EMOTIONAL CONTAGION

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Hatfield, E., Cacioppo, J. L. & Rapson, R. L. (1993). Emotional contagion. *Current Directions in Psychological Sciences, 2,* 96-99.

EMOTIONAL CONTAGION

Emotions have ubiquitous effects in human affairs. Vivian Gornick (1987), in Fierce Attachments, recounts a typical exchange with her mother. Gornick always begins these encounters with high hopes. "Somehow," in spite of her best intentions, their conversations always spiral downward:

> Today is promising, tremendously promising. . . .
>
> I go to meet my mother. I'm flying. Flying! I want to give her some of this shiningness bursting in me, siphon into her my immense happiness at being alive. Just because she is my oldest intimate and at this moment I love everybody, even her.
>
> "Oh, Ma! What a day I've had," I say.
>
> "Tell me," she says. "Do you have the rent this month?"
>
> "Ma, listen . . ." I say.
>
> "That review you wrote for the Times," she says. "It's for sure they'll pay you?"
>
> "Ma, stop it. Let me tell you what I've been feeling," I say.
>
> "Why aren't you wearing something warmer?" she cries. "It's nearly winter."
>
> The space inside begins to shimmer. The walls collapse inward. I feel breathless. Swallow slowly, I say to myself, slowly. To my mother I say, "You do know how to say the right thing at the right time. It's remarkable, this gift of yours. It quite takes my breath away."
>
> But she doesn't get it. She doesn't know I'm being ironic. Nor does she know she's wiping me out. She doesn't know I take her anxiety personally, feel annihilated by her depression. How can she know this? She doesn't even know I'm there. Were I to tell her that it's death to me, her not knowing I'm there, she would stare at me out of her eyes crowding up with puzzled desolation, this young girl of seventy-seven, and she would cry angrily, "You don't understand! You have never understood!" (pp. 103-104).

Gornick is fiercely attached to her mother; she cannot resist "catching" her anxiety and depression.

Recently, we have begun to explore this process of emotional contagion. People seem to be fully aware that conscious assessments can provide a great

deal of information about others. They seem to be less aware that they can gain even more information by focusing-in now and then on their own emotional reactions during those social encounters. As people nonconsciously and automatically mimic their companions' fleeting expressions of emotion, they often come to feel pale reflections of their partners' feelings. By attending to this stream of tiny moment-to-moment reactions, people can and do “feel themselves into” the emotional landscapes inhabited by their partners.

Let us begin by defining “emotional contagion” and discussing several mechanisms that we believe might account for this phenomenon. [We will provide evidence that people tend: (a) to mimic the facial expressions, vocal expressions, postures, and instrumental behaviors of those around them, and thereby; (b) to “catch” others' emotions as a consequence of such facial, vocal, and postural feedback. We will end by reviewing the evidence from a variety of disciplines that such primitive emotional contagion exists.] Emotional contagion may well be important in personal relationships because it fosters behavioral synchrony and the tracking of the feelings of others moment-to-moment even when individuals are not explicitly attending to this information.

DEFINITIONS

Theorists disagree as to what constitutes an emotion family. Most, however, probably would agree that emotional “packages” are comprised of many components--including conscious awareness; facial, vocal, and postural expression; neurophysiological and autonomic nervous system activity; and instrumental behaviors.[1] Since the brain integrates the emotional information it receives; each of the emotional components acts on and is acted upon by the others.

Primitive emotional contagion is defined as:

> The tendency to automatically mimic and synchronize expressions, vocalizations, postures, and movements with those of another person's and, consequently, to converge emotionally (p.153-154).[2]

As early as 1759, the economic philosopher Adam Smith observed that as people imagine themselves in another's situation, they display “motor mimicry.” Later, Theodor Lipps suggested that conscious empathy is due to the unlearned “motor mimicry” of another person's expressions of affect. Today, however, developmental theorists make clear distinctions between the process in which we are interested--primitive empathy or emotional contagion--and the more cognitive, sophisticated, and “socially beneficial” processes of empathy and sympathy.[3]

POSSIBLE MECHANISMS OF EMOTIONAL CONTAGION

Theoretically, emotions can be caught in several ways. Early investigators proposed that conscious reasoning, analysis, and imagination accounted for the phenomenon. For example, Adam Smith observed:

> Though our brother is upon the rack . . . by the imagination we place ourselves in his situation, we conceive ourselves enduring all the same torments, we enter as it were into his body, and become in some measure the same person with him, and thence form some idea of his sensations, and even feel something which, though weaker in degree, is not altogether unlike them (1759/1966, p. 9).

However, some forms of primitive emotional contagion are far more subtle, automatic, and ubiquitious a process than previous theorists have supposed.[4] Evidence is beginning to accrue, for instance, in support of the following propositions.

Mimicry

Proposition 1: In conversation, people automatically and continuously mimic and synchronize their movements with the facial expressions, voices, postures, movements, and instrumental behaviors of others.

