AFFECTIVE PRIMING IS SENSITIVE TO INGROUP AND OUTGROUP COMPARISON WITHIN VARYING MODES OF INTERGROUP DYNAMIC

Derek DeBellis

Lehigh University

Advisor: Professor Dominic Packer

Secondary Advisor: Professor Gordon Moskowitz

What one perceives is often laden with emotionally relevant information. The functionality of an emotion increases if it can get more than just a signal of a particular precept, but a conglomeration of the self, the situation and the precept. Emotion may be an output reflecting a summation and computation of the self, the context, and the environment that helps one evaluate the day. Emotion, in this sense, projects idiosyncratic value onto the world; emotion helps create an image, which is not necessarily concurrent with any *explicit* reasoning, of what the world means to an individual. For instance, emotional responses to interpersonal interactions often dictate, independent of reason, how we appraise someone (Lazarus, 2006). Similarly, emotions felt at a sports game may reflect a combination of both the fans who ones roots with and roots against. The German language has word that expresses the particular reaction to an opposing team's emotional state: "schadenfreude" (Leach, Spears, Branscombe, & Doosje, 2003). This is essentially deriving pleasure from the misfortune of others, and almost every sports fan can admit to finding pleasure in a rival team's defeat, and even the misery of their fans. Similarly, the opposing fans offer diagnostic material independent of actually viewing game. A smile from an opposing team's fan may indicate bad news for my team. Although not as fun or informative as actually watching the game, if one was to solely view the facial expressions of an opposing team's fan, he or she would probably have a pretty good idea about the overall course of the game.

The current research is designed to address the role of group membership and intergroup dynamics in rapidly altering the diagnostic value of ingroup and outgroup member facial expressions. To use the above sports analogy for example, a happy countenance of an ingroup member means something completely different than a happy countenance of an outgroup member. If the two teams are in competition, the emotion of the outgroup member is likely to

mean the opposite of the emotion of the ingroup member. That is, positive emotional outgroup countenances are likely to be responded to negatively, while the same countenance of an ingroup member is likely to be responded to positively. In a different context, however, the negative affective response towards opposing team members could be mitigated or even reversed. Specifically, when the success of the opposing team increase the chances for the success of one's own team this may alter the meaning of the opposing fan's facial expression. For instance, if the Eagles need the Cowboys, a team despised by many Eagles fans, to win in order to advance into the playoffs, Eagles fans might find a new way of diagnosing the smile of an outgroup member. It could produce ambivalence (i.e., simultaneously wish the worse for the Cowboys but need something positive to happen to them) or a temporary truce or even alliance.

Recent literature on emotional contagion and affective transference divulges some of the possible mechanisms for converging and diverging, often effortlessly, from the emotions of those who surround us. Research on emotional contagion has shown that people tend to emotionally converge with people who become targets of their attention/perception (e.g., Barsade, 2002;Williams, Bargh, Nocera, & Gray, 2009; Chartrand & Bargh, 1999); one catches the emotion of another almost as if it was the flu. This process seems to begin well before controlled processes are said to take place (~20ms versus ~600ms), such that ~20ms is all ones needs viewing a picture of someone expressing an emotion for the transference of transference to begin (Tamietto & de Gelder, 2008). Hence, catching another's emotion appears to occur automatically. Mirror neurons, primitive mimicry and afferent feedback have all been proposed mechanisms for the catching of another's emotion. The mirror neuron explanation suggests that the same neurons that fire when the perceiver smiles and when the target of perception smiles (Ramachandran, 2009). This suggests that people may be linked at the neurological level

through perception; seeing emotion has similar neurological effects as feeling emotion. Mimicry and afferent feedback are thought to combine in a process known as Primitive Emotional Contagion. This process involves a physiological, paraverbal, and nonverbal reaction (e.g., positioning and activation of particular facial muscles) that replicates the emotional expressions of another (Bargh & Chartrand, 1999;Barsade, 2002). In this case, these replications initiate a reverse causality. That is, just as sadness can trigger a frown, a frown can produce sadness (Soussingnan, 2002).

Some research shows that emotional contagion serves a functional purpose. Emotional consistency both interpersonally and within the group is propagated by emotional contagion and improves the quality of interactions (Barsade, 2002). Specifically, the interactions become smoother, and this leads to increased liking for others (Bargh & Chartrand, 1999). This would do little to explain emotional divergence. If we simply responded to others' emotions, group membership would not influence our reactions. Little work has investigated the contextual nature of emotional contagion.

In the simplest sense, an individual is unlikely to catch the emotion of someone who attracts little of his or her attention. Moreover, attention is known to be a function of how much one wants to affiliate with a target person (Chartrand & Bargh, 1999). Indeed, it has been shown that people increase the amount they mimic another based on how much they desire to affiliate with the target, and, the more one mimics another, the more one feels affiliated with this person (Lakin, Jefferis, Cheng, & Chartrand, 2003). People try to affiliate with ingroup members more than outgroup members (Brown & Zagefka, 2008). Furthermore, people pay more attention to ingroup members. This can be seen at the neurological level and at the behavioral level. Functional imaging has shown that mere categorization is enough to make visual areas of the

brain that are correlated with facial scanning more active for novel ingroup members than novel outgroup members (Van Bavel, Packer, & Cunningham, 2008). In addition, mere categorization has been shown to cause people to spend a longer time looking at pictures of ingroup members (Bernstein, Young, & Hugenberg, 2007). If primitive contagion was the sole mechanism underlying emotional contagion effects, and we assume that attention plays a large role in the contagion process, one might expect to find differences in contagion based on the group membership of the target, as a function of selective attention. That is, there would be greater emotional convergence for ingroup than outgroup members. It would, however, be difficult for a primitive contagion mechanism to explain emotionally diverging from outgroup members.

Recent research provides evidence of emotional divergence from outgroup members. Weisbuch and Ambady's (2008) research has shown that we diverge from the emotions of outgroup members and converge to the emotions of ingroup members. Specifically, the results occurred when viewing a member of another ethnicity and when hearing a story about a member of an ingroup or outgroup sports team. This research has shown that group membership is an important factor. For instance, when primed with an image of a fearful White person, White participants responded faster to the word "bad" and slower to the word "good". The opposite results were found when the fearful target was Black. This extends the research on primitive emotional mimicry, which generally assumes that we pick up the emotions of others through mimicking their actions before group membership becomes salient. Furthermore, the results cannot be completely explained with attentional differences because that could only account for a greater reaction to an ingroup, not a divergent reaction to the outgroup. It appears that meaning of the emotion differs depending on group membership. For instance, a frown means a completely different thing coming from an ingroup member than an outgroup member.

