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Improving Instructor Quality using the Conversation Analytic Role-play Method (CARM)

William A. Tuccio Ph.D.
Embry-Riddle Aeronautical University - Daytona Beach, bill@tuccio.com

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Dr. Bill Tuccio
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(Archive Version)

Disclaimer

This study is an independent effort of the researchers and is not endorsed or associated with the National Transportation Safety Board, the federal government, or the governments or aviation and safety regulators of the countries of collaborating researchers.

All audio/video content herein was voluntarily submitted for the purpose of this study.

Acknowledgements

Thanks to Maurice Nevile (Australia, Denmark) for his collaboration and expertise in Conversation Analysis.

Thanks to Elizabeth Stokoe and Rein Sikveland for teaching and sharing the Conversation Analytic Role-play Method (CARM) (Stokoe 2011; 2014), commenting on seminar slides, and providing supporting slide assets.

CARM
Conversation
Analytic Role-play
Method

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And this work would not be possible without the many instructors and students who shared recordings of their flights.

Stokoe, E. (2011). Simulated interaction and communication skills training: The 'Conversation-analytic role-play method'. In C. Antaki (Ed.), *Applied conversation analysis: Intervention and change in institutional talk* (pp. 119-139). New York, NY: Palgrave Macmillan. Stokoe, E. (2014). The conversation analytic role-play method (CARM): A method for training communication skills as an alternative to simulated role-play. *Research on Language and Social Interaction, 47*(3), 255-265. doi:10.1080/08351813.2014.925663

