



HAL
open science

Caller resistance to perform cardio-pulmonary resuscitation in emergency calls for cardiac arrest

Marine Riou, Stephen Ball, Austin Whiteside, Sheryl Gallant, Alani Morgan, Paul Bailey, Judith Finn

► **To cite this version:**

Marine Riou, Stephen Ball, Austin Whiteside, Sheryl Gallant, Alani Morgan, et al.. Caller resistance to perform cardio-pulmonary resuscitation in emergency calls for cardiac arrest. *Social Science & Medicine*, 2020, 256, 10.1016/j.socscimed.2020.113045 . hal-02954577

HAL Id: hal-02954577

<https://hal.science/hal-02954577>

Submitted on 22 Aug 2022

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution - NonCommercial 4.0 International License

Article title: Caller resistance to perform cardio-pulmonary resuscitation in emergency calls for cardiac arrest

Authors:

Marine Riou^{1,2}, Stephen Ball^{2,3}, Austin Whiteside³, Sheryl Gallant², Alani Morgan², Paul Bailey³, and Judith Finn^{2,3,4,5}

Author affiliations:

¹Centre de Recherche en Terminologie et Traduction (CRTT), Université Lumière Lyon 2, Lyon, 69007, France

²Prehospital, Resuscitation and Emergency Care Research Unit (PRECRU), School of Nursing, Midwifery and Paramedicine, Curtin University, Bentley, WA 6102, Australia

³St John Ambulance Western Australia, Belmont, WA 6104, Australia

⁴Emergency Medicine, The University of Western Australia, Crawley, WA 6009, Australia

⁵Department of Epidemiology and Preventive Medicine, Monash University, Victoria 3004, Australia

Corresponding author:

Dr Marine Riou

Centre de Recherche en Terminologie et Traduction (CRTT)

Université Lumière Lyon 2

36 rue Pasteur

69007 Lyon

France

marine.riou@univ-lyon2.fr

1 Caller resistance to perform cardio-pulmonary resuscitation in emergency calls
2 for cardiac arrest

3 **Abstract**

4 A key objective of an emergency call for cardiac arrest is to recruit a bystander to
5 perform cardio-pulmonary resuscitation (CPR) until the ambulance arrives. Emergency
6 medical services worldwide work towards increasing the rate of bystander-CPR, and existing
7 research has identified a number of physical barriers to the provision of bystander-CPR. Yet,
8 little is known about the specific ways in which emergency callers resist recruitment to
9 perform basic first-aid, sometimes in the absence of any physical obstacle.

10 This study investigated 65 emergency calls for cardiac arrest received in Australia in
11 2014 and 2015, in which the callers initially resisted CPR. We used conversation analysis to
12 examine callers' practices to resist recruitment and call-takers' practices to counter this
13 resistance.

14 We found that callers who resisted CPR typically provided an account. When callers
15 accounted for their resistance on deontic grounds, they expressed that CPR was not a possible
16 course of action (e.g. "I can't do it"). When callers provided an epistemic account, their
17 justification was based on their knowledge or opinion (e.g. "I think it's too late"). Our findings
18 suggest that epistemic resistance can be a barrier to bystander-CPR. We identified two
19 practices used by call-takers to address caller resistance based on epistemics. Providing more
20 context on the purpose of CPR (e.g. "this is to help him in the meantime") seemed effective
21 in persuading callers to perform CPR. By contrast, aligning with the caller's epistemic and
22 deontic rights (e.g. "it's up to you") did not seem effective in persuading callers.

23 **Keywords**

24 Australia; conversation analysis; emergency call; cardiac arrest; CPR, resistance; epistemics;
25 accounts

26 **Introduction**

27 In everyday talk-in-interaction, participants recruit assistance from others through a
28 continuum of methods (Kendrick and Drew, 2016) which includes explicit verbal methods,
29 such as requests, and more implicit methods, such as hinting (Haugh, 2017). Participants also
30 use non-verbal means to make requests (Rossi, 2014), or can merely display a difficulty, which
31 then occasions an offer of assistance (Kendrick and Drew, 2016).

32 Emergency calls are instances of institutional talk (Heritage, 2005; Heritage and Drew,
33 1992), and as such, they critically differ from ordinary conversation, e.g. through reduction
34 and specialization (Wakin and Zimmerman, 2010; Whalen and Zimmerman, 1987). A
35 telephone call to an emergency number is interpreted by call-takers as a request for help
36 “before the first word is spoken” (Zimmerman, 1992: 433). In addition to this institutional
37 expectation that call-takers assist callers, call-takers recruit callers to perform a range of
38 actions, such as unlocking the front door. When the call-taker recognises that the patient is
39 in cardiac arrest, they try to recruit the caller’s assistance in providing basic first aid while the
40 ambulance is on the way. More specifically, the caller – or any other bystander present at the
41 scene – needs to perform cardiopulmonary resuscitation (CPR).

42 In a previous study of medical emergency calls for cardiac arrest (Riou et al., 2018), we
43 analyzed how call-takers try to get callers to perform CPR. We found that certain linguistic
44 forms seemed more successful in obtaining caller agreement: expressing futurity (e.g. “we’re
45 gonna do CPR”) or obligation (e.g. “you need to do CPR”) was associated to 97% (199/206)

46 and 84% (46/55) caller agreement respectively, while opting for volition (e.g. “do you want to
47 do CPR?”) was associated to 43% (29/67) caller agreement. Overall, it was rare for callers to
48 decline CPR (15% of callers in our data, 65/422 calls). However, this subset of declinations is
49 of particular interest because of how critical CPR is for patient outcomes – it doubles the
50 chance of survival (Riva et al., 2019).

51 Refusing, declining, and disagreeing are dispreferred responses in part because they
52 threaten social solidarity. Life-and-death emergencies can be considered an extreme case
53 scenario in which to observe the enactment of social preferences through talk-in-interaction.
54 Members of society have a moral obligation to assist someone in danger, which some
55 countries have formalized with a law (duty to rescue). Given the social weight of such a
56 normative expectation, it is unlikely that many callers would refuse CPR plainly and directly,
57 as Laforest and Rioux-Turcotte (2016) discussed in their data in Québec French. Rather, we
58 expect callers to provide accounts, i.e. “a statement made by a social actor to explain
59 unanticipated or untoward behavior” (Scott and Lyman, 1968: 46).

60 It is of critical importance to understand the specific ways in which callers resist CPR,
61 as well as if and how they can be persuaded by call-takers. To this end, we analysed callers’
62 initial resistance to the initiation of CPR, as well as the subsequent trajectory of calls where
63 the provision of CPR was negotiated between caller and call-taker.

64 **Background**

65 During cardiac arrest, the heart stops pumping entirely. The patient becomes
66 unconscious and stops breathing – another term for it is “sudden death”. When it happens
67 outside of hospital, survival is very low: in 2017, only 9.1% of patients survived to hospital
68 discharge in Western Australia (Bailey et al., 2018) – which corresponds to survival in Europe

69 (Gräsner et al., 2016) and the United States (Mozaffarian et al., 2016). Time is of the essence,
70 as survival rate declines by approximately 10% (Valenzuela et al., 1997) for every minute
71 without treatment, such as cardio-pulmonary resuscitation (CPR) or the use of an external
72 automatic defibrillator (AED). Therefore, it is critical that basic first aid is provided to the
73 patient by the emergency caller – or any other bystander present at the scene – while the
74 ambulance is on the way. When performed by a bystander, CPR doubles the chance of survival
75 (Riva et al., 2019). Bystander-CPR typically focuses on chest compressions (rather than rescue
76 breaths), during which the bystander pushes down on the patient’s chest at short and regular
77 intervals in order to keep the blood flowing. Call-takers play an essential role in recruiting
78 assistance from bystanders and providing them with step-by-step instructions (Bohm et al.,
79 2011).

