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Mechanical Manipulation of Facial Expressions as Means of Inducement, Suppression, and

Feedback of Emotional States

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Abstract

This paper hypothesizes that tape placed strategically upon the face will provide feedback to the users emotional state by giving feedback to muscle tension. It is also hypothesized that females will greater utilize the feedback than males. Participants in the experiment were 30 college students (18 males and 12 females). Participants were randomly selected to either the experimental or control group. The experimental group had a Band-Aid placed at the outer eyebrow toward the upper ear, while the control group had a Band-Aid placed at a neural location on the upper forehead. Although there was no statistical significance between groups or between males and females, the experiment was preliminal and further experimentation might prove fruitful.

Mechanical Manipulation of Facial Expressions as Means of Inducement, Suppression, and Feedback of Emotional States.

Stress is a major precursor to such maladies as indigestion, headache, high blood pressure, and lower immune response (Fredrickson, 2000). There are many different drugs to modify stress, but their side effects can sometimes outweigh their efficacy (Tone, 2005). The early 1900s gave rise to many therapies to reduce stress and promote well-being. Edmund Jacobson (1965) introduced progressive muscle relaxation, an autogenic moment arose that used self-imposed hypnotic suggestion to decrease anxiety levels (Dobbin et al, 2004), A.T. Alexander introduced his Technique in which the neck and head were seen as locus of control for the entire body (Jones, 1997), there were breathing techniques, yoga, and a plethora of drug cures to treat this common problem (Brown).

Edmond Jacobson was a pioneer in relaxation training and in the area of biofeedback. His Progressive Relaxation technique is still widely used in wellness programs and clinical practices as means of preventing and treating various maladies as well as for improvement of general well being (Harris, 2003). He helped bridge the gap between Psychology and Medical Practice by proving the efficacy of reduced muscle tension as means of treating such ailments as spastic colon, hypertension, and anxiety. He began experimentation in the 1920s. His work culminated in 1938 with the publication of his book Progressive Relaxation which is still a worthwhile read for current investigators.

His method required many hours of training, and fell out of use due to the enormous effort required to learn his methods. It was revived in the 1960s when investigators found that shortened versions of his method were just as effective as the original technique (Harris, 2003). Learning to relax a specific muscle is simple and straightforward. Clients are instructed to tense and then relax a targeted muscle or area of muscles. Attention is paid to somatic sensations of muscles in both phases until the client can readily distinguish the kinesthetic sensation of relaxed or tense. The amount of tension is then reduced in a stepwise manner until the slightest quantity of tension

could be recognized and then released. Recognizing small amounts of tension is key in that many clients given the mere command to relax as opposed to formal training still held muscular tension yet were unable to somatically feel it. His method required the client to be able to master hundreds of various muscles in this manner (Jacobson, 1965). Today's techniques generally require less than twenty muscle groups and can be further reduced to half a dozen.

According to Paul Lehrer (2003) Jacobson implanted electrodes directly into muscles to measure the levels of tension. He and a group of colleagues received one of the earliest patents for an EMG device. He used this device as a concrete measure of muscle tension to confirm client's self reported levels of relaxation. Though he sometimes used it in a biofeedback loop (explained later) he was not fond of doing so. He maintained that the direct kinesthetic feelings of relaxation were superior to readouts as means of tension awareness.

Biofeedback

Biofeedback is used to measure the efficacy of these many treatments, along as a separate treatment in its own right (Fischer-Williams, Nigi, & Sovine, 1981). It was invaluable as a measure for scientific experiment. Early learning theorists sought precise measures for emotional states such as excited or calm. Such anatomical functions such as heart-rate or body temperature could be measured to aid physical observations as to develop a more precise definition of a particular emotional state. Biofeedback can be generally defined as a readout of an instrumental measure of an involuntary physiological response used to consciously manipulate the involuntary response. This is basic operant conditioning in which the response determines the stimulus (Staddon, 2003). A subject attempting to lower his or her heart-rate through a breathing technique would use his or her heart-rate readout in order to determine if the breathing technique is being properly executed. If the heart-rate were to go up instead of down, the breathing technique would be adjusted until the proper results are produced. Human beings are best described as feedback machines. If our temperature gets too high or low, mechanisms arise to keep us on an even keel. Our heartbeat and breath are monitored and adjusted from feedback

such as co2 levels, cortisol, environmental cues, and a plethora of other chemicals and combinations thereof (Cannon, 1963).