Study Origins
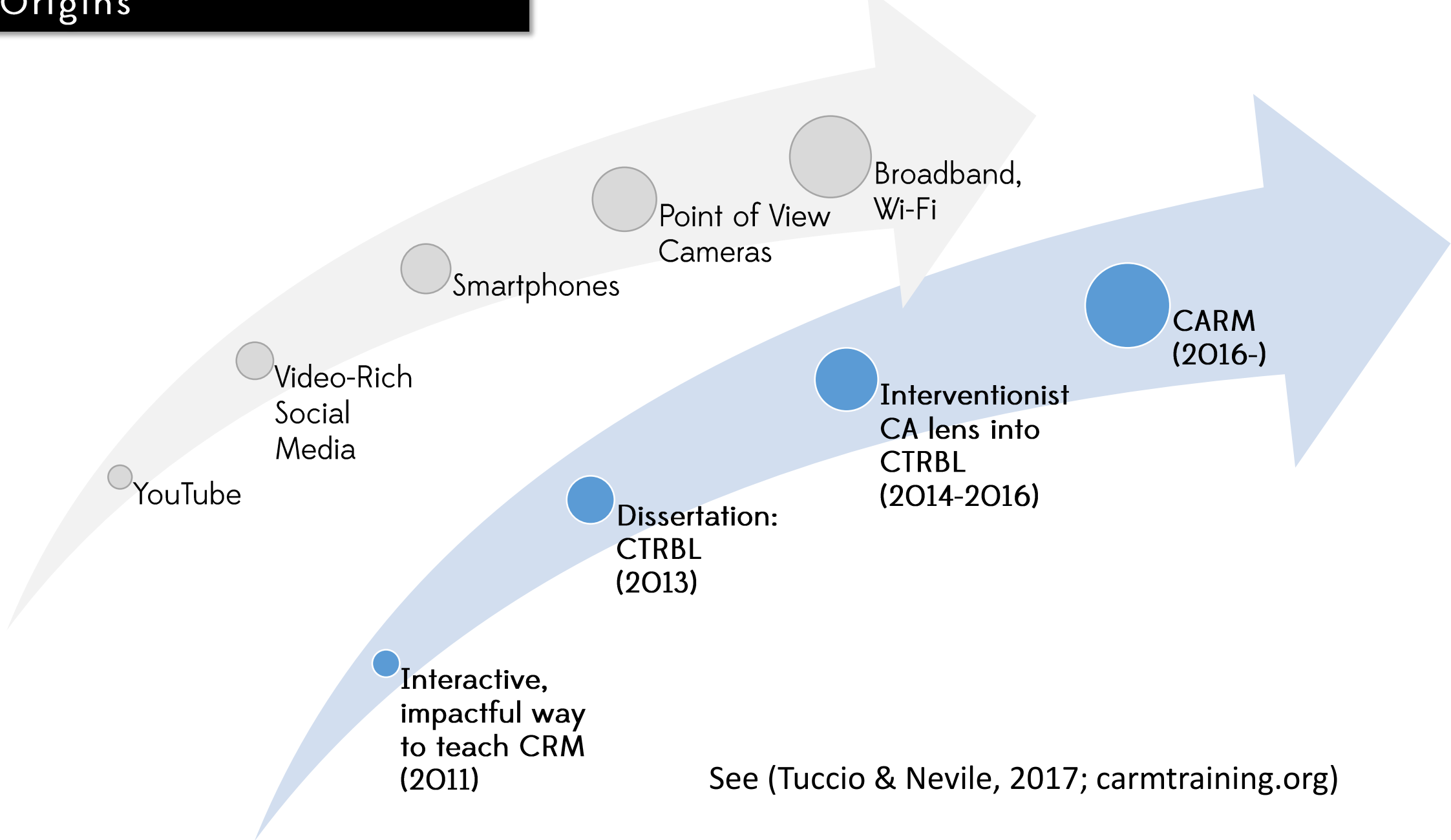
YouTube

Video-Rich Social Media

Smartphones

Point of View Cameras

Broadband, Wi-Fi

Interactive, impactful way to teach CRM (2011)

Dissertation: CTRBL (2013)

Interventionist CA lens into CTRBL (2014-2016)

CARM (2016-)

See (Tuccio & Nevile, 2017; carmtraining.org)

See (Tuccio & Nevile, 2017; carmtraining.org)
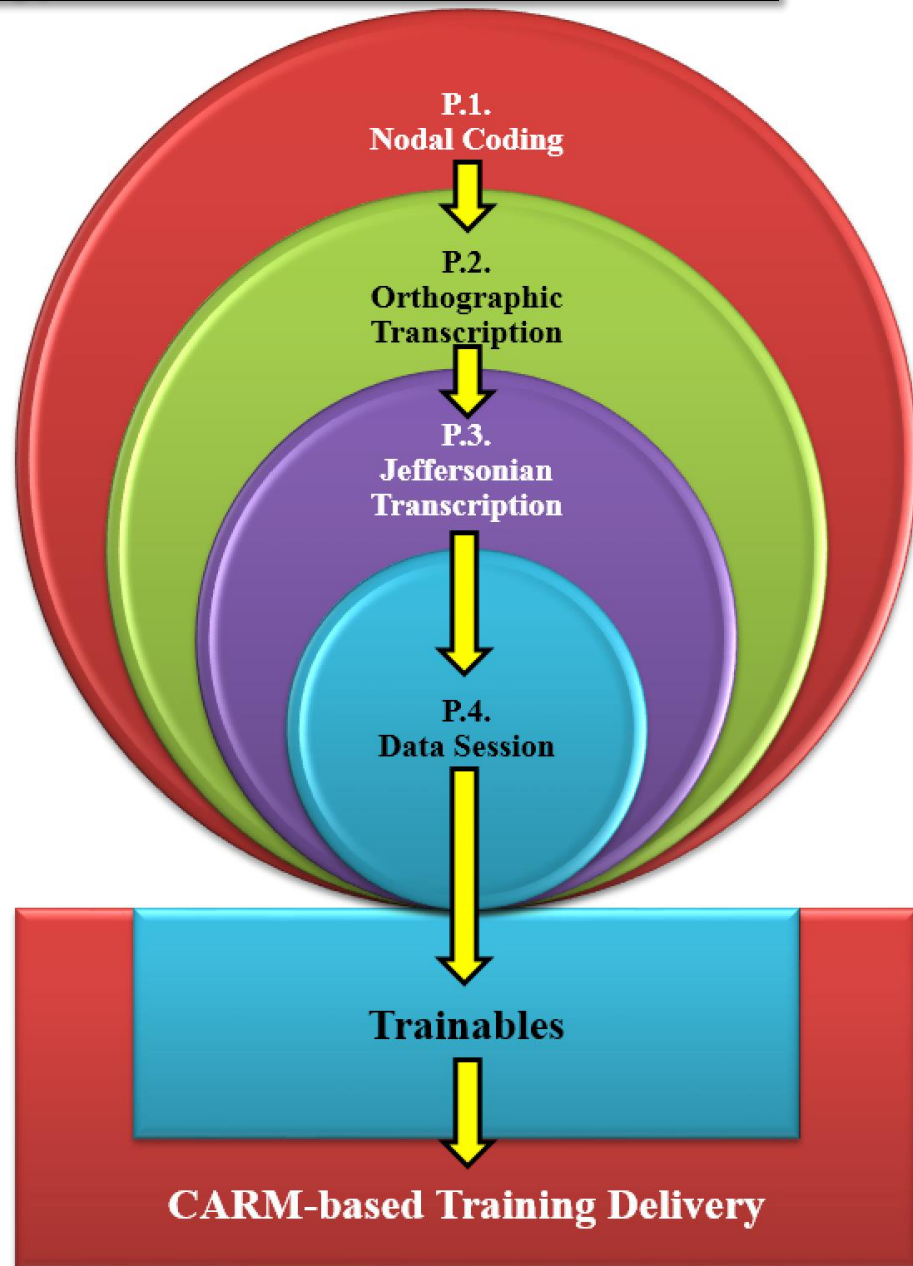
See (Tuccio & Nevile, 2017; carmtraining.org)

What is Conversation Analysis?

