Emotion-in-Motion:
An ABM approach that modifies attentional disengagement from, rather than attentional engagement with, negative information.

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**Emotion-in-Motion: An ABM approach that modifies attentional disengagement from, rather than attentional engagement with, negative information.**

**Abstract**

**Background:** Individuals with heightened anxiety vulnerability demonstrate a bias favouring attention to negative information, and it has been argued that this reflects a difficulty to disengage from negative information. Methods to manipulate attentional bias have demonstrated inconsistent effectiveness, however such methods have not targeted biases in attentional disengagement specifically. A recently developed approach to attentional bias modification, labelled Emotion-in-Motion, has been proposed to result in facilitated attentional disengagement from information. Thus, the present study empirically investigated whether the Emotion-in-Motion task modifies biased attentional disengagement from negative information using eye-movement recordings.

**Methods:** Forty-four participants completed the Emotion-in-Motion attention manipulation task under conditions designed to enhance attention (Attend Negative) or attenuate attention (Avoid Negative) to negative information. Biased attentional engagement with, and attentional disengagement from, negative information was examined subsequently.

**Results:** Participants in the Avoid Negative condition demonstrated lower levels of biased attentional disengagement from negative information as compared to participants in the Attend Negative condition. No difference in biased attentional engagement with negative information was observed.

**Conclusions:** It is concluded that the Emotion-in-Motion task serves to independently manipulate selective attentional disengagement from negative information and may be useful in investigating the specific role of biased attentional disengagement in emotional vulnerability.
MODIFYING BIASED DISENGAGEMENT FROM NEGATIVE INFORMATION

Introduction

People who are high in anxiety vulnerability allocate greater selective attention towards emotionally negative information, relative to non-negative information, than do people low in anxiety vulnerability (Bar-Haim et al., 2007; Mogg & Bradley, 2005). This anxiety-linked attentional bias to negative information has been demonstrated using a variety of experimental approaches to assess the allocation of attention across sets of static stimuli, including measures of latency to respond to attentional probes (Bar-Haim et al., 2007) and measures of eye-movements (Armstrong et al., 2013). In each case, these approaches examine the latency at which individuals move attention toward negative information as compared to non-negative information, with relatively smaller latencies to move attention toward negative information representing relatively heightened attentional bias to negative information.

Researchers have manipulated this attentional bias in order to investigate the impact upon anxiety vulnerability (MacLeod & Clarke, 2015). To reduce attentional bias to negative information, researchers have commonly used task conditions that encourage participants to selectively allocate attention away from negative information and towards non-negative information. Conversely, to elevate attentional bias to negative information task conditions encourage participants to selectively allocate attention toward negative information and away from non-negative information. Though research has demonstrated that successful manipulation of attentional bias to negative information is associated with a consequent impact on anxiety vulnerability, existing methods have demonstrated inconsistency in their capacity to manipulate the bias (Grafton et al., 2017; MacLeod & Clarke, 2015). In response to this challenge researchers have developed novel approaches to manipulating selective...
attention to negative information that require participants to selectively allocate attention in more dynamic emotional visual environments (Notebaert et al., 2018).

Researchers have proposed that anxiety-linked attentional bias to negative information may be underpinned by specific attentional mechanisms of biased attentional engagement with, or biased attentional disengagement from, negative information. Biased attentional engagement with negative information represents an attentional mechanism that results in facilitated execution of attentional shifts towards negative information when attention is initially fixed elsewhere. In contrast, biased attentional disengagement from negative information represents an attentional mechanism that results in delayed execution of attentional shifts away from negative information after attention has been fixed upon it.

