6.

Table 6: Logistic regression analysis for factors associated with number of TCUs in answer before turn transfer when first TCU is type-conforming ($N$=176)[1]

| Predictor | Odds Ratio | Robust Std. Err. | $z$ | $p$ | 95% Conf. Interval |
|---|---|---|---|---|---|
| Answerer gaze at end of TCU1[2] | 0.145 | 0.048 | –5.88 | 0.000 | 0.076 – 0.276 |
| Delay of TCU1 re. question (ms.) | 1.001 | 0.000 | 2.44 | 0.015 | 1.000 – 1.002 |
| 'No'-type vs. 'Yes'-type[3] | 1.026 | 0.310 | 0.09 | 0.932 | 0.567 – 1.857 |

[1] 0=1 TCU; 1=>1 TCU; Wald $Chi^2$=53.56; $R^2$=.15
[2] 0= Away from questioner; 1=At questioner; converted OR=6.9
[3] 0=No-type; 1=Yes-type

Reiterating the findings from Table 5, Table 6 indicates that 'answerer gaze at end of TCU 1' is significantly associated with 'number of answer TCUs before turn transfer.' Specifically, when an answerer gazes away from a questioner at the end of the answer's first TCU (or, alternatively, when an answerer gazes toward a questioner at the end of the answer's first TCU), answers are 6.9 times more likely to contain more than one TCU before turn transfer (or, alternatively, 6.9 times more likely to contain a single TCU before turn transfer). Unlike the findings in Table 4, Table 6 shows that 'delay of TCU 1 relative to the question' is significant, with longer delays being associated with answers containing more than one TCU prior to turn transition. There was no significant association regarding answers' first TCUs being 'No'-type versus 'Yes'-type answers.

## 4.4 Qualitative Analyses

As Stivers (2015) argued, one limitation of coding interaction for statistical purposes is that it 'freezes' interaction. That is, while interaction is coded at – and code-categories apply to – static points in interaction, interactants continue to interact in real time between these coded points, continuing to renegotiate meaning, sound by sound, word by word, embodiment by embodiment, and so on. Thus, cases that appear, by virtue of their coding, to reject analysts' claims about norms, can actually contain evidence that support such norms.

In this section, I begin by qualitatively analyzing four coded cases that support RQ1; these cases are drawn from the lower-right cell of Table 3 (above). It turns out that these cases simultaneously support both RQ1 and Kendon's (1967) original claim. Next, I qualitatively analyze two cases drawn from the lower-left cell of Table 3 that, as coded, reject RQ1. However, I argue that these cases actually support RQ1. Finally, I qualitatively analyze one case that, as coded, rejects Kendon's original claim. Again, though, I argue that this case actually supports his claim.

### *4.4.1 Coded Cases That Support RQ1*

In this subsection, I qualitatively examine four cases that support RQ1 (i.e., cases in the lower-right cell of Table 3). In all four cases, answerers end the first TCU of their answer-turn gazing away from questioners, at which point questioners hold off from taking a turn and answerers extend their turn by continuing to produce a second TCU (resulting in configuration #3 in Figure 11, above). The first example is Extract 13. At

line 1, Larry asks Sofia if her twenty-seven-year-old friend ‘still’ attends college. At the end of this question, Larry and Sofia share mutual gaze (Figure 12).

Figure 12: (Video Frame Grab; CAS.46)


```
Extract 13: School Still [CAS.46.Split.11:48]
                                          #Fig.12
01    LAR:  Does she go duh school still,
02          (027 ms.) *(445 ms.)
02.1  sof:             *--------> ((shifts eyeballs away))
            Fig.13#
03    SOF:  *N:o:.@ sh@e:: uh::m (0.2) .hh she was
03.1  sof:  *-----@---@------------------------->
03.2  sof:        @---@ ((blinks))
                  #Fig.14                 #Fig.15
04    SOF:  *taking* ‘E’ ‘S’ ‘L’ classe^s?=
04.1  sof:  *------*                    ^
04.2  lar:                              ^begins to blink and nod
05    LAR:  =Mm hm
```

Shortly (i.e., 027 ms.) after Larry completes his question, Sofia shifts her eyeballs away from Larry (line 2.1). After Sofia completes the first TCU of her answer, “N:o:.”, she blinks (line 3.2; Figure 13). When she reopens her eyes, they remain averted from Larry (lines 3.1 through 4.1).

Figure 13: (Video Frame Grab; CAS.46)


According to the rules for turn taking (Sacks et al., 1974), Sofia's completion of "N:o:." (line 3) completes a turn-constructional unit (TCU) and marks a transition-relevance place, where it is relevant for Larry to take a turn of talk. In this case, he opts not to do so. Sofia continues speaking and extends her turn. Sofia returns her gaze to Larry after she completes "taking" (line 4; Figure 14), and they share mutual gaze through "classe[s]".

Figure 14: (Video Frame Grab; CAS.46)


Sophia's completion of "classes?" (line 4) completes her second TCU and marks another transition-relevance place. In this case, Larry takes a turn of talk. As Sofia

completes “classes”, he blinks and begins to nod (Figure 15), and then produces the acknowledgement token, “Mm hm.” (line 5).

Figure 15: (Video Frame Grab; CAS.46)


Extract 13 supports two claims. First, it confirms RQ1, which is that an answerer gazing *away* from a questioner at the end of an answer’s *first* TCU is a practice for claiming that the answer turn is not yet transition relevant, thereby projecting additional, answer-related TCUs. Second, Sofia’s gaze at the end of her *second* TCU – which is the actual end of her turn – supports Kendon’s (1967) claim that an answerer gazing *at* a questioner at the actual end of an answer *turn* is a practice for claiming that it *is* transition relevant.

