

```

1  /*
2  Muscle Artifact Experiment
3
4  %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
5  %%%%%%%%% Version History %%%%%%%%%
6  %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
7  - 04-20-2019; created by Chris Gill: created the backbone of the experiment
8  - 02-28-2020; edited by Amanda Beck: modified task instructions, added triggers
9  - 11-09-2020; edited by Alex He: added version history, added 22/23 start/end
10 triggers, updated header parameters, enabled proper logfile saving
11 - 11-11-2020; edited by Alex He: added wait interval before and after 22/23
12 triggers, changed pulse width to 5ms
13 - 01-19-2021; edited by Alex He: updated logfile naming
14 10-05-2022; edited by Anthony Edgar: changed task to be compatible with c-pod.
15 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
16
17 *Note: the script must be changed depending on the screen resolution of the
18 monitor that it is being run on.
19
20 */
21 #####
22 #####
23 # Header
24 scenario = "Muscle_Artifact_Exp";
25 active_buttons = 1;
26 button_codes = 11; # 11 = space bar
27 default_font = "Helvetica";
28 write_codes = true;
29 response_port_output = false;
30 default_output_port = 1;
31 pulse_width = 5;
32 #####
33 #####
34 #SDL
35 begin;
36
37 ###load stimuli###
38
39 #Movement videos array
40 array {
41 video { filename = "brow_lower.avi"; description = "brow_lower.avi"; } vid1;
42 video { filename = "brow_raise.avi"; description = "brow_raise.avi"; };
43 video { filename = "squint.avi"; description = "squint.avi"; };
44 video { filename = "eyes_clench.avi"; description = "eyes_clench.avi"; };
45 video { filename = "nose_wrinkle.avi"; description = "nose_wrinkle.avi"; };
46 video { filename = "mouth_open.avi"; description = "mouth_open.avi"; };
47 } vids;
48
49 picture {box { color = 127,127,127; height = 1080; width = 1920;}; x = 0; y = 0;}
50 gray_box_pic;
51
52 text { caption = "Rest Period"; font_size = 80; background_color = 255,0,0; }
53 Rest_text;
54 box {height = 200; width = 1000; color = 255, 0,0; } box_2;
55 box {height = 700; width = 300; color = 255, 0,0; } box_3;
56
57 #Rest timer pics
58 #images for circle timer
59 array {
60 LOOP $i 25;
61 $k = '$i+1';
62 picture {background_color= 255,0,0; bitmap { filename = "$k.jpg";description =
63 "Timer_pic$k"; }; x = 0; y = 0; box box_2; x = 0; y = 300; box box_2; x = 0; y =
64 -300; box box_3; x = -500; y = 0; box box_3; x = 500; y = 0; text Rest_text; x =

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0; y = 400;} "timer_pic$k";
56 ENDLOOP;
57 } timer_pictures;
58
59
60 #Sounds
61 sound {wavfile { filename = "beep-07.wav";}; description = "Beep1";} beep1;
62 sound {wavfile { filename = "beep-06.wav"; }; description = "Beep2";} beep2;
63
64
65 #Instructions Pics
66 picture {
67     text {
68         caption = "INSTRUCTIONS:";
69         font_size = 44;
70     };
71     x = 0;y = 320;
72
73     text {
74         caption =
75         "You will now be shown a series of facial movements that
76         we would like you to mimic. Watch the facial expression
77         made during each short video and mimic that movement along
78         with the person on screen until you hear a beep. The beep
79         signals the end of the movement and the beginning of a
80         5 second rest period.";
81         font_size = 44;
82         text_align = align_left;
83     };
84     x = 0;y = 40;
85
86     text {
87         caption = "Press the space bar for more instructions.";
88         font_size = 32;
89     };
90     x = 0;y = -300;
91 } instructions_1;
92
93 picture {
94     text {
95         caption = "INSTRUCTIONS:";
96         font_size = 44;
97     };
98     x = 0;y = 320;
99
100     text {
101         caption =
102         "First, there will be a practice round which will
103         familiarize you with all of the movements and with
104         the timing of the trials. This will be followed
105         by 2 test trials.