Various forms and instrumentation of biofeedback are described in Daskin and Crow's book, *Biofeedback: An Introduction and guide* (1981) Pulse rate and temperature were some of the first empirically measurable biofeedback devices. Galvanic skin response was developed in the late 1800s, and was one of the first products to measure stress that arose out of the new emerging field of electricity. It measures minute levels of skin moisture, the more moisture the more stress. The client would receive feedback by observing lights or needle readouts.

Electromyography arose as a measure of muscle tension by measuring electrical output within the muscles. It gave feedback by producing a tone that the client would listen to. The higher the pitch, the more tension there was detected. The electroencephalograph measured brain wave frequencies that were associated with different states of arousal. All of these devices gave feedback to tension in the form of audio or visual feedback that were somewhat removed from the muscle tension they were measuring. Audio feedback is instantaneous, and does not require that you have to continually focus on an output device as is needed with the flashing lights or graphs used with visual feedback. Hearing and seeing have little to do with the kinesthetic sense of emotion. Concentrating on visual and audio cues might well distract from noticing kinesthetic cues to emotion.

Facial Expression

Charles Dauwin (1998) first brought the brought the issue of facial expressions to the forefront with the publication of his book, *The Expression of the Emotions in Man and Animals*, which was published in 1872, He saw them as adaptations for survival in the form of communicating emotions. A frightened look on an individual might inform others that danger is sensed, and appropriate action can be taken. A happy look on a child's face can elicit feelings of love from the mother and strengthen her maternal instincts. Although body language can play a part, such as the wagging tail on a dog to indicate pleasure, emotions are primarily expressed in

the face of man due to its high mobility compared to the lower primates.

Fernandez-Dols (1998) lists some commonly held facts about facial expressions. The seven basic emotions are fear, anger, happiness, disgust, sadness, surprise, and contempt each have their own distinct facial patterns. All other emotions are a mixture of these emotions, and likewise all other facial patterns are a mixture of these basic patterns. Anxiety is a mixture of sadness, anger, and fear. A subject's interpretation of emotion is due in part to the kinesthetic feedback he receives from these facial patterns. It is also stated that these distinct facial patterns are universal to mankind, though other sources debate this point as facial expressions can be linked to identifying specific cultures (Marsh, A.A., Efenbein, H.A., & Ambadi, N., 2003).

Paul Ekman (1997) categorizes discreet facial movements into forty-four action units that combine to create a particular expression. Examples are; outer brow raise, brow lowerer, lip stretch, jaw drop, etc. This is a highly complex system that requires special training to use. While complex definitions contribute to construct validity, they can be cumbersome to the point that reliable research is impaired. It can be simplified into a few basic facial areas such as; raised eyebrow, clench teeth, and lips pushed together to indicate anger (Flack, F.W., Laird, D.J., & Cavallaro, L.A., 1999)

Although facial expressions seem to be universal, specific individuals tend to express themselves in classifiable styles. Ekman and Friesman (1975) names and describes some basic styles of human expression. The *Withholder* tends to have little facial movement. This much limits his communication abilities. Withholding might be of use in poker games, but is generally thought of as a social deficit. *Revealers* always show their emotions. They are seen as honest and open, but if a Revealer draws four aces in a poker game everyone else folds. His basic response can be a liability when discretion of emotional displays is called for. The *Substitute Expressor* may paradoxically express happiness when feeling sad, or disgust instead of sadness. He believes he is showing the proper expression, but others inform him otherwise. The *Frozen Face Expressor* has no neutral expression, but tends to look sad, angry, or disgusted most of the

time. The *Flooded Face Expressor* is much like the Frozen Face Expressor except that one expression, usually fear, will temper all expressions, not just the neutral expression. Other types of expressers are described, but these serve as ample example that universal facial expressions of emotions are not always expressed by a particular individual.

Men generally express their emotions to a lesser extent than women do. This seems to be culturally driven rather than some inherited disposition (Richmond, V.P., Mcroskey, J. C., & Payne, K. S., 1987). Whether it is happiness or sadness, men are expected to inhibit their emotional displays. The exception being that men are more generally allowed to express the emotion of anger to a higher degree. All others the woman usually expresses more (Hutso-comeux, S. L., & Kelly, J. R., 2002). Whether men actually feel less emotion as a result of their inhibited displays is hard to say, but it is possible as emotional displays can produce the emotion they represent (Bonanno, G.A., & Keltner, D., 2004).

