APPENDIX N

Table 1.

Summary of significant effects of follow-up analyses of Coping Style (Cop) × Valence (Val) × Interference (Int) mixed ANOVAs on the performance measures during the Stroop Interference Task.

Measure	Interaction	Main Effect	Follow-up Analyses		
		Level (effect)	Level	Significance	Explanation
Reaction Time					
Total		Valence $F(1,45) = 8.95$ $p < .004$		.	Neg>neu
Non-Targets		Valence $F(1, 45) = 6.76$ $p < .013$			Neg>neu
Color Interference				ns.	
Word Interference		Valence $F(1, 45) = 23.49$ $p < .0001$			
Target				ns.	
Errors					
Total					
Non-Targets					
Color Interference		Coping Style $F(2, 45) = 2.54$ $p < .020$		$t(27) = 2.20$ $p < .037$	Rep > high
Word Interference		Valence $F(1, 45) = 29.67$ $p < .0001$			Neg>neu
Target					

Table 2.

A comparison of multiple heart rate and blood pressure samplings across conditions. The effect of multiple samplings was not the same across conditions or types of measurements suggesting a potential confound.

Measurement	Conditions	Interactions	Main Effects
Heart Rate	Baseline		Multiple Measure $F(1, 44) = 3.68$, $p < .062$
	Stroop Task (neu, neg)		
	Hand Immersion Task (tep, cold)		
Diastolic Blood Pressure	Baseline		
	Stroop Task (neu, neg)		
	Hand Immersion Task (tep, cold)	Multiple Measure(2) × Condition(2) $F(1, 44) = 4.75$, $p < .035$	Multiple Measure $F(1, 44) = 34.87$, $p < .0001$
			Condition $F(1, 44) = 26.45$, $p < .0001$
Systolic Blood Pressure	Baseline		
	Stroop Task (neu, neg)		Multiple Measure $F(1, 44) = 11.38$, $p < .002$
	Hand Immersion Task	Multiple Measure(2) × Condition(2) $F(1, 44) = 7.56$, $p < .009$	Multiple Measure $F(1, 44) = 26.93$, $p < .0001$
	Hand Immersion Task (tep, cold)		Condition $F(1, 44) = 39.82$, $p < .0001$

Table 3.

A summary of significant interactions and follow-up analyses for heart rate and blood pressure data.

Measure	Conditions	Interaction	Main Effect	Follow-up Analyses		
			Level (effect)	Level	Significance	Explanation
Heart Rate	Baseline			ns.		
	Stroop Interference Task			ns.		
	Hand Immersion Task			ns.		
Diastolic Blood Pressure	Baseline		Coping Style $F(2, 46) = 4.10$ $p < .05$	Baseline	$t(32) = 3.38$ $p < .002$	Low > hi
					$t(32) = 2.48$ $p < .019$	Rep > hi
	Stroop Interference Task		Coping Style $F(2, 45) = 5.94$ $p < .01$	Neutral	$t(31) = 2.29$ $p < .029$	Low > hi
				Negative	$t(28) = 3.23$ $p < .003$	Rep > hi
	Hand Immersion Task		Coping Style $F(1, 45) = 2.95$ $p < .065$	Cool	$t(32) = 2.20$ $p < .035$	Low > hi
Systolic Blood Pressure	Baseline		Water $F(1, 45) = 40.61$ $p < .0001$	ns.		
	Stroop Interference Task			Negative	$t(32) = 2.37$ $p < .024$	Low > hi
	Hand Immersion Task					

Table 4.

Summary of significant effects and follow-up analyses of Coping Style (Cop) × Hemisphere (Hem) × Anticipation (Ant) mixed ANOVAs on EEG mean log μV magnitude for each frequency band.

Hz Band	Region	Interactions	Main Effect Level (effect)	Follow-up analyses Level	Significance	Explanation
Theta 3.5 - 7.45 Hz	Medial Frontal		Ant $F(1, 44) = 5.50$ $p < .023$			Cool > cold
	Lateral Frontal		Ant $F(1, 44) = 5.16$ $p < .028$			Cool > cold
	Central		Ant $F(1, 44) = 20.04$ $p < .0001$			Cool > cold
	Parietal		Ant $F(1, 44) = 26.44$ $p < .0001$			Cool > cold
			Hem $F(1, 44) = 3.51$ $p < .068$			Left > right
	Anterior Temporal		Ant $F(1, 44) = 13.39$ $p < .001$			Cool > cold
	Posterior Temporal		Ant $F(1, 44) = 19.73$ $p < .0001$			Cool > cold
	Occipital		Ant $F(1, 44) = 25.81$ $p < .0001$			Cool > cold
Low Theta 3.5 - 5.45 Hz	Medial Frontal		Ant $F(1, 44) = 5.17$ $p < .028$			Cool > cold
	Central		Ant $F(1, 44) = 23.71$ $p < .0001$			Cool > cold
	Parietal		Ant $F(1, 44) = 27.60$ $p < .0001$			Cool > cold
			Hem $F(1, 44) = 4.30$ $p < .044$			Left > right
	Anterior Temporal		Ant $F(1, 44) = 14.09$ p .001			Cool > cold
	Posterior Temporal		Ant $F(1, 44) = 24.50$ $p < .0001$			Cool > cold

Hz Band	Region	Interactions	Main Effect Level (effect)	Follow-up analyses Level	 Significance	 Explanation
	Occipital		Ant F(1, 44) = 26.81 p.0001			Cool > cold
High Theta 5.5 - 7.45 Hz	Medial Frontal		Ant F(1, 44) = 4.81 p < .034			Cool > cold
	Lateral Frontal		Ant F(1, 44) = 6.24 p < .016			Cool > cold
	Central	Ant × Hem F(1, 44) = 4.29 p < .044	Ant F(1, 44) = 10.09 p < .003			Cool>cold
	Parietal	Cop × Ant × Hem F(2, 44) = 4.29 p < .020		Low, left	t(17) = 2.19 p < .045	Cool > cold
				High	F(1,13) = 7.85 p < .020	Cool > cold
				Rep, tep	t(14) = 2.19 p < .05	Left > right
				Rep, left	t(14) = 2.47 p < .03	Cool > cold
		Ant × Hem F(1, 44) = 4.06 p < .050	Ant F(1, 44) = 12.67 p < .001			Cool > cold
	Anterior Temporal		Ant F(1, 44) = 9.93 p < .003			Cool > cold
	Posterior Temporal	Ant × Hem F(1, 44) = 4.13 p < .048	Ant F(1, 44) = 10.96 p < .002			Cool > cold
	Occipital		Ant F(1, 44) = 16.13 p < .0001			Cool > cold
Alpha 7.5 - 13.45 Hz	Central		Ant F(1, 44) = 15.60 p < .0001			Cool > cold
	Parietal	Ant × Hem F(1, 44) = 4.67 p < .036	Ant F(1, 44) = 5.70 p < .021	Right	ns.	Cool ≅ cold
				Left	t(46) = 2.81 p < .007	Cool > cold
			Hem F(1, 44) = 20.81 p < .0001			Left > right
	Anterior Temporal	Ant × Hem F(1, 44) = 5.44 p < .024	Ant F(1, 44) = 4.77 p < .034	Right	ns.	Cool ≅ cold
				Left	t(46) = 3.10 p < .003	Cool > cold
			Hem F(1, 44) = 3.98 p < .052			Left > right

Hz Band	Region	Interactions	Main Effect	Follow-up analyses		
			Level (effect)	Level	Significance	Explanation
	Occipital	Cop × Ant × Hem $F(2, 44) = 3.02$ $p < .059$			ns.	Rep ≅ low ≅ hi
		Ant × Hem $F(1, 44) = 4.89$ $p < .032$			ns.	Rep ≅ low ≅ hi
Low Alpha (7.5 – 8.45 Hz	Lateral Frontal	Cop × Hem $F(2, 44) = 3.00$ $p < .060$	Ant $F(1, 44) = 4.85$ $p < .033$			Cool > cold
				Coping	ns.	Rep ≅ low ≅ hi
		Ant × Hem $F(1, 44) = 3.84$ $p < .056$			ns.	
	Central	Ant × Hem $F(1, 44) = 6.91$ $p < .012$	Ant $F(1, 44) = 15.03$ $p < .0001$			Cool > cold
			Hem $F(1, 44) = 5.88$ $p < .019$	Cool	$t(47) = 3.98$ $p < .02$	Left > right
				Cold	ns.	Left ≅ right
	Parietal	Ant × Hem $F(1, 44) = 7.34$ $p < .010$	Ant $F(1, 44) = 10.26$ $p < .003$			Cool > cold
	Anterior Temporal	Ant × Hem $F(1, 44) = 11.66$ $p < .001$	Ant $F(1, 44) = 14.63$ $p < .0001$	Right	ns.	Cool ≅ cold
				Left	$t(46) = 5.38$ $p < .0001$	Cool > cold
	Posterior Temporal		Ant $F(1, 44) = 8.53$ $p < .005$			Cool > cold
	Occipital		Ant $F(1, 44) = 10.11$ $p < .003$			Cool > cold
Mid Alpha 9.5 - 11.45 Hz	Medial Frontal	Cop × Ant × Hem $F(2, 44) = 4.41$ $p < .018$	Ant $F(1, 44) = 3.90$ $p < .055$	Right	ns.	Cool ≅ cold
				Left	$t(46) = 2.04$ $p < .047$	Cool > cold
				Coping	ns.	Rep ≅ low ≅ hi
	Central		Ant $F(1, 44) = 13.16$ $p < .001$			Cool > cold
			Hem $F(1, 44) = 19.70$ $p < .0001$			Left > right
	Parietal	Ant × Hem $F(1, 44) = 3.70$ $p < .062$	Ant $F(1, 44) = 7.39$ $p < .009$			Cool > cold

Hz Band	Region	Interactions	Main Effect	Follow-up analyses		
			Level (effect)	Level	Significance	Explanation
			Hem $F(1, 44) = 4.24$ $p < .045$	Cool	$t(47) = 2.69$ $p < .010$	Left > right
				Cold	ns	Left ≅ right
	Anterior Temporal	Ant × Hem $F(1, 44) = 3.54$ $p < .066$	Ant $F(1, 44) = 5.10$ $p < .029$	Right	ns.	Cool ≅ cold
				Left	$t(46) = 2.67$ $p < .010$	Cool > cold
			Hem $F(1, 44) = 4.48$ $p < .040$	Cool	$t(47) = 2.53$ $p < .015$	Left > right
				Cold	ns	Left ≅ right
	Posterior Temporal		Ant $F(1, 44) = 3.64$ $p < .063$			Cool > cold
	Occipital		Ant $F(1, 44) = 5.99$ $p < .018$			Cool > cold
High Alpha 11.5 - 13.45 Hz	Central		Ant $F(1, 44) = 5.03$ $p < .030$			Cool > cold
			Hem $F(1, 44) = 17.60$ $p < .0001$			Left > right
	Parietal	Cop × Ant × Hem $F(2, 44) = 3.85$ $p < .029$		Low, cool	$t(17) = 2.25$ $p < .05$.	Left > right
	Posterior Temporal	Cop × Ant × Hem $F(2, 44) = 4.60$ $p < .015$			ns.	Rep ≅ low ≅ hi
	Occipital	Cop × Ant × Hem $F(2, 44) = 4.67$ $p < .014$			ns.	Rep ≅ low ≅ hi
Beta 13.5 - 19.45 Hz	Central		Ant $F(1, 44) = 5.27$ $p < .027$			Cool > cold
	Posterior Temporal		Ant $F(1, 44) = 6.65$ $p < .013$			Cool ≅ cold
	Occipital		Ant $F(1, 44) = 5.43$ $p < .024$			Cold > cool
			Hem $F(1, 44) = 3.64$ $p < .063$			Left > right
Beta 13 13.5 – 16.45 Hz	Lateral Frontal	Ant × Cop × Hem $F(2, 44) = 8.56$ $p < .0001$		ns.		