80 Given the low survival of out-of-hospital cardiac arrests, few patients recover even if
81 they receive bystander-CPR. Some callers may be aware of these low odds, which in turn may
82 impact how they receive offers and requests to perform first-aid. In our previous cohort study
83 (Riou et al., 2018), we found that callers were more likely to resist CPR when they had already
84 declared that the patient was dead. However, all patients had resuscitation attempted by
85 paramedics and hence were considered by health professionals to be potentially ‘viable.’ In
86 this paper, we explore the issue of caller resistance in more detail, and draw on the distinction
87 between “active resistance” and “passive resistance” previously identified in medical
88 interaction. In the context of advice given to new mothers by health visitors, Heritage and Sefi
89 (1992) identified unmarked acknowledgment (“mm hm”) as a form of passive resistance to
90 advice-giving, in contrast with more active practices, such as assertions of competence. In her
91 study of doctors’ recommendations for non-antibiotic treatment of upper respiratory tract
92 infections in children, Stivers (2005) defined active resistance as initiating a course of action

93 regarding the treatment (e.g. asking about its effectiveness) and passive resistance as failing
94 to align with the doctor's recommendation.

95 In this paper, we conceptualize the provision of bystander-CPR during an emergency
96 call as an interactional project pursued by the call-taker. This is based on Levinson's (2013)
97 contrast between "actions" and "projects" in interaction, the latter being a superordinate
98 category going beyond the turn-at-talk, and defined as "a course of action that at least one
99 participant is pursuing" (Levinson, 2013: 122). Bystander-CPR involves a variety of sequences
100 and courses of actions (obtaining the caller's agreement, positioning the patient flat on their
101 back on the ground, doing the chest compressions, counting out loud, adjusting the pace of
102 compressions, etc.). To carry out this interactional project, the call-taker needs to recruit the
103 assistance of the caller. The specificity of the context (a telephone call) means that caller
104 recruitment can only be verbal and explicit.

105 The study of what constitutes an action in interaction, and the relation between
106 language and action, can be traced back to Austin's (1962) work on performatives and then
107 illocutionary acts, and Searle's (1969) speech act theory – see Drew and Couper-Kuhlen (2014)
108 for a review of this legacy. Action ascription has been studied extensively from a conversation
109 analytical perspective (see Levinson, 2013 for a review), with a focus on contrasting social
110 actions such as directives, requests, offers, suggestions, and proposals. Requests and
111 directives have been compared on the basis of entitlement and contingency: while requests
112 orient to the recipient's willingness and/or ability to perform the desired action (Curl and
113 Drew, 2008), directives do not (Craven and Potter, 2010). Schegloff (2007: 84) argued that
114 offers are preferred over requests, observing that participants prototypically decline offers
115 but accept requests. This analysis was qualified by Kendrick and Drew (2014), who conceded

116 “a symbiotic relationship” between offering and requesting, but not a general preference for
117 offers over requests.

118 Despite the rich literature on the topic, we did not choose a specific action term, such
119 as “request” or “directive”, to analyse the turns in which call-takers initiate bystander-CPR.
120 Instead, we use the ad hoc term “CPR-opening”, as in our previous study (Riou et al., 2018).
121 This analytical choice resonates with Enfield and Sidnell's (2017) critique of what they call a
122 “binning” approach of action. They argued that a speaker does not need to categorize an
123 action (i.e. as a request, as a suggestion, etc.) to respond to it, and that it can be more fruitful
124 for the analyst to focus on how participants respond to action, rather than attempting to
125 categorize these actions. In addition, our data critically differs from the existing literature on
126 talk-in-interaction in that we focus on one specific project throughout our dataset, i.e. the
127 provision of bystander-CPR. The term “CPR-opening” allows us to investigate how a similar
128 interactional project is negotiated, irrespective of linguistic design and interactional
129 environment.

130 This study draws on the extensive literature on epistemics and deontics in interaction.
131 The deontic domain has to do with ability, possibility, and necessity: “deontic authority relates
132 to decisions and obligations and is concerned with who can set the rules about what should
133 be done” (Kent, 2012: 713). The study of deontics has particularly focused on asymmetrical
134 interaction, such as elderly care (Heinemann, 2006), disability care (Antaki and Kent, 2012)
135 and parent-child interaction (Antaki and Kent, 2015; Craven and Potter, 2010). Speakers adapt
136 the form of their requests depending on how much entitlement they claim and to what extent
137 they acknowledge the contingencies of their co-participants. Emergency calls display a
138 complex deontic landscape, as a range of actions, including CPR, are typically initiated by the
139 call-taker but carried out by the caller.

140 The epistemic domain has to do with “the knowledge claims that interactants assert,
141 contest and defend” (Heritage, 2013: 370). Speakers are acutely aware of knowledge
142 imbalances (who knows what and who has a right to claim knowledge), which affects turn
143 design and action ascription. For example, epistemic status is crucial to interpret a turn as a
144 question vs. a statement (Heritage, 2013b, 2012). A variety of epistemic stance markers are
145 mobilized, such as *I think* (Kärkkäinen, 2003), *I don’t know* (Lindström et al., 2016; Weatherall,
146 2011), and turn-final *or* (Drake, 2015). Emergency calls are characterized by a twofold
147 epistemic asymmetry: only the caller has sensory access to the patient, while it is typically the
148 call-taker who has the greatest expertise in how to help them. To capture the complexity of
149 this type of “knowledge gap” Grimen (2009), the emerging distinction between the epistemics
150 of expertise vs. the epistemics of experience can be useful (Heritage, 2013a; Lindström and
151 Weatherall, 2015).

152 **Materials and Methods**

153 We used a subset of a corpus of 424 emergency calls collected for our previous
154 retrospective cohort study on CPR negotiation (Riou et al., 2018). The SJA-WA OHCA
155 database, maintained by the Prehospital, Resuscitation & Emergency Care Research Unit
156 (PRECRU) at Curtin University, contains all cases of paramedic-verified out-of-hospital cardiac
157 arrest in Western Australia since 1996. We used a pre-defined protocol for data collection,
158 first identifying all the calls for out-of-hospital cardiac arrest received in Perth by St John
159 Ambulance Western Australia between January 2014 and December 2015, then applying
160 exclusion criteria. More details on data collection can be found in our previous study (Riou et
161 al., 2018). For the purpose of the present paper, what most needs highlighting is that all 424
162 calls of the corpus correspond to cases where (1) the call-taker recognised cardiac arrest

163 during the call, (2) the paramedics confirmed cardiac arrest upon arrival, and (3) the
164 paramedics attempted to resuscitate the patient.

165 We considered that callers initially agreed to perform CPR if they provided verbal
166 confirmation or acknowledgement (e.g. “okay”, “alright”, “yeah I can try it”), or relevant
167 embodied action (e.g. starting the chest compressions, as evidenced through audible signs).
168 The present paper focuses on the subset of 65 calls in which the caller did not initially agree
169 to perform CPR, irrespective of the ways in which this was expressed. In 24 calls, the call-taker
170 eventually persuaded the caller to perform CPR, and in 20 of those, bystander-CPR actually
171 occurred before the paramedics arrived.

172 We transcribed the calls following the system devised by Jefferson (2004) for
173 conversation analysis, using normalised orthography and prosodic annotations inspired from
174 Szczepek Reed (2011). The list of transcription symbols can be found in the appendix. The calls
175 were discretely segmented in turn-constructive units (TCUs) following the guidelines
176 presented in Selting (2000). Each numbered line in the transcripts corresponds to a TCU.

177 Approval for the study was granted by the Human Research Ethics Committee of
178 Curtin University (HR128/2013) and the SJA-WA Research Advisory Group.