Kinesthetic Feedback

At one time I practiced progressive muscle relaxation. Awareness grew of bodily tensions, and I noticed that I carried a lot of tension around the eyes. I decided to investigate the process whereby the tension returned after it had been released. After noticing that my eyebrows pulled inward to create a frown as anxiety returned, I then became aware that the muscles toward the ear made no movement at all. I placed a butterfly band-aid from the corner of my eye toward the stationary muscles near the ear. When I felt a pull on the band-aid, it was a cue to release the tension once more. Cognitive behavioral therapy had taught me that emotions arise from a chain or thoughts, so I began to notice what thoughts I was having at the moment of the tug. This was all a great benefit to me as I was simultaneously working on physical release of tension along with cognitively becoming aware of its sources.

I'm trying to conceive of some experiment or measure to see if this technique might be of some use to other people. I worked on this in private. One's public persona might negate the effect. Many people do not show their feelings when others are present. It's all smiles and poker

faces to hide their feelings from others. Others might react to anxiety by tightening other muscles such as the neck or buttocks. The tug itself would have to be self reported. You can't see what other people feel. Others are not aware of their emotional states to the point that they can differentiate anxiety from other emotional states such as sadness, boredom, or anger. Indeed, these states might produce the same tug as anxiety would. Thoughts arising and noted at the tug could produce even more anxiety as they might be forbidden or blocked ideas. The thoughts might not be noticed, but pushed aside as defense mechanisms kick in.

Kinesthetic feedback at the sight of tension is not mentioned in biofeedback literature, at least in the form as aided by apparatus, e.g., a piece of tape. It is usually assessed through direct apprehension by the individual through their senses with no outside enhancement. Progressive relaxation invites one to feel tension and its release through ordinary perceived sensations in the muscles. Autogenic training instructs one to feel heavy, warm, and relaxed, but many people have a hard time identifying specific tactile/kinesthetic cues. They know that they are feeling something, but cannot specifically label or distinguish between different emotional states. They may say they feel badly or uncomfortable, but don't know if this feeling comes from sadness, anger, or fear.

This investigator found that a band-aid connected from the skin over tension related muscles to other muscles gave immediate kinesthetic feedback by tightening upon the skin when these muscles are contracted. A frown contracts the corrugator muscles that lower the inner eyebrow. At the same time, the outer frontalis muscles pull the outer eyebrows upward. This particular contraction can be indicative of disgust or sadness. Forehead wrinkling caused by contraction of the inner frontalis muscles can be a signal of surprise, fear, or interest. By placing a band-aid so that one end is between the eyes, and the other end goes straight up the forehead to attach to the skin above the inner frontalis, one can get feedback on a variety of emotions. The pads between the sticky ends create a space so that pull from contraction of the corrugator muscles can be distinguished from pull caused by the frontalis muscles. When there is pull at the end between

the eyes it is likely that the corrugators are contracting. When the pull is at the forehead the inner frontalis is contracting.

Inducement and Inhibition

When surgical tape is applied to a neutral face muscle, contractions are felt as a pull on the tape. By attaching one end first, and then pulling on the tape, additional tension can be applied before attaching the other end. This tension can be used inhibit the movement of facial muscle, rather than only better sense it., and thus prohibit a facial expression from occurring. Facial expressions can likewise be induced by using the tape to pull the skin into simple facial expressions. As facial muscles attach directly into the skin, when that area of skin is moved the underlying muscle fibers are also moved. The muscles as well as the skin can simultaneously be molded into simple facial expression.

Facial expressions have long been linked to emotional status. A sad face generally means your feeling sad. By creating or inhibiting facial expression it seems likely that the emotions linked to an expression might likewise be created or inhibited.

The two main sets of muscles used in creating a frown are the corrugators and outer frontalis. By raising the outer brows at the outer frontalis and pulling the outer brow downward, a simple frowning face is produced that should be accompanied by a corresponding emotion, e.g., sadness, anger, disgust, or anxiety. These selfsame emotions might likewise be inhibited by using tension to prevent the outer frontalis from rising and the inner brows from being pulled downward by corrugators. I was able to inhibit these muscles when in an anxious mood, and noticed less subjective anxiety within five or ten minutes. My face felt frozen into a relaxed mask. I left it on for another twenty minutes and noticed that fear and anger seemed to be reduced, but sadness could be more readily noticed. I noticed a similar effect when restraining the corrugators only or the outer frontalis only. As only part of my face was frozen in either condition, I felt more relaxed about the obtrusive nature of surgical tape. Further experimentation will be needed to differentiate the degree of effectiveness in each condition.