Group membership provides diagnostic material to the self. It is the reformation of the outside world to of the self, as opposed to simply shaping the self to the outside world (that might come after the world is shaped to the self). Again, a smile is not simply a smile, but an outside value that is rapidly framed in terms of its meaning to the perceiver. If I simply started affectively and emotionally converging to every target, I would not be relating the target to myself, but simply to emotion. The results of Weisbuch and Ambady (2008) show that a smile is related to more than just a positive concept; a smile is related to the juxtaposition of two concepts: group membership and emotion. A smile from an outgroup member, for instance, brings up two conceptions that combine to form a unique summation. The individual rapidly goes beyond simple recognition of emotion and incorporates group membership, as shown in Figure 1 below.

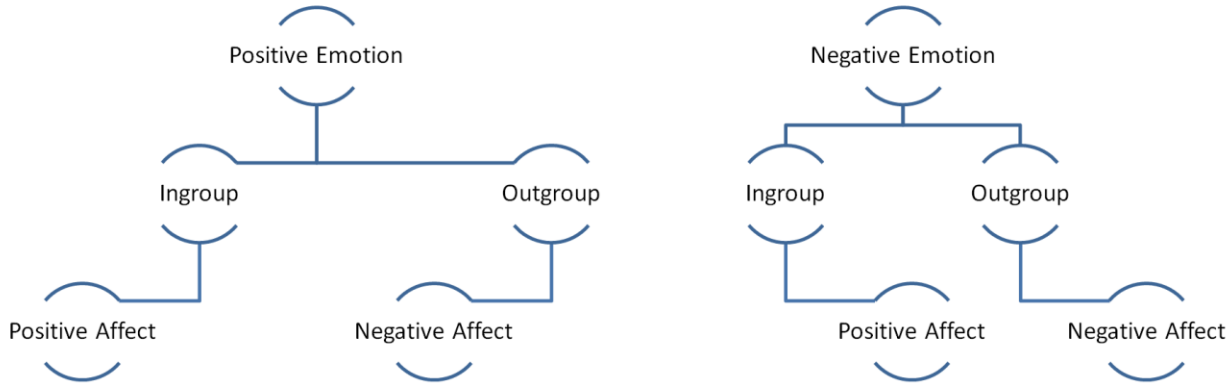


Figure 1: The Role of Group Membership in Affective Priming

Although this previous research suggests that people respond differently depending on the group membership of targets, it is not clear to what extent the broader intergroup context affects these responses. For one, social comparison theorists suggest that one is more likely to compare oneself with a relevant other (Festinger, 1954). If this is the case, people may be more

likely to compare the emotions of their group with the emotions of a group that they are in competition with versus a group that is merely coexisting with them. Competition might further mitigate attentional bias in favor of the ingroup by increasing the importance of understanding the outgroup. In sum, the emotions of an outgroup might become more relevant in competitive contexts than in noncompetitive ones. To the extent that emotional comparisons are used as diagnostic information about current intergroup status, competition is likely to increase emotional contagion to ingroups and divergence from outgroups, at least in many cases.

One could predict emotional divergence from an outgroup solely on attitudinal grounds: I dislike the group, they are happy, therefore I am sad. However, treating emotional expressions as diagnostic information suggests that there may be certain situations when the success of an competing outgroup is positive to ingroup members. Experiencing goal alignment, for example, with an outgroup that one is in competition with, might temporarily make one strive for their success. For instance, when teams are vying for playoff positions, it may be important for one's typical rivals to be victorious in a particular contest against a third team; hence, it would be a positive experience to see happiness on their faces (for the time being); that is, individuals might display emotional contagion to even a disliked outgroup in these specific circumstances. Evidence for this type of effect would help to determine whether rapid emotional responses in intergroup contexts take more into account than targets' group memberships.

The purpose of this study is to extend the understanding of how much is accounted for, and the rapidity by which it is accounted, in the emotional contagion process. We suggest, as Weishbuch and Ambady (2008), that there is more to emotional contagion than the simple processing of an emotion. We agree that group membership plays a moderating role on in the contagion process, but it is apparent that the meaning of group membership is not immutable.

That is, certain situations may change our feelings towards the outgroup. Furthermore, unlike Weishbuch and Ambady, who used real groups, we controlled for extraneous intergroup relations, which can confound data, (e.g., stereotypes and history) by using a minimal-type group manipulation. This was done through assigning participants to trivial teams. The end goal will be to isolate group membership and intergroup dynamic, and see their effects on affective transference processes.

As in the Weisbuch and Ambady study (2008), we used a lexical decision task in order to understand how different intergroup dynamics affect intragroup and intergroup affective transference. The lexical decision task measures how accessible a photograph of emotional faces makes positive and negative words. This is measured by the reaction time to a negative or positive target word displayed after a rapid display of the picture (320ms). In the scope of this study, the pictures were of ingroup or outgroup members who were either happy or sad. Each picture displayed was followed by a target word that was either positive or negative in valence (e.g., sunshine or vomit, respectively). If people respond faster to positive target words than negative words for a particular picture, it is assumed that the picture increased positive affect in the individual (or decreased negative affect). On the other hand, if a person responds faster to negative target words than positive target words, it is assumed that the picture increased negative affect in the individual (or decreased positive affect).

We predicted that rapid affective response would be altered through group membership, and that group membership's diagnostic value is not immutable, but rather based upon on the intergroup dynamic; the meaning of an outgroup members countenance changes based on whether they groups in competition or goal-aligned (i.e., the ingroup benefits from the success of the outgroup). Specifically, we predicted that when the participant is not assigned to a team, as

in the control condition, there should be a general mode of emotional contagion independent of group membership and the intergroup dynamic: happy expressions will decrease reaction times to positive words and increase the reaction times to negative words, while sad expressions will increase reaction times to positive target words and decrease the reaction times to negative target words. When the participant is assigned to a team that is in competition with the outgroup, we predicted that emotional contagion would only continue for ingroup members. We predicted that participants would show a different pattern of affective response to outgroup members than ingroup members: they would either show no affective priming or, as in Weisbuch and Ambady (2008), show affective divergence. On the other hand, when the ingroup can temporarily benefit from the success of the outgroup, the countenances of ingroup and outgroup members will start to have similar diagnosticity and thus mitigate disparities in affective responses. We predicted that there would continue to be affective convergence with the ingroup, and either no affective priming with the outgroup or affective convergence with the outgroup.