Hz Band	Region	Interactions	Main Effect	Follow-up analyses		
			Level (effect)	Level	Significance	Explanation
Beta 16 16.5 - 19.45 Hz	Medial Frontal	Ant × Cop×Hem F(2, 44) = 3.14 p < .053	Ant F(1, 44) = 5.14 p < .028			Cool > cold
					ns.	Rep ≅ low ≅ hi
	Central		Ant F(1, 44) = 11.96 p < .001			Cool > cold
			Hem F(1, 44) = 13. 97 p < .001			Left > right
	Anterior Temporal		Ant F(1, 44) = 3.49 p < .068			Cool ≅ cold
	Occipital	Ant×Hem F(1, 44) = 4.21 p < .010	Ant F(1, 44) = 4.10 p < .049	Right	t(46) = 3.02 p < .004	Cold > cool
				Left	ns	Cool ≅ cold

Table 5.

Summary of significant effects and follow-up analyses of Coping Style (Cop) × Hemisphere (Hem) × Valence (Val) mixed ANOVAs on EEG mean log μV magnitude for each frequency band.

Hz Band	Region	Interactions	Main Effect	Follow-up analyses		
			Level (effect)	Level	Significance	Explanation
Alpha 8.5-13.45 Hz	Medial Frontal	Cop × Val × Hem $F(2, 46) = 3.09$ $p < .055$		Rep, neu	$t(14) = 2.35$ $p < .05$	Right > left
	Central		Hem (right, left) $F(1, 46) = 5.60$ $p < .022$			Right > left
Mid Alpha 9.5-11.45 Hz	Lateral Frontal	Cop × Val × Hem $F(2, 46) = 5.30$ $p < .008$	Hem(left, right) $F(1, 46) = 4.04$ $p < .050$			Right > left
				Right, neutral	$t(32) = 2.81$ $p < .01$	Rep > low
	Anterior Temporal	Cop × Val × Hem $F(2, 46) = 3.22$ $p < .049$	Val (neu, neg) $F(1, 46) = 5.47$ $p < .024$			Neg > neu
				High, right	$t(14) = 3.88$ $p < .002$	Neg > neu
	Central		Hem(right, left) $F(1, 46) = 5.66$ $p < .022$			Right > left
	Parietal		Val (neu, neg) $F(1, 46) = 3.97$ $p < .052$			Neg > neu
Hi Alpha 11.5-13.45 Hz	Anterior Temporal	Cop × Val × Hem $F(2, 46) = 3.13$ $p < .053$	Val (neu, neg) $F(1, 46) = 5.07$ $p < .029$	Right	ns.	Neu ≅ neg
				Left	$t(48) = 2.06$ $p < .045$	Neg > neu
				Coping	ns.	Rep ≅ low ≅ hi
	Medial Frontal	Cop × Val × Hem $F(2, 46) = 3.56$ $p < .040$	Hem(left, right) $F(1, 46) = 3.90$ $p < .054$	Neutral	$t(48) = 2.05$ $p < .046$	Right > left
				Negative	ns.	Right ≅ left
				Right, neutral	$t(28) = 1.93$ $p < .065$	Rep > Highs

Hz Band	Region	Interactions	Main Effect	Follow-up analyses		
			Level (effect)	Level	Significance	Explanation
Beta 13.5-19.45 Hz	Lateral Frontal	Cop × Val × Hem $F(2, 46) = 3.36$ $p < .044$	Hem(left, right) $F(1, 46) = 4.48$ $p < .040$			Right > Left
				Right, neu	$t(32) = 2.12$ $p < .05$	Rep > low
				Right, neg	$t(32) = 2.27$ $p < .05$	Rep > low
	Anterior Temporal		Val (neu, neg) $F(1, 46) = 6.18$ $p < .017$			Neu > neg
Beta 13 13.5-16.45 Hz	Lateral Frontal	Cop × Val × Hem $F(2, 46) = 8.56$ $p < .0001$		Right, neu	$t(32) = 2.57$ $p < .05$	Rep > low
				Right, neu	$t(28) = 1.96$ $p < .06$	Rep > high
	Parietal		Val (neu, neg) $F(1, 46) = 6.17$ $p < .017$			Neg > neu
Beta 16 16.5-19.45 Hz	Anterior Temporal	Cop × Val × Hem $F(2, 46) = 2.85$ $p < .068$	Val (neu, neg) $F(1, 46) = 6.60$ $p < .014$			Neu > neg
				Coping	ns.	Rep ≅ low ≅ hi
	Parietal		Val(neu, neg) $F(1, 46) = 7.23$ $p < .010$			Neg > neu
Delta	Anterior Frontal		Hem(left, right) $F(1, 46) = 5.99$ $p < .018$			Neu ≅ neg
Theta 3.5-7.45 Hz	Occipital		Hem(left, right) $F(1, 46) = 10.08$ $p < .003$			Right > left
	Medial Frontal		Hem(left, right) $F(1, 46) = 6.65$ $p < .013$			Right left
	Parietal		Hem(left, right) $F(1, 46) = 5.08$ $p < .029$			Left > Right
Hi Theta 5.5-7.45 Hz	Occipital		Hem × Cop $F(2, 46) = 2.96$ $p < .062$		ns.	Right ≅ left
				Coping	ns.	Rep ≅ low ≅ hi
	Frontal		Hem(left, right) $F(1, 46) = 5.00$ $p < .030$			Right left
	Parietal		Hem(left, right) $F(1, 46) = 5.01$ $p < .030$			Right > left

Table 6.

Summary of the significant effects and follow-up analyses of the mixed ANOVAs designed to test Heller's (1993) Theory of the correlation between right parietal activity and arousal during the Stroop Interference Task.

Hz Band	Region	Interactions	Main Effect	Follow-up analyses		
			Level (effect)	Level	Significance	Explanation
Mid Alpha	Right Parietal		Valence (neu, neg) $F(1, 46) = 4.70$ $p < .035$			Neg > neu
Beta 16			Valence (neutral, neg) $F(1, 46) = 8.00$ $p < .007$			Neg > neu
Beta			Valence (neu, neg) $F(1, 46) = 6.72$ $p < .013$			Neg > neu

Table 7.

Summary of significant effects and follow-up analyses of Coping Style (Cop) × Water Condition (Water) × Hemisphere (Hem) mixed ANOVAs of mean log μV for each frequency band.

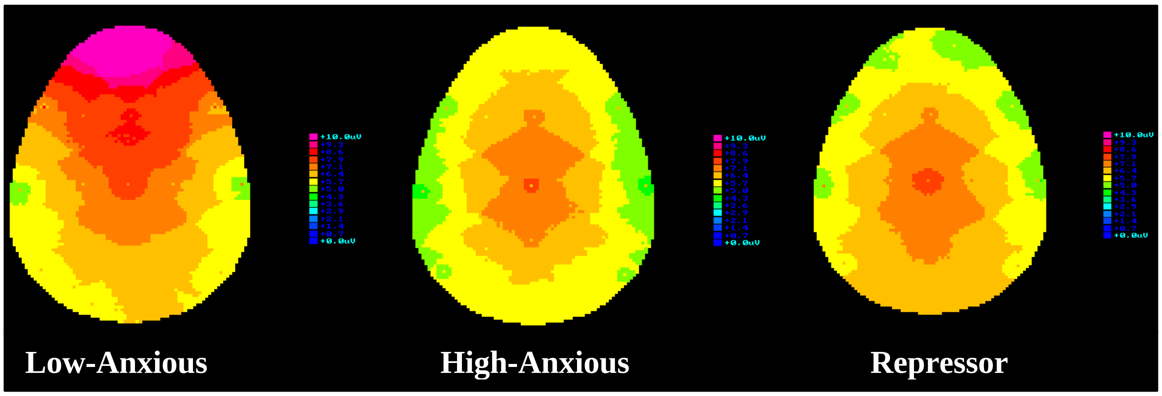
Hz Band	Region	Interactions	Main Effect	Follow-up analyses		
			Level (effect)	Level	Significance	Explanation
Delta 2.0-3.45 Hz	Central		Hem $F(1, 45) = 7.18$ $p < .010$			Left > right
Theta 3.5-7.45 Hz	Medial, Lateral Frontal	Cop × Water $F(2, 45) = 4.12$ $p < .023$			ns.	
	Central	Cop × Water $F(2, 45) = 4.58$ $p < .016$		Cold, left	$t(27) = 1.99$ $p < .056$	Rep > hi
	Parietal	Cop × Water $F(2, 45) = 4.26$ $p < .020$	Hem $F(1, 45) = 6.73$ $p < .013$			Left > right
				Cool, Left	$t(27) = 2.06$ $p < .05$	Hi > rep
Low Theta 3.5-5.45 Hz	Lateral Frontal	Cop × Water $F(2, 45) = 4.74$ $p < .014$		Cool Left	$t(27) = 2.03$ $p < .053$	Hi > rep
	Central	Cop × Water $F(2, 45) = 5.30$ $p < .009$	Water (tep, cold) $F(1, 45) = 3.68$, $p < .061$			Left > right
				Cool, Left	$t(27) = 2.14$ $p < .042$	Hi > rep
					$t(32) = 2.09$ $p < .045$	Low > rep
				Cool, right	$t(27) = 1.97$ $p < .059$	Rep > high
					$t(32) = 1.91$ $p < .066$	Rep > low
	Parietal	Cop × Water $F(2, 45) = 4.93$ $p < .012$		Cold, right		
				Cold, Left		
			Water (tep, cold) $F(1, 45) = 4.86$ $p < .033$ Left > Right		ns.	Left ≅ right
				Cool	ns.	Left ≅ right
				Cold		
Hi Theta 5.5-7.45 Hz	Medial Frontal	Cop × Water $F(2, 45) = 3.24$ $p < .049$		Cool, right	$t(32) = 2.29$ $p < .029$	Low > rep
				Cool, Left	$t(32) = 2.23$ $p < .033$	Low > rep

Hz Band	Region	Interactions	Main Effect Level (effect)	Follow-up analyses Level	 Significance	 Explanation
	Central	Cop × Water $F(2, 45) = 3.73$ $p < .032$		Cold, left	$t(27) = 2.06$ $p < .05$	Rep > high
	Parietal	Cop × Water $F(2, 45) = 3.45$ $p < .040$	Hem $F(1, 45) = 6.22$ $p < .016$	Cool	$t(47) = 2.78$ $p < .009$	Left > right
				Cold	ns.	
Alpha 7.5-13.45 Hz	Central			Left, cool	$p < .061$	Rep>Low>Hi
			Hem $F(1, 45) = 48.82$, $p < .0001$			Left > right
	Parietal		Hem $F(1, 45) = 4.25$ $p < .045$			Left > right
				Right, cool	$t(47) = 2.03$, $p < .05$	Hi>Low>Rep
Low Alpha 7.5-8.45 Hz	Central	Water × Hem $F(2, 45) = 4.87$ $p < .032$	Hem $F(1, 45) = 14.29$ $p < .0001$	Cool	$t(47) = 4.06$ $p < .0001$	Left > right
				Cold	ns.	Left ≅ right
	Parietal	Cop × Water $F(2, 45) = 2.93$ $p < .064$		Right, cool	$t(27) = 1.98$ $p < .058$	Hi > rep
				Left, cool	$t(27) = 2.22$ $p < .035$	Hi > rep
				Cool	$t(47) = 2.18$ $p < .034$	Left > right
				Cold	ns.	Left ≅ right
Mid Alpha 9.5-11.45 Hz	Central		Hem $F(1, 45) = 47.18$ $p < .0001$			Left > right
				Left, cool	$p < .038$	Hi > ep
				Right, cool	$p < .057$	Hi > rep
	Parietal		Hem $F(1, 45) = 6.30$ $p < .016$			Left > right
				P3, Tep	$p < .018$	Hi > rep
				P4, Tep	$p < .027$	Hi > rep
Hi Alpha 11.5-13.45 Hz	Central		Hem $F(1, 45) = 24.71$ $p < .0001$			Left > right