"Talk-in-Interaction"

- Turn taking
- Action formation
- Sequence organization
- Troubles
- Word selection
- Structural organization

(Schegloff, 2007, p. 97)

1 Bet: F_b was last night the first time you met Missiz Kelly?
2   (1.0)
3 Mar: F_{ins} met whom?
4 Bet: S_{ins} Missiz Kelly.
5 Mar: S_b Yes.

Repair

(Schegloff, 2007)
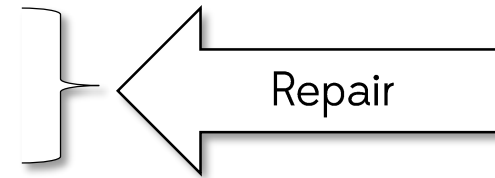
Features in a CA transcript in action: "He's comin' pretty close"

- Instructor teaching stall protections in Cirrus Autopilot
- Here introduced to show CA transcript details...
  - Silence
  - Overlap
  - Cut-offs
  - Repeats
  - Emphasis
  - Pitch

18   *INS: anytime we level off or start a   [climb or (.) descent   ]
19. *STU: [he's he's comin' pretty close to us]
20   *SIL: (0.9)
21   *AUT: traffic (.) two o'clock (0.2) high (0.2) one mile.
22   *SIL: (1.7)
23   *INS: as: long as he doesn't turn towards us [we're] okay.
24   *STU: [yeahp]
25. *SIL: (3.6)
26   *INS: uh::m (1.0) anytime we level off↗
27   *SIL: (0.9)
28   *INS: or start a climb or start a descent↗
29   *SIL: (0.7)

```
30   *INS:     there's probably a power adjus[tment involved.]
31   *STU:                              [alright but we] ah:- right now we  hav:e a
32             Δsituation where we're losingΔ (.) the- (.) (ah) airspeed.
33   *SIL:     (0.2)
34   *INS:     why is that↗ that's [because we] lev↗eled off::
35.  *STU:                         [because we-]
36   *SIL:     (.)
37   *INS:     [(we didn't)]
38   *STU:     [we levelled off and we have to apply power.
39   *INS:     ex::↗actly.
40   *SIL:     (1.9)
41   *STU:     an::d [I'm gonna-]
42   *INS:           [hold on] one second though↗ but just'a for a reminder take  that power to idle.
43.  *SIL:     (3.6)
44   *INS:     this airplane will prevent you from stalling.
45   *SIL:     (2.4)
```

```
..
48   *INS:   so:::
49   *STU:   [(it's)-]
50   *AUT:   [air]speed.
51   *INS:   hear that?
52   *SIL:   (0.2)
53   *STU:   yep.
54   *SIL:   (0.8)
```

```
55   *INS:     when you hear that airspeed thing≈
56   *STU:     ≈that- it- [it- it's gettin' too slow.]
57   *INS:              [(  )        warning you] (0.3) a'yeah advance power↘ hold on↗
58   *SIL:     (0.2)
59   *STU:     awp.
60   *SIL:     (0.7)
61   *INS:     if you hear the (0.3) "stall" (.) it's not actually
               going to let you  [stall-] ≈
62   *AUT:                     [((sound of high pitch tone, similar to stall warning))]
63   *AUT:     ((tone continues)) ≈ stall.
64   *AUT:     ((tone continues))
65   *AUT:     ((tone continues)) stall≈ [((tone comes to end))]
66   *INS:                              ≈ [   put the power in] smoothly
67   *SIL:     (0.2)
```

68   *AUT: ((tone begins again)) stall.
69   *AUT: [((tone continues))]
70   *INS: [bring it right up]
71   *AUT: ((tone continues)) stall.
72   *AUT: [((tone comes to end))]
73   *INS: [all]
74   *AUT: airspeed.
75   *AUT: ((tone begins again)) sta-
76   *SIL: (2.1)
77   *INS: and the autopilot will [get you out of it] just≈
78   *AUT: [airspeed   ]
79   *INS: ≈you gotta bring the power up↗ when you hear that airspeed and'stall bring the power up↗
80   *SIL: (0.9)
81   *INS: till you recovered (0.4) and then set it to something more (0.9) reasonable like in our case maybe:::↗
82   *INS: fifty [percent]
83   *STU: [seven]
84   *SIL: (1.2)
85   *STU: °kay°

What is Interventionist Conversation Analysis?