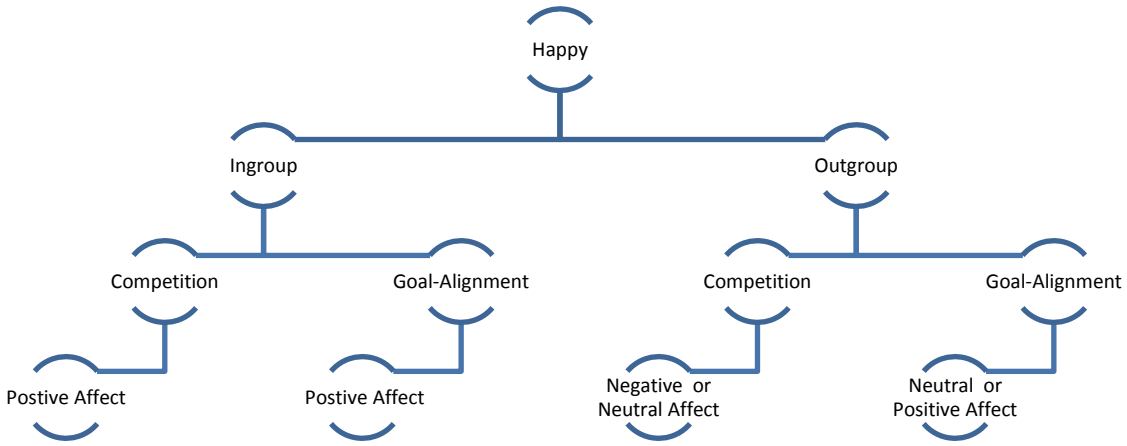


Figure 2: The hypothesized role of group membership and the intergroup dynamic in affective transference

The experiment was designed to show that rapid emotional processes are capable of compounding conditions. That is, they are able to combine higher-order conditions to promote a more contextually relevant and useful outputs and use the emotional information as a source of diagnosticity for the broader social context. Early work seemed to suggest that emotional contagion seemed to suggest primitive contagion. In this framework, a happy face would prime positivity regardless of group membership or the intergroup dynamic. Weisbuch and Nabady (2008) showed conditionality behind affective transference: group membership. We suggest that rapid emotional processes are capable of compounding conditionality. That is, rapid emotional processes are capable of integrating multiple conditions in forming an output as affective state. Specifically, we believe that these processes combine information about an expressor's emotion with knowledge of their group membership, as well as a broad intergroup dynamic (i.e., current relations between groups).

Experiment 1

Method

Design

A 3(intergroup dynamic: competition, goal-aligned, or control (no group affiliation)) x 2 (Expresser group: ingroup, outgroup) x 2 (facial expression: happy, sad) x 2 (target word valence: positive, negative) was used to test the predictions. Intergroup dynamic was a between subjects variable; all others were within subjects variables.

Participants

176 Lehigh University undergraduate students participated for partial course credit. The experiment was run in groups of 2-6, and each participant was assigned a private cubicle where they completed the procedure on a computer with E-Prime.

Materials

Photographs were taken from the MacBrian Face Stimulus Set (Tottenham, 2002).[1] The photographs were of 12 European- American males (6) and females (6). Each person selected had a picture expressing happiness, sadness, and neutral emotion. The photos were combined into two teams of six with an even number of males and females in each.

Procedure

Intergroup Dynamic Background: After completing an unrelated study and an informed consent, participants were guided through the study through computer prompts. First participants were given a background story that either assigned to the Lions or gave them no group membership (the control condition) and briefly explained the relationship between the Lions and the outgroup---the Tigers. In the mode of competition, participants read that the Lions and Ligers were in competition and that the Lions---their ingroup--- wanted to the tigers to lose. In the goal-alignment condition, participants received the same information, but were also read that their ingroup temporarily benefited from the success of the outgroup. In the control condition, participants were not assigned to a group and read about two groups that were in competition.

Group Memorization: After learning about the intergroup dynamic, participants were asked to memorize the members of the ingroup and the outgroup. Each group had 6 members. In the memorization task participants were shown each group member's neutral face three times for 5 seconds.

Lexical Decision Task: After the memorization task, participants completed 2 practice trials of the lexical decision task. After the practice trials, participants then completed 36 test trials. Each trial started with a centered fixation point. Following the fixation point, participants

[1] Development of the MacBrain Face Stimulus Set was overseen by Nim Tottenham and supported by the John D. and Catherine T. MacArthur Foundation Research Network on Early Experience and Brain Development. Please contact Nim Tottenham at tott0006@tc.umn.edu for more information concerning the stimulus set.

superliminally viewed (350ms) viewed a happy or sad expression from an ingroup or outgroup member. After viewing another another fixation point, participants responded to either a positive target word (e.g., sunshine) or negative target word (e.g.,vomit). Although participants were told to respond as quickly and accurately as possible, the target word stayed on the screen until they responded. Participants indicated whether the target word was positive or negative by pressing either 1 or 2 on the number pad. The keys were adjacent to prevent right or left hand bias. The keys were also counterbalanced across participants.

Memory Task: It was vital that participants recalled who was in their ingroup and who was in the outgroup. So, after the lexical decision task, participants viewed images of group members and nongroup members (people that were not previously shown). Participants had to indicate whether the person was an ingroup member, an outgroup member, or new.

Results

Data Screening

We eliminated the data of participants who did not remember their groups or had more than 4 errors on the memory task. In total, 32 participants were deleted. The remaining sample of 144 had a 94.14% average on the memory task.

Overarching Results

Study one showed a trend towards a 4-way Intergroup Dynamic X Team X Emotion X Target interaction ($b = .41$, $t = 1.55$, $p = .12$).

Control Group

As shown in Figure 3, Study one's control group showed a significant emotion x target effect ($b=.19$, $t= 1.98$, $p< .05$) that was independent of team ($b=.23$, $t= 1.24$, $p=. 21$). Specifically, the data showed faster response times to positive target words than negative target words after participants saw happy faces, while showing slower response times to positive target words than negative target words following sad faces. Thus, participants showed emotional contagion to

both groups when they were not a member of either. This provides a baseline to compare the other conditions against.