For a second example, see Extract 14. In Extract 14, At line 1, Sara asks Ben if his college courses are still ‘really easy.’ At the end of this question, Sara and Ben share mutual gaze (Figure 16).

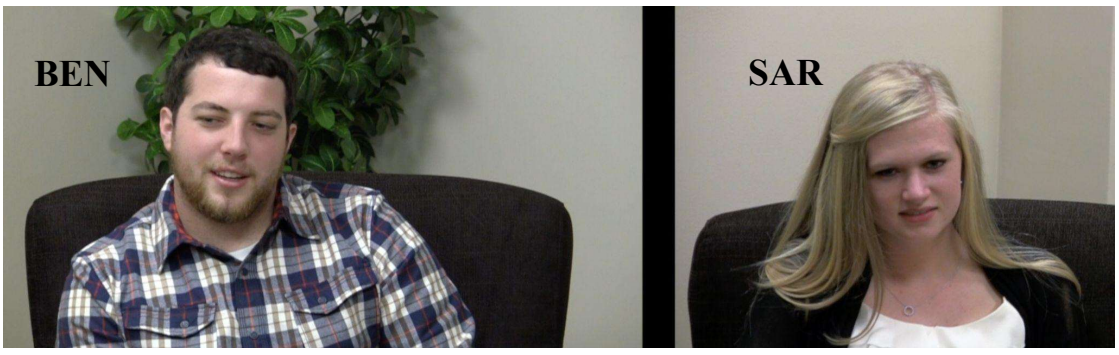
Figure 16: (Video Frame Grab; CAS.17)


Extract 14: Classes Easy [CAS.17.Split.5:12]

```
                                                    #Fig.16
01    SAR:  Are=y'r classes really easy still?
02          (134 ms.) *(488 ms.)
02.1  ben:            *shifts eyeballs to right----->
                      #Fig.17    #Fig.18
03    BEN:  *Y:eah. (.) I mea*n: (1)=I have s- like
03.1  ben:  *----------------*
                           #Fig.19
04     BEN:  anthropology an' English.
05           (0.5)
06     SAR:  Oh:.
```

Similar to the first example, shortly (i.e., 134 ms.) after Sara starts her question (line 2), Ben shifts his gaze away from Sara (line 2.1). After the first TCU of Ben's answer, "Y:eah." (line 3), his gaze remains averted from Sara (Figure 17).

Figure 17: (Video Frame Grab; CAS.17)



The completion of Ben's "Y:eah." marks a transition-relevance place, but Sara opts not to take a turn. After a brief silence ("(.)", line 3), Ben begins a second TCU with, "I mean:…" . After "I mea...", Ben returns his gaze to Sara (line 3.1 and Figures 18).

Figure 18: (Video Frame Grab; CAS.17)


When Ben possibly completes his second TCU after "...English." (line 4), he again arrives at a transition-relevance place, where he is gazing at Sara (Figure 19). In this case, Sara opts to take a turn with, "Oh:." (line 6).

Figure 19: (Video Frame Grab; CAS.17)


Extract 14 again supports two claims. First, it confirms RQ1, which is that an answerer gazing *away* from a questioner at the end of an answer's *first* TCU is a practice for claiming that the answer turn is not yet transition relevant, thereby projecting additional, answer-related TCUs. Second, Extract 14 supports Kendon's (1967) claim

that an answerer gazing *at* a questioner at the actual end of an answer turn (i.e., Ben after "...English.", line 4) is a practice for claiming that it *is* transition relevant.

For a third example, see Extract 15. As context, Iva and her boyfriend live in a house that used to be 'across the street' from Jim's parents' house. At line 2, Jim asks Iva if his parents 'still live across the street.' At the completion of this question, Jim and Iva share mutual gaze (Figure 20).

Figure 20: (Video Frame Grab; CAS.38)


Extract 15: Across The Street [CAS.38.Split.6:47]

```
01    IVA:  So they bought thuh house                        #Fig.20
02    JIM:  (e)- Do his parents still live across thuh street.

       Fig.21#   #Fig.22    #Fig.23                          #Fig.24
03    IVA:  N*o. *they l*ive* in (w)- (.) in (w)=<Welches.>#
03.1  iva:   *g\-*      *g/-*
04          (0.6)
05    JIM:  Like (.) Mount Hood Welches?
```

As Iva completes the first TCU of her answer, "No." (line 3), she closes her eyes (line 3.1 and Figure 21). When she re-opens her eyes, she is gazing up and away from Jim (Figure 22).

Figure 21: (Video Frame Grab; CAS.38)


Figure 22: (Video Frame Grab; CAS.38)


According to the rules of turn taking, Iva's completion of "No." marks a transition-relevance place where it is relevant for Jim to take a turn of talk. In this case, he opts not to. Iva begins a second answer TCU with "they l…" (line 3), where her gaze remains averted from Jim (akin to Figure 22, above). However, as Iva finishes "live…" (line 3), she returns her gaze to Jim (line 3.1, Figure 23).

Figure 23: (Video Frame Grab; CAS.38)


When Iva completes "<Welches.>" (line 3) – which possibly completes her second answer TCU and marks another transition-relevance place – she is gazing at Jim (Figure 24). In this case, Jim opts to take a turn of talk (line 5).