- Antaki (2011) *Applied Conversation Analysis: Intervention and Change in Institutional Talk*
  - Existing interactional, recurrent problem
  - Likely related to talk-in-interaction
  - Collaborative solution: institution and CA'er
- Relations and examples
  - Nudge theory (Thaler & Sunstein, 2008; Stokoe, 2015; Halpern, 2015)
  - "Some vs. Any" in medical consultations (Heritage & Robinson, 2011)
  - Dealing with aphasia (Wilkinson, 2011)

Terminology, Timing, & Busy Fingers: "Positive Sensing"

- Scenario:
  - IFR Stage 1 Check
  - Intercepting a Radial

- How might you assign this task, *in this context, in this stage check*?

- How important is standard terminology? How valid is an assessment when non-standard terminology is used?

- How do we balance helping student chores/tasks versus changing things/states and cause confusion?

```
1   *INS:   alright let's pr↑ocee::d (1.0) heading three six zero::: (1.4)  a::nd
            interce:::pt (1.3)
2   (1.3)
3   *INS:   the:: one ze::ro ze::ro degree radial outbound
            from the Crestview  VOR.
4.  (1.6)
5   *STU:   okay.
6   (3.3)
7   *INS:   so we've i- (.) ideed an (0.6) a::n ah:: (0.7) we're
8           monitoring  because we've got the nav flags right?
9   *STU:   right.
10  (1.0)
11  *STU:   ( [  )
12  *INS:   [now we use (0.3) both of these to do that (.) one zero zero:.
13  (2.3)
14  *INS:   we're not doing >an ILS so we don't care about the glideslope.<
15  (2.0)
16  *INS:   so we're just gonna go up he::re heading three six zero:::
17  (1.1)
18  *INS:   til we get within about a half a mi::le an (.) an we're going  to turn
            onto the (0.7) one zero zero degree outbound.
19  (3.1)
20  *INS:   one zero zero degree radial outbound
```

21. *INS: no:w are we gonna get (.) positive sensing, (.) on the CDI?
22 (1.1)
23 *STU: ((clears throat))
24 *STU: positive sensing?
25 (0.5)
26 *INS: yeah.
27. (1.0)
28 *INS: meaning that (0.8) that (0.2) if we have to correct le:ft (0.3)
            it'll correct left (.) or
            if we have to correct w- right (.) it'll correct right.
29 (0.5)
30 *INS: but (0.8) but are we gonna get positive sensing or reverse sensing?
31 (0.9)
32 *STU: I don't know.
33 (0.4)
34 *STU: honestly I don't know.
35 (1.1)
36 *INS: okay well

No Critique Needed:
## "You need to say Crestview VOR…"

- Scenario:
  - IFR training (approach phase)
  - Just departed, navigating to practice area
  - Desired "direct to" is a non-collocated VOR/Airport with same name

- How do we maintain our own hearing?

- What happens when we critique something that was right?

WHITING CLASS C

361
(256)
455
(270)
500
42
14
MUNSON
630
(420)
263°
42
SFC

122.2
122.45
255.4

CRESTVIEW
115.9 Ch 106 CEW
GAINESVILLE
(Pvt)
BLACKWATER
200 – 40
BAKOS
(Pvt)
SKYPARK
250 – 30
616
(Pvt)

DOTSON
251 – 21
EGLIN A
EAST
MOA
Milligan
512
(315)
391
462
(320)

EGLIN A
WEST MOA
24
IR57
IR59
IR21
fish
hatchery
580

HAROLD
NOLF
(NZX)
150
421
PRINCE (2R4)
82 *L-37
122.975 C
RP 18

H
R

YELLOW RIVER
150 – 25
18

(Pvt)
MC CUTCHAN
160 – 20
Yellow River
R-2915A
SFC-UNLTD
Bagdad

EGLIN
TEST SITE B6 (FL34)
1.20 – 50
14

SANTA ROSA NOLF (NGS)
150 – 45 361.1 C

NOLF (NFJ)
ATIS 290.55
*L-80

HURLBURT-(HRT)
CT - 126.5
ATIS 134.475 360.675
38 L 96

CTC PENSACOLA APP WITHIN
20 NM ON 119.0 OR 269.375

See NOTAMs/Supplement
for Class D eff hrs
FT WALTON BEACH (1J9)
22 – 21 122.7 C
358
26

