

**It's Written All Over Your Face:  
The Dynamic Synergy of Emotion and Social Interaction**

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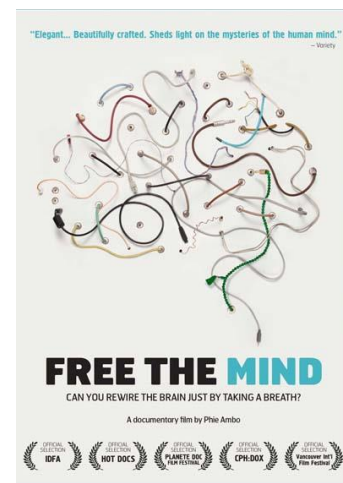
Class of 2020  
Biochemistry

WRT 105: Being Homo Sapiens Sapiens (Spring 2017)  
WRT 105

### *Introduction*

For centuries, emotions have been viewed as strictly internal, presumed to only occur within the individual and having no impact made on or by the interactions that individual has with the outside world. However, after the pioneering research of numerous leading psychologists, it has become increasingly clear that emotion is an entity predominantly, if not entirely, dependent on interpersonal factors. The expanse of emotion that we experience internally influences how we interact with those around us, and in turn, how others interact with us (Parkinson 1996). In one 1992 study, psychologists analyzed 600 written accounts of emotional experiences and found that over 75% of those narratives arose from the joys or complications of an individual's relationship with another person (Shaver et al. 1992). Findings such as this do more than just confirm that emotion is more dimensional than previously thought. By providing a new approach to emotion theory, an incredibly well-established topic in psychology, studies like this have allowed for many traditionally conducted research endeavors to be revisited, thus giving a new meaning to emotions and their ramifications.

One instance in which this new opportunity can be capitalized on is in the case of *Free the Mind*, a film which follows three military veterans through their participation in mindfulness exercises as they work to overcome their personal mental obstacles. Mindfulness, as it is understood in this film, is the ability to recognize and identify an emotion, such as anger or fear, and its origin, such as a painful memory. A significant portion of the film is focused on a breathing and meditation workshop for these veterans, each of whom is facing post-traumatic stress disorder (PTSD). Through this workshop, it becomes clear



how internally-focused techniques greatly improve many of the veterans' PTSD symptoms (Phie 2012). When reexamining this film from the viewpoint of the social aspect of emotions, it is apparent that the veterans' progress may not only have been a result of the mediation and breathing exercises, but also of their involvement in positive social situations and interactions. To clarify this impact, I will utilize one veteran from the film, Rich, as a case study to analyze his statements and behavior and how they may have been caused or affected by certain social elements of his life. Rich's experiences are remarkably similar to those of millions of veterans across the country, and thus conclusions from Rich's case can be applied universally. Ultimately, Rich's journey is evidence that the workshop addressed two features of social emotions that it did not initially intend to address: interpersonal relationships and the physical expression of emotion, specifically through smiling. By improving the condition of Rich's interpersonal relationships and putting him in an environment where smiling is more naturally evoked, this program makes clear how social interactions can be incredibly impactful on emotions and emotional recovery.

### *Interpersonal Relationships*

One of the key findings of the last two decades is that interpersonal relationships, in terms of both quality and quantity, are a strong factor in how we interpret and experience emotions. Rich, for example, who was alone in all scenes except when shown in the meditation group, mentions many experiences that suggest he lacked healthy interpersonal relationships during and after his time overseas. In his first interview, Rich mentions a diary that he kept while overseas, and states that he used it in a way that "you would use a friend or someone to talk to" (Phie 2012). In this line, Rich's use of "you" creates a distance between what he finds himself doing from what he feels others, or "you," would do. This suggests that the concept of confiding

in a friend or close acquaintance was not something that Rich felt could be applied to himself, and from other interviews throughout the film, it is clear that writing in this diary was the only emotional outlet that Rich had at the time.

The negative implications of Rich's lack of interpersonal relationships on his ability to improve, or even maintain, his mental state seemed to be immense. Having only a small social network to rely on meant poor social support before and, to some extent, throughout Rich's recovery process. According to Solomon et al., lacking a healthy level of social support is detrimental to those facing PTSD, and can itself be a stressor which can worsen existing troubles. However, significant research has shown that even just the perception of social support, which one can achieve simply by sitting in a group setting as Rich did in the meditation group, can alleviate some of stress placed on an individual without an actual support system (Solomon et al. 1998). These findings suggest that a strong contributor to Rich's relatively exceptional

results was that he was placed in a social environment with others who were going through his same struggle, creating a sense of involvement and belonging for Rich that he previously



The meditation workshop which Rich (third from left) and the other veterans participated in throughout the film.

lacked. The other veterans focused on in this film exhibited stronger existing relationships, putting Rich at a disadvantage to begin with, but eventually allowing for him to show greater relative improvements.