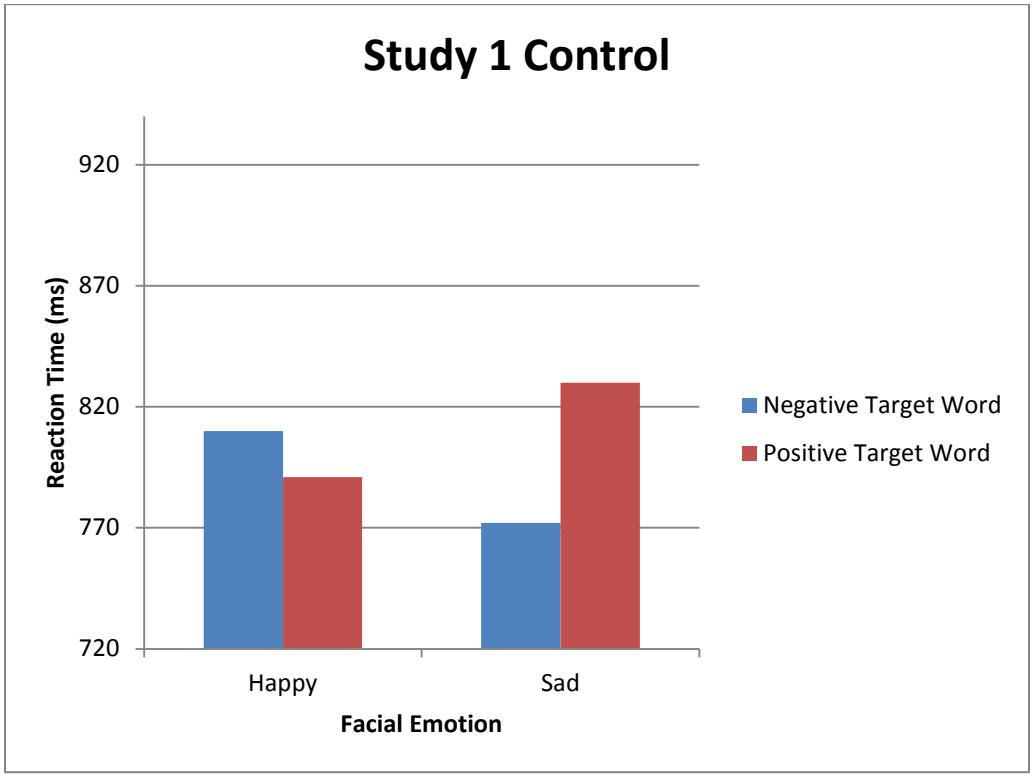
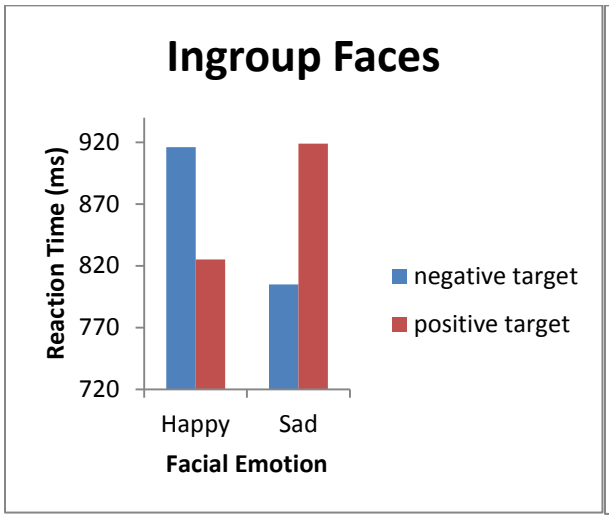


Figure 3

Competition

When participants were assigned to the Lions (ingroup), and the Lions were in the mode of competition with the Tigers (outgroup) there was a 3-way Team X Emotion X Target interaction ($b=.20$, $t= 2.30$, $p< .05$). As shown in Figure 4, responses to ingroup faces showed a significant Emotion X Target interaction ($b=.49$, $t= 3.37$, $p < .001$). This Emotion X Target interaction was indicative of emotional convergence; that is, participants responded faster to positive words than negative words after seeing happy ingroup member faces, while responding slower to positive words than negative words after seeing sad ingroup member faces. In contrast, and as seen in Figure 5, response to outgroup pictures showed no significant Emotion X Target interaction ($b=.04$, $t=0.32$, $p = .74$). These results fit our prediction that in a competitive intergroup context

there would be a disparity between affective responses to ingroup faces and affective responses to outgroup faces: specifically, emotional contagion to ingroup but not to the outgroup. Results did not replicate the affective divergence from outgroup emotion found in Weisbuch and Ambady (2008).



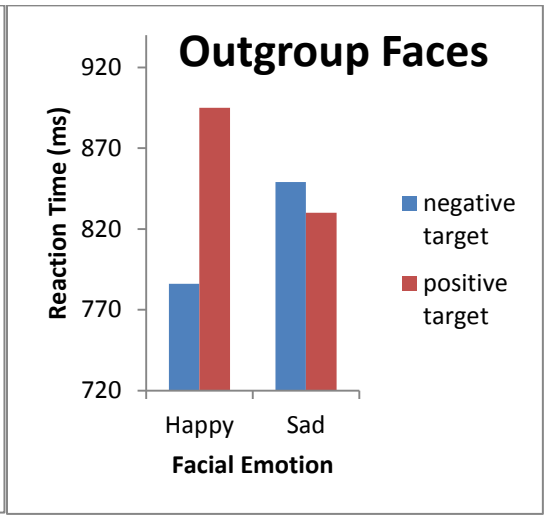
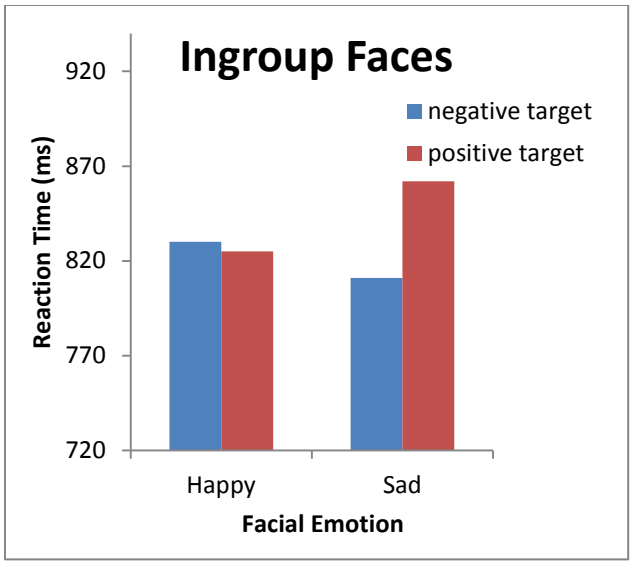


Figure 4 **Figure 5**

Goal- Aligned

When participants were assigned to the lions, and the lions were temporarily goal-aligned with the tigers there was no 2-way Emotion X Target interaction (b= .11, t= 1.27, p = .20). In addition, team did not play a significant moderating role (b= .05, t= 0.25, p = .70). As such, when the teams were goal-aligned, there did not seem to emotional contagion to either the ingroup or the outgroup (as shown in Figures 6 and 7). These results fit with our predictions. That is, the disparity in emotional transference between affective states elicited ingroup expressions and affective states elicited from outgroup expressions was minimized. This minimization, however, was not due to an increase in outgroup convergence, but to the decrease in ingroup convergence.