EGLIN
B MOA
Blackman
IR57
51.8
(320)
582
(318)
IR30
IR31
VR1082
VR1083
VR1065

EGLIN B MOA excludes
CRESTVIEW, FL CLASS E (sfc)
Airspace below 1500' AGL
073°

SIKES (CEW)
ASOS 119.275
214 *L 80 122.95 C
Crestview
673
(47)
515
088°

See NOTAMs/Supplement
for Class E (sfc) eff hrs
40
05 AGL

(Pvt)
BREEZY KNOLL
235 – 21
Shoal
671
(410)
VR1084
614
(320)

TRIPLE B (Pvt)
210 – 18
660
(420)
488

571
514
478
460
566

315
(233)

CTC EGLIN APP ON 124.05
PRIOR TO ENTERING F.A. R-93 AREA

15
376
(225)
27
466
(216)
DUKE (EGI)
(EGLIN AF AUX NR 3)
CT - 133.
195 L 80
499
(346)
R-2918
SFC-UNLTD
09

FIELD 2
R-2917
SFC-5000
UC
405

EGLIN AFB/DESTIN-
FT WALTON BEACH
(VPS)
CT - 118.2
ATIS 134.625 273.5
84 L 120
Niceville

(Pvt)
RUCKEL
67 – 33
379
(303)
360
(300)
549

340
R
80
274

25
335
(300)
525
26
Valparaiso
WHITE POINT
CHOCTAWHATCHEE

1	*OTR:	((VOR [voice and static playing))]
2	*ATC:	[Aeroclub one three radar contact] (0.3) four miles northeast of::: (0.4) Eglin north corridor flight approved via field two.
3	*SIL:	(0.4)
4.	*STR:	.hh Aeroclub one three north (.) corridor via field two↗ anyway we can get direct Crestv- Crestview v-o-r?
5	*SIL:	(3.0)
6	*ATC:	Aeroclub one three approved as requested.
7	*SIL:	(0.7)
8	*STR:	Aeroclub one three direct Crestview v-o-r an:d-uh:: last request is altitude my discretion.
9	*SIL:	(0.3)
10	*INS:	you're [out of ( )]
11	*ATC:	[and Aeroclub one three approved as requested]
12	*SIL:	(.)
13	*STR:	I: appreciate Δit thanks altitude my discretionΔ AeroClub one three
14	*SIL:	(0.4)
15	*INS:	you got it anyway, you're five miles away
16	*SIL:	(0.8)
17	*STU:	just makin' sure
18	*SIL:	(0.2)
19	*INS:	yeap

20-36….((continues))…

37 *OTR: ≈[((VOR voice, static, ident continue & other-plane ATC))]≈

38. *INS: [yeah when you say Crestview you ju'need to make sure you
**   say Crestview v-o-r though.]**

39 *OTR: ≈((VOR voice, static, ident continue))≈
40 *OTR: ≈[((VOR voice, static, ident comes to end))]≈
41. *STU: [I   s a i d   i t   t h i s] time↗ didn't I?
42 *INS: I (.) don't (0.3) know you have to listen to the tape
43 *OTR: (0.5)
44 *STU: ha ha he ha ☺I he think I said v-o-r this time because
          yesterday I did say Crestview☺
45 *SIL: (4.9)
46 *STU: I can ask the controller see if she remembers?
47 *INS: ah:::: we'll play it [back↘ (0.3) ☺a'we'll find] out☺≈
48 *STU: [three t w o   sixty]
49 *INS: ≈☺in a minute when they ask you where the hell
          you're goin' (.) ha ha he ha ha heh ha☺
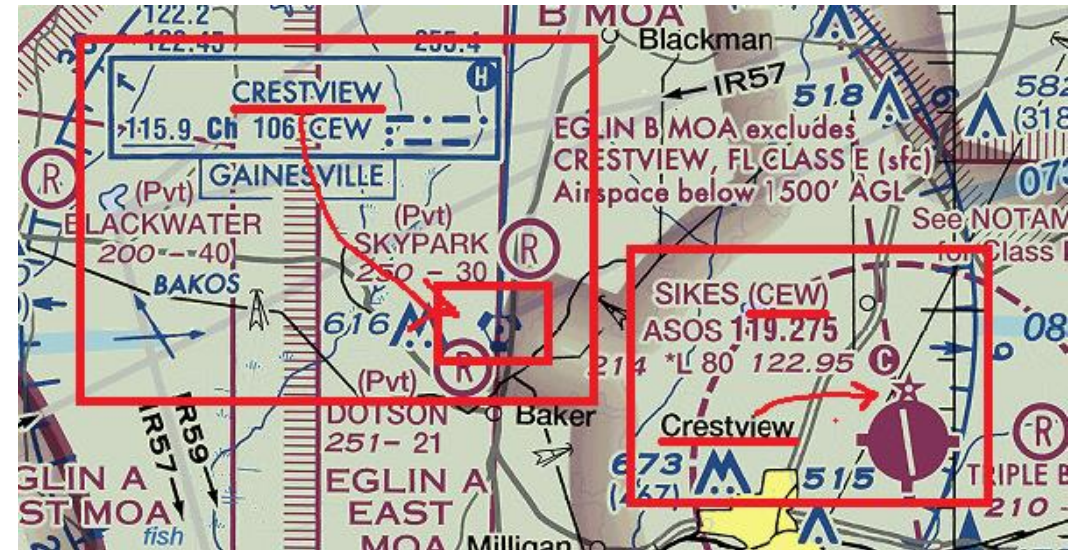
Role-Play