Research investigating attentional bias to negative information across both attentional probe and eye-movement based approaches has concluded that the bias likely reflects delayed attentional disengagement from negative information (Armstrong & Olatunji, 2013; Cisler & Koster, 2011; Fox et al., 2002; Salemink et al., 2007). This biased attentional disengagement from negative information is most accurately assessed by tasks that initially anchor attention upon negative information and then measure the latency at which participants move attention away from that information (Clarke et al., 2013). While earlier studies did not include these features, recent studies that have done so have also supported the proposal that anxiety is underpinned by biased attentional disengagement from negative information (Grafton & MacLeod, 2014; Rudaizky et al., 2014).

Given these findings, one limitation of traditional methods of manipulating attentional bias to negative information is that they do not specifically target the attentional disengagement component of attentional processing. Thus, it is possible that the inconsistency with which existing methods have manipulated attentional bias to negative
information is due to their failure to manipulate biased attentional disengagement from negative information.

The recently developed “Emotion-in-Motion” attentional bias manipulation approach described by Notebaert et al. (2018) may be capable of targeted manipulation of biased attentional disengagement from negative information. The Emotion-in-Motion task presents groups of images of emotional faces that dynamically move around a computer screen. Under conditions designed to attenuate attentional bias to negative information, participants are required to track the movement of a sole target face displaying a positive emotional expression (e.g. happiness) with their cursor. Participants are required to maintain tracking of the target face, and so refrain from disengaging attention from it, until the face changes to display a negative emotional expression (e.g. anger). At this point the participant must immediately disengage attention from the negative emotional face and use their cursor to track a new sole face displaying a positive emotional expression. This process is repeated across trials. Conversely, conditions designed to enhance attentional bias to negative information invert the target emotional expression, such that participants must track faces with negative emotional expressions and disengage attention from faces with positive emotional expressions. Conditions designed to assess attentional bias to negative information present equal numbers of trials under each of these arrangements, and assess the relative speed with which participants disengage from negative as compared to non-negative information by computing the time taken to remove the cursor from old target faces and move it to new target faces. One limitation of this design, however, is its assumption that attention is bound to the cursor location, in lieu of a more direct measure of attentional fixation.
Researchers using the Emotion-in-Motion task to examine biased attentional processing in the consumption domain have reported findings consistent with the prospect that the task may effectively manipulate biases in attentional disengagement specifically. Jonker et al. (2019) examined whether a variant of the task, that required participants to use their cursor to track images of non-foods and disengage attention from images of foods, resulted in enhanced attentional disengagement from images of foods amongst unsuccessful dieters. The study used a visual search task paradigm to assess biases in attentional engagement with, and disengagement from, food and non-food images. It was observed that participants who completed the Emotion-in-Motion task, as compared to participants in a control group, demonstrated speeded attentional search latencies for non-food images embedded in arrays of food images, consistent with a relatively enhanced ability to attentionally disengage from food images. In contrast, the visual search task did not yield differences between the participant groups in measures of attentional engagement with food images. Importantly however, the visual search paradigm does not hold those key features that permit the most accurate evaluation of biased attentional disengagement from information (Clarke et al., 2013). Consequently, whether the Emotion-in-Motion task manipulates biased attentional disengagement from information remains to be clearly demonstrated.

Thus, the aim of the present study was to determine whether the Emotion-in-Motion task manipulates biased attentional disengagement from negative information. Participants completed the Emotion-in-Motion task under conditions that were anticipated to enhance attentional disengagement from negative information (by requiring disengagement from negative emotional faces), or not enhance attentional disengagement from negative information (by requiring disengagement from positive emotional faces). The impact of the
manipulation task upon attentional processing was examined using an assessment variant of the Emotion-in-Motion task, and importantly, via a task capable of independently assessing biased attentional engagement with, and biased attentional disengagement from, negative information. Across these tasks, attention was measured via recording of participants’ eye movements.