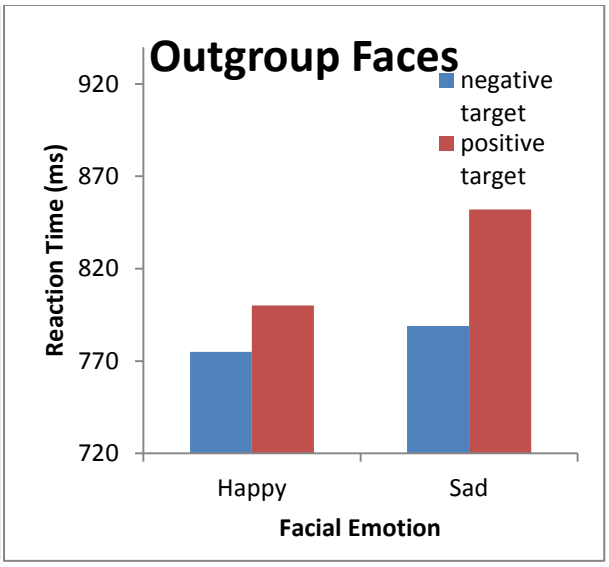


Figure 6 **Figure 7**

Discussion

Study one provided some support for our predictions and justified a second study. First, there was a trend towards a 4-way Intergroup Dynamic X Team X Emotion X Target interaction (b = .41, t = 1.55, p = .12). This provides some evidence that the mind is able to integrate the emotion in the context of the expresser's group membership and the relationship between the ingroup and the outgroup. The control condition, as predicted, showed that the group-independent affective priming created emotional contagion effects: participants showed positivity to happy faces and negativity to sad faces. In addition, there was no bias towards one team or the other team when the participants did not belong to either. When participants were assigned, however, to one of the competing teams the emotional contagion only continues to occur for the ingroup; responses to the outgroup, on the other hand, show no significant pattern of affective priming. Critically, in the goal-alignment condition, there was no significant pattern of affective response to either the ingroup or the outgroup. It is possible that the expression's diagnosticity was much more ambiguous in this situation. The emotional contagion

to the ingroup was lost in this ambiguity, perhaps because people may believe they have privileged information about the outgroup. Another possibility is that the temporary alignment of goals may be harder to keep track off than competition and thus more cognitively taxing; competition may be a more default mode of seeing intergroup relations, and the processes required to see it differently drain cognitive resources to the point of losing emotional contagion. Participants, in a sense, may have been too busy to be affected by others' emotions in this model.

There were, however, a number of limitations to this study. For instance, the memorization task may have been too taxing on participants, as could be seen in the amount of participants that needed to be dropped from the study due to forgetting who was in their group. The cognitive demands of remembering faces could have affected the responses, as well. In the second study we removed the memorization task and added a color background to denote team membership, so that participants had a visual cue as to who was on which team. In addition, we wanted to see if these results had to do with changes in participants' identification with the ingroup or attitudes with the outgroup as a function of intergroup dynamic.

Experiment 2

Methods

Overview

Experiment 2 was identical to Experiment 2 in design and procedure, but sought to reduce noise in the data by minimizing the role of memory. To minimize the role of memory each group was assigned a particular color and that color was placed as the background of every picture. Due to this addition, the memorization task and memory check were unnecessary and removed. In addition, following the lexical decision task, we assessed participants' identification with the ingroup and attitudes towards the outgroup.

Participants

51 participants (20 men, 30 women, and 1 did not report) Lehigh University students (40 undergraduates, 10 graduates, and 1 did not report) participated for $10.00. The experiment was run in groups of 2-6, and each participant was assigned a private cubicle where they completed the procedure on a computer with E-Prime.

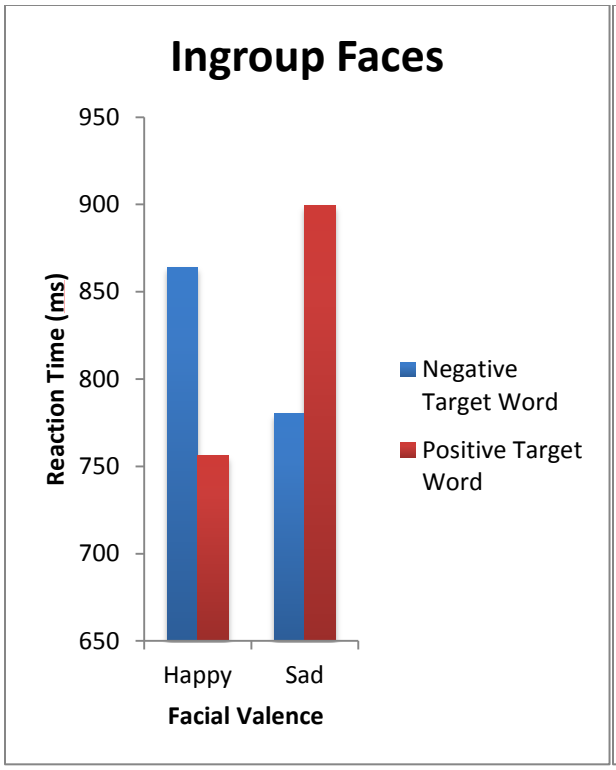
Results

Overarching Results

Whereas Study 1 showed a pursuable trend towards a 4-way interaction ($b=.41$, $t= 1.55$, $p= .12$), Study 2 showed a significant 4-way interaction ($b= .77$, $t= 2.73$, $p < .05$). That is, Study 2 showed that the results were a product of an interaction between facial expression, expresser group, intergroup dynamic, and target word valence. We decompose this interaction by examining effects within each between subjects condition.