Figure 24: (Video Frame Grab; CAS.38)


Extract 15 again supports two claims. First, it confirms RQ1, which is that an answerer gazing *away* from a questioner at the end of an answer's first TCU is a practice for claiming that the answer turn is not yet transition relevant. This practice projects additional, answer-related TCUs. Second, Extract 15 supports Kendon's (1967) claim that an answerer gazing *at* a questioner at the actual end of an answer turn (i.e., Iva after "<Welches.>", line 3) communicates that it *is* transition relevant.

In the first three examples (Extracts 13-15, above), answers contain two TCUs, with the answerer gazing away from the questioner after the first TCU, but returning their

gaze to the questioner after the second TCU, which ends up being the actual end of their turn. In the fourth and final example in this subsection (Extract 16, below), the answer contains three TCUs, with the answerer gazing away from the questioner after the completion of the first two TCUs, but returning their gaze to the questioner after the third and final TCU. This example reinforces the claim that gazing away from a questioner at the end of an answer TCU – that is, *not just the first TCU* – is a practice for claiming that the answer turn is not yet transition relevant.

Prior to Extract 16, Ula reported repeatedly attempting to talk to her boyfriend about their unhealthy relationship and his inability to listen/change. At lines 1-2, Camilla inquires into reasons why Ula continues to initiate these conversations. Through the majority of Camilla's question, she shares mutual gaze with Ula (akin to Figure 25).

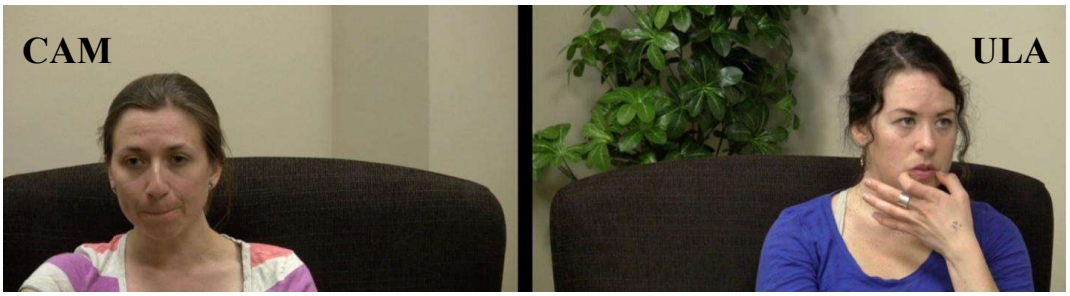
Extract 16: Talk To Him [CAS.41.Split.36:30]

```
01    CAM:  Or like (.) is it 'cause you feel like
                Fig.25#
02    CAM:  you nee:d,# (0.4) tuh talk to h*im?
02.1  ula:                              *eyeball shift->
                        Fig.26#                        #Fig.27
03    ULA:  *N:ee:d not so much# (.) w:ant to:: (.) yes.#
03.1  ula:  *----------------------------------------->
                                 Fig.28#
04    ULA:  *because I:=w- (1.5) in uh per*fect world I wish
04.1  ula:  *----------------------------*
                                #Fig.29
05    ULA:  that it would work out.#
06          (0.4)
07    CAM:  B't=it's not a perfect world,...
```

Figure 25: (Video Frame Grab; CAS.36)


As Camilla completes her question with "...him?" (line 2), Ula shifts her gaze away from Camilla (line 2.1). As Ula possibly completes her first TCU, "N:ee:d not so much" (line 3), she is gazing away from Camilla (Figure 26). At this transition-relevance place, Camilla opts not to take a turn and Ula continues to produce a second TCU.

Figure 26: (Video Frame Grab; CAS.36)

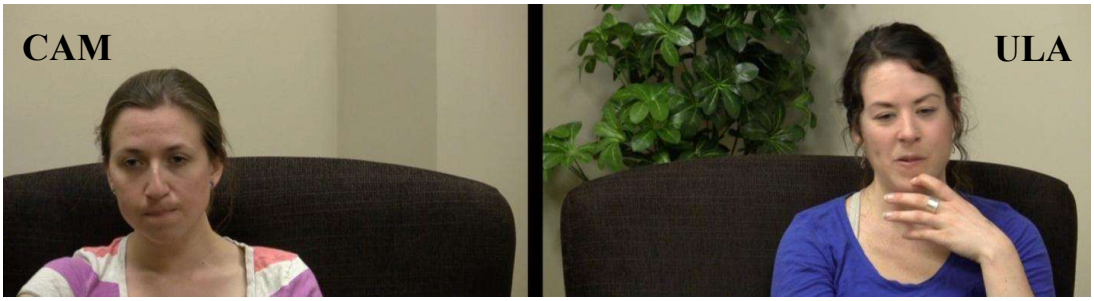



At the possible completion of her second TCU, "w:ant to:: (.) yes.", Ula continues to avert her gaze from Camilla (Figure 27). At this transition-relevance place, Camilla again opts to not take a turn and Camilla continues to produce a third TCU.

Figure 27: (Video Frame Grab; CAS.36)


Partway through Camilla's third TCU – through "...perfect..." (line 4) – Ula returns her gaze to Camilla (line 4.1; Figure 28).

Figure 28: (Video Frame Grab; CAS.36)




At the possible completion of her third TCU – after "work out." (line 5) – Ula and Camilla share mutual gaze (Figure 29). At this transition-relevance place, Camilla opts to take a turn of talk (line 7).