Another key feature of Rich's social network that may have been impacting his wellness and recovery is the quality of the relationship he had with his wife at the time, the only

meaningful relationship that he indicated having. In one of his personal interviews, Rich explains that he was very closed off from his wife. From the time that he returned from Iraq until their separation, he didn't share how he was coping, and wasn't open to discussing the experiences that were causing him so much pain (Phie 2012). Communication with others is a key element in having strong interpersonal relationships ("Attachment Theory" 2010). Through this account, it is clear to see that this was something Rich was unable to achieve. Most notably, from this testimony it can be inferred that Rich had a form of insecure attachment in this relationship. The form of insecure attachment presented by Rich, anxious-avoidant insecure attachment, means that he does not share or connect with his attachment figure, in this case his wife, in the way that one would in a healthy, secure relationship. Generally, insecurely attached individuals spend a greater amount of time in a negative mood state and are, overall, significantly more distressed than securely attached individuals ("Attachment Theory" 2010). Insecure attachments are not isolated in a person's life nor do their effects immediately disappear following the termination or amelioration of that relationship. If an individual shows signs of one insecure attachment, it is likely that many or most other relationships in that person's life will fall under the same category. Having this stressor and its ramifications present before, during, and after his recovery may have made it significantly more difficult for Rich to succeed in a program that did not address such issues.

In addition to the inherent stress of an insecure relationship, negative attachments can often have damaging effects on emotional responses to memory recall, something that is central to Rich's PTSD recovery. During all of Rich's personal interviews, he recounted specific, painful events from his past that demonstrated either the harmful effects of his PTSD, such as the time when he became so upset that when he grabbed his wife's arm he left bruises, or the root of the

PTSD itself, such as the day in Iraq that was so emotionally painful even at the time of occurrence that he couldn't write it down in his diary. For the other veteran focused on in the film, only half of the personal interviews consisted of painful memory recall (Phie 2012). According to Cavanaugh et al., those who are insecure in their relationships tend to take longer to recover from the negative mood brought on by reflecting on past experiences in those relationships or traumatizing memories in general. When placed under the same circumstances, securely attached individuals would be able to more quickly recover, and even benefit, from this type of nostalgia (2015). Based on the significant amount of on-screen time that Rich spends reflecting on his relationship with his wife, it is clear that his deep concern with how that relationship played out, as well as his role in its demise, were of near equal or equal concern to him as the stressors he experienced while in Iraq. This, in combination with the quality of his attachment, suggests that Rich may have been struggling to deal with the negative emotions associated with those memories, thus complicating his recovery.

It is widely accepted that interpersonal relationships play a significant role in how an individual will act both outwardly and inwardly. By using this knowledge as a foundation to monitor the progress of the veterans in the group, specifically that of Rich, it becomes clear that his insecure attachment likely impacted how extreme his PTSD symptoms were from the beginning, and why, when suddenly placed in a positive social environment like the meditation group, he exhibited such a drastic recovery. For the innumerable others who face the same circumstances as Rich, this evidence shows just how potent a poor social network can be to the process of recovery and, conversely, how forming positive relationships can hasten one's recovery.

### *Smiling as an Indicator and Modifier of Emotion*

A strong indicator of how the veterans in the program had been progressing was how and when they chose to physically present their emotions. Immersion in social situations greatly influences how and when emotions are displayed through the use of specific facial expressions, particularly smiling. These physical expressions of emotion can, in turn, alter the underlying emotions. In Rich's case, his progress and signs of a greater chance of successful recovery were shown in the frequency and intensity of his smiling. On screen, Rich did not show indications of a smile until minute forty-one, which was during his fourth appearance. Even then, he showed only the slight upturn of the corners of his lips, not quite a full smile. In all previous appearances, Rich's facial expression was stern, unchanging, and at times, distressed. With each subsequent appearance, Rich grew more expressive in the group and smiled more, with his last on-screen appearance containing his most objectively genuine smile (Phie 2012).



Rich's facial expressions during the medication workshop as the film progressed. As time passed, the number of times that Rich smiled in the workshop increased.