**Method**

**Participants**

Participants were recruited through invitations sent to a large cohort of undergraduate psychology students (n = 1,380) at the University of Western Australia. Forty-four undergraduate students, who reported no mental-health disorders, accepted the invitation to participate and completed the study. They were randomly allocated to Emotion-in-Motion task conditions. Twenty-one participants (9 Male; Age, M = 21.24, SD = 5.90) were allocated to a condition designed to enhance attentional disengagement from negative information, labelled the ‘Avoid Negative’ condition, and 23 participants (9 Male; Age, M = 19.26, SD = 3.34) were allocated to a condition designed to diminish attentional disengagement from negative information, labelled the ‘Attend Negative’ condition.

**Materials**

**Apparatus.** The experiment task was conducted on a PC and 22-inch widescreen colour monitor at a resolution of 1920 x 1080 pixels with a 15ms refresh rate. Eye movements were recorded using an EyeLink 1000 that recorded monocular gaze at 1000Hz using pupil centre corneal reflection computed from a nine-point calibration procedure. Eye-movements, gaze fixations, and spatial areas of interest were calculated in real time. Raw gaze samples were initially cleaned using a two-sample noise reduction filter (Stampe, 1993). Fixations were defined as gaze samples that were below a 30°s\(^{-1}\) velocity threshold.
and an 8000°s^-2 acceleration threshold. Manual task responses were made by participants using a standard USB computer keyboard and mouse.

**Attention Task Emotional Stimuli.** The emotional faces used in the attentional tasks were drawn from the Karolinska Directed Emotional Faces stimulus set (Lundqvist et al., 1998) and the characteristics of images used in each task mirrored those used by Notebaert et al. (2018). The Emotion-in-Motion Attention Manipulation Task used 64 photographs of 32 actors (16 female; 16 male), each displaying a happy facial expression and an angry facial expression. The Emotion-in-Motion Attention Assessment Task used 64 photographs of an additional 32 actors (16 female; 16 male), each displaying a happy facial expression and an angry facial expression. The Attentional Engagement Bias and Disengagement Bias Assessment Task comprised a set of 96 photographs of the same 32 actors included in the Emotion-in-Motion Attention Assessment Task, each displaying a happy, angry, and neutral facial expression.

**Emotion-in-Motion Tasks.** The design of the Emotion-in-Motion tasks in the present study mirrored the design described by Notebaert et al (2018), but with the key amendment that attention was now measured through the recording of participant eye-movements, without the need for participants to use a cursor. A pictorial example of a trial in each of the tasks is presented in Figure 1. The design of these tasks in the present study is described henceforth.

*Emotion-in-Motion: Attention Manipulation Task.* The Attention Manipulation Task was designed to manipulate attention under conditions anticipated either to enhance attentional disengagement from negative information or reduce attentional disengagement from negative information.
The task consisted of eight trial blocks. During each block eight rectangles, each containing an image drawn from the stimulus set described earlier, moved dynamically around the screen over a black background. Rectangles ‘bounced’ off the sides of the screen and off one another during collisions. Each block task displayed a random subset of 8 actors (4 female; 4 male). Seven images displayed actors with the same emotional expression and one image displayed an actor with the different emotional expression. The rectangle that displayed the different emotional expression was the target rectangle and participants’ goal was to maintain gaze upon it. For participants in the Attend Negative Condition, the target rectangle always contained an actor with an angry expression while all other rectangles contained actors with happy expressions. For participants in the Avoid Negative Condition, the target rectangle always contained an actor with a happy expression while all other images contained actors with angry expressions.

Across the duration of each block the images changed actors’ identities (but not actors’ emotion) at random intervals of between 1 - 2 seconds. Participants were instructed to maintain gaze upon the target rectangle for as long as the emotional expression of the actor remained the same. At random intervals, every 5 - 10 seconds, the change in actor identity would be accompanied by a change in emotional expression, at which point the rectangle ceased to be the target. At that same moment, another rectangle would display a face portraying the target emotion and thus would become the new target rectangle. Hence, participants were required to disengage attention from the former target rectangle to start tracking the new target rectangle. Each block comprised 20 instances of target rectangle changes.