Self experimentation is generally more useful towards creating hypothesis than proving them.

As I stated earlier, the amount of tension applied to the tape differentiates producing/inhibiting muscle tension as opposed to only more noticing when facial tension is produced. If the tape position remains the same as in the above experiments, and the tension of the tape is lowered, facial tension will be more noticed rather than created or inhibited.

A gentle smile can be created by pulling the corners of the mouth upward. A smile might likewise be inhibited by creating an inward pull on the muscle thus preventing its contraction and the resulting smile. A crinkling of the outer corners of the eyes adds power to the smile both subjectively and objectively. This can be accomplished with an adjustable elastic band with tape attached to both ends that are secured at both temples.

Creating a positive mood might be more effective towards countering depression or anxiety, rather than merely inhibiting a negative mood. Studies indicate that time spent in positive moods may serve to counteract the adverse effects of time spent in negative moods, e.g., lowered immune response, high blood pressure etc.(Lehrer,2003). One might also induce anxiety for experimental purposes by creating conflicting signals, such as an induced smile coupled with an induced frown.

Shoulder tension and postural alignment can also be assessed through direct skin tension feedback. By first relaxing the shoulders and straitening the neck, one is placed in a postural position in which the head is balanced on the spinal column. An object in balance requires little effort to maintain its position. Neck and shoulder tension are thus avoided. Surgical tape is then placed down the front and back of the neck when it is in an erect and relaxed position. If the head is placed forward, the tape at the back of the neck tightens, and the one on the front loosens. This same process is reversed when the head leans backwards. Leaning either way loses the equilibrium attained by balance. A surprising effect occurred when both pieces went limp. Shoulder muscles were contracting. There are no muscles that lengthen the neck. It is made to appear shorter only when shoulder muscles are tensed or raised. This raising of the shoulders in

turn causes the tapes to go limp. If one wears a fairly high shirt collar, the tape can be worn in public without detection. On the downside it is somewhat uncomfortable pull when the head is rotated laterally. This becomes a negative reinforcement that induces one to turn the whole upper body, rather than the head only. I felt a little robotic, in posture, within movement, as if I were imitating a robot. It may be an advantage to use these methods in public as pressures toward anxiety may be of a different nature or greater intensity than what might be encountered in private. Meeting with other people can only be imagined in private, and though somewhat effective is surely not highly comparable to the actual experience. Wearing a Band-Aid or other such device in public might prove embarrassing and add to anxiety already felt. A headband or hat might prove useful in concealing a Band-Aid or other device worn at the temple as in the experimental condition.

Self Help

Self help techniques are mainstream, and seem to be here to stay. These methods may well prove superior to others in that mechanically aided kinesthetic feedback could possibly be more effective in regulating kinesthetic tension. The high cost of electronic feedback apparatus makes it inaccessible to many people for home or even in professional settings. Low budget feedback might also be helpful in clinical experimentation, as electrical apparatus is costly, and sometimes not available to all experimenters.

Experiment

Thought was given to creating an experiment in which inhibition, inducement, and feedback conditions would be measured in a multilevel experiment. A senior thesis is limited in time and resources. Also, the nature of this exploration makes for a confusing array of hypothesis. It was thus decided to run a single experiment on the simplest concept, kinetic feedback.

A piece of tape placed just above the outer eyebrow to the temple at the hairline does little to inhibit or induce emotions, however at tug is noticeable when the outer eyebrow is pulled upward or inward, possibly indicating sadness, fear, or anger. Anxiety can then be induced, and

it should be more noticeable to the participant. Three outcomes are possible: noticing the anxiety might drive the participant to higher levels of anxiety; it might more warn the participant to anxiety, thus giving feedback to resist it; or it might not affect anxiety levels in any way.

Hypotheses and tests.

As discussed before, having tape on such a sensitive area as the face might in itself prove anxiety provoking, but the control group should experience an equal amount of anxiety in this respect. Any differences between the groups should consequentially be attributed to the feedback mechanism in the treatment group. It is hypothesized that the treatment group should experience either more or less anxiety than the control group. Differences between male and female responses will also be measured. Women generally show more tactile sensitivity than men. It is predicted that women in the treatment group will show greater differences than men in the treatment group.

A two by two factorial ANOVA will be used to test the efficacy of the treatment and check for gender differences. The effectiveness of the mood inducer will be judged in accordance with the participant's feedback on the questionnaire.

