

Role of Gender in Autonomic Reactivity: Analysis of Heart Rate of Preschool Children During Videos with Different Emotional Content

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Introduction

- Emotions are complex phenomena that include changes at different levels of organization
- Heart rate is a robust measure for evaluating emotional processing → greater heart rate variation (range) implies greater emotional processing and reactivity
- During preschool years, both emotional processing and autonomic reactivity are in development
- Gender proved to be a modulator of emotional processes, due to the gender socialization
- **The aim of this work was to compare heart rate variation (range) after viewing short videos with different emotional valence**

Methods

- **Sample.** 5-years-old children ($n = 43$, 17 girls). Participants were randomly assigned to one of two possible conditions (positive video: $n = 19$, or neutral video: $n = 19$)
- **Measures.** Heart rate was registered previously (baseline) and during the video watching. The interests variables were the heart rate range registered during the task
- **Data Analyses.** A 2x2 ANOVA was performed in order to examine the interaction between gender and video emotional content. Baseline heart rate was introduced as a covariable

Results

M(SD) by condition, and by gender

	Condition		Gender	
	Neutral	Positive	Female	Male
Baseline HRrange	13.20 (6.09)	12.30 (7.20)	12.53 (5.82)	12.86 (7.30)
Movie HRrange	7.79 (3.46)	12.60 (5.33)	10.53 (4.76)	9.95 (5.40)

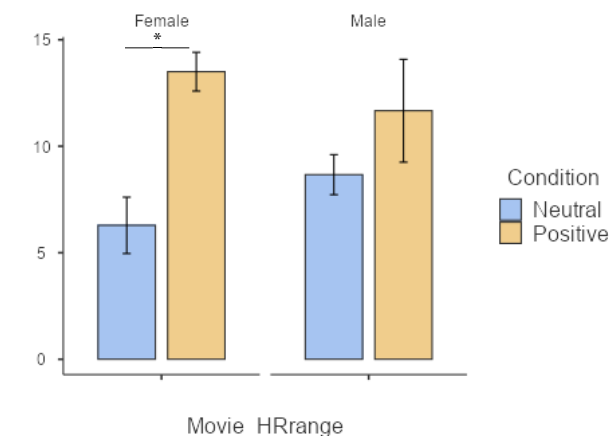
ANOVA

	SS	df	F	p	η^2p
Model	354.25	4	3.86	.011	.32
Condition	257.24	1	13.14	< .001	.26
Gender	2.40	1	0.12	.728	.00
HR_Base	38.59	1	1.97	.170	.03
Condition * Gender	56.02	1	2.86	.100	.08

Note: $R^2 = .32$

Post Hoc Comparisons

Comparison	Dif	SE	t	df	$p_{\text{bonferroni}}$
Neutral - Positive	-5.34	1.47	-3.63	33.00	< .001
Female - Male	-0.52	1.47	-0.35	33.00	.728
Neutral Female - Neutral Male	-3.04	2.16	-1.41	33.00	1.000
Neutral Female - Positive Female	-7.86	2.23	-3.53	33.00	.008
Neutral Female - Positive Male	-5.85	2.25	-2.60	33.00	.084
Neutral Male - Positive Male	-2.81	1.96	-1.44	33.00	.961
Positive Female - Neutral Male	4.82	1.89	2.54	33.00	.095
Positive Female - Positive Male	2.01	2.04	0.99	33.00	1.000



Discussion

- Children in the positive condition showed a greater heart rate range than those in neutral one, girls presented a wider HR range than boys, and no interaction was found between condition and gender
- These results are consistent with the literature
- The study emphasizes the importance of including gender in studies about emotional processing at this stage of development
- The viewing of videos is an emotional modulation paradigm that allows showing differences in the autonomous level

References

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