**Emotion-in-Motion: Attention Assessment Task.** The Attention Assessment Task was a variant of the Attention Manipulation Task develop to assess biased attentional processing
of negative information under the same conditions that attention was manipulated. The design of blocks was closely identical to the format of the manipulation task. The task delivered 12 blocks that each comprised five instances of target switches. All participants completed blocks that required the tracking of angry face expressions and blocks that required the tracking of happy face expressions. The order of blocks was randomly determined with the constraint that no more than two consecutive blocks displayed target rectangles with the same face expression. To allow a measure of attentional processing the duration that participants tracked target rectangles with their gaze, in milliseconds, was recorded in real time. Trials were excluded if the latency to initiate eye-movement to a new target rectangle was smaller than 83 ms or larger than 6000 ms after a target rectangle change. For each block, the percentage of time that gaze was fixed on the target rectangle was computed by the task and was labelled the ‘Tracking Score’.

A measure of attentional bias to negative information was computed for each participant by subtracting the mean Tracking Score a participant obtained in blocks where targets displayed happy faces, from the mean Tracking Score the participant obtained in blocks where targets displayed angry faces. Thus, a higher positive score on this Attentional Bias Index represented more successful tracking of angry faces than happy faces, and so reflected a greater level of attentional bias favouring the processing of negative information.

**Attentional Engagement Bias and Disengagement Bias Assessment Task.** The Attentional Engagement Bias and Disengagement Bias Assessment Task was designed to independently assess biased attentional engagement with, and disengagement from, negative information. The task delivered four blocks of 32 trials each. Two blocks presented trials designed to assess biased attentional engagement with negative information and
remaining blocks presented trials designed to assess biased attentional disengagement from negative information. The characteristics of trials were identical apart from key features that allowed for the assessment of bias in attentional engagement or bias in attentional disengagement.

All trials commenced with the presentation of a fixation cross that participants were required to gaze upon for 500ms for the trial to proceed. Following this, the cross was removed from the screen and two images were presented for 1500 ms, on the left and right side of the screen. Participants were instructed that there was no requirement to view these images in any specific manner. Each image was 5.43 cm wide and 6.80 cm high. Each pair of images comprised a face displaying a neutral expression and a face displaying a happy or angry expression. The face expressions were randomly presented in each image location with equal frequency across trials. Following presentation of the images the screen turned blank and the next trial commenced after a 1000 ms delay. Each trial recorded the latency and direction of the participant’s first eye-movement if it was directed to one of the images. Trials were excluded from further analysis if a fixation was not recorded on any image or if the recorded latency to initiate the first fixation to an image was smaller than 83ms from trial commencement.

To assess biased attentional engagement with negative information it was imperative that attention was fixed distal to emotionally valenced images at the start of each trial. Thus, trials assessing biased attentional engagement with negative information presented the fixation cross in the centre of the screen. At the conclusion of the task for each participant, a measure of biased attentional engagement with negative information was computed. This measure was computed by subtracting the mean latency to execute an initial eye movement that resulted in a fixation upon the emotional face from the mean
latency to execute an initial eye movement that resulted in a fixation upon the neutral face, separately for trials that presented happy emotional faces and trials that presented angry emotional faces. Thus, greater values on each of these two measures reflected greater speeding to fixate upon the emotional face as compared to the neutral face. Next, an index of biased attentional engagement towards angry faces, labelled the Engagement Bias Index, was computed by calculating the difference in these two measures to reflect the degree to which this measure was larger on trials that presented angry faces as compared to trials that presented happy faces. Thus, greater scores on this index represented relatively greater biased attentional engagement with negative information.