Method

Participants

Thirty participants volunteered from an introductory Psychology class pool (18 men and 12 women). Mean age is estimated at 19.5 years. Participants were treated in accordance with the "Ethical Principles of Psychologist" (American Psychological Association, 2002).

Apparatus

Standard Band-Aid brand, two inch, butterfly band-aids were used

Materials

An anxiety scale asking the three following questions was used. 1. I feel tense right now. 2. I feel relaxed right now. 3. I feel nervous right now. Participants were told to write M for male and F for female on this same piece of paper.

The following Questionnaire was administered.

1. Did you notice the tape? _____. If yes how so?
2. Do you think the sensations you felt were related to stress?
3. How noticeable was the bandage? Circle one.
Not at all -----somewhat-----moderately noticeable-----definitely noticeable—very noticeable
4. The tape helped me identify stressful feelings Yes or No _____.
A. If yes did you make an effort to inhibit these feelings? Yes or No _____.
6. Do you think that writing how busy you are is a stressful task _____? If yes, how so?
7. Do you think that other people would likely find that writing how busy they are is a stressful task?
8. I used the sensations I felt to help me relax? Yes or No _____.

Procedure

Participants were randomly assigned to the treatment group or the control group. Each participant then filled out a scale for their current anxiety levels. I placed a band-aid from the temple to just above the corner of the right eyebrow on each member of the treatment group. A band-aid was placed horizontally across the midline of the forehead about a quarter inch from the hairline. They were then instructed to write about how busy they are at this time of year for a fifteen minute period. At the end of the fifteen minute period they were instructed to fill out another anxiety level scale. These were collected, and the questionnaires were administered. Participants were then debriefed as to the nature of the experiment.

Results

A two tailed ANOVA with an alpha level of .05 was ran to check for differences between the control and experimental groups, and also to check differences between males and females. There was no significant differences between the control group ($M = -0.20$, $SD = 2.88$) and the experimental group ($M = -0.15$, $SD = 3.80$), $F(1,27) = .72$, $p < .40$, $n = 28$. There was no significant reaction between males ($M = -1.25$, $SD = 3.21$, $n = 16$) and females ($M = 1.25$, SD

=2.89, $n = 12$), $F(1,27) = .925$, $p < .078$, $n = 28$. There was a near significant reaction between females in the control ($M = 0.25$, $SD = 3.10$, $n = 8$) and the experimental group ($M = 3.25$, $SD = 0.50$, $n = 4$), $F = 2.71$, $p < .133$.

Discussion

Statistical analysis showed no significant effect between the experimental group and the control group. This was not surprising in that the experiment was designed to seek out effect under least possible conditions. Participants were not informed as to the possible feedback effect of the Band-Aid pulling at the temple to help them recognize anxiety. It was feared that they might report less anxiety in an effort to make the experiment successful in order to please the experimenter. It was also designed to rule out placebo effects of a *magic Band-Aid* that helped eliminate stress. It is likely that feedback would have been more useful had participants known the purpose and function of the Band-Aid. It seemed appropriate that the first experiment in this area look for least effect on which to build upon.

The hypothesis that women would be more sensitive to this type of feedback was nearly realized. The mean difference in anxiety scores for men and women was quite large and nearly of statistical significance. It was encouraging to see some effect on such a low level experiment. Support for further experimentation seems warranted. It might be possible that the relative difference in size between men and women's faces played some part. A two inch Band-Aid placed upon an average woman's face is relatively larger than one placed upon an average woman's face.

Tensioning of the Band-Aid would likely provide better feedback and some inhibition of anxiety. This might be problematic in that it might prove difficult to measure the amount of tension provided. Even if equal tension could be measured and provided for each participant it might prove counterproductive to do so. Each individual has different resiliencies and structures

in skin and muscle tone. Likely, an optimal amount of tension should be provided for each person. The best solution might be for each participant to be informed of what ends he is seeking, and then have them tension the bandied upon their own faces.

Only 4 (all female) of the 30 participants agreed that “writing how busy they were” was in itself a stressful situation. The experiment was conducted during finals week, and it may have been that the students were already stressed to the point that this 15 minute exercise seemed a negligible stressor by comparison. In that all that answered yes were female, it could be considered that females are more likely to admit something is bothering them. Paradoxically, 15 (8 female) considered that the exercise would be stressful to someone else. It seems they were putting on a face “this would be tough for other people, but it doesn’t bother me kind of attitude.” It might be supposed that if so many could admit it stressful to others and not themselves as means of denial, then some of the ones who stated that it would not be stressful to anyone might also be in denial as to the anxiety aroused by the writing exercise. It might prove fruitful to repeat the experiment without the band-aids in order to get a clearer picture of the mood inducer. A control group could write on some neutral subject such current weather conditions.

