Effect of Communication Ability on Cardiovascular Reactivity to a Speech Task

Susie Kola & Jane Walsh
Department of Psychology
National University of Ireland, Galway
Communication ability

- Communication ability may be an important variable in people’s ability to cope with a stressor
- Appears to play a role in fostering social relationships, thus affecting social support (e.g., Sarason et al., 1985)
Cardiovascular reactivity

- CVR refers to variations in HR and BP in response to perceived stressful environmental situations.
- There are individual differences in the amount of reactivity shown by different individuals in the same situation.
CVR research

- A lot of research carried out in laboratories to examine what variables may moderate CVR to psychological stress
- Typically, stressors have been standardised to remove individual differences (Turner, 1994)
Speech tasks in CVR research

- Research has investigated various state-type variables in relation to speech tasks
- Speech tasks used without consideration for individual differences in communication style and competence (Hughes, 2001)
Hughes (2001) conducted study to assess the possible stress buffering effect of CA on CVR under two stress conditions. After task, completed CA questionnaire. Found that high effective communicators showed reduced levels of HR reactivity to maths task.
Present study

- Results of Hughes (2001) study suggest that CA may play some role in relationship between stressor and CVR, even when the stressor is non-speech based.
- The aim of the present study to assess whether levels of CA would affect cardiovascular responses to a speech task.
Method

- Design – 2 (high and low CA) x 3 (baseline, task, recovery) mixed design
- IV – Communication ability (effective and dominant)
- DVs – heart rate, systolic and diastolic blood pressure
Participants

- 56 female undergraduate psychology students
- Mean age 19.45 years (SD = 4.97)
- Exclusion criteria: oral contraceptive use, medication use, history of hypertension
Equipment

- 18 items, measures CA on three scales; Effective, Dominant, and Nonverbal
- Each measure highly reliable (α = .79, α = .76, α = .74, respectively).
Equipment cont.

- Speech task based on the evaluative speaking task (Saab et al., 1989).
- Participants asked to prepare and deliver a speech about a hypothetical situation.
- Tape recorder present, told the speech would be rated for style, content and articulation.
Procedure

- Pre-screening based on administration of McManus et al.’s (1997) re-standardised version of the Norton Communicator Style Questionnaire
- Random selection of 98 from those that scored in 33rd and 66th percentiles
Main study procedure

- Each participant tested individually
- Initial 10-minute resting period, CV measures taken at end of min 3, 6, 9.
- For pre-task period (5min), task period (5 min) and recovery period (5min) CV measures recorded at end of min 1, 2.5, and 4.
Results

- A series of 2x3 mixed ANOVAs were carried out for ECA and DCA
- Range of ECA scores 9-23
- High ECA >16, Low ECA <14
- Range of DCA scores 8-22
- High DCA >17, Low DCA <13
Results – CA and HR

- Significant main effect for time, $F_{(1.40, 71.51)} = 25.08, \ p = .000$
- No significant interaction between time x ECA, $p = .708$ or between time x DCA, $p = .663$
- No significant mean differences between high and low ECA, $p = .170$, or between high and low DCA, $p = .918$
Results – CA and SBP

- Significant main effect for time, $F_{(1.45, 73.70)} = 100.08, p = .000$
- No significant interaction between time x ECA, $p = .892$, or between time x DCA, $p = .596$
- No significant differences between high and low ECA, $p = .951$, or between high and low DCA, $p = .313$
Results – CA and DBP

- Significant main effect for time, $F_{(1.36, 69.17)} = 126.34, p = .000$
- No significant interaction between time x ECA, $p = .759$, or between time x DCA, $p = .259$
- No significant differences between high and low ECA, $p = .323$, or between high and low DCA, $p = .885$
Summary

- Study conducted to assess whether CA would have a stress-buffering effect on CVR to a speech task
- Stressor successful in eliciting stress response
- No significant differences between levels of CA for CVR or CV recovery
Summary

- Degree of reactivity during speaking determined by a wide range of factors.
- Differences diminished as a result of task engagement?
- Other possibilities: extraversion/introversion, trait anxiety, communication apprehension, evaluation apprehension.
Thank You

Susie Kola & Jane Walsh
National University of Ireland, Galway