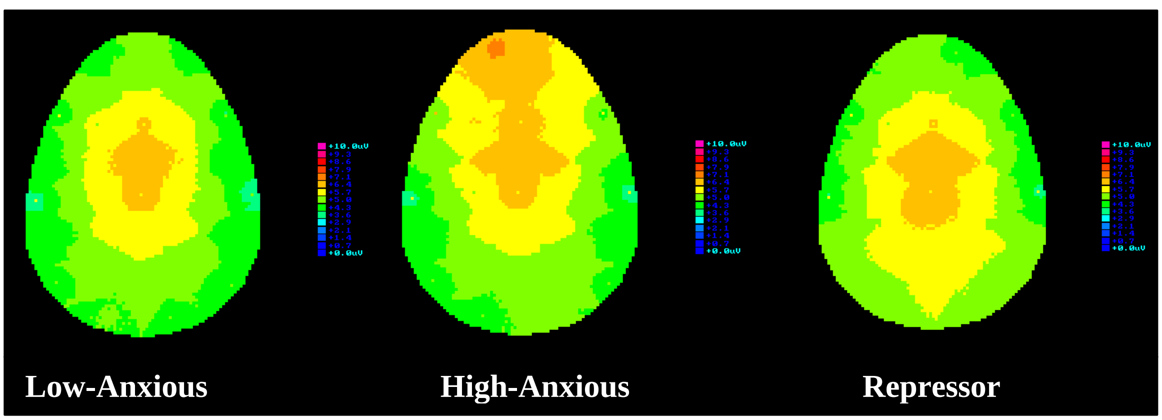
Hz Band	Region	Interactions	Main Effect	Follow-up analyses		
			Level (effect)	Level	Significance	Explanation
Beta 13.5-19.45 Hz	Central		Hem $F(1, 45) = 23.11$ $p < .0001$			Left > right
Beta 16 16.5-19.45 Hz	Central		Hem $F(1, 45) = 28.55$ $p < .0001$			Left > right
	Parietal		Hem $F(1, 45) = 3.74$ $p < .059$			Left > right

APPENDIX O

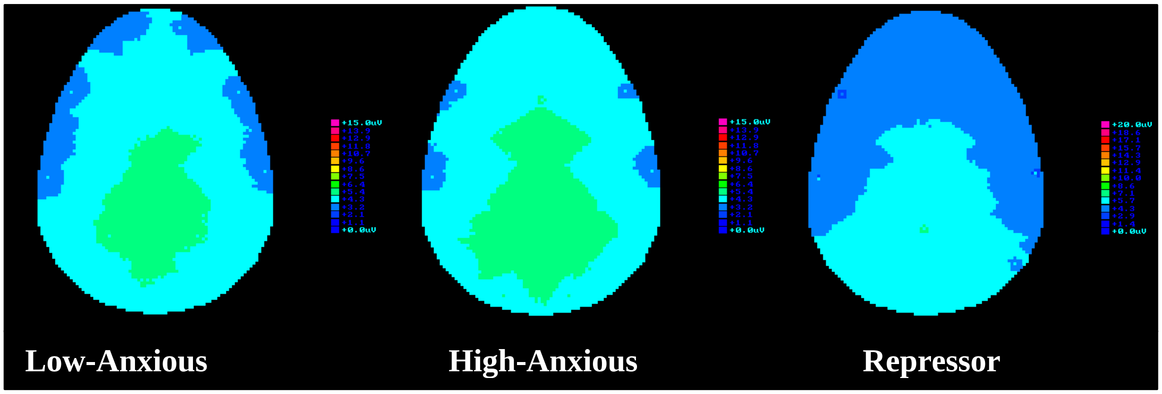
Figure 1. Topographic Maps of EEG Dynamics During the Neutral Condition of the Stroop Interference Task



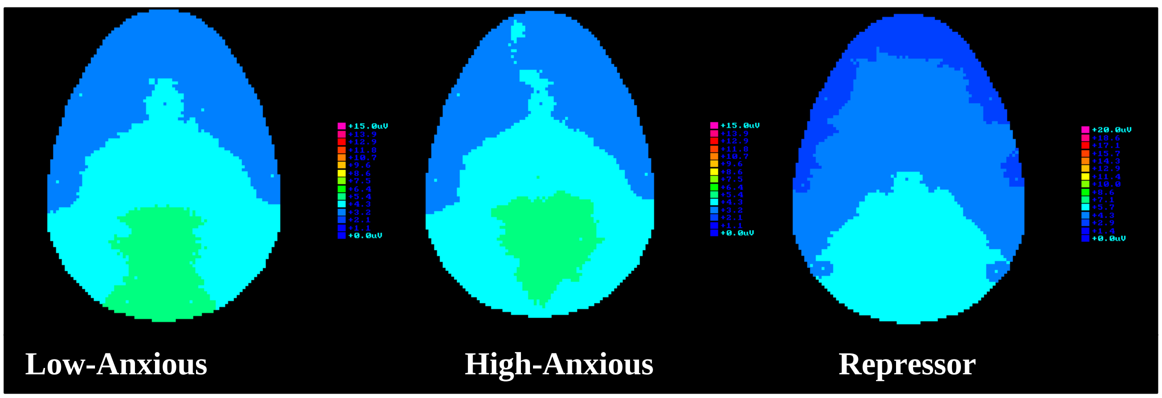
Low Theta Activity (3.5 - 5.45 Hz) During the Neutral Condition of the Stroop Interference Task in Low-Anxious, High-Anxious, and Repressor Individuals



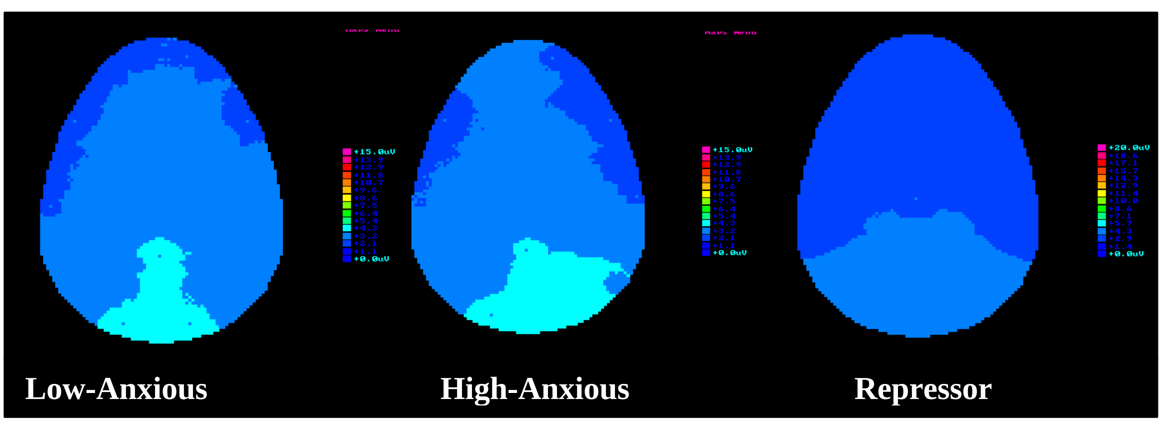
High Theta Activity (5.5 - 7.45 Hz) During the Neutral Condition of the Stroop Interference Task in Low-Anxious, High-Anxious, and Repressor Individuals



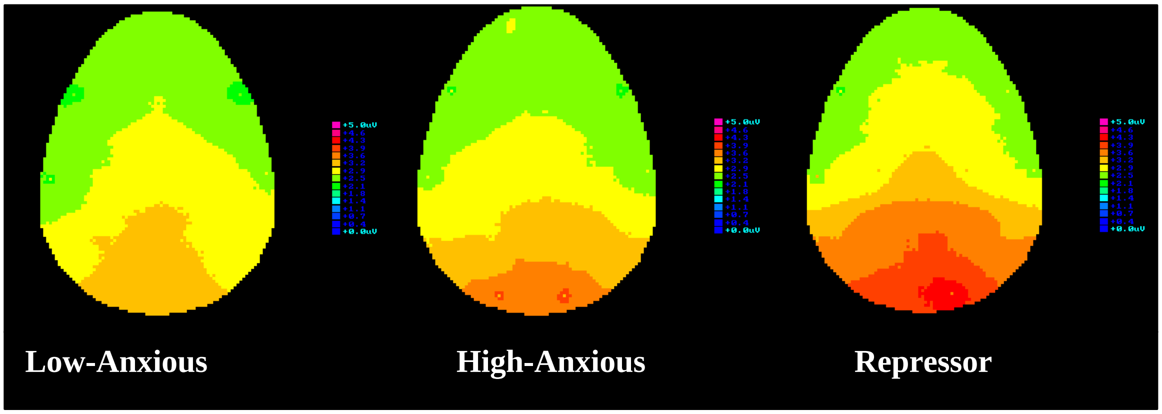
Low Alpha Activity (7.5 - 8.45 Hz) During the Neutral Condition of the Stroop Interference Task in Low-Anxious, High-Anxious, and Repressor Individuals



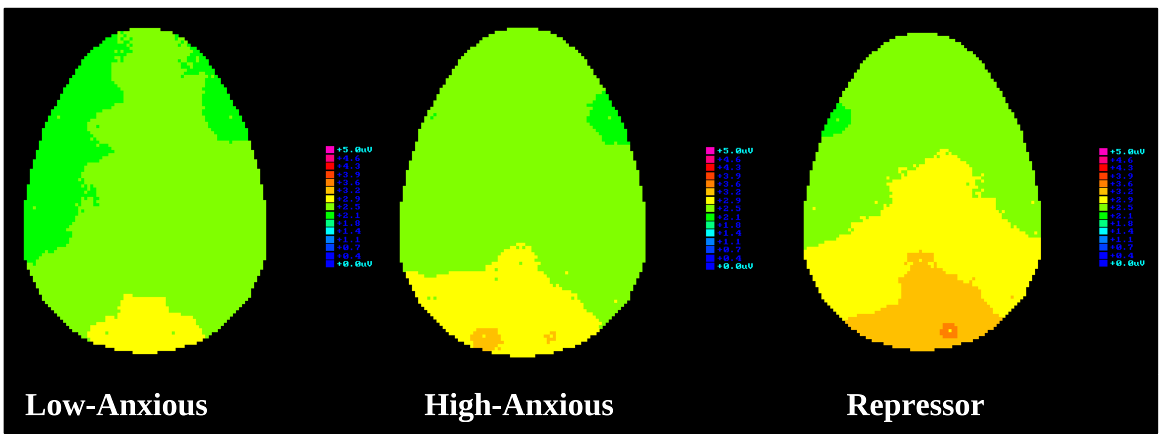
Mid-alpha Activity (9.5 - 11.45 Hz) During the Neutral Condition of the Stroop Interference Task in Low-Anxious, High-Anxious, and Repressor Individuals



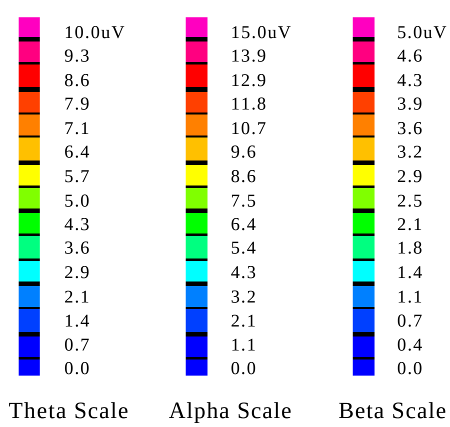
High Alpha Activity (11.5 - 12.45Hz) During the Neutral Condition of the Stroop Interference Task in Low-Anxious, High-Anxious, and Repressor Individuals



Beta 13 Activity (13.5 - 15.45 Hz) During the Neutral Condition of the Stroop Interference Task in Low-Anxious, High-Anxious, and Repressor Individuals

