

Overriding question: Does the presence of a conductor affect the fixation pattern of an undergraduate instrumentalist who is reading music while playing an instrument?

Specific Questions

1. Does the presence of a conductor change the visual pattern?
2. Does the expressiveness of the conductor change the visual pattern?
3. Does the type of motion factor affect the visual pattern?

Definitions

- All measurements begin calculations at the initiation of movement (beginning of the count off gesture) and end at the cessation of movement (end of the cut off gesture) unless otherwise noted.
- Raw data can be found on the following page.
- Dot (M1) refers to the video of a non-human circle of light moving in a 4-4 pattern.
- No expression (M2) refers to the video of a conductor mirror conducting with a flat facial expression.
- With expression (M3) refers to the video of a conductor moving the hands independently with varying facial expressions.
- Fixation – time greater than 50 milliseconds during which the focal point of the eyes does not change.

Number of fixations

1. Greater for with expression than dot or no expression.
2. Greater for no expression than dot.
3. Results
 - a. No significant results at current sample size. – 1 Way ANOVA
 - i. If the trend holds, a significant interaction might occur.
4. These trends hold for all individuals in addition to the group as a whole.

Total Fixation Duration

1. Greater for with expression than dot or no expression.
2. Greater for no expression than dot.
3. Results
 - a. No significant results at current sample size. – 1 Way ANOVA
 - b. If the trend holds, a significant interaction might occur.
4. These trends hold for all individuals in addition to the group as a whole.

Total Fixation time

1. Dot – Mean time is 5.79% of video duration
2. No expression – Mean time is 11.73% of video duration
3. With expression – Mean time is 18.35% of video duration
4. Average for all scenarios = 11.79% fixation time out of total time of 3 videos.

Fixations during start

These fixations happen during count-off and 1st beat (approx. 3 seconds).

1. Dot – 46.55% (27/58)
 - a. Since this not typically viewed while playing an instrument, does a person focus longer to allow the brain to process?
2. No expression – 19.1% (17/89)
3. With expression – 13.67% (19/139)
4. Miniscule difference in the raw number of no expression (17) and with expression (19).

Dot	Total Fixation Duration full video				
	N	Mean	Sum	Median	St Dev
Fl 1	1	2.33	2.33	2.33	-
Pilot AS 1	1	3.49	3.49	3.49	-
Pilot Cl 1 b	1	3.2	3.2	3.2	-
All Recordings	3	3.01	9.03	3.2	0.6

No expression	Total Fixation Duration full video				
	N	Mean	Sum	Median	St Dev
Fl 1	1	2.35	2.35	2.35	-
Pilot AS 1	1	6.23	6.23	6.23	-
Pilot Cl 1 b	1	8.14	8.14	8.14	-
All Recordings	3	5.57	16.72	6.23	2.95

With expression	Total Fixation Duration full video				
	N	Mean	Sum	Median	St Dev
Fl 1	1	4.66	4.66	4.66	-
Pilot AS 1	1	10.49	10.49	10.49	-
Pilot Cl 1 b	1	11.27	11.27	11.27	-
All Recordings	3	8.81	26.42	10.49	3.61

Dot	Fixation Count full video				
	N	Mean	Sum	Median	St Dev
Fl 1	1	19	19	19	-
Pilot AS 1	1	20	20	20	-
Pilot Cl 1 b	1	19	19	19	-
All Recordings	3	19.33	58	19	0.58

No expression	Fixation Count full video				
	N	Mean	Sum	Median	St Dev
Fl 1	1	22	22	22	-
Pilot AS 1	1	26	26	26	-
Pilot Cl 1 b	1	41	41	41	-
All Recordings	3	29.67	89	26	10.02

With expression	Fixation Count full video				
	N	Mean	Sum	Median	St Dev
Fl 1	1	29	29	29	-
Pilot AS 1	1	48	48	48	-
Pilot Cl 1 b	1	62	62	62	-
All Recordings	3	46.33	139	48	16.56

Dot	Fixation count start				
	N	Mean	Sum	Median	St Dev
Fl 1	1	11	11	11	-
Pilot AS 1	1	8	8	8	-
Pilot Cl 1 b	1	8	8	8	-
All Recordings	3	9	27	8	1.73

No expression	Fixation count start				
	N	Mean	Sum	Median	St Dev
Fl 1	1	3	3	3	-
Pilot AS 1	1	5	5	5	-
Pilot Cl 1 b	1	9	9	9	-
All Recordings	3	5.67	17	5	3.06

With expression	Fixation count start				
	N	Mean	Sum	Median	St Dev
Fl 1	1	7	7	7	-
Pilot AS 1	1	5	5	5	-
Pilot Cl 1 b	1	7	7	7	-
All Recordings	3	6.33	19	7	1.15