Figure 29: (Video Frame Grab; CAS.36)

Extract 16 uniquely supports the same two claims supported by Extracts 13-15 (above). First, it confirms and extends RQ1, which is that an answerer gazing *away* from a questioner at the end of an answer's first *or second* TCU is a practice for claiming that the answer turn is not yet transition relevant. In other words, the practice of gaze aversion appears to apply to more than the first TCU of an answer turn. Second, Extract 16 continues to support Kendon's (1967) claim that an answerer gazing *at* a questioner at the actual end of an answer turn (i.e., Ula after "...work out.", line 5) is a practice for claiming that it *is* transition relevant.

### *4.4.2 Coded Cases That Appear to Reject RQ1*

In this subsection, I qualitatively examine two cases that appear to reject RQ1. That is, in these cases – represented in the lower-left cell of Table 3 – although the answerer is gazing *away* from the questioner at the end of the answer's first TCU, the answerer does *not* continue to produce an additional TCU and the questioner *does* take a turn of talk. However, I argue that these cases do not actually reject RQ1, and in fact support the patterns exposed in Extracts 13-16 (above). These two cases are representative of a pattern shared by 6/22 (27%) cases in the lower-left cell of Table 3.

In Extract 17, Sofia asks Larry if his reported Korean drink ('soju') was 'hot' (line 6). At the possible completion of this question, Sofia and Larry share mutual gaze (Figure 30).

Figure 30: (Video Frame Grab; CAS.46)


```
Extract 17: Was It Hot [CAS.46.Split.36:21]
01     SOF:  Ye[ah.]
02     LAR:    [I've] had Korean (.) soju.
03           (.)
04     LAR:  °I think it's called soju.°
05           (.)                              #Fig.30
06     SOF:  Was it- (0.2) >was it< (.) ho:t?
07           (105 ms.) @(213 ms.) %(108 ms.)
07.1   lar:            @----------%-------->> eyeball shift down
07.2   lar:                       %-------->> head shake
                           Fig.31#
08     LAR:  @No.@
08.1   lar:  @---@ eyeball shift
09           +(628 ms.)+ (038 ms.)
09.1   lar:  +blinks---+
             #Fig.32   #Fig.33
10     SOF:  It's co:ld?
11           (.)
12     LAR:  Yeah.
```

Shortly (105 ms.) after Sofia's question, Larry averts his gaze downward (line 7.1; Figure 31).

Figure 31: (Video Frame Grab; CAS.46)


Larry keeps his gaze averted downward through the possible completion of the first TCU of his answer, "No." (lines 8 & 8.1). At this transition-relevance place, Sofia

opts not to take a turn. Immediately after completing "No." (line 8), Larry fully closes his eyes (Figure 32). He keeps his eyes closed for a relatively long (628 ms.) silence (i.e., 628 ms. far exceeds a normal transition space of 200-300 ms.), during which Sofia (who continues to gaze at Larry) can be characterized as waiting for Larry to continue; here she continues to opt not to take a turn.

Figure 32: (Video Frame Grab; CAS.46)


Very quickly (038 ms.) after Larry opens his eyes and gazes at Sofia (Figure 33), Sofia takes a turn (line 10).

Figure 33: (Video Frame Grab; CAS.46)

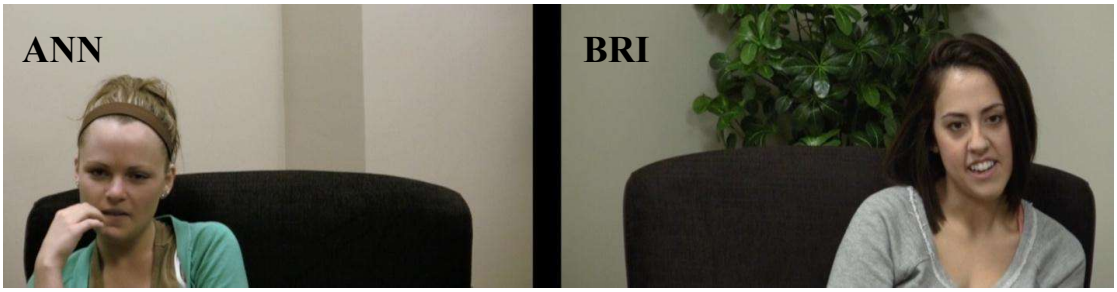

In this case, although Larry does not actually go on to produce a second answer TCU, Sofia orients to him as if he will (i.e., by waiting). That is, Sofia can be characterized as treating Larry's gaze aversion after "No." as a practice for claiming that his turn-so-far is not yet transition relevant. When Larry returns his gaze to Sofia without

producing a second TCU, she treats his turn-so-far as now being transition relevant by taking a turn herself.