179 **Accountability and resistance to CPR**

180 We found that explicit refusals to perform CPR were not very common, with 18/65
181 cases. Even rarer (2/65) were cases where the callers refused explicitly and did not provide at
182 any point during the call an account for their refusal. An example is shown in (1), in which the
183 false-starts and hesitations (l.2) contribute to display the caller’s accountability (Robinson,
184 2016) for the inappropriateness of her response.

185 (1) SJA106 (102-107)

186 1 Call-taker <<h> d- d:o you want to do CPR darling, >
 187 (.)
 188 → 2 Caller ↑no- no l h .h h l-
 189 3 Call-taker <<h> it's okay, >
 190 4 that's alright,
 191 5 %I'm right here with you,%
 192 6 it's okay Elther way darling.

193 More typically, callers accounted for their explicit refusals, as in (2).

194 (2) SJA579 (54-60)

195 1 Call-taker <<h> so have you just ↑found him? >
 196 (..)
 197 2 Caller yea:h h
 198 3 Call-taker %okay alright=%
 199 4 =is there a defibrillator available.
 200 (.)
 201 5 Caller no [he's- he's] gone.
 202 6 Call-taker [%alright.%]
 203 7 (..)
 204 8 okay.
 205 9 alright,
 206 10 Caller [he's gone.]
 207 11 Call-taker [did] (. did- <<h> did you want to start CPR? >
 208 (..)
 209 12 Caller ((SIGHS))
 210 → 13 [no].
 211 14 Call-taker [t-] (un)til the ambulance gets there ↑no?
 212 15 Caller nope,
 213 → 16 nah he's gone,

214 In response to the CPR-opening l. 11 (“did you want to start CPR?”), the caller initially delivers
 215 a type-conforming answer (“no” l.13) (Raymond, 2003), though prefaced with marked delay
 216 and a loud sigh. He then he delivers an account (“he’s gone” l.16) when the call-taker makes
 217 a second attempt (l.14). Interestingly, the same assessment of the patient’s state was used
 218 just a few seconds earlier (“no he’s- he’s gone” l.5) in response to the call-taker’s inquiry about
 219 the availability of a defibrillator (l.4). The caller accounts for his negative response to two

220 possible courses of action (using a defibrillator if there is one, and performing CPR) by
221 implying their irrelevance, as further suggested by his exasperated sigh (l.12).

222 Rather than explicitly refusing to perform CPR, callers more often display resistance in
223 implicit ways, such as in example (3).

224 **(3) SJA310 (59-76)**

225 1 Call-taker <<h> do you want to (.) try: anything? >
226 2 o::r like tr- a- attempt CPR?
227 3 <<f> °or anything that-° >
228 4 .h try and see anything?
229 5 we can do anything?
230 → 6 Caller put- well I haven't TRIED that.
231 7 Call-taker do you want to d- do you want to go ↓through that?
232 → 8 Caller .h well h I don't know whether I'm- I'm capable of DOing that,
233 9 I'm eighty (.) .h [three and a] half myself.
234 10 Call-taker [okay:.]
235 11 Caller I'm a bit shaken up at the moment.
236 12 Call-taker okay.
237 13 [alright sir.]
238 14 Caller [I'm sor]ry to [↑say that but.]
239 15 Call-taker [<<h> no no no, >]
240 16 th- it's- it's completely up to you sir.
241 17 #↑you know what you're capable of#.

242 The caller initially withholds a response to five consecutive attempts (l.1-5) from the call-taker
243 to initiate CPR. Then, the caller delivers a *well*-prefaced transformative answer (“well I haven't
244 TRIED that” l.6). With this type of response, a speaker retroactively adjusts the question posed
245 to them (Stivers and Hayashi, 2010). Here, instead of providing a type-conforming answer (i.e.
246 agreeing or not agreeing to do CPR), the caller responds that he has not tried CPR. When the
247 call-taker makes another attempt (“do you want to d- do you want to go ↓through that?”
248 l.7), the caller delivers another *well*-prefaced transformative answer (“well h I don't know
249 whether I'm- I'm capable of DOing that” l.8), this time expressing his concern of not being
250 able to perform CPR, for which he then provides two deontic accounts, one referring to his
251 age (“I'm eighty (.) .h three and a half myself” l.9) and one to his emotional state (“I'm a bit

252 shaken up at the moment” l.11). *Well*-prefaces are routinely used in dispreferred responsive
253 turns (Heritage, 2015; Schegloff and Lerner, 2009). As such, *well*-prefacing in the two
254 transformative answers (l.6; 8) foregrounds the caller’s resistance in the earliest possible slot
255 of his turns. In sum, the caller passively resists CPR without ever explicitly refusing. The call-
256 taker eventually aborts her interactional project and the caller immediately expresses his
257 accountability to cooperate with an apology (“I’m sorry to say that but” l.14).

258 Accounts are a traditional feature of dispreferred responsive turns (Heritage, 1988;
259 Pomerantz and Heritage, 2013) along with delays and prefaces (but see Kendrick and Torreira,
260 2015). With accounts, “second speakers invoke contingent knowledge of their own
261 circumstances to account for the lack of a positive response” (Heritage, 1984: 272). For
262 example, a speaker may provide an explanation or justification as to why they do not accept
263 an offer. Following the call-taker’s first CPR-opening, most (57/65) of the callers who initially
264 declined CPR did so with an account. Two categories of meaning can be identified in callers’
265 accounts to decline CPR: deontics and epistemics. The numeric results are summarized in
266 Table 1 and discussed in the following section.

267 **Deontic resistance**

268 When a caller provides an account based on deontics, they express that they are
269 unable to perform CPR. For example, the patient is lying on a bed, and they are too heavy for
270 the caller to roll them onto their back on the floor. Out of the 57 callers who responded to
271 the first CPR-opening with an account, 20 did so on deontic grounds, as in (4) and (5). Deontic
272 accounts typically contained the contracted negative modal auxiliary “can’t”.

304 CPR training, which could be easily resolved by the call-taker's reassurance that they would
 305 provide step-by-step instructions. In the 7 remaining cases, a major physical obstacle needed
 306 to be overcome to position the patient, who was either on a bed or a couch, or inside the
 307 toilet. Thus, even though CPR was presented as impossible in the caller's responsive turn, this
 308 was not always an interactional impasse. In (7), the caller initially presents the patient's
 309 position as a major obstacle (l.4; l.7), but then quickly and successfully overcomes this barrier.

310 **(7) SJA722 (162-198)**

311 1 Call-taker what we need to do: i:s start (.) doing CPR=
 312 2 < <f> =are you able to roll him on his back at all? >
 313 (.)
 314 3 Caller ((SIGHS))
 315 → 4 (.) .h he's so: h- I CA:N'T (.) get him (.) over.
 316 5 Call-taker you can't?
 317 6 %no;,%
 318 (.)
 319 → 7 Caller %I can't get him over.%
 320 8 Call-taker ↑alright lovey.
 321 9 I mean I can help you: it's: just you tell me what you're doing and the:n
 322 I'll know what I can- I can give.
 323 10 .h < <h> there's no way you can get on the bed and push him over onto
 324 his back? >
 325 (.)
 326 11 Caller I'm trying to pull him over.
 327 12 Call-taker ↑yeah?
 328 13 okay,
 329 14 I'm just trying to help you.
 330 15 ((5secs 300ms))
 331 16 Call-taker < <h> how big is your hubby love, >
 332 (..)
 333 17 Caller u::m h (.) .h one thirty- one forty kilos?
 334 18 Call-taker o:kay.
 335 19 < <h> no worries. >
 336 20 .h alright.
 337 21 .h (.) < <h> a:re we: at all- have you try- you tried to get him over= >
 338 22 =i- is he over or is he not.
 339 (.)
 340 23 Caller almost got it.
 341 24 ((5secs))
 342 25 < <exp> got him on the FLOOR. >
 343 26 Call-taker great.