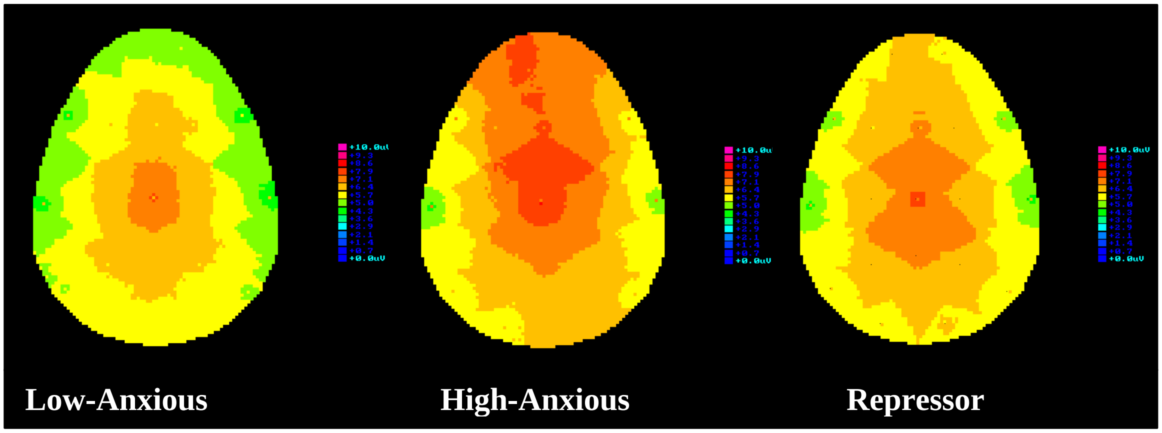


Beta 16 Activity (15.5 - 19.45 Hz) During the Neutral Condition of the Stroop Interference Task in Low-Anxious, High-Anxious, and Repressor Individuals

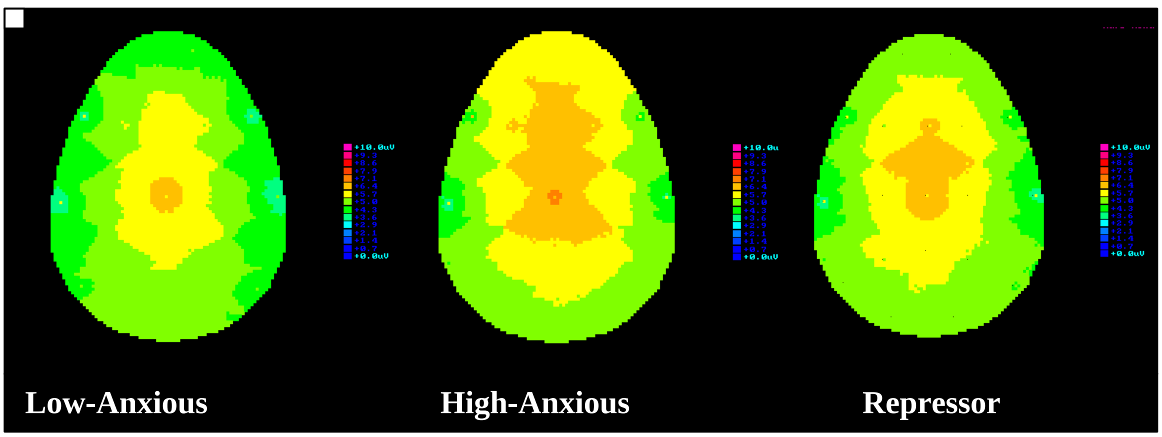


Mean Magnitude Scales for each of the Hz bands.

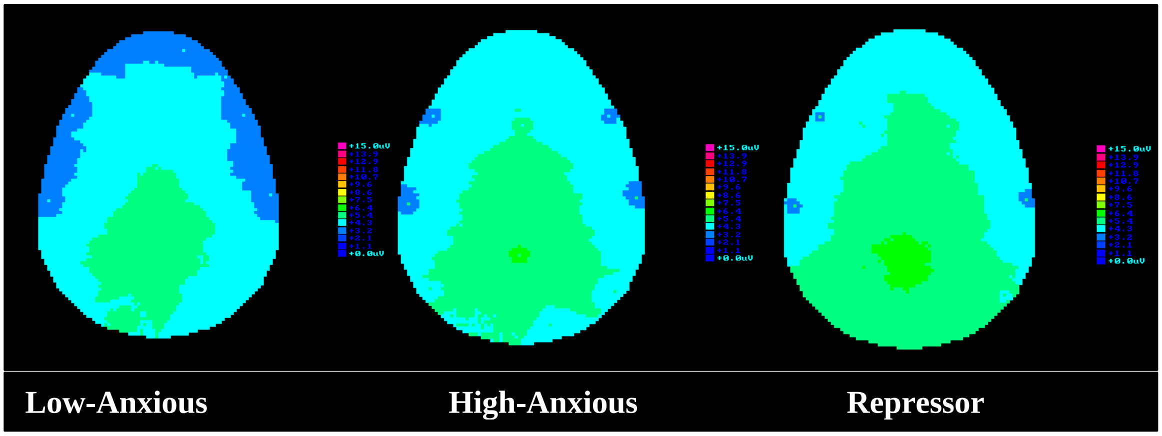
Figure 2. Topographic Maps of EEG Dynamics During the Negative Condition of the Stroop Interference Task



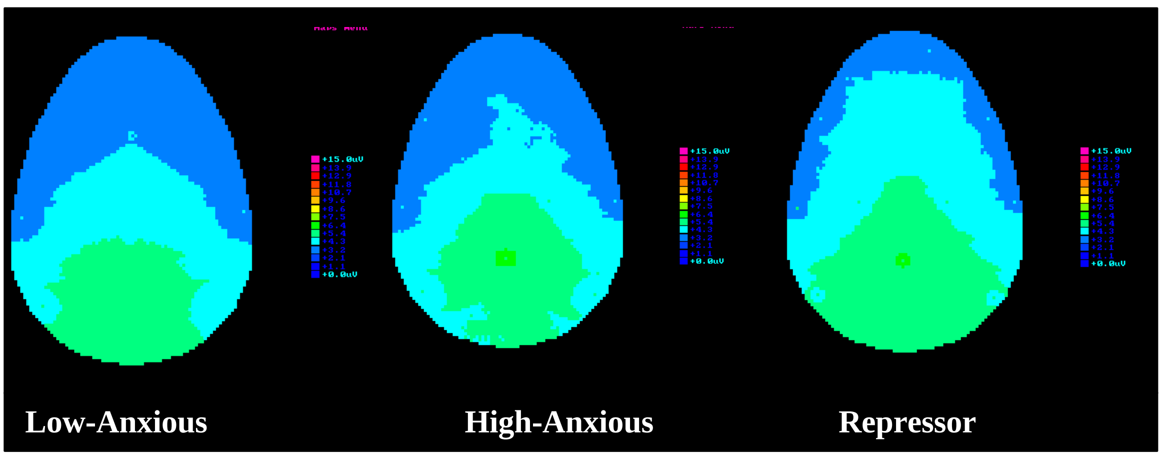
Low Theta Activity (3.5 - 5.45 Hz) During the Negative Condition of the Stroop Interference Task in Low-Anxious, High-Anxious, and Repressor Individuals



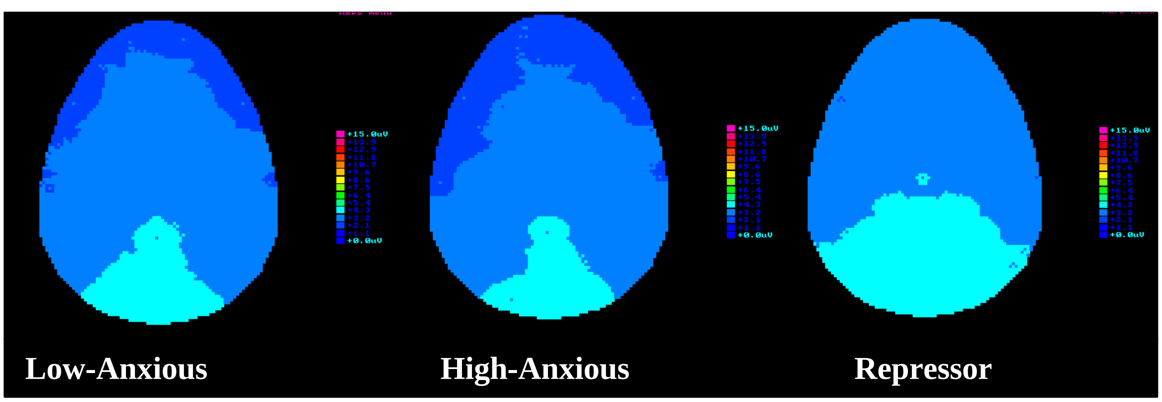
High Theta Activity (5.5 - 7.45 Hz) During the Negative Condition of the Stroop Interference Task in Low-Anxious, High-Anxious, and Repressor Individuals



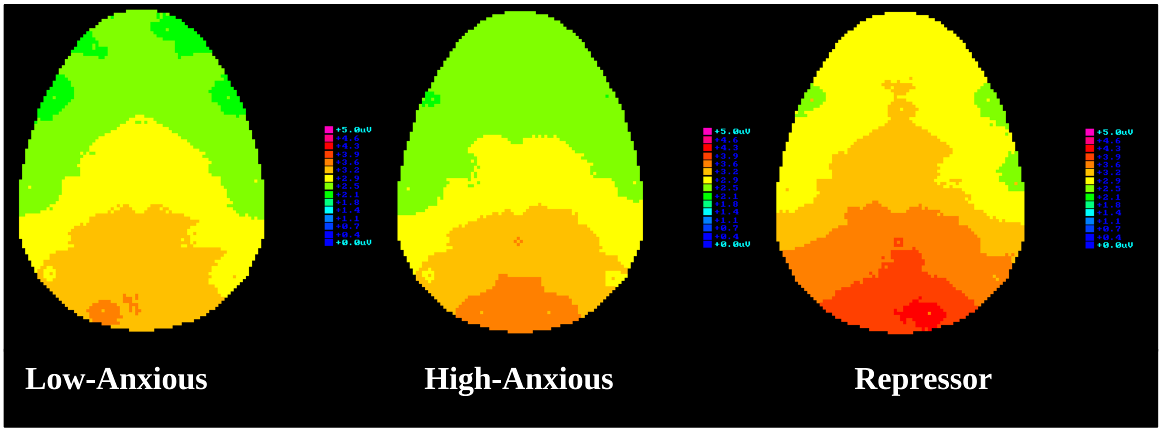
Low Alpha Activity (7.5 - 8.45 Hz) During the Negative Condition of the Stroop Interference Task in Low-Anxious, High-Anxious, and Repressor Individuals



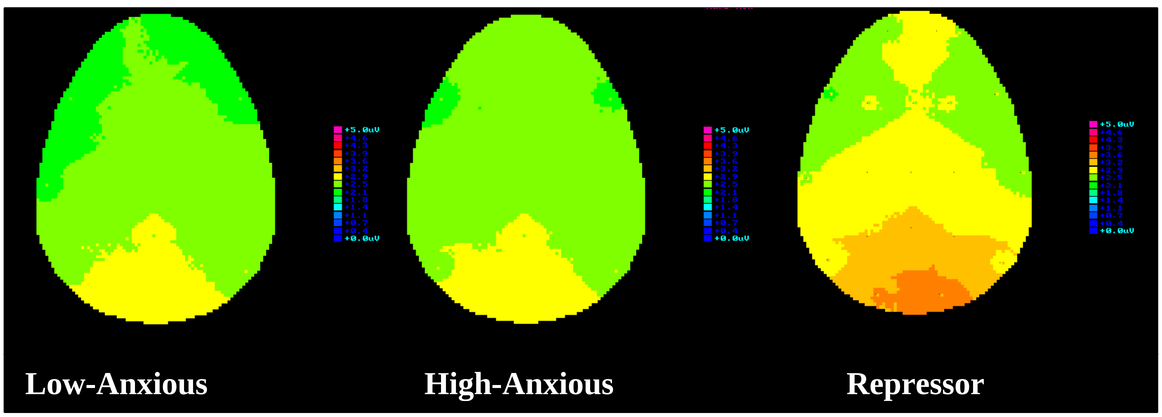
Mid-alpha Activity (9.5 - 11.45 Hz) During the Negative Condition of the Stroop Interference Task in Low-Anxious, High-Anxious, and Repressor Individuals