Competition

As in Study 1, when participants were assigned to the Lions (ingroup), and the lions were in the mode of competition with the Tigers (outgroup) there was a 3-way Team X Emotion X Target interaction ($b=.47$, $t= 1.88$, $p< .06$). As shown in Figure 8, reactions to ingroup faces showed a significant Emotion X Target interaction ($b=.51$, $t= 2.65$, $p < .01$), also mirroring Study 1. This Emotion X Target interaction was indicative of emotional convergence; that is, participants responded faster to positive words than negative words after seeing a happy ingroup member faces, but responding slower to positive words than negative words after seeing sad ingroup member faces. Contrastingly, as shown in Study 1, and as shown in Figure 9, outgroup pictures showed no significant Emotion X Target interaction ($b=.04$, $t=0.23$, $p = .82$). These results fit our prediction that in competition there would be a disparity between affective responses to ingroup faces and affective responses to outgroup faces. Again, the results did not replicate the affective divergence from outgroup emotion found in Weisbuch and Ambady (2008).



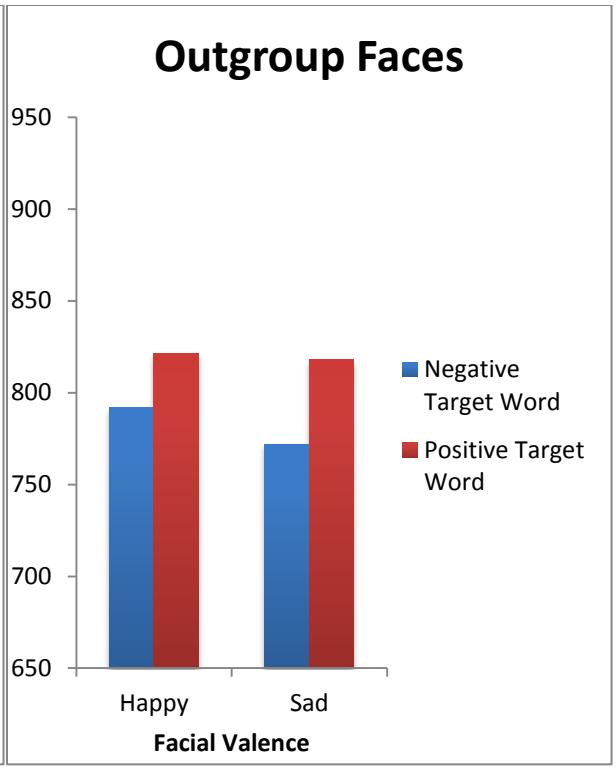


Figure 8 **Figure 9**

Goal-Alignment

When participants were assigned to the Lions, and the Lions were temporarily goal-aligned with the Tigers there was a significant 3-way Team X Emotion X Target interaction ($b = .30$, $t = -2.18$, $p < .05$). That is, when teams are temporarily goal-aligned reaction times were a product of facial expression, expresser group, and target word valence. Specifically, as shown in Figure 10, participants showed a trend towards emotional divergence from ingroup members ($b = -.18$, $t = 1.62$, $p = .11$) and, as shown in Figure 11, emotional convergence with outgroup members ($b = .12$, $t = 1.48$, $p = .14$). The trend of emotional convergence seen in response to outgroup faces was in line with predictions, but the trend of emotional divergence from the ingroup was not. That is, we expected participants to start converging with outgroup members or begin to show more covergence with outgroup members in the mode of goal-alignment than in the mode of

competition, but our predictions did not encompass the trend of ingroup divergence. Possible reasons for ingroup divergence will be discussed below.

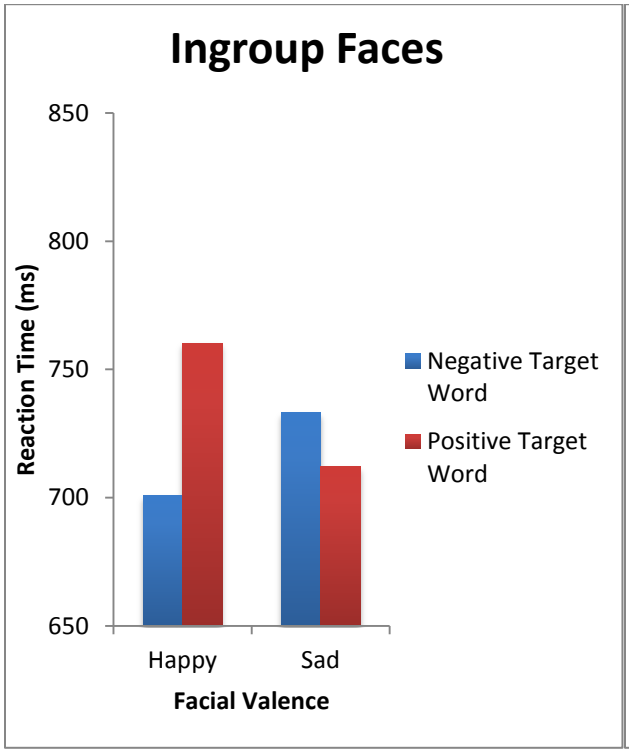


Figure 10

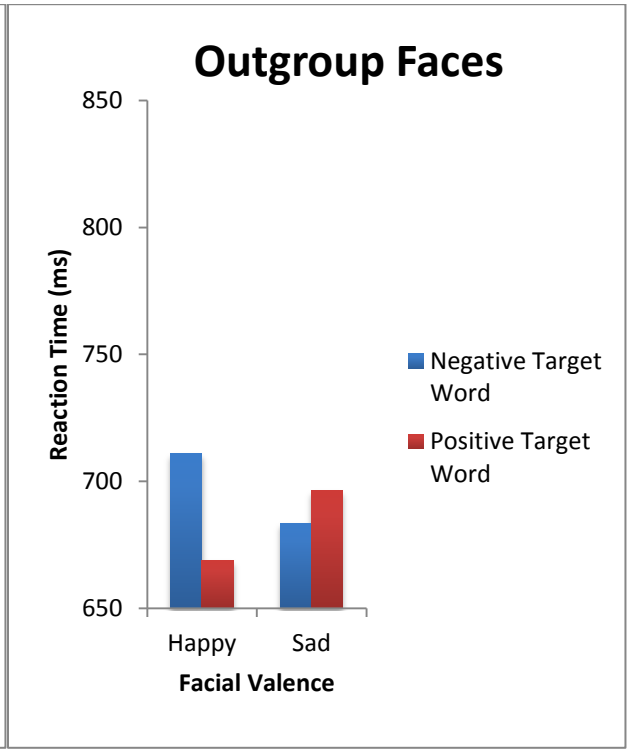


Figure 11

Identification or Attitude

In Study 2, we also assessed participants' levels of identification with the ingroup (alpha = .92) and their attitudes to toward the outgroup (alpha = .70). Neither identification nor attitudes differed as a function of intergroup dynamic. Specifically, participants in the competition reported similar levels of identification with the ingroup as participants in the goal-aligned condition (2.99 and 3.27, respectively; $F(1, 49) = 0.59$, $p > .40$) and similar attitudes to the outgroup (2.20 and 2.17, respectively; $F(1,49) = 0.01$, $p > .90$). This finding shows the differences in emotional priming across conditions cannot be explained by participants in the

goal-aligned condition feeling less identified with their group or having more positive attitudes toward the outgroup.