344 27 that's great,
 345 28 is he on his back?
 346 (..)
 347 29 Caller yeah.
 348 30 Call-taker (.) a:right
 349 31 now listen carefully I'm gonna tell you how to do resuscitation okay:?
 350 (..)
 351 32 Caller °yeah°.

352 **Epistemic resistance**

353 When a caller provides an account based on epistemics, they make a claim based on
 354 what they know – or think they know. In our data, 28 callers accounted for their resistance
 355 on epistemic grounds, as in (8) and (9).

356 **(8) SJA676 (76-78)**

357 1 Call-taker would you like to attempt some CPR with your dad.
 358 → 2 Caller no he's dead.
 359 → 3 I ↑know he's dead.

360 **(9) SJA779 (359-360)**

361 1 Call-taker < <h> are you willing to do CPR? >
 362 (..)
 363 → 2 Caller h darling ↑I think it's too LATE.

364 In their epistemic accounts, callers expressed the view that it would be futile to attempt CPR,
 365 as they considered it was too late and the patient was already dead. Callers used an epistemic
 366 stance marker, such as “I think” (or “I don’t think”) and “I know”, in 17/28 epistemic accounts.
 367 It is important to reiterate here that paramedics attempted to resuscitate all the patients of
 368 the dataset, and so, none of them were considered to be obvious deaths.

369 The practice of resisting CPR based on epistemic grounds is further evidenced by cases
 370 such as (10). The call comes from the car park of a shopping centre where a patient is
 371 unconscious in his car. The caller was attracted to the scene by the cries of the patient’s wife.

372 (10) SJA299 (206-218)

373 1 Call-taker < <h> we're gonna do: resuscitation. >
374 2 we're gonna [try and help him.]
375 → 3 Caller [he's uh he's-] he's been here for hours apparently.
376 4 Call-taker okay.
377 5 < <h> do you believe that he's beyond any help? >
378 (..)
379 → 6 Caller I'd say I think so yea:h.
380 (.)
381 7 Call-taker °o:kay°.
382 8 (.) .h a:lright.
383 9 Caller ↑okay.
384 10 (.) < <f> okay okay. >
385 11 we ? (.) < <h> have someone here who knows CPR [hang on.] >
386 12 Call-taker [okay] alright.

387 The caller initially resists CPR with an epistemic account on the patient's supposed viability
388 ("he's been here for hours apparently" l.3). When the call-taker requests a confirmation ("do
389 you believe that he's beyond any help?" l.5), the caller reiterates his claim ("I'd say I think so
390 yeah" l.6), though downgraded with the contracted form of the modal auxiliary "would" and
391 the stance marker "I think". However, when another bystander joins the interaction and it so
392 happens that this person is trained in CPR, the caller does not seem to consider CPR as futile
393 anymore. Cases like this suggest that refusal (or fear) to do CPR can be camouflaged as a belief
394 that that patient is beyond help.

395 Only 6 out of the 28 callers who provided an epistemic account eventually performed
396 CPR. This suggests that the caller's perception of the patient's viability can be a barrier to
397 bystander-CPR. We identified a call-taker practice which seemed to be effective to persuade
398 callers who resisted CPR based on epistemic grounds. This is when call-takers provided more
399 context on CPR, explaining that its purpose is to help the patient while the ambulance is on
400 the way. When using this practice, call-takers typically resorted to expressions of simultaneity
401 such as "in the meantime" and "while". In (11), the call-taker's attempt to initiate CPR ("are
402 you willing to do CPR sir" l.1; "would you like me to t:ry and give you some instructions to see

403 if we can start CPR" l.10) are initially met with resistance from the caller, who delivers four
 404 turns (l.3;4;7;8) in which he expresses his belief that the patient is beyond help. However, the
 405 caller eventually agrees to perform CPR after the call-taker presents CPR as a course of action
 406 while waiting for the ambulance ("I can give you some instructions while the ambulance is on
 407 the way:." l.21).

408 **(11) SJA577 (82-110)**

409 1 Call-taker < <h> are you willing to do CPR sir= >
 410 2 =I can give you [some instructions,]
 411 3 Caller [no he- he- he-] he's- there's nothing there.
 412 4 [there's ↑nothing the:re.]
 413 5 Call-taker [°o:kay°.]
 414 6 < <h> do you believe that he's beyond any help? >
 415 7 Caller he- ↑he- there's nothing there,
 416 8 his eyes are wide open and there's nothing.
 417 9 Call-taker o:kay.
 418 10 would you like me to t:ry and give you some instructions to see if we can
 419 start CPR=
 420 11 =or would you prefer not to.
 421 12 Caller .h I- I don't know what to DO:,
 422 13 Call-taker [I can give you so-]
 423 14 Caller [like I- I don't] [know- I- I-]
 424 15 Call-taker [what's your ↑name] sir.
 425 (.)
 426 16 Caller .h s:orry?
 427 17 Call-taker what's your ↑name.
 428 (..)
 429 18 Caller ((NAME)).
 430 19 Call-taker ((NAME))?
 431 20 Caller [yes,]
 432 → 21 Call-taker .h ((NAME)) [I can gi]ve you some instructions while the ambulance is on
 433 the way:.
 434 22 < <h> would you like me to do that? >
 435 23 Caller [please please please.]
 436 24 Call-taker < <h> or would- [do you believe he's beyond any- yeah?] >
 437 25 [okay.]
 438 26 Caller [please.]

439 In (12), the call-taker explains that CPR is something to do "until the ambulance crews come"
 440 (l.4), but also corrects the caller's expectations that the patient would swiftly regain

441 consciousness from chest compressions alone (l.15;17), when the main objective of
442 bystander-CPR is to maintain blood flow until more advanced resuscitation can be carried out
443 by the paramedics.

444 **(12) SJA259 (63-88)**

445 1 Call-taker u:h do you wanna do CPR?
446 (..)
447 2 Caller I think it's too late.
448 (.)
449 3 Call-taker ? %okay,%
450 → 4 w:ell I can help you until the ambulance crews come=
451 5 =they're on their way?
452 6 < <h> do you wanna attempt [to do CPR? >]
453 7 Caller [yeah yeah just wait.]
454 8 just wait.
455 9 yeah [just wait.]
456 10 Call-taker [unhunh?]
457 ((46.4 SECONDS OMITTED WHILE CALLER WALKS AWAY FROM THE PHONE AND ASKS
458 ANOTHER BYSTANDER TO PERFORM CPR))
459 11 Caller hello?
460 12 Call-taker unhunh?
461 13 Caller yeah we're trying to do CPR nah but unfortunately it's not working I
462 [don't think.]
463 14 Call-taker [y:ea:h.]
464 15 you ↑have to (.) keep going?
465 16 Caller [o:h,]
466 17 Call-taker < <h> [you can't] just do it [for a few minutes?>]
467 18 Caller [okay okay,]

468 Among cases of epistemic resistance to CPR, callers were persuaded to do CPR in 4/7
469 calls where call-takers provided more context on CPR. By contrast, only 2 callers were
470 persuaded to do CPR in the 21 calls where the practice was not used. When call-takers provide
471 more context on CPR, as seen l.21 in (11) and l.4 in (12), they reframe the caller's
472 understanding of CPR rather than directly addressing the caller's epistemic right in knowing
473 that CPR would be futile. The call-taker counters an epistemic claim based on experience, by
474 means of an epistemic claim based on expertise – while neither aligning nor disaligning with
475 the caller's epistemic and deontic rights as the person who has physical and sensory access

476 to the patient. We argue that this call-taker practice can be persuasive precisely because it
477 side-steps the caller's epistemic claim.

478 By contrast, in 12 of the 28 calls with epistemic resistance to CPR, call-takers used
479 another practice, using phrases such as "it's up to you", "it's your choice", or "that's fine". An
480 example can be seen in (13), where the project of bystander-CPR reaches an impasse quickly
481 after the call-taker uses the practice in question.