For a second example, see Extract 18. At line 1, Ann asks Brianne if a guy ‘ever accepted’ her ‘friend request’ made through the social-media platform Facebook. Participants gaze at each other during the question (line 1), the silence at line 2, and the very beginning of Brianne’s “N[o].” (line 3; Figure 34).

```
Extract 18: Friend Request [CAS.10.Split.40:17]
01    ANN:  >Did 'e ever< accept your friend request,
02          (379 ms.)
             #Fig.34
03    BRI:  N*o.*
03.1  bri:   *g\*
                #Fig.35
                                  *Fig.36
04          (151 ms.) *(069 ms.)* (356 ms.)
04.1  bri:            *gaze back*
05    ANN:  Asshole.
```

Figure 34: (Video Frame Grab; CAS.10)

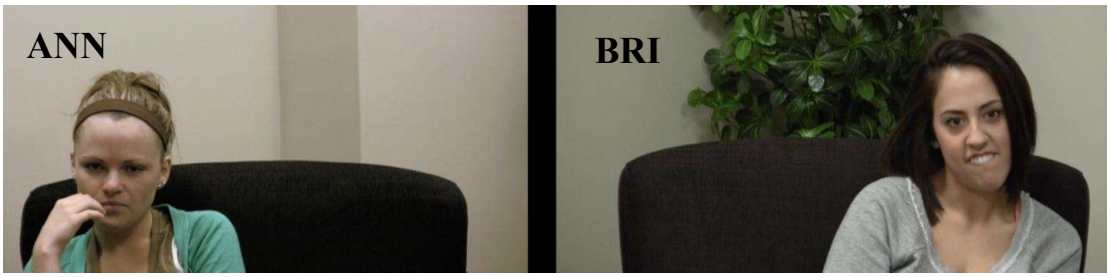



As Brianne completes “No.” (line 3), she shifts her gaze away from Ann (line 3.1; Figure 35).

Figure 35: (Video Frame Grab; CAS.10)


The end of Brianne's "No." marks the completion of her first answer TCU, and a transition-relevance place. Ann opts to not immediately take a turn. After pausing for 151 milliseconds (line 4), Brianne returns her gaze to Ann (line 4.1; Figure 36).

Figure 36: (Video Frame Grab; CAS.10)




Both participants continue to gaze at each other for an additional 356 ms. (line 4). During this silence, Ann continues to opt not to take a turn, and can be characterized as 'waiting' for Brianne to continue. Ultimately, though, Ann takes a turn (line 4).

In sum, Extracts 17-18 reflect similar patterns of gaze orientation and turn taking found in Extracts 13-16, if not the same code categories from the coding scheme. In both cases, answerers' complete their first TCUs gazing away from questioners, and questioners treat answerers' turns-so-far as not being transition relevant by 'waiting' for periods of time much longer than a normal transition space, declining to take a turn. Of course, there may be alternative explanations. For example, in both cases, initial answer

TCUs are ‘No,’ and perhaps questioners wait for an expected account or explanation (Ford, 2002). However, the sensitivity analysis (see section 4.3) suggested that answering ‘Yes’ versus ‘No’ was not a significant predictor of turn transition.

According to the rules for turn taking (Sacks et al., 1974), while questioners have first rights to take a next turn, if they opt not to, then answerers have the right to continue speaking. In Extracts 17-18, questioners do not continue speaking while their gaze is averted, as happened in Extracts 13-16. Extracts 17-18 suggest that, when answerers return their gaze to questioners without continuing after a marked amount of silence after the first TCU, answerers communicate that their turn is transition relevant. In this way, Extract 17-18 support Kendon’s (1967) claim that gazing *at* a questioner at the actual completion of an answer turn is a practice for claiming that it *is* transition relevant. In sum, the apparent contradictory status of Extracts 17-18 is likely a function of the coding scheme and the interactionally static process of coding interaction (Stivers, 2015). For example, answerers’ gaze orientation was only coded at the precise completion of answerers’ first TCUs, and did not account for how answerers shifted their gaze after that point in time.

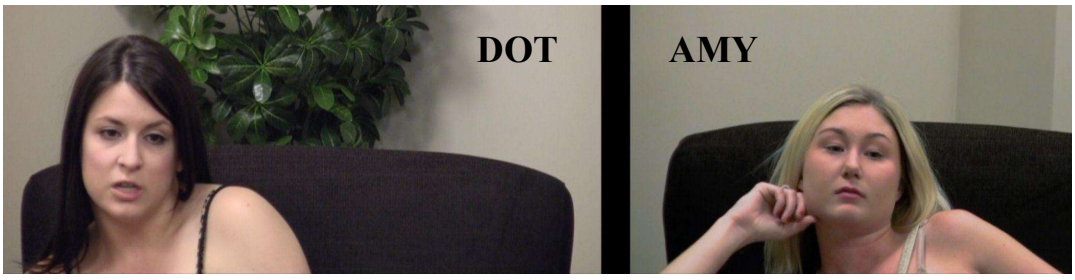
### *4.4.3 A Coded Case That Appears to Reject Kendon’s (1967) Claim*

As demonstrated above (Table 3), there is statistical support not only for RQ1, but also for a claim resembling that of Kendon (1967). While Kendon did not differentiate between turns and TCUs, data support a claim that gazing *at* a questioner at the end of an answer-related TCU is a practice for claiming that the answer turn *is* transition relevant. These cases are represented in the upper-left cell of Table 3. This claim is supported

qualitatively as well (see Extracts 13-18, above). In this subsection, I qualitatively examine one case (Extract 19, below) that appears to reject this claim. This case is drawn from the 54 cases in the upper-right cell of Table 3, where an answerer ends the first TCU of their turn gazing at the questioner, and instead of the questioner taking a turn next, the answerer extends their turn with another TCU. Extract 19 is representative of a pattern shared by 5/54 (09%) cases in the upper-right cell of Table 3.

As context for Extract 19, Amy has reported that the long-distance nature of her relationship with her boyfriend is difficult. Furthermore, when she gets to see him, he is preoccupied with his current, full-time job, which is selling illegal drugs, which makes Amy uncomfortable. At lines 1-3, Dottie asks Amy if the long-distance nature of her relationship would be easier to handle if her boyfriend worked a 'real' (i.e., legal) job. Through the middle of this question, Dottie and Amy share mutual gaze (Figure 37).