Multiple studies have found that this increase can be attributed to Rich's presence in a social environment, regardless of whether or not he was actively participating in a classically social sense. One such study found that when people are in a social setting, they tend to smile more than when they are alone, even if there is no direct communication with others in the group



Rich during his first (top) and last (bottom) personal interview. In the first interview, Rich rarely made eye contact with the camera and appeared very distraught. By the last interview, his demeanor and eye contact had both improved.

(Fridlund 1991). For analytical purposes, each time that Rich appeared on screen was considered a social setting, regardless of whether the appearance was in a personal interview or during a meditation workshop. Although Rich appeared to be alone in the personal interviews, he was sharing his thoughts with one or more other individuals behind the camera or

off-screen, thus constituting a social interaction. Based on Rich's own statements, this in-person emotional

vulnerability was something that he was lacking in his life prior to the film, and so a sudden increase in social involvement may have contributed to Rich's smiling frequency and intensity. Universally, smiling can be assumed to indicate happiness, thus pointing to these social settings as potential sources of Rich's improvement.

While smiling is, in most cases, a sign of a positive mood, it cannot always be considered the most reliable measure as an indicator of happiness. Smiles can be faked or may come not from a place of genuine happiness, but rather a fleeting moment of good mood. However, even if this



is the case, just the act of smiling can bring a person closer to having their mood match their expression. The facial feedback hypothesis states that if an individual forms a certain facial expression, their mood will begin to match the emotion generally associated with that expression (Arminjon et al. 2015). In the case of Rich, the expression is smiling and, per the facial feedback hypothesis, his increase in smiles likely led him to a better emotional state, whether or not his actual mood at the time of the smiles was positive, negative, or indifferent. Combined with the positive relationship between social interaction and smiling, this becomes a self-repeating cycle. As Rich is immersed in more social situations, he will smile more. When he smiles more, he can be pushed further in the direction of a stable, positive emotional state.

Another way in which smiling can be a tool for both recovery and progress assessment is in its association to memory recall. For Rich, we see in the film that over time, he smiles more during his personal reflections, regardless of the negative or positive moods those reflections may generally elicit (Phie 2012). According to research conducted by Arminjon et al., the act of smiling while reactivating an unpleasant memory has been found to lessen an individual's negative feelings towards that memory. This was particularly effective in PTSD patients since memory recall and its ramifications are central to the condition (Arminjon et al. 2015). When applied to Rich, these findings suggest that his smiling is a sign of the improvement that he has already made, as well as a promise of further recovery from the time earlier in the film when these memories had a clear, negative impact on his disposition.

As exhibited by the Fridlund study, smiling is a social action that is deeply connected to our presence in and awareness of social situations, making it a necessary tool for understanding an individual's fluctuation of emotions (1991). A cycle is created by being placed in a social setting, smiling more, and then, per the facial feedback hypothesis, that act of smiling improving

one's underlying mood. Rich is a strong example of this cycle occurring over the course of his time in the program, and seeing as he did not smile in any early appearances, this was likely just as significant of a contributor to his recovery as the interpersonal relationships he gained through the workshop. Just as before, these experiences and improvements can be applied to the understanding of a larger, broader population. The concept of smiling affecting one's emotional state is universally understood, and Rich's progress supports the inclination that this specific concept can be used as a tool for emotional recovery from trauma or other negative mental states.

### *Limitations and Areas of Future Study*

Although this research is based on careful observation of the veterans in *Free the Mind* (Phie 2012) and multiple peer-reviewed studies, there are several limitations contributing to how accurate the conclusions formed in this paper can be. The first can be attributed to the film itself, which was based on a study that did not focus on or discuss the impact of social situations on emotion, and thus was not cut together in a way that makes analysis for this topic very straightforward. Ideally, in order to obtain a more comprehensive view of how social situations impacted the veterans' emotions, additional interviews and group setting observations would be conducted. This way, conclusions could be based on a wider sample of data and thus be more reliable.

Another substantial limitation of this research comes from the subjects themselves. Rich is just one veteran, and seeing as not much is known about his life outside of the program, it is difficult to account for certain aspects of his personality or specific past experiences that may have contributed to how he benefitted from the workshop and how much of it was truly due to social factors. Again, in order to account for this limitation, further interviews that investigate the social quality of Rich's life and how he physically reacts to certain emotional stimuli would need

to be conducted and included for analysis. Despite these limitations, the analyses made in this investigation are built from a foundation of the findings from numerous well-supported and reviewed scientific studies and thus the observations and claims align with popular thought.