482 **(13) SJA171 (109-114)**

483 1 Call-taker we need to do CPR.
484 ..)
485 2 Caller I think you'd be wasting your time?
486 3 ..) he doesn't- he's not responding in any way.
487 → 4 Call-taker okay ma'am well it's up t- < <h> i- [it's up to] you? >
488 5 Caller [XXX]
489 6 (.) .h (.) yeah,

490 Such a practice operates both on the epistemic and the deontic domains: the call-taker aligns
491 with the caller's epistemic claim that the patient is not viable, and confirms their deontic right
492 to withhold assistance. This practice does not seem to be an effective way to persuade callers.
493 The caller was persuaded to do CPR in only 2/12 calls in which the call-taker used the practice
494 of aligning with the callers' epistemic and deontic rights, while the caller was persuaded in
495 4/16 calls where the call-taker did not use it.

496 The two call-taker practices that we identified (providing more context on CPR; aligning
497 with the caller's epistemic and deontic rights) are not mutually exclusive. They are both used
498 in example (14), highlighting the complex epistemic and deontic negotiation which can occur
499 when callers and call-takers discuss the provision of CPR. The caller has just found his relative
500 lying unconscious inside the house, and he is calling from outside.

501 **(14) SJA375 (101-119)**

502 1 Call-taker < <h> do you want me to talk you through CPR? >

503 (.)
504 2 Caller ↑u::m I think it's- ((SIGHS))
505 3 (..) ((SIGHS)) she's all cold and that I (.) she's cold eh like-
506 4 < <h,f> I don't know, >
507 → 5 Call-taker I can talk you through and we can do it together until the crews turn up,
508 6 and then they can make the decision what to do when we get there?
509 (..)
510 7 Caller it really scares the shit out of me eh,
511 8 I don't want to go in there.
512 9 Call-taker ↓alright,
513 10 okay no ↑I'm-
514 → 11 < <h> it's your dec- it's your choice. >
515 12 okay?
516 13 < <exp,f> but I CAN help you if you want me to. >
517 (...)
518 14 Caller I dunno I think-
519 15 .h < <h> I just tried to check her pulse. >
520 16 a:nd (.) XXX her whole arm's freezing cold and,
521 17 °and just-°
522 18 Call-taker .h (.) alright.

523 The caller initially resists CPR on epistemic grounds, suggesting that it is too late for CPR
524 because the patient is cold to touch. The call-taker counters this epistemic account with the
525 practice identified above, i.e. providing additional context on CPR (“I can talk you through and
526 we can do it together until the crews turn up” l.5). The caller then provides a different reason
527 for resisting CPR: he is afraid to be in the same room as the patient (“it really scares the shit
528 out of me eh, I don't want to go in there” l.7-8). The caller’s change of justification
529 retroactively strengthens the evidence that providing more context on CPR is an effective
530 counter to epistemic accounts. When the epistemic account cannot be maintained anymore
531 due to this call-taker practice, the caller verbalizes the real obstacle that he is facing. Only
532 then does the call-taker use the second practice, aligning with his deontic rights (“it's your
533 dec- it's your choice” l.11). The call-taker aborts the interactional project of bystander-CPR a
534 few seconds later.

535 **Conclusion**

536 In this study of 65 emergency calls for cardiac arrest, we described two ways in which
537 callers resisted an interactional project initiated by the call-taker, namely, bystander-CPR.
538 With deontic accounts (e.g. “I can’t do it”), callers justified their resistance based on the
539 presence of a physical or contextual obstacle. When callers gave an epistemic account (e.g. “I
540 think he’s dead”), they claimed access and rights to knowledge based on their sensory
541 proximity to the patient, expressing their views that the patient was beyond help. We
542 identified two practices used by call-takers to address resistance based on epistemic grounds.
543 The first strategy consists in providing more context on CPR, i.e. saying that it is a procedure
544 to help the patient while the ambulance is on the way (e.g. “this is to help him in the
545 meantime”). Our findings suggest that this practice has the potential to persuade some callers
546 to do CPR. This is not the case of the second strategy we identified in the data, by which call-
547 takers align with the callers’ epistemic and deontic rights (e.g. “it’s up to you”). Instead of
548 persuading callers, this second strategy seemed to halt bystander-CPR as an interactional
549 project.

550 Emergency medical services worldwide work towards increasing the rate of
551 bystander-CPR, and existing research has identified a number of physical barriers to the
552 provision of bystander-CPR. Yet, little is known about the specific ways in which emergency
553 callers express their refusal to perform CPR, sometimes in the absence of any physical
554 obstacle. Future research is necessary to determine to what extent callers’ assessments of
555 the patient’s viability is a barrier to bystander-CPR. By contrast with physical barriers, a barrier
556 of this type can only be overcome through interaction. The combined contribution of this
557 paper and our previous one (Riou et al., 2018) alludes to a domino effect. Callers who declare

558 that the patient is dead are more likely to decline CPR. In response to such statements, call-
559 takers more commonly frame CPR in volitional terms (e.g. “do you want to do CPR?”), which
560 in turn is associated with lower caller agreement than other linguistic modalities such as
561 futurity and obligation. The perception of patient viability emerges as a central force bearing
562 on the trajectory of calls. It is precisely this core issue which is targeted by the effective
563 countering strategy identified in this paper (i.e. providing more context on CPR). Our aim was
564 not to find ways to convince all callers to perform CPR against their wishes or beliefs, as
565 ultimately, performing CPR remains the caller’s prerogative. However, it is crucial to
566 understand how CPR is negotiated and resisted, so that interactional roadblocks can be
567 explicitly addressed, and resolved where appropriate. The complex dynamic of resistance and
568 persuasion in emergency calls needs to be better understood before informed decisions can
569 be made from medical and ethical perspectives.

570 Our study expands current knowledge on resistance in medical interaction through
571 our focus on resistance displayed by bystanders rather than patients. Our findings consolidate
572 Landmark et al.'s (2015) analysis of the negotiation of epistemic and deontic rights in
573 secondary care consultations. More generally, our study contributes to the recent research
574 investigating how speakers accomplish resistance and persuasion interactionally (Humă et al.,
575 2019; Sikveland and Stokoe, 2016).

576 **Appendix – Transcription conventions**

577	<u>Symbol</u>	<u>Definition</u>
578	→	target line referred to in the text
579	(.)	micro pause
580	(..)	short/medium pause

581	(...)	longer pause
582	:	lengthening
583	=	latching
584	[]	overlap with following turn
585	[]	overlap with previous turn
586	↑	pitch upstep
587	↓	pitch downstep
588	<<l>>	lower register level
589	<<h>>	higher register level
590	<<exp>>	expanded register
591	<<f>>	faster tempo
592	.	unit-final falling contour
593	?	unit-final rising contour
594	,	unit-final contour slightly rising or falling
595	-	unit-final level contour or mid-unit truncated contour
596	.h	in-breath
597	h	out-breath
598	ʔ	glottal stop
599	WORD	louder volume, shouting
600	°word°	lower volume, whispered segment
601	%word%	creaky segment
602	#word#	breathy
603	@word@	smiling or laughing voice
604	((LAUGHS))	non-linguistic sound or anonymised content