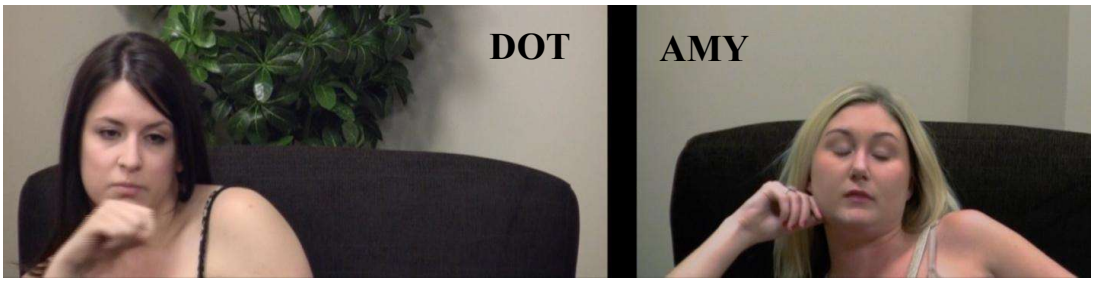
Figure 37: (Video Frame Grab; CAS.2)



```
Extract 19: A Real Job [CAS.2.Split.43:04]
01    DOT:  Would=j- (0.2) could yo:u handle
                                Fig.37#
02          not seeing him a:s mu:ch, if he was
                                 #Fig.38
03    DOT:  working a rea*l jo^b,^
03.1  amy:                  *g\--^--^closes eyes
                #Fig.39
04    AMY:  Ye^a@h.
04.1  amy:    ^ @nods>>
04.2  amy:    ^opens eyes
                                #Fig.40
05          @(956 ms.)@ (464 ms.)
05.1  amy:  @nods-----@
                      #Fig.41
06    AMY:  <Totall^y.>^
06.1  dot:          ^---^ closes eyes
07    DOT:  You j'st- (0.2) did you...
```

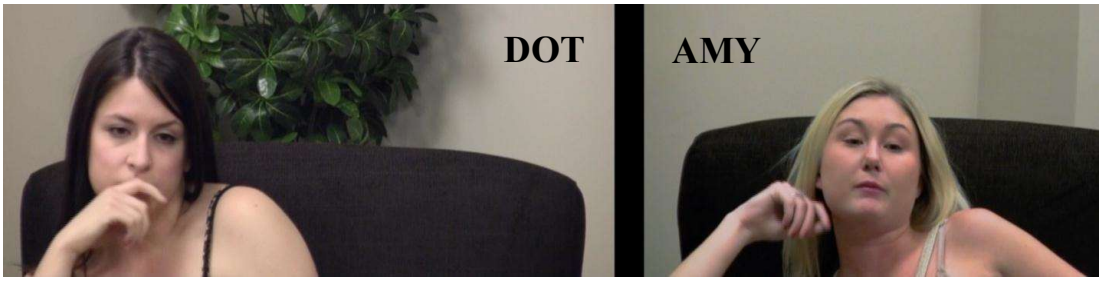
As Dottie finishes "...real" (line 3), Amy shifts her eyes away from Dottie (line 3.1), ultimately closing them completely upon Dottie's completion of "...job." (Figure 38).

Figure 38: (Video Frame Grab; CAS.2)



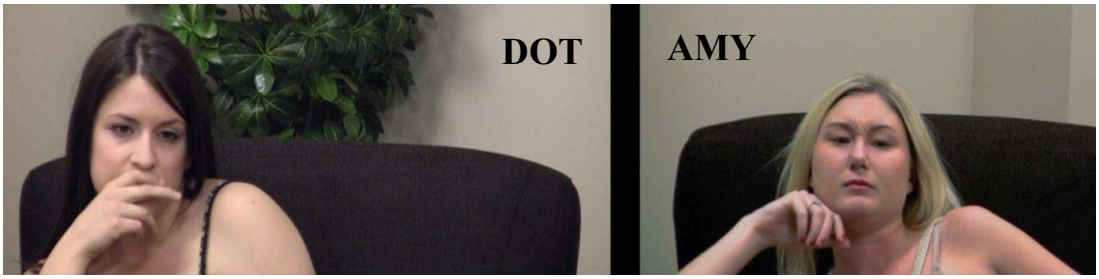

However, before Amy completes the first TCU of her answer, "Yeah." (line 4), she opens her eyes (line 4.2, Figure 39) and begins to nod (line 4.1). Thus, at the end of Amy's first TCU, she is gazing at Dottie.

Figure 39: (Video Frame Grab; CAS.2)