Discussion

Study 2's significant 4-way interaction suggests that group membership and the intergroup dynamic were important factors in processing the emotion and ending with an affective state. When the groups where in competition, participants affectively converged with the ingroup and showed no significant affective response to the outgroup. When the ingroup temporarily benefitted from outgroup's success, the pattern of affective response significantly differed from the pattern of affective responses of the competition condition. This pattern suggests that the diagnostic value of the face changes not only to group membership, but to the dynamic between the groups as well. The change in responses between the competition condition and goal-alignment condition was not due to changes in identification levels with the ingroup or attitude towards the outgroup. The data also suggests two interesting trends within the goal-alignment condition: ingroup divergence and outgroup convergence. Outgroup convergence fits well with our predictions: when the outgroup's success can temporarily benefit the ingroup, it seems fits within our predictions that happy outgroup members elicit a state of positivity and sad outgroup members elicit a state of negativity. Ingroup divergence is a bit more of a cumbersome finding. This finding is discussed below.

General Discussion

This research provides evidence that the diagnostic value or meaning of emotional expressions is moderated by the group membership of who is expressing the emotion and the overall intergroup context. These data suggest that rapid emotional processes do not simply respond to bottom-up or low-level emotional signals. The value of an emotion that is displayed for $3.5/10^{ths}$ of a second is not solely based upon the emotion itself, but the context surrounding

the emotion. In sum, for all of the information (i.e., group membership, intergroup dynamic, and emotional expression) to be amalgamated in such a short time frame shows not only the saliency of group membership and intergroup dynamics, but the rapidity with which the mind can compute the layers of the context.

The minor alterations of a few sentences was all that was needed to show the unstable meaning of an expression. As in Tajfel, Billig, Bundy, and Flament (1971) the creation of trivial groups or categorizations proved to be all that was necessary in creating bias towards the ingroup. This study was able to show that this bias created by assigning participants to minimal-type groups extends into affective responses. Merely being assigned to the Lions was all the participants needed to show biased affective responses. Affective responses were also sensitive to the short background story about the dynamic between the Lions and Tigers. Affective states were dependent on whether or not the competing outgroup's success could temporarily benefit the ingroup. It was not necessary to say what they were in competition over or how outgroup success could benefit the ingroup to conjure these results. The data shows that trivial groups in a superficial context can evoke changes in rapid affective responses to expressions.

When participants were told that their ingroup (Lions) was in competition with the outgroup (Tigers), emotional contagion only occurred while viewing the expressions of ingroup members, not outgroup members. There was no significant pattern of affective convergence with the outgroup, as expected. In addition, there was no evidence, as there was in Weisbuch and Ambady (2008), of emotional divergence to the outgroup. This evidence sits well with Brewer (1999) in that positivity towards the ingroup is not reciprocally related to the negativity towards the outgroup. "Discrimination between ingroups and outgroups is a matter of relative favoritism toward the ingroup and the absence of equivalent favoritism towards the outgroup"

(Brewer, 1999, p. 434). Another possible explanation for the lack of emotional divergence is that the minimal-type group manipulation was not powerful enough to replicate the true ingroup-outgroup divide. The emotional convergence to the ingroup when the groups were in competition suggests that there was a sense of group investment . It is also possible the real groups (e.g., baseball teams and ethnicities) used in their studies carried multiple group-extraneous relations that were beyond direct groupiness; there could have been confounding relations such as stereotypes and prior attitudes. Our minimal-type group manipulation was chosen to focus on groupiness and its immediate context (i.e., goal-alignment or competition).

When participants read that outgroup success would temporarily benefit the ingroup, the patterns of affective response showed a contrast to affective responses of participants in the competition condition. Although Study 1 did not show a significantly different overall patter of affective response, the individuals levels showed changes in response pattern. Namely, the affective contagion effect found in the competition condition with the ingroup disappeared in the goal-alignment condition. It is possible that this is the result of a state of ambiguity brought out in the condition of goal-alignment. Participants may have had to make too many assumptions (e.g., does the rest of the ingroup know the role of the outgroup in benefitting the ingroup?). The pattern of no affective priming to the outgroup may be a result of indifference, like in the competition conditions. It is also possible that there was ambivalence regarding the outgroup members emotion. The smile of an outgroup member may combine both good and bad implications. Moreover, the prompt did not indicate if outgroup failure had any effect on the ingroup, leaving a wide variety of predictable affective response to a sad outgroup members (i.e., possibilities include anything from something that would hurt the ingroup to something that would only fail to benefit the ingroup). Future studies may benefit from indicating what

outgroup failure means to the ingroup in the goal-alignment condition. It is also possible that the participants were cognitively overloaded. The memory task may have made the move towards emotional evaluation a difficult one. Moreover, adding to the cognitive complexity, the goal-alignment condition may be more cognitively demanding than the competition condition. That is, competition may be closer to the default way of viewing the relationship between the ingroup and outgroup. Goal-alignment may have required extra cognitive effort due to being further away from the default mode of viewing the relationship between the ingroup and the outgroup.

In Study 2, within the goal-alignment condition, the data showed a significantly different overall pattern from the competition condition. The patterns within the goal-alignment condition are suggestive of affective divergence from the ingroup and affective convergence to the outgroup (both of these only approached significance). The results suggest that the participants were able to find diagnosticity in the emotional reactions, unlike Study 1. The patterns of affective response imply that participants were neither too cognitively burdened nor confused to find meaning from the emotional expressions. The affective convergence to outgroup members fits well within our predictions. The outgroup's success benefits the ingroup and, thus, a happy outgroup member may signal the outgroup's success, which is good news for the ingroup and likely to trigger positivity. Affective divergence from the ingroup, however, is much more difficult to integrate into our predictions. It is possible that participants assumed ingroup members where not privy to the information about the temporary role of the outgroup. In addition, they also must have assumed that the emotions of the ingroup members were products of emotionally diverging reactions to the outgroup. Consequently, sadness coming from the ingroup member would be indicative of outgroup success, and may be reason enough to elicit

positivity; this positivity would be affectively diverging from ingroup emotional displays. It would be very unexpected if all of these assumptions were capable of being processed in such a short time frame.