Contrived

versus

Authentic

CARM

Conversation
Analytic Role-play
Method

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Authentic Role-play:
"one six juliet established…"

- Scenario:
  - IFR training (approach phase)
  - Controller vectoring across the localizer
- How might this be simulated? (contrived)
- What really happens? (authentic)

AIM 5-4-3 (b)(1)(b)

After release to approach control, aircraft are vectored to the final approach course (ILS, MLS, VOR, ADF, etc.). Radar vectors and altitude or flight levels will be issued as required for spacing and separating aircraft. *Therefore, pilots must not deviate from the headings issued by approach control.* Aircraft will normally be informed when it is necessary to vector across the final approach course for spacing or other reasons. If approach course crossing is imminent and the pilot has not been informed that the aircraft will be vectored across the final approach course, <u>the pilot should query the controller.</u>

1	*STR:	-hh one six juliet are we going to have to expect a long wait for the i-l-s?
2	*SIL:	(0.6)
3	*ATC:	( ) one six juliet turn left heading <u>one seven zero</u>
4	*SIL:	(0.9)
5	*STR:	confirm turn ↑left
6	*SIL:	(0.2)
7	*ATC:	sorry about that right [one sev-seven zero]
8	*STU:	[hh- ((shakes head))]
9	*SIL:	(0.4)
10	*STR:	right to one seven zero for one six juliet thanks
11	*INS:	clear right

...((some time elapses))....

20   *INS: yeah you ↑comin ↑up ↑on ↑the localizer↑
21   *SIL: (1.7)
22   *ATC:((atc talks to [another plane]))
23   *INS: [I hope he don't have you ↑fly through it]
24.   *SIL: (4.0)
25   *INS: dah:: duh dat dah:::
26→   *STR:one six juliet's established
27.   *SIL: (1.1)
28   *ATC:∇one six juliet roger∇
29   *SIL: (0.9)
30   *STU: I tried
31   *SIL: (0.9)
32   *STU: we'll see
…((a few lines omitted))…

50 *INS: well your- you acknowledged your ↑established
                does that mean you can track it inbound↑
51 *SIL: (0.2)
52 *STU: eh:::
53 *SIL: (0.7)
54 *INS: or is that-- [(0.5)   or is] that a grey area↑
55 *STU: [it's kind'a like that]
56 *SIL: (0.3)
57 *STU: that's kind of a grey area
58 *SIL: (3.9)
59 *INS: he might'a took it as your inbound
...((a few lines omitted))...

75 *INR: ah::: (0.6) approach one six juliet
            you want us to track the
      ⟶   localizer inbound or maintain one seven zero↑
76. *SIL: (0.5)
77 *ATC: ( ) one six juliet affirm
78. *SIL: (0.9)
79 *INR: okay track the localizer↑ (0.2) one six juliet
80 *SIL: (6.2)
...((a few lines omitted))...

"...knowledge and practical reasoning informing language use..."

Communication Training

Clift, R. (2016, p.36), Garfinkel (1967)

Differing Resources:
"You're not that far off"

- Student under the hood, inbound from hold, approaching final approach fix

- What information should instructor use to guide student?

Student Resources:
- 6-pack instruments
- VOR

Instructor Resources:
- ForeFlight
- Visual reference

10   *INS: wow (0.9) ( ) you corrected pretty good you turned inside it↘ or the wind held you just inside it again

11   *SIL: (2.3)

12   *INS: uh-oh (0.2) what happened to my picture (0.5) a'right

13.   *SIL: (2.1)