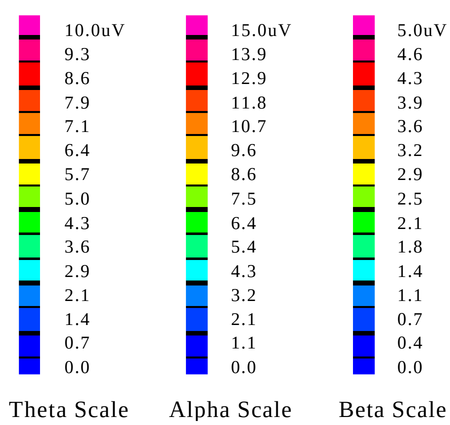
High Alpha Activity (11.5 - 12.45 Hz) During the Negative Condition of the Stroop Interference Task in Low-Anxious, High-Anxious, and Repressor Individuals



Beta 13 Activity (13.5 - 15. 45 Hz) During the Negative Condition of the Stroop Interference Task in Low-Anxious, High-Anxious, and Repressor Individuals

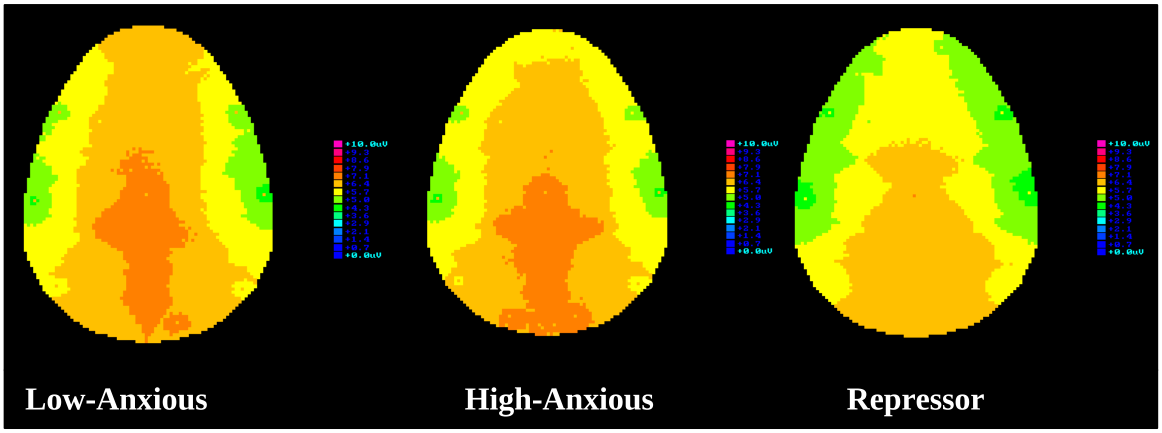


Beta 16 Activity (15.5 - 19.45 Hz) During the Negative Condition of the Stroop Interference Task in Low-Anxious, High-Anxious, and Repressor Individuals

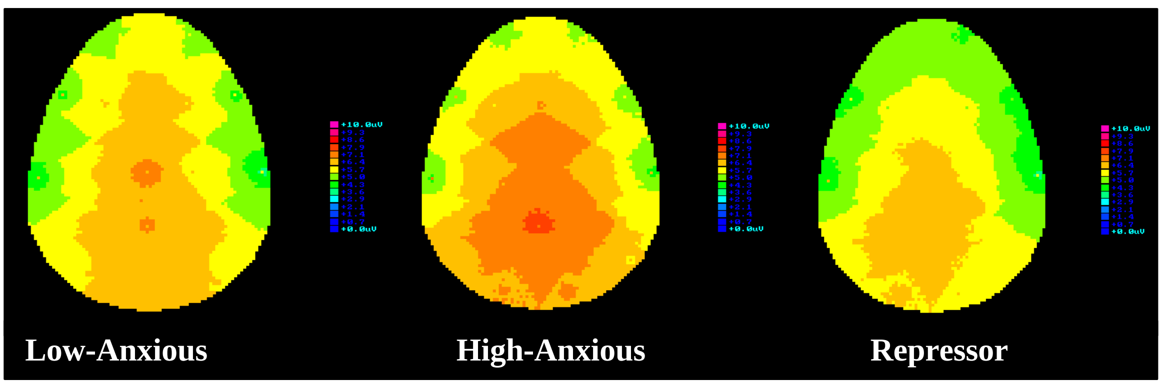


Mean Magnitude Scales for each of the Hz bands.

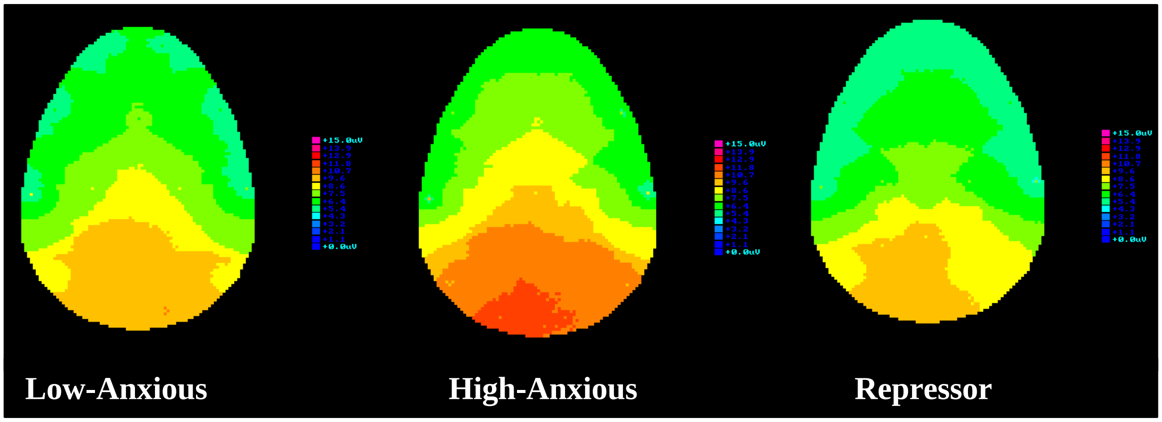
Figure 3. Topographic Maps of EEG Dynamics During the Cool Condition of the Hand Immersion



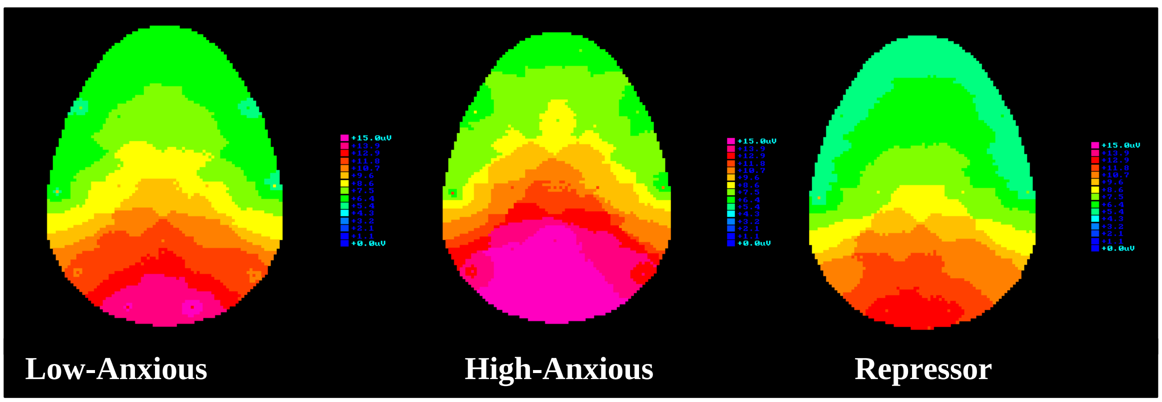
Low Theta Activity (3.5 - 5.45 Hz) During the Cool Condition of the Hand Immersion Task in Low-Anxious, High-Anxious, and Repressor Individuals



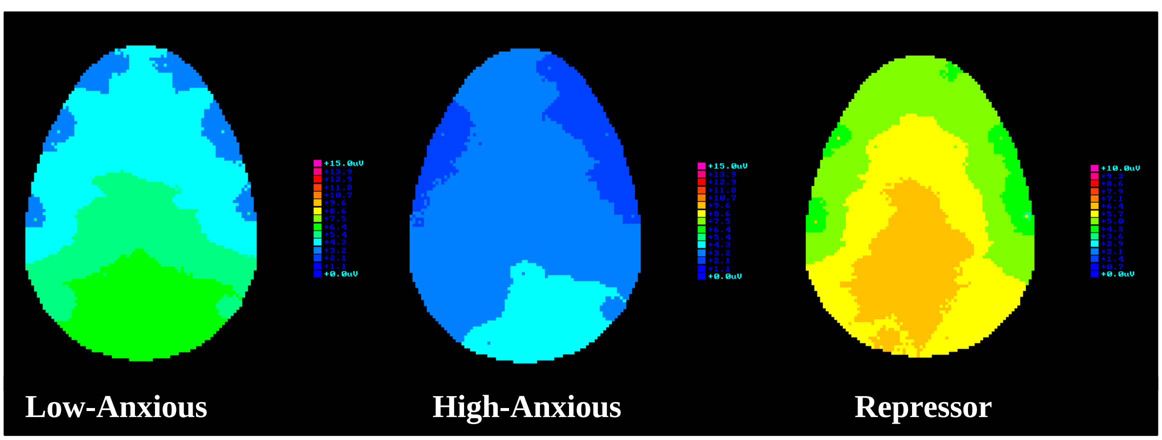
High Theta Activity (5.5 - 7.45 Hz) During the Cool Condition of the Hand Immersion Task in Low-Anxious, High-Anxious, and Repressor Individuals



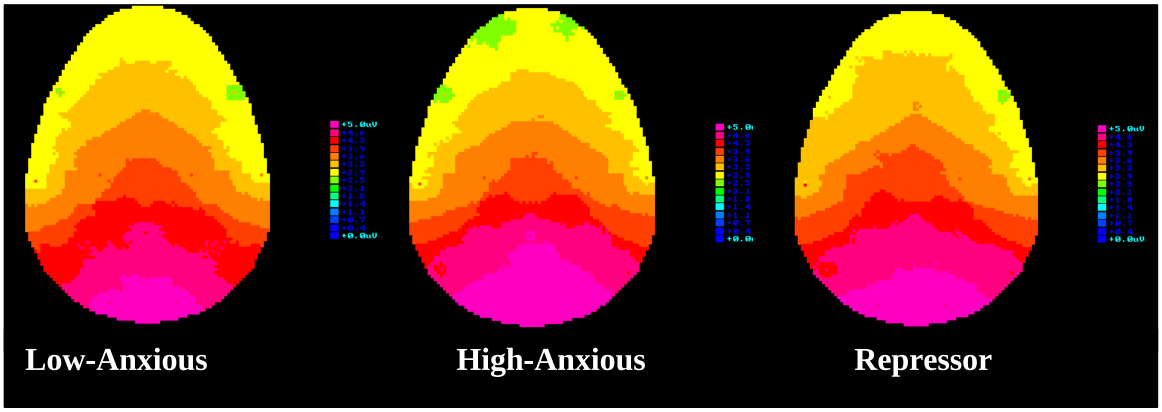
Low Alpha Activity (7.5 - 8.45 Hz) During the Cool Condition of the Hand Immersion Task in Low-Anxious, High-Anxious, and Repressor Individuals