The findings of this paper are just one example of approaching a past study with a new perspective. Approaching similar studies with this method could lead to advancement in the universally known and accepted mechanisms of social and emotional processing. The program followed in *Free the Mind* was incredibly successful and the arguments made in this paper are not made to discount those methods or results, but rather to provide an explanation of the results from an additional perspective. Looking forward, it may be beneficial to conduct a more formal study into how the social concepts discussed in this paper can be applied to current therapy programs, and how they can be used to create new program that takes both the internal and external aspect of PTSD into account.

### *Conclusions*

Recent studies have been exceptionally successful in confirming the connection between our internal emotional state and the external social world. With this relatively new understanding, existing programs that currently only focus on the internal aspect of emotions can be revisited and their mechanisms can be given a more holistic explanation, one which takes into account all aspects of an individual's dynamic emotional experience. Two ways in which social situations exhibit a positive impact on emotional health are in the availability of support in a social environment and in both the causes and effects of smiling induced by a social environment. From this analysis, it is clear that modification in one's external environment can be just as impactful on the recovery process as the non-social meditation practices carried out in the film *Free the Mind*.

Developing a greater understanding and acceptance of the impact that social interactions can have on emotional processes can not only prove to be useful at both an institutional level and an interpersonal or individual level. Institutionally, these concepts can and should be incorporated into the structuring of recovery programs that currently only focus on intrapersonal recovery methods. If future studies or programs are able to link these two approaches, the possibilities for various forms of emotional recovery are endless, and PTSD patients in particular could reach a level of recovery that neither approach has, at this point, been able to achieve on its own.

On a less structured level, focusing more on the natural relationships between PTSD patients and those close to them, these concepts can be used to encourage the strengthening of support networks and further emphasize the need for positive experiences in that patient's life. If these changes are able to be made outside of one's formal recovery or therapy process, it can only serve to help hasten or increase the magnitude of recovery. These are simple tools that can be applied to any relationship between a PTSD patient and those close to them, and if future studies or programs are able to link these two approaches, the possibilities for various forms of emotional recovery are endless, and PTSD patients in particular could reach a level of recovery that neither approach has, at this point, been able to achieve on its own.

### *Cited References*

Ambo P. 2012. *Free the mind: Can you rewire the brain just by taking a breath?* San Francisco: Video Project.

“Free The Mind” (2012), directed by Phie Ambo, follows three individuals through the process of learning how to refocus and overcome waves of negative, volatile emotions, offers incredible insight into the power of calming techniques such as mediation and breathing. The first and youngest individual, Will, is an elementary school-age boy who, after spending the day with a mindfulness expert, Laura Pinger, and receiving techniques to identify and cope with his fear of elevators, Will was able to ride the elevator in his

school and feel, in his own words, “calm.” The other two individuals, Rich and Steve, were veterans that had been facing the devastating effects of post-traumatic stress disorder. Both Rich and Steve reported having significantly less control over their emotions, trouble sleeping, and an overall inability to connect with who they once were. In a group with several other veterans, Steve and Rich spent seven days learning breathing and meditation exercises specifically designed to help PTSD victims cope with overwhelming waves of memories and emotions. After taking part in this workshop, Steve showed a 40% improvement in both his PTSD symptoms and his sleeping issues. Similarly, Rich showed 39% and 72% improvement, respectively.

Arminjon M, Preissmann D, Chmetz F, Duraku A, Ansermet F, Magistretti PJ. 2015. Embodied memory: Unconscious smiling modulates emotional evaluation of episodic memories. *Front Psychol* 6:650.

Attachment theory. 2010. In: *Encyclopedia of group processes & intergroup relations*. Levine JM and Hogg MA, editors. Thousand Oaks, CA: SAGE Reference. 37 p.

Cavanagh SR, Glode RJ, Opitz PC. 2015. Lost or fond? effects of nostalgia on sad mood recovery vary by attachment insecurity. *Front Psychol* 6:773.

“Lost or fond? Effects of nostalgia on sad mood recovery vary by attachment insecurity” is a paper that discusses the positive and negative associations of nostalgia, as well as how those associations may arise based on preexisting circumstances of an individual. In order to investigate this, researchers first instructed participants to reflect on memories that elicit certain nostalgia-related emotions, and then to rate how they felt after that reflection. The participants were then put into a sad mood via the viewing of a sad movie clip and told to reflect on both nostalgic and ordinary (non-nostalgic) events. Afterwards, the participants’ adult attachment was assessed in two categories, anxiety, meaning “fear of separation and an excessive need for approval,” and avoidance, meaning “fear of intimacy and excessive self-reliance.” Through the scores collected from this self-response exercise, the participants’ attachment was determined to be either secure or insecure. Most significantly, these methods found that those with secure attachments benefitted from nostalgia, while those with insecure attachments were more disturbed by it and were less easily able to recover from the sad mood. Additionally, nostalgic event recall made it more difficult to come out of a sad mood than ordinary event recall did. These findings indicate that the implications of nostalgia can be closely associated with one’s personal social relationships and their feelings towards them.