14   *INS: barely↗ you're not that far off

15   *SIL: (3.8)
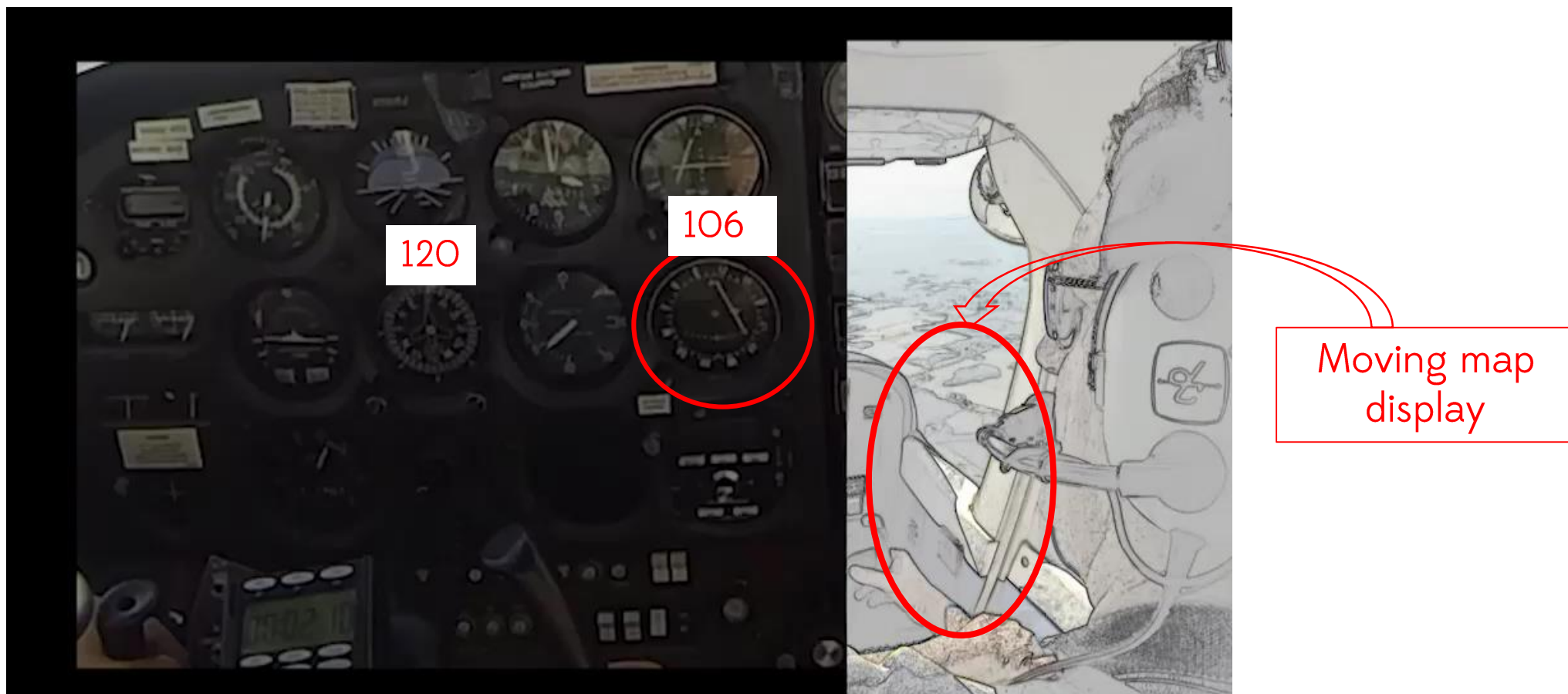
25	*STU:	I didn't even get to it
26	*SIL:	(1.2)
27	*INS:	oh you'll be there
28	*SIL:	(1.5)
29	*INS:	it's one oh six you're practically over-
30.	*SIL:	(0.7)
31	*INS:	over the top- should be passing it right now you're in the cone

Introductions and Sequence: "Something a little bit different..."

- Instrument Stage II Check
- Student gives standard departure brief
- Note how, when, & what instructor introduces
- When is it appropriate to throw in a last minute twist?
- Is this the right runway environment for an instrument takeoff?
- How about on a Stage Check?