It is clear that a smile does not always elicit a state of positivity, and that the resultant affective state transferred from the smile is moderated by group membership and group dynamic, but where does the smile lose its sense positivity? That is, is the value of an emotion changing, or is the emotion simply not being sensed? It may be that there is an indifference towards outgroup members that causes participants not to focus on the emotional responses of outgroup members; this lack of focus or attention would make affective priming unlikely. Again, research at the neuronal level has shown decreased activity in facial processing areas when viewing outgroup members as opposed to ingroup members (Van Bavel, Packer, & Cunningham, 2008). On the other hand, it is completely possible that the indifference to the outgroup does not occur at the level attention, but somewhere after the smile has been perceived. For instance, participants may perceive ingroup smiles only to attribute little diagnostic meaning to them. As a consequence of this, participants are not likely to be affectively primed by outgroup members.

Only the affective divergence from the ingroup found in the goal-alignment condition of Study 2 gives some insight as to whether the disparity in affective priming between the ingroup and outgroup has something to do with attention or mid-process altering of an emotion's meaning. The trend of affective divergence found in Study 2 suggests that participants needed to be cognizant of the emotional expression and alter its diagnostic meaning; this indicates that affective response is beyond focus, at least at this particular level (i.e., Study 2's goal-alignment condition while viewing ingroup faces). Any form of affective convergence only guarantees that the emotion was sensed, but, when an emotion is affectively diverged from, the emotion was

not only sensed, but then given an opposite meaning somewhere during the process. Notwithstanding, whether the results were products of an allocation of focus or something occurring post-production, the rapid affective processes are still able to integrate group membership of the expresser and the intergroup dynamic to the emotional expression. The end consequence of these rapid affective processes is a context-specific affective state.

Works Cited

Bargh, J. A., & Chartrand, T. L. (1999). The unbearable automaticity of being. *American Psychologist, 54*(7), 462-479.

Barry, E. S., Naus, M. J., & Rehm, L. P. (2004, Jun). Depressions and implicit memory: Understanding mood congruent memory bias. *Cognitive Therapy and Research, 28*(3), 387-414.

Barsade, S. G. (2002). The Ripple Effect: Emotional Contagion and Its Influence on Group Behavior. *Administrative Science Quarterly*, 644-677.

Bernstein, M. J., Young, S. G., & Hugenberg, K. (2007). The cross-category effect: Mere social categorization is sufficient to elicit an Own-Group Bias in face Recognition. *Psychological Science*, 706-712.

Brewer, M. B. (1999). The psychology of prejudice: Ingroup love or outgroup hate? *Journal of Social Issues, 55*(3), 429-444.

(2008). Ingroup affiliations and prejudice. In R. Brown, H. Zagefka, J. F. Dovidio, P. Glick, & L. A. Rudman (Eds.), *On the Nature of Prejudice: Fifty Years after Allport.* Oxford, UK: Blackwell Publishing Ltd.

Chartrand, T. L., & Bargh, J. A. (1999). The Chameleon Effect: The Perception-Behavior Link and Social Interaction. *Journal of Personality and Social Psychology, 76*(6), 893-910.

Diener, E., & Eunkook, S. (1997). Measuring quality of life: Economic, social, and subjective indicators. *Social Indicators Research, 40*, 189-216.

Evans, I. (2010, November). Positive affective priming: A behavioral technique to faciliatate therapeutic engagement by families, caregives, and teachers. *Child & Family Behavior Therapy, 32*(4), 257-271.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7*(2), 117-140.

Hepburn, S., Thorsten , B., & Williams, M. (2006, Oct). Effects of mood on how future events are generated and perceived. *Personality and Individual Differences, 41*(5), 801-811.

Lakin, J. L., Jefferis, V. E., Cheng, C. M., & Chartrand, T. L. (2003). The chameleon effect as social glue: Evidence for the evolutionary significance of nonconscious mimicry. *Journal of Nonverbal Behavior, 27*(3), 145-162.

Lazarus, R. S. (2006). Emotions and interpersonal relationships: Toward a person-centered conceptualization of emotions and coping. *Journal of Personality, 74*(1).

Leach, C. W., Spears, R., Branscombe, N. R., & Doosje, B. (2003). Malicious Pleasure: Schadenfreude at the suffering of another group. *Journal of Personality and Social Psychology, 84*(5), 932-943.

Ramachandran, V. (2009, November). *VS Ramachandran: The neurons that shaped civilization*. Retrieved December 9, 2010, from TED: http://www.ted.com/talks/vs_ramachandran_the_neurons_that_shaped_civilization.html

Soussingnan, R. (2002). Duchenne smile, emotional experience, and automatic reactivity: A test of the facial feedback hypothesis. *Emotion, 2*(1), 52-74.

Tajfel, H., Billig, M. G., Bundy, R. P., & Flament, C. (1971, April/June). Social categorization and intergroup behaviour. *European Journal of Social Psychology, 1*(2), 149-178.

Tamietto, M., & de Gelder, B. (2008). Emotional contagion for unseen bodily expressions: Evidence from facial emg. *IE*.

Tottenham, M. B. (2002). Categorization of facial expressions in children and adults: Establishing a larger stimulus set. *Cognitive Neuroscience annual meeting.* San Francisco.

Turner, J. C. (1985). Social categorization and the self-concept: A social cognitive theory of group behavior. *Advances in group processes*.

Van Bavel, J. J., Packer, D. J., & Cunningham, W. A. (2008). The neural substrates of ingroup bias: A functional Magnetic Resonance Imaging Investigation. *Psychological Science, 19*(11), 1131-1139.

Weisbach, M., & Ambady, N. (2008). Affective Divergence: Automatic responses to Others' Emotions Depend on Group Membership. *Journal of Personality and Social Psychology, 95*(5), 1063-1079.

Williams, L. E., Bargh, J. A., Nocera, C. C., & Gray, J. R. (2009). The unconscious regulation of emotion: Nonconscious reappraisal goals modulate emotional reactivity. *Emotion, 9*(6), 847-854.