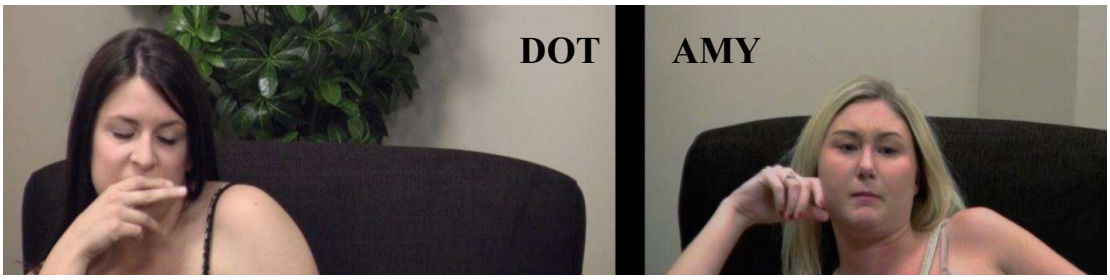

The completion of Amy's "Yeah." (line 4) marks a transition-relevance place, where Dottie initially opts to not take a turn. Amy continues to gaze at Dottie and nod for 956 milliseconds (which far exceeds a normal-length transition space), and Dottie continues to gaze at Amy and remain silent and effectively motionless (e.g., Dottie does not nod/shake her head, smile, raise/furrow her eyebrows, etc.). In this 956 ms. silence: (1) Amy can be characterized as tacitly reiterating her initial, affirmative answer (via nodding), treating that answer as transition relevant (which aligns with the claim that her gazing at Dottie claims such transition relevance); and (2) Dottie can be characterized as 'waiting' for Amy to continue, treating her initial answer as not transition relevant, perhaps in spite of, or 'ignoring' or 'resisting,' Amy's behaviors indexing the contrary (e.g., Amy's continued nodding and focused gaze orientation on Dottie). Amy stops nodding and continues to silently gaze at Dottie for another 464 milliseconds (Figure 40).

Figure 40: (Video Frame Grab; CAS.2)




Ultimately, Amy continues her turn with a second TCU, "<Totally.>" (line 6), which she produces with a 'serious/stern' face (Figures 4-5) and enunciates (symbolized in the transcript by the less-/greater-than icons). Amy ends her second TCU gazing at Dottie (Figure 41).

Figure 41: (Video Frame Grab; CAS.2)




Amy's "<Totally.>" (line 6) explicitly completes her original answer "Yeah." (line 4) in an upgraded fashion, and is evidence that, from Amy's perspective, her original answer was, in fact, transition relevant. Thus, insofar as Amy completed "Yeah." gazing at Dottie, this case provides evidence that doing so was implicated in communicating that Amy's original answer was transition relevant.

Extract 19 is a deviant case (Raymond & Robinson, forthcoming): (1) Amy gazes at Dottie at the end of the answer's first TCU, which appears to be a normative practice for communicating that her (Amy's) turn is transition relevant; (2) Dottie 'violates' this

norm by not taking a turn of talk while continuously gazing at Amy; (3) Amy orients to the norm by recompleting her original answer while gazing at Dottie; and (4) This time Dottie responds normatively by taking a turn of talk (line 7). Insofar as code categories of interactional coding schemata are designed to capture normative (i.e., predictable) conduct, they are designed to mis-represent deviant cases as contradicting research questions/hypotheses, despite the fact that deviant cases are some of the most powerful, qualitative evidence for norms (Raymond & Robinson, forthcoming).

## 5.0 Discussion

This thesis set out to explore the role of answerers' gaze orientation in turn taking. The following research question (RQ) was posed: "When an answerer withdraws their gaze from a questioner at the completion point of the first TCU of their answer, is this a practice for communicating that the answer-turn-so-far is *not* transition relevant (i.e., that the answerer is *not* complete with their turn and will continue speaking)?" This RQ was answered affirmatively both quantitatively and qualitatively (i.e., emically, capturing participants' orientations).

Quantitatively, compared to when the answerer ended the first TCU of their answer turn gazing at the questioner, when the answerer averted their gaze from the questioner at the same point, the answerer was significantly more likely (75% vs. 25%) to produce at least one more TCU prior to turn transfer (i.e., prior to the questioner coming in to take a turn of talk). This was confirmed with a logistic regression that accounted for two other independent variables, including the amount of delay (in ms.) between the question and the answer's first TCU, and the type-conformity of the answer's first TCU (i.e., *Yes*/*No*-type vs. other). These results were replicated in a sensitivity analysis limited to cases in which an answer's first TCU was type conforming. The sensitivity analysis uniquely suggested that, as the 'amount of delay between the question and the answer' increased, so did the likelihood of the answerer producing at least one more TCU prior to turn transfer.

The inverse of my research question was also quantitatively supported. Specifically, compared to when the answerer ended the first TCU of their answer turn

gazing away from the questioner, when the answerer gazed *at* the questioner at the same point, the answerer was significantly more likely (71% vs. 29%) to produce just a single TCU (vs. more than 1 TCU) prior to turn transfer. These results were again replicated in the sensitivity analysis limited to cases in which an answer's first TCU was type conforming.

Both my RQ and its inverse were also qualitatively supported. Specifically, in cases that, as coded, *supported* my RQ (i.e., Extracts 13-16, above), the answerer: (1) ended the first TCU of their answer turn gazing away from the questioner; (2) continued to produce a second TCU (without the questioner coming in to take a turn); and (3) ended their objectively final TCU gazing at the questioner; whereupon (4) the questioner came in and took a turn. My RQ was also qualitatively supported in at least a portion of the cases that, as coded, *rejected* it. Specifically, in Extracts 17-18 (above): (1) the answerer ended the first TCU of their answer turn gazing away from the questioner; (2) the questioner 'waited' for the answerer to continue speaking, *in line with my RQ*; (3) the answerer, after a pause, shifted their gaze back to the questioner instead of continuing taling; whereupon (4) the questioner took a turn of talk, *in line with the inverse of my RQ*. Finally, the inverse of my RQ was qualitatively supported in a case that, as coded, *rejected* it. Specifically, in Extract 18 (above): (1) the answerer ended the first TCU of their answer turn gazing at the questioner; (2) the questioner 'waited' for the answerer to continue speaking, in *opposition* to the inverse of my RQ; but (3) *the answerer oriented to the questioner's 'waiting' as non-normative, with the answerer effectively insisting that their turn was transition relevant*.