30	*STR:	tower AeroClub one three ready for departure
		∇one nine at november:::∇ (.)
		Δv-f-r for the north training areaΔ
31	*SIL:	(1.0)
32	*STU:	te:::st
33	*TWR:	AeroClub one three (.) Eglin Tower
		runway one nine wind estimated 340 at 3
		cleared for takeoff (maintain) v-f-r ( )
34	*SIL:	(0.6)
35	*STR:	AeroClub one three cleared
		for takeoff one nine at november
36	*SIL:	(1.1)

```
37  *INS:  alright (man) were gonna do a (little) something
    .          a little bit  different here
38  *SIL:  (1.9)
39  *INS:  and
40  *SIL:  (0.9)
41  *INS:  you're going to ah: line up on the centerline
               and center up the  ah localizer here
42  *SIL:  (1.3)
43  *STU:  okay
44  *SIL:  (3.9)
45  *INS:  and then I want you to put the foggles on
46  *SIL:  (2.1)
47. *STU:  on the runway?
48  *SIL:  (0.3)
49  *INS:  mm hmm
50  *SIL:  (0.4)
51  *STU:  ah this will be interesting
52  *SIL:  (2.3)
53  *INS:  okay so (0.3) stop with that centered up
    …((takeoff begins))…
```
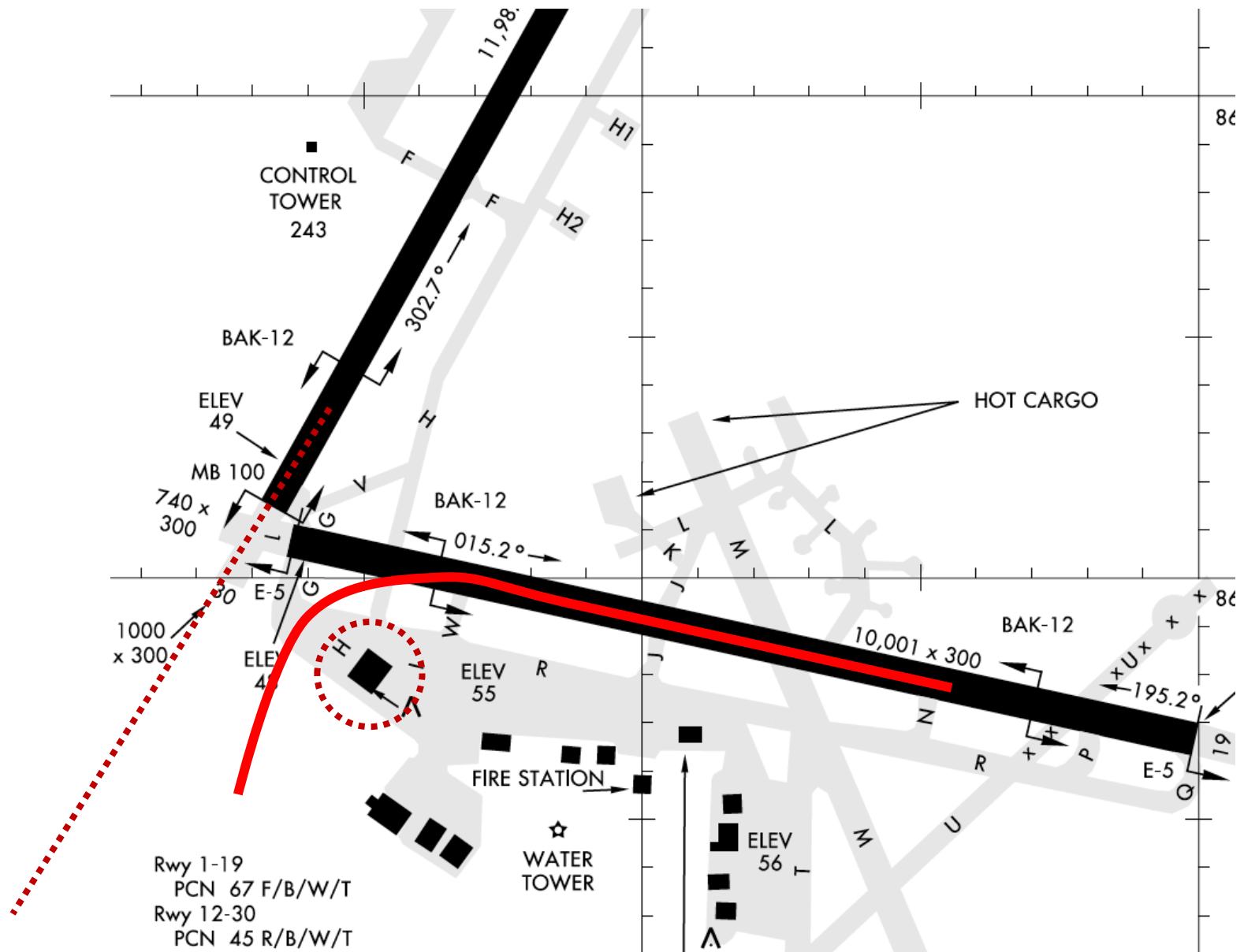
60	*INS:	stay on that localizer
61	*SIL:	(3.4)
62	*INS:	alright at point five d-m-e:::
63	*SIL:	(0.5)
64	*INS:	I want you to turn <u>left</u>: to heading of zero seven zero
65	*SIL:	(1.6)
66	*STU:	okay (0.3) point five turn left
67	*SIL:	(2.0)
68	*INS:	ah:: make it point four
69	*SIL:	(2.2)
70	*STU:	okay alright
71	*INS:	there is point four ↑lef:t (.) turn to zero seven zero

200 Feet

Thank you.

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