106
107         Try to mimic the facial expressions that you see
108         as accurately as you can.";
109         font_size = 44;
110         text_align = align_left;
111     };
112     x = 0;y = 40;
113
114     text {
115         caption = "Press the space bar to begin.";
116         font_size = 32;
117     };
118     x = 0;y = -300;

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119 } instructions_2;
120
121 picture {
122     text {
123         caption = "INSTRUCTIONS:";
124         font_size = 44;
125     };
126     x = 0;y = 320;
127
128     text {
129         caption =
130         "This marks the end of the practice round. We will
131         now begin two test trials. Watch the facial expression
132         made during each short video and mimic that movement
133         along with the person on screen until you hear a beep";
134         font_size = 44;
135         text_align = align_left;
136     };
137     x = 0;y = 40;
138
139     text {
140         caption = "Press the space bar to begin.";
141         font_size = 32;
142     };
143     x = 0;y = -300;
144 } instructions_3;
145
146
147
148 ###Trials###
149 #Instructions Trial
150 trial {
151     trial_type = specific_response;
152     trial_duration = forever;
153     terminator_button = 1;
154     picture instructions_1;
155     code = "Instruction 1";
156 }instructions_trial_1;
157
158 trial {
159     trial_type = specific_response;
160     trial_duration = forever;
161     terminator_button = 1;
162     picture instructions_2;
163     code = "Instruction 2";
164 }instructions_trial_2;
165
166 trial {
167     trial_type = specific_response;
168     trial_duration = forever;
169     terminator_button = 1;
170     picture instructions_3;
171     code = "Instruction 3";
172 }instructions_trial_3;
173
174 #Rest Trial
175 trial {
176     trial_type = fixed;
177     trial_duration = 200;
178     stimulus_event{
179         picture timer_pic1;
180         code = "Rest circle timer";
181     } red_screen_circle_event;
182 } rest_trial;

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183
184 #Wait Delay Trial
185 trial {
186     trial_duration = 1000;
187 } wait_trial;
188
189 #Test Trial
190 trial {
191     trial_type = fixed;
192     trial_duration = stimuli_length;
193     stimulus_event{
194         video vid1;
195         port_code = 2;
196         code = "Test Video";
197     } vid_event;
198 } vid_trial;
199
200 #beep trial
201 trial {
202     trial_type = fixed;
203     trial_duration = stimuli_length;
204     stimulus_event{
205         sound beep2;
206         port_code = 3;
207         code = "Beep";
208     } beep_event;
209 } beep_trial;
210
211 #####
212 #####
212 #Begin PCL
213 begin_pcl;
214
215 ###Variables###
216 int nBlocks = 2;
217 int nTrials = 6;
218
219 #####
220 #####
220 #Set the port number
221 output_port port = output_port_manager.get_port( 1 );
222
223 string logpath = logfile_directory;
224 logfile.set_filename(logpath +logfile.subject() + "_EMG1_logfile.log");
225
226 #Instructions
227 instructions_trial_1.present();
228 instructions_trial_2.present();
229
230 #Example/training phase
231 wait_interval(100);
232 port.send_code(22);
233 wait_interval(100);
234 loop int jj=1 until jj>6 begin
235     loop int ii=1 until ii>timer_pictures.count() begin
236         red_screen_circle_event.set_stimulus(timer_pictures[ii]);
237         rest_trial.present();
238         ii=ii+1;
239     end;
240     vid_event.set_stimulus(vids[jj]);
241     gray_box_pic.present();
242     vid_trial.present();
243     beep_trial.present();
244     jj=jj+1;

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245     end;
246     wait_interval(100);
247     port.send_code(23);
248     wait_interval(100);
249
250     #Test instruction
251     instructions_trial_3.present();
252
253     #####
254     #Test Phase
255     wait_interval(100);
256     port.send_code(22);
257     wait_interval(100);
258     loop int k = 1 until k > nBlocks begin
259         loop int j = 1 until j > nTrials begin
260             #Rest
261             loop int i = 1 until i > timer_pictures.count() begin
262                 red_screen_circle_event.set_stimulus(timer_pictures[i]);
263                 rest_trial.present();
264
265                 i = i + 1;
266             end;
267             #Movement vid
268             vid_event.set_stimulus(vids[j]);
269             gray_box_pic.present();
270             vid_trial.present();
271             beep_trial.present();
272
273             j = j + 1;
274         end;
275     k = k + 1;
276 end;
277 wait_interval(100);
278 port.send_code(23);
279 wait_interval(100);
280

```