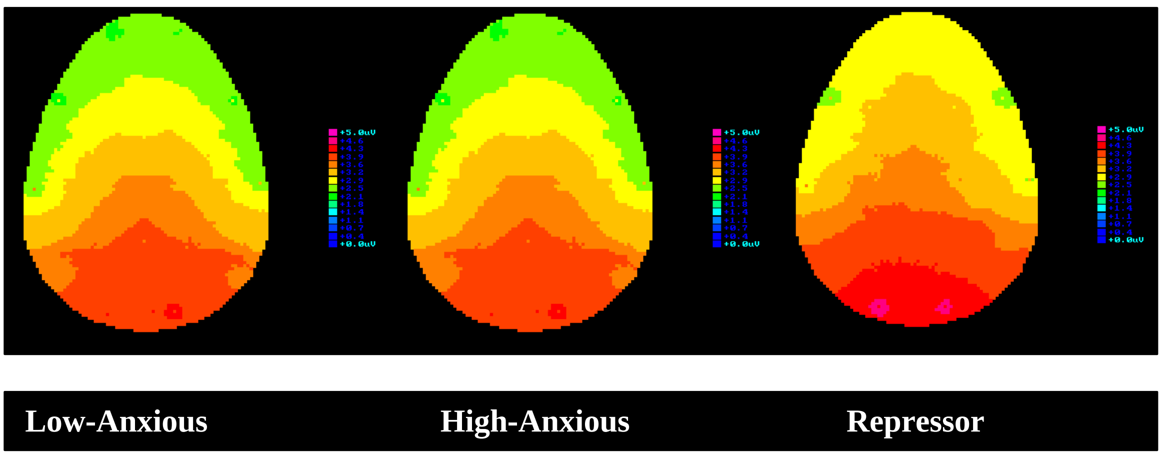
Mid-alpha Activity (9.4 - 11.45 Hz) During the Cool Condition of the Hand Immersion Task in Low-Anxious, High-Anxious, and Repressor Individuals



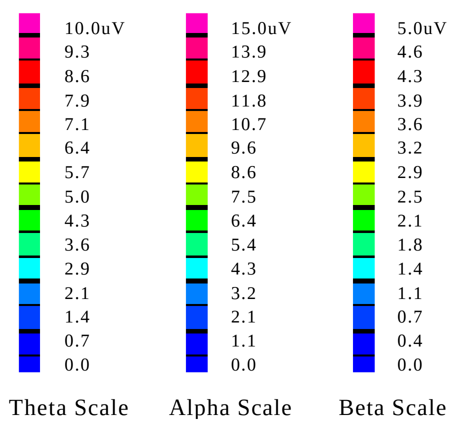
High Alpha Activity (11.5 - 12.45 Hz) During the Cool Condition of the Hand Immersion Task in Low-Anxious, High-Anxious, and Repressor Individuals



Beta 13 Activity (13.5 - 15.45 Hz) During the Cool Condition of the Hand Immersion Task in Low-Anxious, High-Anxious, and Repressor Individuals

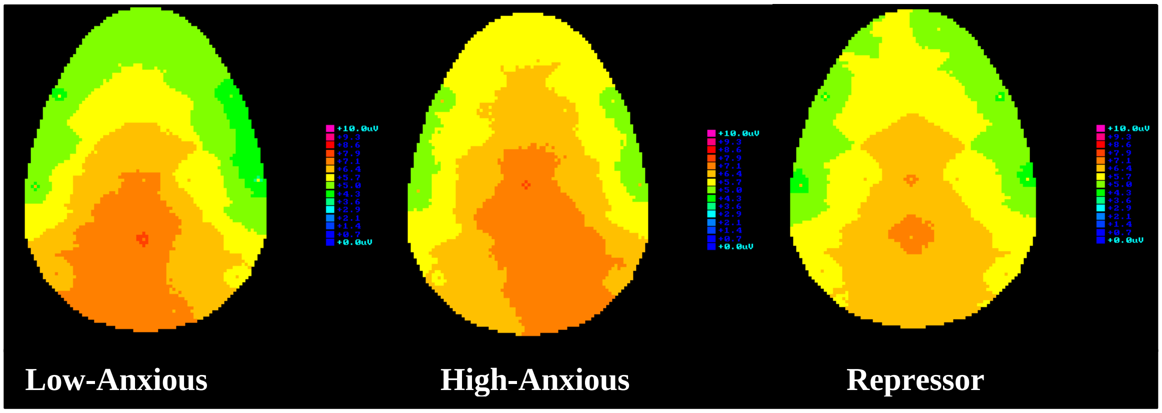


Beta 16 Activity (15.5 - 19.45 Hz) During the Cool Condition of the Hand Immersion Task in Low-Anxious, High-Anxious, and Repressor Individuals

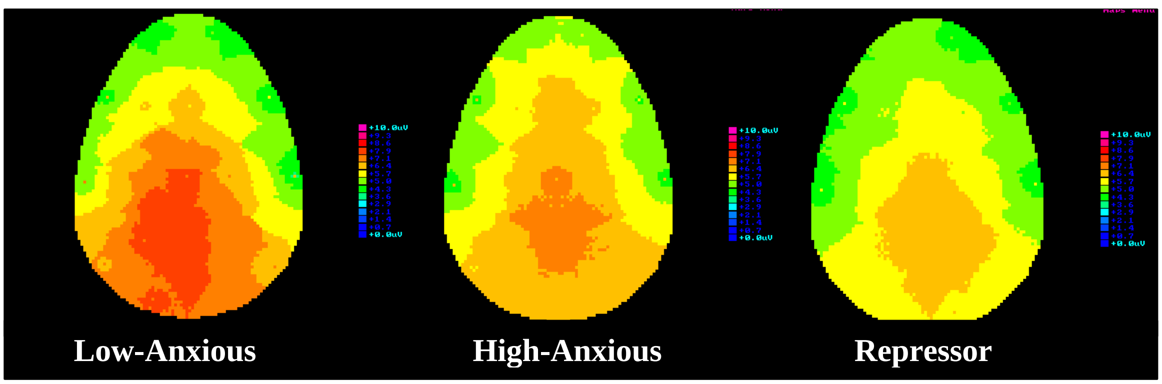


Mean Magnitude Scales for each of the Hz bands.

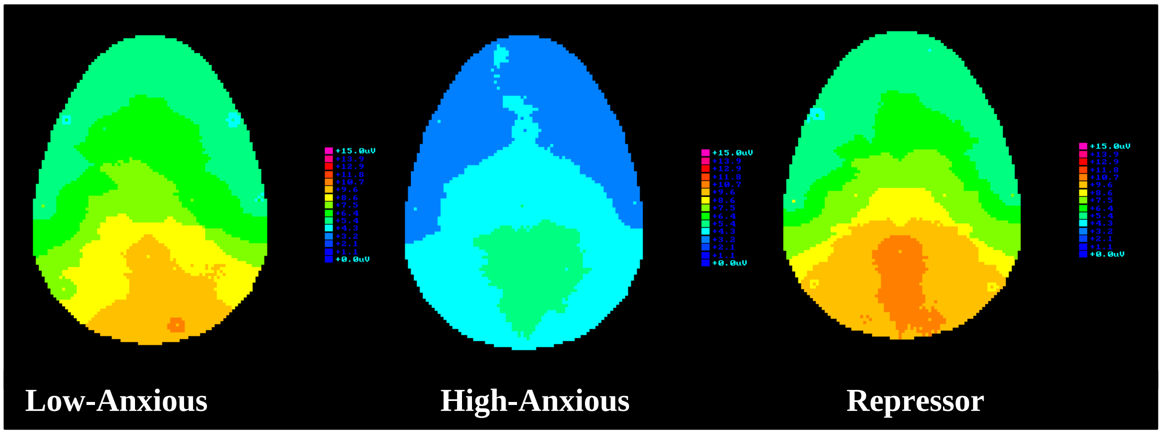
Figure 4. Topographic Maps of EEG Dynamics During the Cold Condition of the Hand Immersion Task



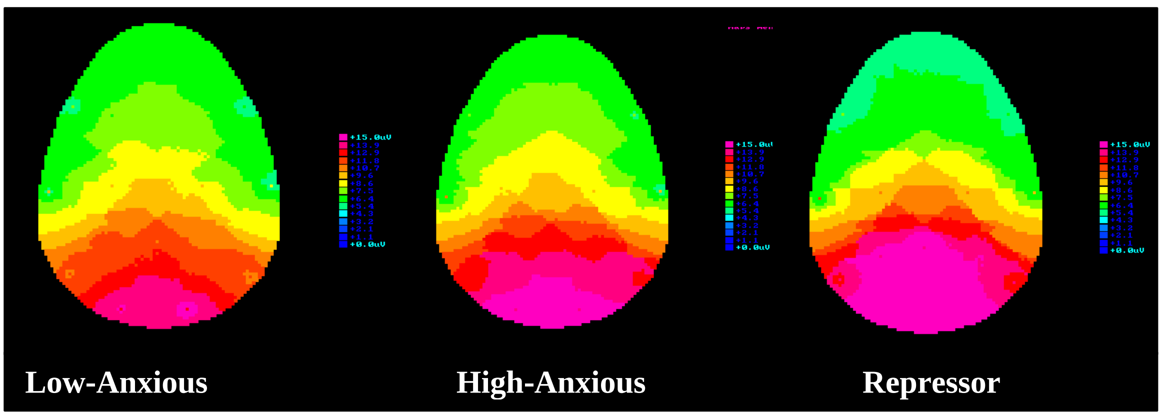
Low Theta Activity (3.5 - 5.45 Hz) During the Cold Condition of the Hand Immersion Task in Low-Anxious, High-Anxious, and Repressor Individuals



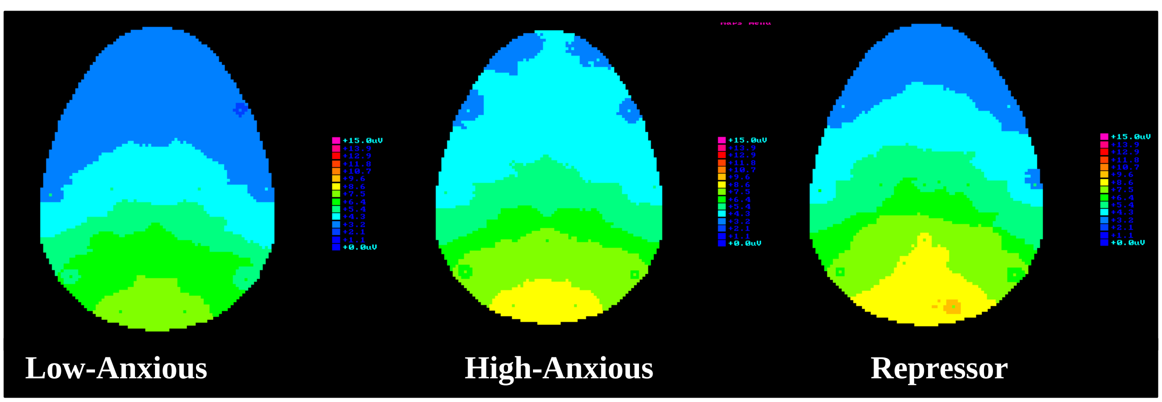
High Theta Activity (5.5 - 7.45 Hz) During the Cold Condition of the Hand Immersion Task in Low-Anxious, High-Anxious, and Repressor Individuals