Fridlund AJ. 1991. Sociality of solitary smiling: Potentiation by an implicit audience. *J Pers Soc Psychol* 60(2):229.

In this study, participants were divided into groups differing in social environment and instructed to view a videotape designed to elicit happiness, and thus smiling. In one condition, the viewer watched alone. In a second condition, the viewer also watched alone but was told that the other participant was “down the hall” to complete another unrelated part of the study. The third condition was similar, though in this case the viewer was told that the second participant would be in another room, but watching the same video. In the fourth condition, two viewers watched the tape simultaneously. These tests

were conducted repeatedly over a six-month period and at various points in the day in order to control for confounding variables in participant mood. Through analysis of facial movements concurrent with smiling, the researchers found that participants were more likely to physically display happiness in the conditions where another participant is perceived to be viewing the video, whether that participant is in the same room (fourth condition) or not (third condition). When the viewer was alone or thought that the other participant was not engaging in the same activity, the incidence of smiling was significantly decreased. These results illuminate the impact that perceived social interaction has on our actions and expressions, and how emotion is more than merely an individual experience.

Parkinson B. 1996. Emotions are social. 663+.

This source provides a broad overview of the history and context of emotions as a social facet of the human experience, as opposed something with merely individual or personal implications. Parkinson argues that emotions and social involvement are closely linked; emotions are generally brought about by social situations, and these emotions lead people to experience a multitude of social consequences, both positive and negative. One key argument made in this paper is that different cultures exhibit different incidences of certain emotions, and some languages will have numerous words for a range of emotions that other languages completely lack. For instance, “self-assertive emotions” like anger are far more common in individualistic cultures than in community-based cultures. The points made in this paper mark a shift in the professional world that occurred around two decades ago, when psychologists were just beginning to view and study emotion as more than an individual experience. Parkinson provides various ways in which emotions were newly recognized, and how those new perceptions could alter the way both the person and their culture could be studied as a unit as opposed to two separate entities.

Shaver PR, Wu S, Schwartz JC. 1992. Cross-cultural similarities and differences in emotion and its representation.

Solomon Z, Mikulincer M, Avitzur E. 1988. Coping, locus of control, social support, and combat-related posttraumatic stress disorder: A prospective study. *Journal of Personality and Social Psychology: Personality Processes and Individual Differences* 55(2):279-85.

Williams ACDC. 2002. Facial expression of pain: An evolutionary account. *Behav Brain Sci* 25(4):439,55; discussion 455-88.

In “Facial expression of pain: An evolutionary account,” Williams explores how the outward physical display of pain has evolved for similar reasons as the pain itself. Facial expressions in particular are a good measure of voluntary pain expression as they are often not physically connected to the injury in questions, but are merely used to indicate pain ranging from mild discomfort to excruciating pain. Such expression can be useful in communicating one’s pain and thus receiving care from others, though it can become maladaptive in chronic pain cases where the caregivers become less sensitive to the patient’s signs of discomfort. However, generally, physical expression of pain is beneficial, explaining the apparent increase in expression when the individual in pain is in a social setting or in an environment in which they seek to gain care by making their

pain noticeable. Historically, pain has been omitted from evolutionary literature but this paper provides a wide an in-depth analysis of how pain and pain expression is in fact an evolutionary consequence.

Yu EH, Choi EJ, Lee SY, Im SJ, Yune SJ, Baek SY. 2016. Effects of micro-and subtle-expression reading skill training in medical students: A randomized trial. *Patient Educ Couns* 99(10):1670-5.

The goal of this study was to examine the effectiveness of two tools used to train medical students in non-verbal expression when in the medical setting. The two tools, called the Micro Expression Training Tool (METT) and the Subtle Expression Training Tool (SETT), are designed to teach medical students how to accurately identify subtle facial movements that indicate emotions such as anger, fear, sadness, disgust, and more. Students were given a pre-tool baseline test before being exposed to the METT and the SETT, and then tested afterwards in order to assess their progress. Overall, the students exposed to the tools exhibited greater capacity for recognizing and responding to micro expressions. This study emphasizes the practical application of both identifying minute displays of emotion and forming appropriate responses to those emotions. Doing so greatly improves a doctor's ability to relate to and work alongside patients and their families, as well as improving the patient's overall experience.