606 **References**

- 607 Antaki, C., Kent, A., 2015. Offering alternatives as a way of issuing directives to children:
608 Putting the worse option last. *Journal of Pragmatics* 78, 25–38.
609 <https://doi.org/10.1016/j.pragma.2015.01.004>
- 610 Antaki, C., Kent, A., 2012. Telling people what to do (and, sometimes, why): Contingency,
611 entitlement and explanation in staff requests to adults with intellectual impairments.
612 *Journal of Pragmatics* 44, 876–889. <https://doi.org/10.1016/j.pragma.2012.03.014>
- 613 Austin, J.L., 1962. *How to Do Things with Words*. Oxford University Press, New York.
- 614 Bailey, P., Ahern, T., Finn, J., 2018. Out-of-hospital Cardiac Arrest Report 2017. St John WA,
615 Belmont, Western Australia.
- 616 Bohm, K., Vaillancourt, C., Charette, M.L., Dunford, J., Castrén, M., 2011. In patients with out-
617 of-hospital cardiac arrest, does the provision of dispatch cardiopulmonary
618 resuscitation instructions as opposed to no instructions improve outcome: A
619 systematic review of the literature. *Resuscitation* 82, 1490–1495.
620 <https://doi.org/10.1016/j.resuscitation.2011.09.004>
- 621 Craven, A., Potter, J., 2010. Directives: Entitlement and contingency in action. *Discourse*
622 *Studies* 12, 419–442. <https://doi.org/10.1177/1461445610370126>
- 623 Curl, T.S., Drew, P., 2008. Contingency and Action: A Comparison of Two Forms of Requesting.
624 *Research on Language and Social Interaction* 41, 129–153.
625 <https://doi.org/10.1080/08351810802028613>
- 626 Drake, V., 2015. Indexing Uncertainty: The Case of Turn-Final Or. *Research on Language and*
627 *Social Interaction* 48, 301–318. <https://doi.org/10.1080/08351813.2015.1058606>
- 628 Drew, P., Couper-Kuhlen, E. (Eds.), 2014. *Requesting in Social Interaction*. John Benjamins,
629 Amsterdam; Philadelphia.
- 630 Enfield, N., Sidnell, J., 2017. On the concept of action in the study of interaction. *Discourse*
631 *Studies* 19, 515–535. <https://doi.org/10.1177/1461445617730235>
- 632 Gräsner, J.-T., Lefering, R., Koster, R.W., Masterson, S., Böttiger, B.W., Herlitz, J., Wnent, J.,
633 Tjelmeland, I.B.M., Ortiz, F.R., Maurer, H., Baubin, M., Mols, P., Hadžibegović, I.,
634 Ioannides, M., Škulec, R., Wissenberg, M., Salo, A., Hubert, H., Nikolaou, N.I., Lóczi, G.,
635 Svavarsdóttir, H., Semeraro, F., Wright, P.J., Pijls, R., Cebula, G., Correia, V.G.,
636 Cimpoesu, D., Raffay, V., Trenkler, S., Markota, A., Strömsöe, A., Maier, M., de
637 Longueville, D., Preseau, T., Biarent, D., Melot, C., Mpotos, N., Monsieurs, K., Van de
638 Voorde, P., Vanhove, M., Lievens, P., Faniel, M., Keleuva, S., Lazarevic, M., Ujevic, R.M.,
639 Devcic, M., Bardak, B., Barisic, F., Anticevic, S.H., Georgiou, M., Truhlál, A., Knor, J.,
640 Smržová, E., Sviták, R., Šín, R., Mokrejš, P., Lippert, F.K., Hallikainen, J., Hoikka, M.,
641 Iriola, T., Jama, T., Jäntti, H., Jokisalo, R., Jousi, M., Kirves, H., Kuisma, M., Laine, J.,
642 Länkimäki, S., Loikas, P., Lund, V., Määttä, T., Nal, H., Niemelä, H., Portaankorva, P.,
643 Pylkkänen, M., Sainio, M., Setälä, P., Tervo, J., Väyrynen, T., Jama, T., Murgue, D.,
644 Champenois, A., Fournier, M., Meyran, D., Tabary, R., Avondo, A., Gelin, G., Simonnet,
645 B., Joly, M., Megy-Michoux, I., Paringaux, X., Duffait, Y., Vial, M., Segard, J., Narcisse,
646 S., Hamban, D., Hennache, J., Thiriez, S., Doukhan, M., Vanderstraeten, C., Morel, J.-
647 C., Majour, G., Michenet, C., Tritsch, L., Dubesset, M., Peguet, O., Pinero, D.,
648 Guillaumee, F., Fuster, P., Ciacala, J.-F., Jardel, B., Letarnec, J.-Y., Goes, F., Gosset, P.,

649 Vergne, M., Bar, C., Branche, F., Prineau, S., Lagadec, S., Cornaglia, C., Ursat, C.,
650 Bertrand, P., Agostinucci, J.-M., Nadiras, P., de Linares, G.G., Jacob, L., Revaux, F.,
651 Pernot, T., Roudiak, N., Ricard-Hibon, A., Villain-Coquet, L., Beckers, S., Hanff, T.,
652 Strickmann, B., Wiegand, N., Wilke, P., Sues, H., Bogatzki, S., Baumeier, W., Pohl, K.,
653 Werner, B., Fischer, H., Zeng, T., Popp, E., Günther, A., Hochberg, A., Lechleuthner, A.,
654 Schewe, J.-C., Lemke, H., Wranze-Bielefeld, E., Bohn, A., Roessler, M., Naujoks, F.,
655 Sensen, F., Esser, T., Fischer, M., Messelken, M., Rose, C., Schlüter, G., Lotz, W.,
656 Corzilius, M., Muth, C.-M., Diepenseifen, C., Tauchmann, B., Birkholz, T., Flemming, A.,
657 Herrmann, S., Kreimeier, U., Kill, C., Marx, F., Schröder, R., Lenz, W., Botini, G.,
658 Grigorios, B., Giannakoudakis, N., Zervopoulos, M., Papangelis, D., Petropoulou-
659 Papanastasiou, S., Liaskos, T., Papanikolaou, S., Karabinis, A., Zentay, A., ýorsteinsson,
660 H., Gilsdóttir, A., Birgisson, S.A., Guðmundsson, F.F., Hreiðarsson, H., ýrnason, B.,
661 Hermannsson, H., Björnsson, G., Friðriksson, B. ýór, Baldursson, G., Höskuldsson,
662 ýrmann, Valgarðsdóttir, J., ýsmundardóttir, M., Guðmundsson, G., Kristjánsson, H.,
663 ýórarinsson, E.R., Guðlaugsson, J., Skarphéðinsson, S., Peratoner, A., Santarelli, A.,
664 Sabetta, C., Gordini, G., Sesana, G., Giudici, R., Savastano, S., Pellis, T., Beissel, J., Uhrig,
665 J., Manderscheid, T., Klop, M., Stammel, P., Koch, M., Welter, P., Schuman, R., Bruins,
666 W., Amin, H., Braa, N., Bratland, S., Buanes, E.A., Draegni, T., Johnsen, K.R., Mathisen,
667 W.T., Oedegaarden, T., Oppedal, M., Reksten, A.S.-N., Roedsand, M.E., Steen-Hansen,
668 J.E., Dyrda, M., Frejlich, A., MaciŁg, S., Osadnik, S., Weryk, I., Freitas, C., Cruz, P.,
669 Caldeira, C., Barros, J., Vale, L., Brazão, A., Jardim, N., Rocha, F., Duarte, R., Fernandes,
670 N., Ramos, P., Jardim, M., Reis, M., Ribeiro, R., Zenha, S., Fernandes, J., Francisco, J.,
671 Assis, D., Abreu, F., Freitas, D., Ribeiro, L., Azevedo, P., Calafatinho, D., Jardim, R.,
672 Pestana, A., Faria, R., Oprita, B., Grasu, A., Nedelea, P., Sovar, S., Agapi, F., KliŁkoviŁ,
673 A., Lazil, A., NikoliŁ, B., Zivanovic, B., MartinoviŁ, B., MilenkoviŁ, D., Damir, H.,
674 Koprivica, J., Jakšil, K.H., Pajor, M., MiliŁ, S., VidoviŁ, M., Glamoclija, R.P., Andjelic, S.,
675 Sladjana, V., Babil, Z., Fišer, Z., Androvic, P., Bajerovska, L., Chabron, M., Dobias, V.,
676 Havlikova, E., Horanova, B., Kratochvilova, R., Kubova, D., Murgas, J., Patras, J., Simak,
677 L., Snarskij, V., Zaviaticova, Z., Zuffova, M., Roig, F.E., Santos, L.S., Sucunza, A.E.,
678 Cordero Torres, J.A., Muñoz, G.I., del Valle, M.M., Rozalen, I.C., Sánchez, E.M.,
679 Berlanga, M.V.R.C., Olalde, K.I., Ruiz Azpiazu, J.I., García-Ochoa, M.J., López-Navarro,
680 R.Z., Adsuar Quesada, J.M., Cortés Ramas, J.A., Mellado Vergel, F.J., López Messa, J.B.,
681 del Valle, P.F., Anselmi, L., Benvenuti, B.C., Batey, N., Ambulance, Y., Booth, S., Bucher,
682 P., Deakin, C.D., Duckett, J., Ji, C., Loughlin, N., Lumley-Holmes, J., Lynde, J., Mersom,
683 F., Ramsey, C., Robinson, C., Spaight, R., Dosanjh, S., Whittington, A., Loughlin, N.,
684 Lumley-Holmes, J., Lynde, J., Mersom, F., Ramsey, C., Robinson, C., Spaight, R.,
685 Dosanjh, S., Viridi, G., Whittington, A., 2016. EuReCa ONE - 27 Nations, ONE Europe,
686 ONE Registry: A prospective one month analysis of out-of-hospital cardiac arrest
687 outcomes in 27 countries in Europe. *Resuscitation* 105, 188–195.
688 <https://doi.org/10.1016/j.resuscitation.2016.06.004>
689 Grimen, H., 2009. Power, Trust, and Risk: Some Reflections on an Absent Issue. *Medical*
690 *Anthropology Quarterly* 23, 16–33. [https://doi.org/10.1111/j.1548-](https://doi.org/10.1111/j.1548-1387.2009.01035.x)
691 [1387.2009.01035.x](https://doi.org/10.1111/j.1548-1387.2009.01035.x)
692 Haugh, M., 2017. Prompting offers of assistance in interaction. *Pragmatics and Society* 8, 183–
693 207. <https://doi.org/10.1075/ps.8.2.02hau>