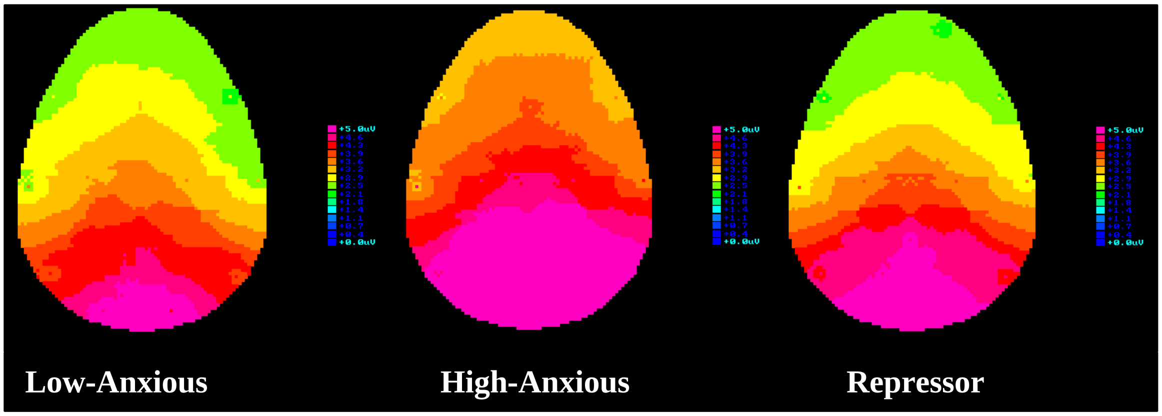
Low Alpha Activity (7.5 - 8.45 Hz) During the Cold Condition of the Hand Immersion Task in Low-Anxious, High-Anxious, and Repressor Individuals



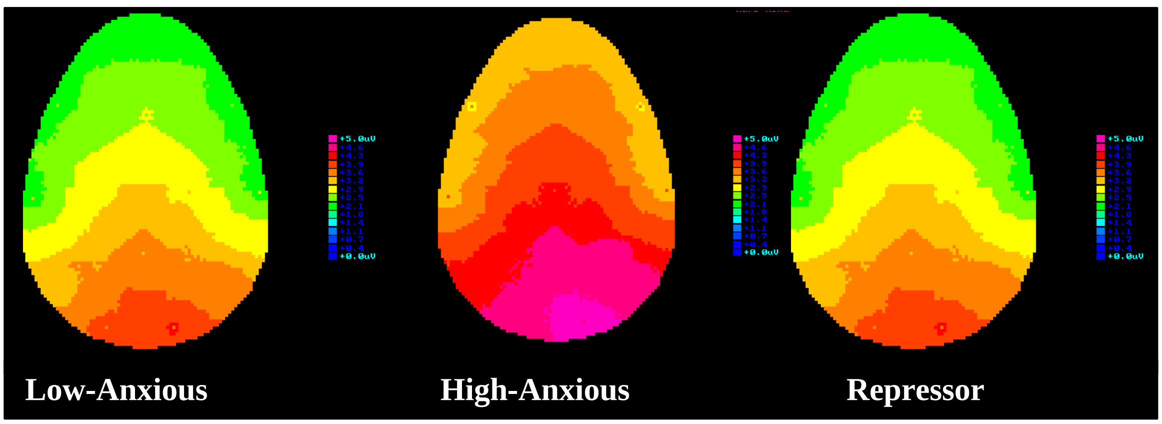
Mid-alpha Activity (9.5 - 11.45) During the Cold Condition of the Hand Immersion Task in Low-Anxious, High-Anxious, and Repressor Individuals



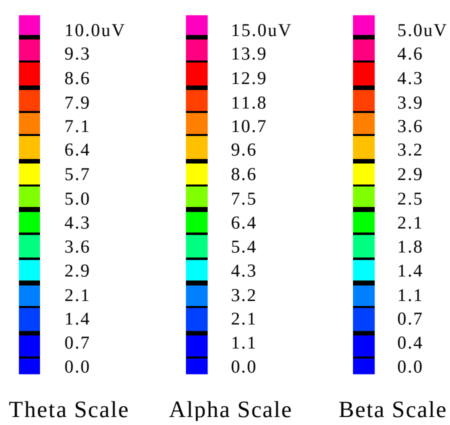
High Alpha Activity (11.5 - 12.45 Hz) During the Cold Condition of the Hand Immersion Task in Low-Anxious, High-Anxious, and Repressor Individuals



Beta 13 Activity (13.5 - 15.45 Hz) During the Cold Condition of the Hand Immersion Task in Low-Anxious, High-Anxious, and Repressor Individuals



Beta 16 Activity (15.5 - 19.45 Hz) During the Cold Condition of the Hand Immersion Task in Low-Anxious, High-Anxious, and Repressor Individuals



Mean Magnitude Scales for each of the Hz bands.

CURRICULUM VITAE
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EDUCATION

B.S. Virginia Polytechnic Institute and State University, Blacksburg, VA. (May 1992) Psychology.

Senior Thesis: *The effect of light on unilateral stroke patients in a dichotic listening task*. David W. Harrison, Ph.D., supervising professor.

M.A. Hollins College, Hollins, VA. (May 1993) Experimental Psychology.

Master's Thesis: *Wandering behavior as a function of season and time of day*. George J. Ledger, Ph.D., major professor.

Ph.D. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. (May 4, 1999). Experimental Psychology (Emphasis on Cognitive Neuroscience).

Dissertation: *Repressors vs. low- and high- anxious coping styles: EEG, heart rate, and blood pressure differences during cognitive and cold pain stressors.* Helen J. Crawford, Ph.D., major professor.

OTHER EDUCATION

- Ψ fMRI Workshop at Cognitive Neuroscience Society (1997, Boston, Massachusetts)
- Ψ C++ Programming (1 semester, Virginia Western College)
- Ψ Excel Training, Power Point Training (Veteran's Medical Center, Salem, Virginia)

HONORS

- Ψ Psi Chi National Honor Society in Psychology
- Ψ Outstanding Rating (July 1994). Department of Veteran's Affairs Medical Center, Salem VA.
- Ψ Dean's List (fall 1989 - spring 1993)
- Ψ 1992 Award for Achievement in Research, Psychology Department, Virginia Polytechnic Institute and State University

APPOINTMENTS AND POSITIONS

8/98-present

Temporary Instructor Cognitive/Experimental Program, University of Georgia. Currently teaching courses at the undergraduate and graduate levels in the areas of Sensation/Perception, Cognition, and Advanced General Psychology, Introductory Psychology, Honors Introductory Psychology. Supervisor: Jim Brown, Ph.D.

1/98-5/98

Coordinator of Applications to the Graduate Psychology Program, Virginia Polytechnic Institute and State University. Maintained a computer database of all demographic and scholastic information for applicants to the graduate psychology program, generated weekly status reports of applicants for each specialty area within psychology, communicated with all levels of faculty and staff regarding status of applicants, answered all queries regarding applicant standing. Supervisor: Jack Finney, Ph.D.

5/97-12/97

Graduate Research Assistant, Neurocognition Laboratory, Virginia Polytechnic Institute and State Univeristy. Senior Paid Research Assistant on a grant-sponsored joint study (P.I.: Helen Crawford) between Virginia Polytechnic Institute and State University and the University of Virginia investigating functional Magnetic Resonance Imaging (fMRI) correlates of pain and non-pain conditions during different levels of attention, as modified by individual differences in attentional processes. As the project coordinator, duties included overall coordinating of daily activities, planning and execution of all research projects, conducting cold presser training, and supervision of undergraduate assistants receiving field study course credit for their participation. Other duties included working with the UVA team during recording and analyses of fMRI data, and maintaining ongoing education involving analysis of fMRI data. Supervisor: Helen J. Crawford, Ph.D.

5/97-8/97

Lab Coordinator, Psychophysiological Laboratory, Virginia Polytechnic Institute and State University. Responsibilities included redesign of lab space, development of lab guidelines, repair and maintenance on 10 psychophysiological recording stations, identification of damaged equipment including, but not limited to. EEG caps, leads, cords, bioamplifiers, computer cards and development of a new menu system for data handling. Requirements included familiarity with the following software and software driven systems: Windows 95, Windows 3.x, Neuroscan 3.0 & 4.0 EEG/ERP workstation, Lexicor Neurosearch-24 EEG/ERP workstation, Vision Lab, LC Technologies Eyegaze software, A-Codas and Dos 3.0, 5.0. Supervisor: Jack Finney, Ph.D.

8/95 - 5-97

Instructor, Virginia Polytechnic Institute and State University. Responsibilities included design of course syllabus; selection of textbooks and other course material; design, lectures, administration and grading of exams for classes of 60 - 90 students. Courses taught: Research Methods, Psychology of Learning and Psychology of Personality. Supervisors: Jack Finney, Ph.D. and Helen Crawford, Ph.D.

8/94 - 5/95

Neurocognition Laboratory, Virginia Polytechnic Institute and State University. Paid research assistant on a NASA Langley Research Center grant involving the EEG descriptors of attentional performance in low and high sustained attention subjects performing computer simulated pilot decision making tasks under varying workload. Responsibilities included developing running the experimental paradigm, recording EEG data, screening EEG data for artifacts and preparing manuscripts. Position required complete familiarity with the Neurosearch-24 bioamplifiers and the Lexicor Recording System. Supervisor: Helen J. Crawford, Ph.D.

1/94 - 5/94

Neurocognition Laboratory, Virginia Polytechnic Institute and State University. Paid research assistant on an NIH grant involving the EEG and SEP correlates of pain control in adults with chronic low back pain and matched control subjects. Operated Grass amplifiers and recording system and a Lexicor Neurosearch-24 EEG machine. Joint study with the Brain Center, Radford University, (Director: Karl Pribram). Supervisor: Helen J. Crawford, Ph.D.

6/95 -9/96 Research Assistant, Endocrine Section, Department of Veteran’s Affairs Medical Center, Salem, VA. Responsibilities included coordinating and participating as a co-investigator in a study investigating the endocrine concomitants of cigarette smoking and smoking cessation in chronic smokers and matched controls. Supervisor: Kim Ragsdale, Ph.D.

1/92 - 5/97 Student Trainee, Department of Psychology, Department of Veteran's Affairs Medical Center, Salem, Virginia. Clinical responsibilities included program design and selection of therapeutic techniques to be used in the Smoking Cessation Program. Specific duties related to the Smoking Program included screening and scheduling of patients, formulating individual treatment plans, consulting with staff physicians on individual cases to arrange for prescriptions of Nicotine Replacement Patch and design and maintenance of the Smoking Cessation Instruction Manual for use in the clinic. Additional clinical responsibilities included the yearly psychological evaluation of spinal cord patients . Research responsibilities included the formation and design of research projects and consultation with all levels of staff in regard to ongoing projects, assisting with statistical analysis on ongoing research projects and auditing medical research projects for the Human Subjects Committee. Supervisors: James J. Lanter, Ph.D. and Jerome Gilmore, Ph.D.

8/93 - 12/93 Graduate Teaching Assistant, Introductory Psychology Discussion Leader. Responsible for discussion classes of about fifty students each. Led discussions on basic psychological topics. Supervisor: Mike Casey, M.S.

1/93 - 5/93 Guest Lecturer, Department of Psychology, Hollins College, Hollins, VA. Senior Level Seminar on Physiological Psychology. Supervisor: George Ledger, Ph.D.

10/90 - 12/91 Volunteer Research Student, Department of Veteran's Affairs Medical Center, Salem, VA. Responsibilities included screening elderly patients using the Mini-Mental Status for a study involving altered rates of positron emission across pseudo-depressive, alcohol related and Alzheimer’s type dementias. Additional responsibilities included coordinating and participating as a researcher in an experiment involving the effects of bright light exposure on accuracy and response time during a dichotic listening study in unilateral stroke patients. Supervisors: James Lanter, Ph.D. and David Harrison, Ph.D.

PROFESSIONAL AFFILIATIONS

Ψ Student member, Society for Psychophysiological Research

Ψ Student member, American Psychological Association

Ψ Student member, American Psychological Society

Ψ Student member, Cognitive Neuroscience Society

RESEARCH PUBLICATIONS

Coplin[Ψ], J. M., Ragsdale, K. G. (1997). Efficacy of nicotine transdermal program vs. a nicotine fading program: a treatment outcome study. Federal Practitioner, 14,46-48, 56.