To assess biased attentional disengagement with negative information it was imperative that attention was fixed proximal to emotionally valenced images at the start of each trial. Thus, trials assessing biased attentional disengagement with negative information presented the fixation cross in the location that would subsequently contain the emotional face. At the conclusion of the task for each participant, a measure of biased attentional disengagement with negative information was computed. This measure, labelled the Disengagement Bias Index, was computed by subtracting the mean latency for participants to execute an initial eye movement away from the happy emotional faces, from the mean latency for participants to execute an initial eye movement away from the angry emotional faces. Thus, greater scores on this index reflected relatively longer latencies for participants to move gaze away from angry faces as compared to happy faces, and so represented relatively greater biased attentional disengagement from negative information.

**Procedure**

All procedures conducted were approved by the Human Research Ethics Committee at the University of Western Australia. The experiment session was conducted in a sound
attenuated room with the experimenter seated outside of participants’ view. Participants provided demographic information before being seated in front of the eye-tracker with their head secured on a chin rest 54 cm from the computer screen. The eye gaze calibration procedure was then conducted with the experimenter monitoring participants’ eye movements from a second computer throughout the experiment session. Re-calibration of eye-movement tracking was performed throughout the session as needed.

Participants first completed the Emotion-in-Motion Attention Manipulation Task and were not informed of their allocation to an attention manipulation condition. Following completion of this task participants completed the Attentional Engagement Bias and Disengagement Bias Assessment Task, followed by the Emotion-in-Motion Attention Assessment Task. Prior to the conduct of each task participants were verbally instructed of the task’s requirements. For participants in each condition, the duration of all three attentional tasks was approximately 60 minutes. Once the session had concluded participants were debriefed.

Results

Analyses first established whether the Emotion-in-Motion attention manipulation task successfully impacted attentional processing under the assessment variant of the paradigm, before turning to the primary objective of evaluating its impact upon biased attentional engagement with, and biased attentional disengagement from, negative information. Examination of the distributions of each attentional index score within participant conditions revealed that their distributions each deviated from a normal distribution (Shapiro-Wilk, all $p < .001$). Thus, non-parametric analyses were conducted on these indices. The results of these analyses are presented in turn.
Impact of the Emotion-in-Motion Attention Manipulation Task upon Attentional Bias to Negative Information during the Emotion-in-Motion Attention Assessment Task.

To determine the impact of the Emotion-in-Motion Attention Manipulation Task upon attentional bias to negative information assessed during the Emotion-in-Motion Attention Assessment Task, analyses examined whether participants in each Attention Manipulation Condition differed in Attentional Bias Index scores. Descriptive statistics of attentional measures recorded during the Attention Assessment Task, for participants in each Attention Manipulation Condition, are present in Table 1. Kruskal-Wallis analysis of variance (ANOVA) was used to analyse these data. This analysis included Attention Manipulation Condition (Avoid Negative Condition, Attend Negative Condition) as a between-participants factor and Attentional Bias Index scores as the dependent variable. The analysis resulted in a significant main effect, $\chi^2(1) = 24.70, p < .001, \epsilon^2 = .57$, reflecting that participants in the Attend Negative Condition demonstrated significantly greater Attentional Bias Index scores as compared to participants in the Avoid Negative Condition. Thus, this analysis revealed that the Attention Manipulation Task was successful in manipulating attentional bias to negative information across participants in the manner anticipated through the allocation of participants to Attentional Manipulation Conditions.

Impact of the Emotion-in-Motion Attention Manipulation Task upon Biases in Attentional Engagement with, and Disengagement from, Negative Information.

To determine the impact of the Attention Manipulation Task upon biased attentional engagement with, and disengagement from, negative information, analyses examined the degree to which participants in each Attention Manipulation Condition differed in Engagement Bias Index scores and Disengagement Bias Index scores computed from the Attentional Engagement Bias and Disengagement Bias Assessment Task. Descriptive
statistics of these measures, for participants in each Attention Manipulation Condition, are presented in Table 2.