Scientists and writers have long observed that people tend to mimic the emotional expressions of others. As Adam Smith observed: "When we see a stroke aimed, and just ready to fall upon the leg or arm of another person, we naturally shrink and draw back on our leg or our own arm" (1759/1966, p. 4). Smith felt that such imitation was "almost a reflex." Since the l700s, researchers have collected considerable evidence that people do tend to imitate others' emotional expressions. Social psychophysiologists, for example, have found that facial mimicry is at times almost instantaneous; people seem to be able to track the most subtle of moment-to-moment changes. Such investigations have found that peoples' emotional experiences and facial expressions (as measured by electromyographic (EMG) procedures), tend to reflect at least rudimentary features of the changes in emotional expression of those they observe. This motor mimicry is often so subtle that it produces no observable changes in facial expression.[5] For example, Ulf Dimberg (1982) studied college students at the University of Uppsala, Sweden. He measured subjects' facial EMG activity as they looked at people displaying happy and angry facial expressions. He found that happy and angry faces evoked very different EMG response patterns. Specifically, when subjects observed happy facial expressions, they showed increased muscular activity over the zygomaticus major (cheek) muscle region. When they observed angry facial expressions, they showed increased muscular activity over the corrugator supercilii (brow) muscle region. Research has also shown that subjects sometimes overtly mirror others' facial expressions. Infants begin to mimic facial expressions of emotion shortly after birth and continue to do so throughout their lifetimes. Adults engage in the same sort of mimicry.[4]

People also mimic and synchronize vocal utterances. Different people prefer different interaction tempos. When partners interact, if things are to go well, their speech cycles must become mutually entrained. There is a good deal

of evidence in controlled interview settings supporting interspeaker influence on utterance durations, speech rate, and latencies of response.[4] Individuals have also been found to mimic and synchronize their postures and movements with others.[6]

We are probably not able consciously to mimic others very effectively: the process is simply too complex and too fast. For example, it took even the lightning fast Muhammed Ali a minimum of l90 milliseconds to detect a light and 40 milliseconds more to throw a punch in response. William Condon and W. D. Ogston (1966), however, found that college students could synchronize their movements within 21 milliseconds (the time of one picture frame). Mark Davis (1985) argues that microsynchrony is mediated by brain structures at multiple levels of the neuraxis and is either “something you've got or something you don't”; there is no way that one can deliberately “do” it.” (p. 69). Those who try consciously to mirror others, he speculates, are doomed to look phony.

Thus, there is considerable evidence that (1) people are capable of mimicking/synchronizing their faces, vocal productions, postures, and movements with startling rapidity, and (2) they are capable of automatically mimicking/synchronizing a startling number of emotional characteristics at a single instant.[4]

Feedback

Proposition 2: Subjective emotional experience is affected, moment-to-moment by the activation and/or feedback from facial, vocal, postural, and movement mimicry. Theoretically, emotional experience are influenced by: (1) the central nervous system commands that direct such mimicry/synchrony in the first place; (2) the afferent feedback from such facial, verbal, or postural mimicry/synchrony; or (3) conscious self-perception processes, wherein individuals make inferences about their own emotional states on the basis of their

own expressive behavior. Given the functional redundancy that exists across levels of the neuraxis, all three processes may operate to insure that emotional experience is shaped by facial, vocal, and postural mimicry/synchrony and expression. Thus, research is needed to determine which of these distinctive processes subserves emotional experience and contagion or, perhaps more likely, under what conditions each underlies emotional experience and emotional contagion.

Darwin[7] argued that emotional experience should be profoundly affected by feedback from the facial muscles:

> The free expression by outward signs of an emotion intensifies it. On the other hand, the repression, as far as is possible of all outward signs softens our emotions. He who gives way to violent gestures will increase rage; he who does not control the signs of fear will experience fear in a greater degree; and he who remains passive when overwhelmed with grief loses his best chance of recovering elasticity of mind (p. 365).

Recent reviews of the literature on facial feedback show that emotions are tempered to some extent by facial feedback.[8] What remains unclear are how important such feedback is (is it necessary, sufficient, or merely a small part of emotional experience?) and exactly how the two are linked. Researchers have tested the facial feedback hypothesis-- using three different strategies to induce subjects to adopt emotional facial expressions. Sometimes, they simply ask subjects to exaggerate or to try to hide any emotional reactions they might have. Sometimes, they try to “trick” subjects into adopting various facial expressions. Sometimes, they try to arrange things so subjects will unconsciously mimic the emotional facial expressions of others. In all three types of experiments, the emotional experiences of subjects tend to be affected by the facial expressions they adopt.[4]