Crawford, H. J., Knebel, T., Kaplan, L., Vendemia, J.M.C., Xie, M., Jameson, S. & Pribram, K.H. (1998). Hypnotic analgesia: I. Somatosensory event-related potential changes to noxious stimuli and II. Transfer learning to reduce chronic low back pain. International Journal of Clinical and Experimental Hypnosis, 46, 92-132.

Crawford, H.J., Knebel, T. & Vendemia, J.M.C. (1998). The nature of hypnotic analgesia: Neurophysiological foundation and evidence. Contemporary Hypnosis, 15, 22-23.

Crawford, H.J., Knebel, T.F., Vendemia, J. M. C., Kaplan, L. & Ratcliff, B. (1995). EEG activation patterns during tracking and decision-making tasks: Differences between low and high sustained adults. Proceedings of the 8th International Symposium on Aviation Psychology, (pp. 886-890). Columbus, OH.

Crawford, H. J., Knebel, T. F. & Coplin, J .M. (1994). Hypnotic analgesia is no longer a paradox: Neurophysiological and cognitive processes explored. International Journal of Clinical and Experimental Hypnosis, 42, 478-479.

Crawford, H. J., Knebel, T., Vendemia, J. M. C., & Horton, J. E. (in press). La naturaleza de la analgesia hipnótica: bases y evidencias neurofisiológicas. Anales de Psicologia.

PUBLISHED ABSTRACTS

Vendemia, J. M. C., Ragsdale, K. G. & Iranmanesh, A. (1995). Activity of the hypothalamic-pituitary-adrenal axis and -endorphin secretory dynamics in men habituated to cigarette smoking. Psychophysiology, 32, S81.

Coplin, J. M., Knebel, T. F. & Crawford, H. J. (1994). Cold pressor pain: EEG topographical pattern differences before and during dips as measured by cognitive variables. Psychophysiology, 31, s36.

Downs III, J.H., Crawford, H.J., Plantec, M.B., Horton, J.E., Vendemia, J.M.C., Harrington, G.S., Yung, S. & Shamro, C. (1998). Attention to painful somatosensory TENS stimuli. NeuroImage, 7, S432.

Crawford, H.J., Horton, J.E., Hirsch, T.B., Harrington, G.S., Plantec, M.B., Vendemia, J. M. C., Shamro, C., McClain-Furmanski, D., & Downs III, J.H. (1998). Attention and disattention (hypnotic analgesia) to painful somatosensory TENS stimuli differentially affects brain dynamics: a functional magnetic resonance imaging study. International Journal of Psychophysiology, 30(1-2), 77.

Crawford, H.J., Horton, J.E., Harrington, G.S., Vendemia, J.M.C., Plantec, M.B., Yung, S., Shamro, C. & Downs III, J.H. (1998). Hypnotic analgesia (disattending pain) impacts neuronal netword activation: an fMRI study of noxious somatosensory TENS stimuli. NeuroImage, 7, s436.

Lamas, J., Crawford, H.J. & Vendemia, J.M.C. (1997). MMN and auditory event-related potentials during posthypnotically suggested deafness: effect of hypnotizability level. Psychophysiology.

Crawford, H.J., Knebel, T., Pribram, K.H., Kaplan, L., Vendemia, J.M.C., Xie, M., & L'Hommedieu (1997). Somatosensory event-related potentials and allocation of attention to pain: effects of hypnotic analgesia as moderated by hypnotizability level. International Journal of Psychophysiology, 25, 72-73.

[Ψ] Maiden name

Crawford, H.J., Knebel, T., Kaplan, L., Vendemia, J.M.C., Jamison, S. & Pribram, K.H. (1996). Learning to control experimental pain in the laboratory and its effects on chronic low back pain. International Journal of Clinical and Experimental Hypnosis.

Crawford, H. J., Knebel, T. F., Vendemia, J. M. C., Kaplan, L. & Ratcliff, B. (1995, April). EEG activation patterns during tracking and decision-making tasks: Differences between low and high sustained attention adults. Paper presented at the 8th International Symposium on Aviation Psychology, Columbus, OH.

Crawford, H., J., Knebel, T. & Coplin, J. (1994, October). Hypnotic analgesia is no longer a paradox: Neurophysiological and cognitive processes explored. International Journal of Clinical and Experimental Hypnosis, 42, 478-479.

Crawford, H., J., Knebel, T. F., Coplin, J. M., Scanlon, J. M., Fulkerson, B. & Houzouris, N. G. (1994, October). EEG topographic map differences in high and low sustained-attention adults. Paper presented to the Society for Psychophysiological Research, Atlanta, GA.

MANUSCRIPTS IN PREPARATION

Vendemia, J.M.C., Horton, J. & Crawford, H.J. (manuscript in preparation). Evidence for personality mediated inhibition: physiological reactivity and performance of repressors and non-repressors on on an emotional stroop interference Task.

Lamas, J., Crawford, H.J. & Vendemia, J.M.C. (manuscript under editorial review). Processing irrelevant auditory stimuli: Hypnotizability level moderates ERP amplitudes and latencies.

Crawford, H.J., Vendemia, J.M.C. & Knebel, T.F. (manuscript in preparation). Dynamic EEG pattern shifts during attention and hypnotic analgesia: Differences between low and high hypnotizables in their response to cold pressor pain.

PROFESSIONAL PRESENTATIONS

1. Presentations

Vendemia, J.M.C., Horton, J. & Crawford, H.J. (1998, May). Physiological reactivity of repressors and non-repressors on an emotional stroop interference Task. Poster session presented at the 10th Annual Convention of the American Psychological Society, Washington, DC.

Vendemia, J.M.C., Karnasuta, M.A. & Crawford, H.J. (1998, May). Reaction Time and Errors during an Emotionally Valenced Computer Stroop Task. Poster session presented at the 10th Annual Convention of the American Psychological Society, Washington, DC.

Downs III, J.H., Crawford, H.J., Plantec, M.B., Horton, J.E., Vendemia, J.M.C. Vendemia, Harrington, G.C., Yung, S. & Shamro, C. (1998, June). Attention to painful somatosensory TENS stimuli. The Cognitive Neuroscience Society, Toronto, Canada.

Crawford, H.J., Horton, J.E., Harrington, G.C., Vendemia, J.M.C., Plantec, M.B., Jung, S., Shamro, C & Downs III, J.H. (1998, June). Hypnotic analgesia (disattending pain) impacts neuronal network activation: an fMRI study of noxious somatosensory TENS stimuli. The Cognitive Neuroscience Society, Toronto, Canada.

Lamas, J., Crawford, H.J. & Vendemia, J.M.C. (1997, October). MMN and auditory event-related potentials during posthypnotically suggested deafness: Effect of hypnotizability level. Paper presented at the 37th Annual Meeting of the Society for Psychophysiological Research, Cape Cod, MA.

Vendemia, J. M. C., Ragsdale, K. G. & Iranmanesh, A. (1995). Activity of the hypothalamic-pituitary-adrenal axis and -endorphin secretory dynamics in men habituated to cigarette smoking. Poster session presented at the 35th Annual Meeting of the Society for Psychophysiological Research, Toronto, Canada.

Crawford, H. J., Knebel, T. F., Vendemia, J. M. C., Kaplan, L. & Ratcliff, B. (1995, April). EEG activation patterns during tracking and decision-making tasks: Differences between low and high sustained attention adults. Paper presented at the Eighth International Symposium on Aviation Psychology, Columbus, OH.

Coplin, J. M., Knebel, T. F. & Crawford, H. J. (1994, October). Cold pressor pain: EEG topographical differences before and during dips as moderated by cognitive variables. Poster session presented at the 34th Annual Meeting of the Society for Psychophysiological Research, Atlanta, GA.

Crawford, H. J., Knebel, T., Coplin, J., Fulkerson, B., Scanlon, J., Sawyer, J. & Houzouris, N. (1994, October). EEG topographic map differences in high and low sustained-attention adults: tracking tasks. Poster session presented at the 34th Annual Meeting of the Society for Psychophysiological Research, Atlanta, GA.

Crawford, H. J., Knebel, T. & Coplin, J. (1994, October). Hypnotic analgesia is no longer a paradox: Neurophysiological and cognitive process explored. In A. Tellegen (Chair), Celebrating E. R. "Jack" Hilgard's 90th birthday: On individual differences in hypnotic ability and one individual's difference to the study of hypnosis. Symposium conducted at the 45th Annual Scientific Program of the Society for Clinical and Experimental Hypnosis, San Francisco, CA.

Coplin, J. M., Lanter, J. J., Ledger, G. J., The quantification of wandering behavior in Alzheimer's patients. Paper presented at the spring Convention of the Virginia Psychological Association, April, 1993.

Coplin, J. M. , Harrison, D. W. , Lanter, J. J. , The effect of light on unilateral stroke patients in a dichotic listening task: a preliminary report. Paper presented at the spring Convention of the Virginia Psychological Association, April, 1992.

Bunce, V. L., Coplin, J. M. , Harrison, D. W. Child- or adult- directed speech and esteem: effects on performance and arousal in elderly adults. Paper presented at the Third Annual American Psychological Society Convention, June, 1991.

2. Invited Addresses

Crawford, H. J., Horton, J., Hirsch, T. B., Harrington, G. S., Plantec, M. B., Vendemia, J. M. C., Shamro, C., McClain-Furmanski, D., and Downs III, J. H. (October, 1998). Attention and Disattention (Hypnotic Analgesia) to Painful Somatosensory TENS Stimuli Differentially Affects Brain Dynamics: A Functional Magnetic Resonance Imaging Study. Invited Paper for Symposium on "New Perspectives on Brain Imaging of Human Pain and Pain Control: Symposium in Remembrance of Bonica" (Chair: Andrew Chen). 9th World Congress of Psychophysiology, Sicily, Italy.

3. Refereed Scientific Papers

Downs III, J. H., Crawford, H. J., Plantec, M. B., Horton, J. E., Vendemia, J. M. C., Harrington, J. S., Yung, S., Shamro, C. (June, 1998). Attention to Painful Somatosensory TENS Stimuli: An fMRI Study . Paper presented at the 4rth International Conference on Function Mapping of the Human Brain, Montreal, Canada.

Crawford, H. J., Horton, J. E., Harrington, G. S., Vendemia, J. M. C., Plantec, M. B., Yung, S., Shamro, C., & Downs III, J. H. (June, 1998). Hypnotic Analgesia (Disattending Pain) Impacts Neuronal Networdk Activation: An fMRI Study of Noxious Somatosensory TENS Stimuli. Paper presented at the 4rth International Conference on Function Mapping of the Human Brain, Montreal, Canada.

Lamas, J., Crawford, H. J., & Vendemia, J. M. C. (1997, October). MMN and Auditory Event-Related Potentials During Posthypnotically Suggested Deafness: Effect of Hypnotizability Level. Paper presented at the Society for Psychophysiological Research, Cape Cod, MA.

Crawford, H. J., Knebel, T. F., Kaplan, L., Vendemia, J. M. C., Jamison, S., & Pribram, K. H. (1996, November). Learning to Control Experimental Pain in the Laboratory and its Effects on Chronic Low Back Pain. Paper in symposium "Cognitive and Neurophysiological Aspects of Hypnosis" presented at the Society for Clinical and Experimental Hypnosis, Tampa, FL.

Crawford, H. J., Knebel, T. F., Pribram, K. H., Kaplan, L., Vendemia, J. M. C., Xie, M., & Hommedieu, C. L. (1996, July). Somatosensory Event-Related Potentials and Allocation of Attention to Pain: Effects of Hypnotic Analgesia as

Moderated by Hypnotizability Level. Invited paper presented in symposium: "Neurophysiological and Attention Aspects of Hypnosis" presented at the 8th World Congress of Psychophysiology, Tampere, Finland.

Crawford, H. J., Knebel, T. F., Kaplan, L., Vendemia, J., Xie, M., & Pribram, K. H. (1996, April). Hypnotically suggested analgesia as moderated by hypnotic susceptibility level: Somatosensory Event-Related Potentials. Paper Presented at the Cognitive Neuroscience Society meeting, San Francisco, CA.