- 694 Heinemann, T., 2006. 'Will you or can't you?': Displaying entitlement in interrogative
695 requests. *Journal of Pragmatics* 38, 1081–1104.
696 <https://doi.org/10.1016/j.pragma.2005.09.013>
- 697 Heritage, J., 2015. Well-prefaced turns in English conversation: A conversation analytic
698 perspective. *Journal of Pragmatics* 88, 88–104.
- 699 Heritage, J., 2013a. Epistemics in conversation, in: Sidnell, J., Stivers, T. (Eds.), *The Handbook*
700 *of Conversation Analysis*. Wiley-Blackwell, Chichester, pp. 370–394.
- 701 Heritage, J., 2013b. Action formation and its epistemic (and other) backgrounds. *Discourse*
702 *Studies* 15, 551–578. <https://doi.org/10.1177/1461445613501449>
- 703 Heritage, J., 2012. Epistemics in Action: Action Formation and Territories of Knowledge.
704 *Research on Language & Social Interaction* 45, 1–29.
705 <https://doi.org/10.1080/08351813.2012.646684>
- 706 Heritage, J., 2005. Conversation analysis and institutional talk, in: Fitch, K.L., Sanders, R.E.
707 (Eds.), *Handbook of Language and Social Interaction*. Lawrence Erlbaum Associates,
708 Mahwah, NJ, pp. 103–147.
- 709 Heritage, J., 1988. Explanations as Accounts: A Conversation Analytic Perspective, in: Antaki,
710 C. (Ed.), *Analyzing Lay Explanation: A Case Book of Methods*. Sage, London, pp. 127–
711 144.
- 712 Heritage, J., 1984. *Garfinkel and ethnomethodology*. Polity Press, Cambridge; New York.
- 713 Heritage, J., Drew, P. (Eds.), 1992. *Talk at work. Interaction in institutional settings*. Cambridge
714 University Press, Cambridge.
- 715 Heritage, J., Sefi, S., 1992. Dilemmas of advice: aspects of the delivery and reception of advice
716 in interactions between health visitors and first-time mothers, in: Drew, P., Heritage,
717 J. (Eds.), *Talk at Work. Interaction in Institutional Settings*. Cambridge University Press,
718 Cambridge, pp. 359–417.
- 719 Ho, A.F.W., Sim, Z.J., Shahidah, N., Hao, Y., Ng, Y.Y., Leong, B.S., Zarinah, S., Teo, W.K., Goh,
720 G.S.Y., Jaafar, H., others, 2016. Barriers to dispatcher-assisted cardiopulmonary
721 resuscitation in Singapore. *Resuscitation* 105, 149–155.
722 <https://doi.org/10.1016/j.resuscitation.2016.05.006>
- 723 Humă, B., Stokoe, E., Sikveland, R.O., 2019. Persuasive Conduct: Alignment and Resistance in
724 Prospecting “Cold” Calls. *Journal of Language and Social Psychology* 38, 33–60.
- 725 Jefferson, G., 2004. Glossary of Transcript Symbols with an Introduction, in: Lerner, G.H. (Ed.),
726 *Conversation Analysis: Studies from the First Generation*. John Benjamins Publishing,
727 Amsterdam; Philadelphia, pp. 13–31.
- 728 Kärkkäinen, E., 2003. Epistemic stance in English conversation: A description of its
729 interactional functions, with a focus on I think. John Benjamins, Amsterdam;
730 Philadelphia.
- 731 Kendrick, K.H., Drew, P., 2016. Recruitment: Offers, Requests, and the Organization of
732 Assistance in Interaction. *Research on Language and Social Interaction* 49, 1–19.
733 <https://doi.org/10.1080/08351813.2016.1126436>
- 734 Kendrick, K.H., Drew, P., 2014. The putative preference for offers over requests, in: Drew, P.,
735 Couper-Kuhlen, E. (Eds.), *Requesting in Social Interaction*. John Benjamins,
736 Amsterdam; Philadelphia, pp. 87–113.
- 737 Kendrick, K.H., Torreira, F., 2015. The timing and construction of preference: A quantitative
738 study. *Discourse Processes* 52, 255–289.
739 <https://doi.org/10.1080/0163853X.2014.955997>