If indeed the exercise is not a very effective negative mood inducer, then all differences in subjective levels of anxiety before and after treatment would likely be attributable to the passage of time or the band-aids placed upon their foreheads. Beside the fact that having Band-Aids placed on sensitive skin areas might be irritating, it might also be possible that Band-Aids remind people of negative events culminating in scratches or cuts that needed some first aid.

It might prove beneficial to screen participants in future experiments. It is reasonable to believe that the experimental group contained some mix of the types of facial expressers as

described earlier in the paper (Ekman, 1975). Any Withholders in the group would have naturally shown little facial expression, and would likely have gotten little feedback in the experimental group. The Revealers, who wear their heart on their sleeves, would likely have gained the most from this form of aided kinesthetic feedback. The Substitute, Frozen Face, and Flooded Face Expressers, when taken together, would likely have gotten mixed and uncertain results. Although most people show some mix of these characteristics, choosing a group that most resembles the Revealers would likely result higher F-ratios and clearer differences between experimental and control groups

Unfortunately 17 people ended up in the control group, and 13 were in the experimental group. In providing equal chance of being chosen for the experimental or the control group, the experimenter failed to provide that only 15 people be chosen for each group. Two out-lyers (both from the control group) were withdrawn from statistical analysis, and this somewhat evened the groups. Nevertheless unequal group sizes somewhat lessens the validity of the statistics.

Kinesthetic devices need not be limited to tape and Band-Aids. It was suggested earlier that a hat or headband might be used to conceal a Band-Aid in public. In fact the headband or hat itself might be a usable device toward suppression or feedback toward emotional states. Both to varying degrees (and depending how worn) compress a line of muscles around the forehead and to the back of the head. As tension on the headband could be adjusted to optimal degree of effectiveness, although what amount of tension desired for maximum effectiveness is not yet known. When one considers the various societies and subgroups of societies and their use of headgear, it might be postulated that headgear already functions to effect emotional states and is already, though subconsciously, used for this purpose.

Street gangs and soldiers of fortune spring to mind. This subgroup experiences high pressures toward anxiety in the violent and criminal lifestyles they endure. Many of them choose to wear headbands. Their headbands likely serve some useful purpose, such as to identify them from their enemies or to keep blood or sweat out of their eyes, but headbands are not essential to their trade. Is it possible that headbands help to steel them against the pressures they endure? Might the hat liners of construction workers or coalminers give them emotional protection as well as protect them from falling debris. Hat liners have adjustable bands. It is conceivable that their users might tension a tight or loose fit in order to minimize stress. Entire Arab nations can be considered. They are situated along trade routes that have precipitated territorial wars for centuries. Is it possible that their traditional headgear was developed and has endured for more than religious purposes or protection from the

Other articles of clothing can be considered. Other major sites of tension are the shoulders and buttocks. Tight or loose fitting pants, shirts, dresses, etc. might produce or inhibit stress on the people who wear them. It has been suggested that the large number of hysterical cases in women found in Freud's day were due more to the tight corsets they wore than to psychological causes. Koreans use headbands as cures for headaches. It has been suggested that restriction of blood flow might be responsible for this effect, but there is some possibility that muscular inhibition or feedback could be responsible for lessening their pain.

Makeup is also worn on the human body. Women and sometimes men use makeup for cosmetic reasons, generally on certain occasions such as dates or special affairs. It is used primarily upon the face, but no body part is excluded from tanners, lotions, or powders. They can make the skin tighter or looser, more moist or more dry, heavier or lighter. Makeups that tighten the skin might provide feedback similar to the Band-Aids used in the treatment group in this

paper. They could also slightly inhibit emotions. Special occasions may create unique or increased anxiety that could profit from tension reduction.

Jewelry surrounds the neck, encircles the fingers, arms, and wrists. Jewelry in piercings contacts the naval, eyebrows, nose, tongue, and chin. It is attached to various intimate body parts. Where fashion might dictate it to be located on our bodies in the future is hard to say. It seems that the more sensitive body parts might possibly provide more feedback than other areas touched. Eyebrow jewelry would best relate to the Band-Aid of our treatment group.

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