To determine the impact of the Attention Manipulation Task upon biased attentional engagement with negative information a Kruskal-Wallis ANOVA included Attention Manipulation Condition (Avoid Negative Condition, Attend Negative Condition) as the between-participants factor and Engagement Bias Index Scores as the dependent variable. The analysis did not result in a significant main effect of Attention Manipulation Condition, $\chi^2(1) = 2.52$, $p = .11$, $\varepsilon^2 = .06$, reflecting no significant difference in Engagement Bias Index scores between participants allocated to each Attention Manipulation Condition in the Attention Manipulation Task.

To determine the impact of the Attention Manipulation Task upon biased attentional disengagement from negative information a Kruskal-Wallis ANOVA included Attention Manipulation Condition (Avoid Negative Condition, Attend Negative Condition) as the between-participants factor and Disengagement Bias Index scores as the dependent variable. This analysis resulted in a significant main effect of Attention Manipulation Condition, $\chi^2(1) = 5.14$, $p = .023$, $\varepsilon^2 = .12$, indicating that participants in the Avoid Negative Condition demonstrated significantly reduced Disengagement Bias Index scores as compared to participants in the Attend Negative Condition.

Thus, the results of these analyses demonstrated that participants who completed the Emotion-in-Motion attention manipulation task in the Avoid Negative Condition exhibited relatively lower levels of delayed attentional disengagement from negative information, as compared to participants in the Attend Negative Condition, and that participants in each condition did not differ in their level of biased attentional engagement with negative information.
Discussion

The aim of the present study was to determine whether the Emotion-in-Motion task serves to specifically alter biased attentional disengagement from negative information. The study demonstrated that participants who completed the Emotion-in-Motion task under conditions believed to facilitate attentional disengagement from negative information subsequently demonstrated lower levels of biased delayed attentional disengagement from negative information as compared to participants who completed the task under conditions designed to attenuate attentional disengagement from negative information. Participants in each condition did not differ in level of biased attentional engagement with negative information.

The present findings are consistent with previous research that has demonstrated the Emotion-in-Motion task capable of manipulating attentional processing on attentional assessment variants of the task (Notebaert et al., 2018). The findings also support the conclusion drawn by investigators previously, that the Emotion-in-Motion attention manipulation task manipulates biased attentional disengagement without influencing biased attentional engagement (Jonker et al., 2019). Crucially however, the present study adopted a methodology that overcame limitations in the design of the original Emotion-in-Motion task and in the measurement of biased attentional engagement and biased attentional disengagement used in these studies. Hence, the present study demonstrates the specific impact of the Emotion-in-Motion task upon biased attentional disengagement from information using methods that are more precise than those reported in previous research.

The present study identifies the Emotion-in-Motion attention manipulation paradigm as a potentially useful experimental tool for evaluating the emotional impacts of
modifying biased attentional disengagement from negative information. Researchers investigating the attentional components of attentional bias to negative information across both attentional probe and eye-movement based approaches have concluded that delayed attentional disengagement from negative information underpins the bias (Armstrong & Olatunji, 2013; Fox et al., 2002; Salemink et al., 2007), and contemporary models of anxiety-linked attentional bias to negative information have characterized biased attentional disengagement as a key mechanism underpinning the anxiety-linked bias (Cisler & Koster, 2011). Thus, the present findings indicate that the Emotion-in-Motion task could usefully evaluate the validity of hypotheses concerning the independent role of biased attentional disengagement from negative information in elevated anxiety vulnerability.