For example, in a classic experiment, James Laird[9] told subjects that he was interested in studying the action of facial muscles. The experimental room contained apparatus designed to convince anyone that complicated multichannel recordings were about to be made of facial muscle activity. Silver cup electrodes were attached to the subjects' faces between their eyebrows, at the corners of their mouths, and at the corner of their jaws. These electrodes were connected via an impressive tangle of strings and wires to electronic apparatus (which, in fact, served no function at all.) The experimenter then proceeded surreptitiously to arrange the faces of the subjects into emotional expressions. Laird found that emotional attributions were shaped, in part, by changes in the facial musculature. Subjects in the “frown” condition were less happy and more angry than those in the “smile” condition. The subjects' comments give us some idea of how this process worked. One man said with a kind of puzzlement:

> When my jaw was clenched and my brows down, I tried not to be angry but it just fit the position. I'm not in any angry mood but I found my thoughts wandering to things that made me angry, which is sort of silly I guess. I knew I was in an experiment and knew I had no reason to feel that way, but I just lost control (p. 480).

The link between emotion and facial expression can be quite specific.[9] When people produced facial expressions of fear, anger, sadness, or disgust, they were more likely to feel the emotion associated with those specific expressions.

Furthermore, Paul Ekman and his colleagues[10] have argued that both emotional experience and autonomic nervous system activity are affected by facial feedback. They asked people to produce six emotions--surprise, disgust, sadness, anger, fear, and happiness. They were to do this either by reliving times when they had experienced such emotions or by arranging their facial muscles in appropriate poses. The authors found that the act of reliving

emotional experiences or flexing facial muscles into characteristic emotional expressions produced effects on the ANS that would normally accompany such emotions. Thus facial expressions seemed to be capable of generating appropriate ANS arousal.

Vocal feedback can also influence emotional experience. In one experiment, Elaine Hatfield and her colleagues required subjects to reproduce one of six "randomly generated" sound patterns. Communications researchers have documented that emotions are linked with specific patterns of intonation, voice quality, rhythm, and pausing. (For example, Klaus Scherer (1982) found that when people are happy they produced sounds with small amplitude variation, large pitch variation, fast tempo, a sharp sound envelope and few harmonics). The five tapes were designed to possess the sound characteristics associated with joy, love, anger, fear and sadness. The authors found evidence that the emotions of individuals were affected by feedback from their vocal productions.

Finally, evidence exists suggesting that emotions are shaped by feedback from posture and movement.[4] Interestingly enough, the theorist of theatre, Konstantin Stanislavski (in Moore, 1960), noticed the connection between posture and performance. He argued:

> Emotional memory stores our past experiences; to relive them, actors must execute indispensable, logical physical actions in the given circumstances. There are as many nuances of emotions as there are physical actions (p. 52-53).

Stanislavski proposed we may relive emotions anytime we engage in a variety of small actions that were once associated with these emotions. Whether or not Stanislavski was correct, there exists an array of evidence supporting the contention that subjective emotional experience is affected, moment-to-

moment, by the activation and/or feedback from facial, vocal, postural, and movement mimicry.

Contagion

Proposition 3: Consequently, people tend, from moment-to-moment, to "catch" others' emotions.

Finally, there is evidence from animal researchers, developmentalists (interested in emotional contagion, empathy, and sympathy), clinical researchers (exploring transference and countertransference and the impact that anxious, depressed, and angry people have on others), social psychologists and sociologists, and (most recently) historians, which suggest that people do indeed often catch the emotions of others.[4]

CONCLUSIONS

In this paper, then, we confront a paradox. People seem to be capable of mimicking others' facial, vocal, and postural expressions with stunning rapidity. As a consequence, they are able to feel themselves into those other emotional lives to a surprising extent. And yet, puzzlingly, they seem oblivious to the importance of mimicry/synchrony in social encounters. They seem unaware of how swiftly and how completely they are able to track the expressive behaviors and emotions of others.

What are some implications of such findings? The research on contagion underscores the fact that we use multiple means to gain information about others' emotional states: Conscious analytic skills can help us figure out what makes other people "tick". But if we pay careful attention to the emotions we experience in the company of others, we may well gain an extra edge into "feeling ourselves" into the emotional states of others. Both provide invaluable information. In fact there is evidence that both what we think and what we feel may provide valuable, and different, information about others. In one study, for

example, Hatfield and her colleagues[2] found that people's conscious assessments of what others “must be” feeling were heavily influenced by what the others said. People's own emotions, however, were more influenced by the others' non-verbal clues as to what they were really feeling.

Awareness of the existence of emotional contagion the associated phenomenon of emotional decoding may prove useful in understanding and perhaps advancing various areas of interpersonal communication--between lovers, between teachers and students, parents and children, therapists (or doctors or lawyers) and clients, between labor or international negotiators, between heads of state. They may better help us understand group behaviors which have shaped history, whether they be Hitler fanning hatred to his listeners, Martin King spreading a message of love, or the ways in which crowds behave. And they may even tell us something about the awesome contemporary power of celebrityhood and of the mass media as these agencies of large-scale emotional and cognitive contagion continue to expand their capacities to define reality for billions of people.

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