- 740 Kent, A., 2012. Compliance, resistance and incipient compliance when responding to
741 directives. *Discourse Studies* 14, 711–730.
742 <https://doi.org/10.1177/1461445612457485>
- 743 Laforest, M., Rioux-Turcotte, J., 2016. La personne déclarée morte par l'appelant au service
744 téléphonique d'urgence : une source de désalignement interactionnel. Reporting
745 Death to 9-1-1 Emergency Service: A Source of Interactional Misalignment.
746 *Communiquer* 18, 65–83. <https://doi.org/10.4000/communiquer.2046>
- 747 Landmark, A.M.D., Gulbrandsen, P., Svennevig, J., 2015. Whose decision? Negotiating
748 epistemic and deontic rights in medical treatment decisions. *Journal of Pragmatics* 78,
749 54–69. <https://doi.org/10.1016/j.pragma.2014.11.007>
- 750 Levinson, S.C., 2013. Action Formation and Ascription, in: Sidnell, J., Stivers, T. (Eds.), *The*
751 *Handbook of Conversation Analysis*. Wiley-Blackwell, Chichester, pp. 103–130.
- 752 Linderoth, G., Hallas, P., Lippert, F.K., Wibrandt, I., Loumann, S., Møller, T.P., Østergaard, D.,
753 2015. Challenges in out-of-hospital cardiac arrest – A study combining closed-circuit
754 television (CCTV) and medical emergency calls. *Resuscitation* 96, 317–322.
755 <https://doi.org/10.1016/j.resuscitation.2015.06.003>
- 756 Lindström, A., Weatherall, A., 2015. Orientations to epistemics and deontics in treatment
757 discussions. *Journal of Pragmatics* 78, 39–53.
758 <https://doi.org/10.1016/j.pragma.2015.01.005>
- 759 Lindström, J., Maschler, Y., Pekarek Doehler, S., 2016. A cross-linguistic perspective on
760 grammar and negative epistemics in talk-in-interaction. *Journal of Pragmatics* 106,
761 72–79. <https://doi.org/10.1016/j.pragma.2016.09.003>
- 762 Mozaffarian, D., Benjamin, E.J., Go, A.S., Arnett, D.K., Blaha, Cushman, M., Das, S.R., de
763 Ferranti, S., Després, J.-P., Heather J., Howard, V.J., Huffman Mark D., Isasi Carmen R.,
764 Jiménez Monik C., Judd Suzanne E., Kissela Brett M., Lichtman Judith H., Lisabeth
765 Lynda D., Liu Simin, Mackey Rachel H., Magid David J., McGuire Darren K., Mohler
766 Emile R., Moy Claudia S., Muntner Paul, Mussolino Michael E., Nasir Khurram, Neumar
767 Robert W., Nichol Graham, Palaniappan Latha, Pandey Dilip K., Reeves Mathew J.,
768 Rodriguez Carlos J., Rosamond Wayne, Sorlie Paul D., Stein Joel, Towfighi Amytis,
769 Turan Tanya N., Virani Salim S., Woo Daniel, Yeh Robert W., Turner, M.B., 2016. Heart
770 Disease and Stroke Statistics—2016 Update. *Circulation* 133, e38–e360.
771 <https://doi.org/10.1161/CIR.0000000000000350>
- 772 Nuño, T., Bobrow, B.J., Rogge-Miller, K.A., Panczyk, M., Mullins, T., Tormala, W., Estrada, A.,
773 Keim, S.M., Spaite, D.W., 2017. Disparities in telephone CPR access and timing during
774 out-of-hospital cardiac arrest. *Resuscitation* 115, 11–16.
775 <https://doi.org/10.1016/j.resuscitation.2017.03.028>
- 776 Pomerantz, A., Heritage, J., 2013. Preference, in: Sidnell, J., Stivers, T. (Eds.), *The Handbook*
777 *of Conversation Analysis*. Wiley-Blackwell, Chichester, pp. 210–228.
- 778 Raymond, G., 2003. Grammar and social organization: Yes/no interrogatives and the structure
779 of responding. *American Sociological Review* 68, 939–967.
- 780 Riou, M., Ball, S., Whiteside, A., Bray, J., Perkins, G.D., Smith, K., O'Halloran, K.L., Fatovich,
781 D.M., Inoue, M., Bailey, P., Cameron, P., Brink, D., Finn, J., 2018. 'We're going to do
782 CPR': a linguistic study of the words used to initiate dispatcher-assisted CPR and their
783 association with caller agreement. *Resuscitation* 133, 95–100.
784 <https://doi.org/10.1016/j.resuscitation.2018.10.011>
- 785 Riva, G., Ringh, M., Jonsson, M., Svensson, L., Herlitz, Claesson Andreas, Djärv Therese,
786 Nordberg Per, Forsberg Sune, Rubertsson Sten, Nord Anette, Rosenqvist Mårten,

787 Hollenberg, J., 2019. Survival in Out-of-Hospital Cardiac Arrest After Standard
788 Cardiopulmonary Resuscitation or Chest Compressions Only Before Arrival of
789 Emergency Medical Services. *Circulation* 139, 2600–2609.
790 <https://doi.org/10.1161/CIRCULATIONAHA.118.038179>

791 Robinson, J.D., 2016. Accountability in Social Interaction, in: Robinson, J.D. (Ed.),
792 Accountability in Social Interaction. Oxford University Press, New York, pp. 1–44.

793 Rossi, G., 2014. When do people not use language to make requests?, in: Drew, P., Couper-
794 Kuhlen, E. (Eds.), Requesting in Social Interaction. John Benjamins, Amsterdam;
795 Philadelphia, pp. 303–334.

796 Schegloff, E.A., 2007. Sequence organization in interaction. Volume 1, a primer in
797 conversation analysis I. Cambridge University Press, Cambridge.

798 Schegloff, E.A., Lerner, G.H., 2009. Beginning to Respond: Well-Prefaced Responses to Wh-
799 Questions. *Research on Language and Social Interaction* 42, 91–115.

800 Scott, M.B., Lyman, S.M., 1968. Accounts. *American sociological review* 33, 46–62.

801 Searle, J.R., 1969. Speech acts: An essay in the philosophy of language. Cambridge University
802 Press, Cambridge.

803 Selting, M., 2000. The construction of units in conversational talk. *Language in Society* 29,
804 477–517.

805 Sikveland, R., Stokoe, E., 2016. Dealing with Resistance in Initial Intake and Inquiry Calls to
806 Mediation: The Power of “Willing.” *Conflict Resolution Quarterly* 33, 235–254.
807 <https://doi.org/10.1002/crq.21157>

808 Stivers, T., 2005. Parent Resistance to Physicians’ Treatment Recommendations: One
809 Resource for Initiating a Negotiation of the Treatment Decision. *Health*
810 *Communication* 18, 41–74. https://doi.org/10.1207/s15327027hc1801_3

811 Stivers, T., Hayashi, M., 2010. Transformative answers: One way to resist a question’s
812 constraints. *Language in Society* 39, 1–25.

813 Szczepek Reed, B., 2011. Analysing conversation: an introduction to prosody. Palgrave
814 Macmillan, Basingstoke; New York.

815 Valenzuela, T.D., Roe, D.J., Cretin, S., Spaite, D.W., Larsen, M.P., 1997. Estimating
816 Effectiveness of Cardiac Arrest Interventions. A Logistic Regression Survival Model.
817 *Circulation* 96, 3308–3313. <https://doi.org/10.1161/01.CIR.96.10.3308>

818 Wakin, M.A., Zimmerman, D.H., 2010. Reduction and Specialization in Emergency and
819 Directory Assistance Calls. *Research on Language and Social Interaction* 32, 409–437.
820 https://doi.org/10.1207/S15327973rls3204_4

821 Weatherall, A., 2011. I don’t know as a Prepositioned Epistemic Hedge. *Research on Language*
822 *and Social Interaction* 44, 317–337. <https://doi.org/10.1080/08351813.2011.619310>

823 Whalen, M.R., Zimmerman, D.H., 1987. Sequential and Institutional Contexts in Calls for Help.
824 *Social Psychology Quarterly* 50, 172–185. <https://doi.org/10.2307/2786750>

825 Zimmerman, D.H., 1992. The interactional organization of calls for emergency assistance, in:
826 Drew, P., Heritage, J. (Eds.), *Talk at Work. Interaction in Institutional Settings*.
827 Cambridge University Press, Cambridge, pp. 418–469.

828

Article title: Caller resistance to perform cardio-pulmonary resuscitation in emergency calls for cardiac arrest

Table 1: Caller turn design when initially declining CPR, by caller final response

	Caller persuaded	Caller not persuaded	Total
Deontic account (e.g. "I can't do it")	10	10	20
Epistemic account (e.g. "I think it's too late")	7	21	28
• Call-taker strategy #1: providing more context on CPR (e.g. "this is to help him in the meantime")	4	3	7
• Call-taker strategy #2: aligning with the caller's deontic and epistemic rights (e.g. "it's up to you")	2	10	12
• Neither strategy #1 nor strategy #2	3	18	21
No account in caller's turn	7	10	17
TOTAL	24	41	65