In sum, results suggest that an answerer's gaze orientation is at least one, but likely only one of several, practices for communicating that the possible completion of an answer's first TCU is not transition relevant. Results suggest that the findings of both Kendon (1967) and Kendrik et al. (2023) – which, on their face, might appear to contradict one another – are accurate in their own way. Kendon restricted his examination of answerers' gaze orientation to the actual ends of longer utterances that likely contained multiple turn-constructional units (TCUs; Sacks, Schegloff, & Jefferson, 1974). Kendrick et al. examined answerers' gaze orientation at the end of each and every TCU but did not isolate and analyze only those culminating in turn transfer.

### 5.1 Implications and Future Research

My findings have at least two implications. First, prior research had strongly suggested that the role of gaze orientation in turn taking is affected by both sequence-organizational context (e.g., the social action being performed by a TCU and its status as, e.g., an initiating or responding action; Rossano, 2012) and turn-organizational context (e.g., the location of a TCU within a turn, recognizing that turns can be composed of multiple TCUs; Kendrick et al., 2023). However, no prior study had exhaustively 'controlled' for, or measured, both of these types of context. In doing so, my thesis explained how apparently discrepant findings (e.g., Kendon, 1967 vs. Kendrick et al., 2023) can be seen as being in alignment. While future research needs to determine if my findings hold in other interactional contexts, there are positive indications. For example, Pekarek-Doehler et al. (2022) found that, in five different languages (Czech, French, Hebrew, Mandarin, and Romanian), responding to information-seeking questions,

proposals, assessments, and informings with *I don't know* while gazing away from their interlocutor at the end of the TCU is a practice systematically followed by the answerer continuing to produce additional TCUs prior to turn transfer. Future research needs to explore the extent to which this practice of gaze orientation is shared by other cultures.

Second, my findings expand knowledge about the organization of turn taking (Sacks et al., 1974). According to these rules, with several exceptions: (1) the possible completion point of a TCU marks a place where turn transfer is relevant, albeit not mandatory; and (2) when a speaker begins their turn, they normally have the right to produce a single TCU, after which other interactants have the right to speak next (1974). Despite this, a large minority of turns in conversation consist of multiple TCUs, *and this is functional* (Robinson & Ruhlemann, 2022). My findings suggest that gaze orientation is one of several practices – for example, perhaps along with the 'amount of delay between a question and an answer's first TCU' – that speakers use to manage or negotiate the transition relevance of their TCUs, to communicate that their turns are not yet complete. Looking back to the puzzling case presented in the introduction (Extract 2), gaze was the missing piece to explain why Genevieve produced an answer turn with two TCUs/actions.

This thesis presents simple, clear guidelines for how to measure and compare gaze behavior that serves as a foundation for future research. One next step is to build upwards on this foundation and explore questions involving how gaze behavior might be affected by a variety of social factors (e.g., power and other demographics, such as sex,

age, race). Another next step is to examine alternative action and sequence environments to see how gaze behavior might (or might not) change.

### 5.2 Limitations

This thesis has at least three limitations, the first of which involves the generalizability of its findings. Data are unscripted, mundane conversation between English-speaking friends and reflect a very specific sequence- and turn-organizational context. Prior research suggests that gaze organization can be differently shaped by culture (Rossano, 2010), task-oriented activities, and the nature of social action (e.g., questioning vs. storytelling; Bavelas et al., 2002; Rossano, 2012). Relatedly, my sample size was neither large nor diverse enough to test for the effects of demographic variables, such as sex, race, age, etc.

A second limitation is that this thesis did not analyze prosodic features of an answer's first TCU. As Selting (2000) argued, "even if a TCU is possibly complete – syntactically, semantically, and pragmatically – prosody can be used on its own in order to project turn continuation" (p. 510; see also Bögels & Torreira, 2021). Two such prosodic practices are ending a TCU with level pitch (2021) and/or a glottal stop (Local & Kelly, 1986, Local & Walker, 2005). Even when TCUs do not themselves prosodically project continuation, there are other prosodic practices for securing additional TCUs, such as the 'rush through' (Schegloff, 1982; Walker, 2010) and 'abrupt join' (Walker & Local, 2004), both of which share a common practice of reducing the juncture, or length of the transition space, between two TCUs.

Finally, this thesis is limited by its code categories and the assumptions they make about interaction. For example, the code-category of 'answer's gaze orientation at the end of the answerer's first TCU' included 'gazing at' versus 'gazing away.' However, 'gazing away' included gazing to the left, right, up, down, etc., all of which were 'lumped' together. However, results can be biased if any of these nuances were meaningful for participants (e.g., looking to the left indexes 'thinking').

### 5.3 Conclusion

The rules for turn taking for conversation (Sacks et al., 1974) form the bedrock for human sensemaking. Despite relatively minor cultural adaptations, these rules appear to be a human universal (Rossano, 2010). The communicative 'puzzle' of determining when a current speaker is complete with their turn, and thus when the next speaker can take their turn, is shared by all humans. The question is: What communicative resources do speakers use to solve this puzzle, and do different cultures provide different resources? Understanding these resources will be central to solving 21st-century communication problems, for example, those involving the design of human-machine communication technologies (e.g., robots, computers, artificial intelligence). More basically, though, understanding these resources is central to understanding what it means to be human.

## 6.0 References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