It is noteworthy however, that trials in the Emotion-in-Motion attention manipulation task involve simultaneous requirements to disengage from, and engage with, emotional stimuli. For example, conditions intended to enhance attentional avoidance of negative information require participants to disengage from negative stimuli and search for positive stimuli, and conditions intended to enhance attention towards negative information require participants to disengage from positive stimuli and search for negative stimuli. Thus, though the present study demonstrated the task independently manipulated attentional disengagement from negative information it is not clear to what degree this arises from repeated selective attentional engagement toward, or disengagement from, positive and negative emotional stimuli, nor whether this is consistent across individuals. Future research could determine which facet of the task’s conditions drive attentional change by separating targeted training of each facet across distinct conditions and examining the unique impact upon biased attentional disengagement from negative information.
It is also of note that the sample size of the present study was modest. Hence, though the present study observed statistically significant differences between attention manipulation conditions in indices of attentional bias to negative information yielded from the Emotion-in-Motion assessment task and in indices of biased disengagement from negative information, it is possible that a relatively smaller though true difference in biased engagement with negative information between the attention manipulation conditions was not detected by the present study. Future research could usefully seek to replicate the present method across a larger participant sample to determine whether the present pattern of findings remains consistent.

It is important to consider that the present study employed a non-select sample of participants. Accordingly, the capacity of the Emotion-in-Motion task to enhance attentional disengagement from negative information in individuals with heightened anxiety vulnerability cannot be concluded from this study. Future research could usefully examine the capacity of the task to modify biased attentional disengagement amongst high trait anxious individuals and individuals with clinical anxiety disorders. If the Emotion-in-Motion task proves capable of independently manipulating biased attentional disengagement from negative information in anxious and clinically anxious participants, then by examining the impact of this attentional manipulation on anxious symptomatology it may become possible to delineate the anxiety symptoms driven by this specific mechanism of biased attentional processing.

For the moment, the present study demonstrated evidence consistent with the proposal that the Emotion-in-Motion task manipulates biased attentional disengagement from negative information without impacting biased attentional engagement with negative information. These findings indicate that the Emotion-in-Motion task may usefully be
implemented in research seeking to manipulate biased attentional disengagement from information. It is hoped the present findings will be of value to researchers seeking to understand the independent contribution of biased attentional disengagement from information to individual differences, including emotional vulnerability.
References


Rudaizky, D., Basanovic, J., & MacLeod, C. (2014). Biased attentional engagement with, and


### Table 1

Table 1. Descriptive statistics of attentional measures recorded during the Emotion-in-Motion Attention Assessment Task, for participants in each Attention Manipulation Condition. Mean (SD)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Target Face Emotion</th>
<th>Attention Manipulation Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Avoid Negative</td>
</tr>
<tr>
<td>Tracking Score (percentage of time gaze on target image)</td>
<td>Happy (Positive)</td>
<td>70.94 (7.38)</td>
</tr>
<tr>
<td></td>
<td>Angry (Negative)</td>
<td>67.07 (7.62)</td>
</tr>
<tr>
<td>Attentional Bias Index</td>
<td>-</td>
<td>-3.87 (5.27)</td>
</tr>
</tbody>
</table>

### Table 2

Table 2. Descriptive statistics of attentional measures recorded during the Attentional Engagement Bias and Disengagement Bias Assessment Task, for participants in each Attention Manipulation Condition. Mean (SD)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Emotional Face Emotion</th>
<th>Attention Manipulation Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Avoid Negative</td>
</tr>
<tr>
<td>Engagement Latency (ms)</td>
<td>Happy (Positive)</td>
<td>391.57 (176.25)</td>
</tr>
<tr>
<td></td>
<td>Angry (Negative)</td>
<td>410.94 (183.43)</td>
</tr>
<tr>
<td>Engagement Bias Index</td>
<td>-</td>
<td>-19.37 (65.43)</td>
</tr>
<tr>
<td>Disengagement Latency (ms)</td>
<td>Happy (Positive)</td>
<td>597.11 (153.36)</td>
</tr>
<tr>
<td></td>
<td>Angry (Negative)</td>
<td>560.50 (153.95)</td>
</tr>
<tr>
<td>Disengagement Bias Index</td>
<td>-</td>
<td>-36.61 (107.58)</td>
</tr>
</tbody>
</table>
Figure 1. A pictorial example of a trial in the Emotion-in-Motion tasks. In this trial, participants must maintain gaze upon the single happy face as the faces move around the screen.