USING MEASURES OF EMOTIONS TO IMPROVE WORK CLIMATE, PRODUCTS AND DECISION-MAKING

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Abstract. *Individual emotions can be measured and interactive patterns of emotions can be interpreted to provide insights about the emotional state of individuals. This article describes the merger of two disparate methodologies, one which provides the means for measuring emotions and another which provides for analysis of the complex patterns of emotions to produce meaningful interpretations. Traditionally, measures of emotions have been used in clinical settings for therapeutic purposes. In this paper we explore the use of measures of emotions for business purposes. Specifically we provide examples of how information about an individual's emotions can be used to improve organizational climate, improve product design, and improve decision-making.*

Key words: decision-making, measuring emotions, nonlinear, product design.

1. Introduction

When we get angry, the entire pattern of physiological processes – a red face, faster breathing, trembling, and so on - is an integral part of our engagement with the present environment. These responses are driven by a set of basic emotions which are as much a part of the engagement as is mental awareness. They are so integral that it has been suggested there is an emotional coloring to every cognitive act (Capra, 1996).

Research on emotions is marked by very few major contributors and reflects the difficulty of the subject. This is not a topic which readily lends itself to classic experimental designs or empirical research as the very nature of the subject requires accepting the value of perceptions and self-reported measures. Yet few individuals can sense an emotion and accurately attach a name to it and fewer still can delineate the subtle differences between anxiety and fear or contempt and anger. The progress made so far is impressive considering the elusive nature of this topic.

Darwin provided the first major contribution to the study of emotion. Though he sites earlier work by Duchenne and Bell, his 1872 book titled *The Expression of Emotions in Man and Animal* is an obvious beginning to the field (Darwin, 1872). Darwin asked the right first questions: „What are the basic emotions?" and „Are the expressions of emotions universal across the human race and across species?" The answers he received from correspondents around the world allowed him to identify and describe in detail an initial set of basic emotions. As suggested by the title, his work highlighted the way in which emotions are expressed. The differences in the

expressions led to the identity of various distinct emotions. Most of the emotions identified by Darwin have been recognized by other contributors to the field.

Not only did Darwin provide an initial list of separate emotions, he provided a productive methodology for research in the field. Expressions were the useful units to define, measure and compare. Expressions defined the emotions. Focusing on the facial expressions, Paul Ekman has advanced this notion to a scientific end. He identified the specific muscle groups of the face which relate to selected emotions and developed a Facial Action Coding System (FACS) which allows one to objectively identify an emotion from the combination of facial muscles used to express it (Ekman & Friesen, 1978). Conversely, it permits one to produce the expression of a given emotion by deliberately manipulating specific muscles in the face.

An ongoing debate has centered on the list of emotions. What precisely are the basic emotions? A useful answer comes from the doctoral work of Ilan Shalif at the University of Ramat-Gan, Jerusalem. His dissertation, originally published in Hebrew in 1991 and translated to English in 1992 addressed the question of whether emotions were more faithfully described and communicated as cognitively interpreted terms (e.g., words) or subjectively interpreted visual images of expressions (e.g., pictures) (Shalif, 1992). In pursuit of this question Shalif developed a defendable list of emotions supported by prior research. We were able to add Anxiety to this list as a distinctly different emotion supported by Darwin and others (see Table 1).

Table 1

A Consolidated List of Basic Emotions

Happiness	Shame
Interest	Fear
Surprise	Anger
Contempt	Distress
Disgust	Sadness
	Anxiety

Although we are all familiar with these terms, they are used here to refer to distinct and separate emotions defined by unique sets of physiological characteristics and neurological responses. The origin of each is also thought to differ though they all have distinctive evolutionary implications. Recent work by Richard Lazarus confirms the merit of this list and adds considerably to our understanding of how they relate to each other (Lazarus, 1999). Though distinct, these emotions are all present to some degree at all times. Our emotional state at any given moment is defined by the relative strength of these elements which is continually changing.

2. How to Measure Emotions

Contemporary movements in the field of emotion theory acknowledge the complexity of the phenomenon of emotions while moving beyond simple linear notions depicting cause-and-effect relationships. Current progress in the field of emotion theory emphasizes the dialogic qualities of emotions while recognizing the interactive, narrative, and social context of emotional situations. The modern study of emotions identifies the need for assessment instruments designed to honor the dynamic nature of emotions and behavior (Heiby, 1995b; Mayne & Ramsey, 2001; Lazarus, 1999) while emphasizing the need to accurately assess emotions through "time series measurement that is interpreted by iterations of an individual's past scores" (Heiby, 1995a, p. 15). Current researchers in the field of emotion theory accept that aggregated statistics are not designed to capture or address the complexity of affect and advocate the following:

- Emotions must be treated as processes rather than steady states (Scherer, 2000).
- Emotion research and assessment should not be anchored solely around a convenient set of verbal emotion labels that perpetuate a "steady state" conceptualization of emotions (Scherer, 2000).
- Emotion assessment instruments must be sensitive to temporal factors and to the dynamic nature of some behavior (Heiby, 1995b)

Over the past eight years a computer-based system has been developed that utilizes concepts and tools derived from nonlinear systems theory to analyze emotion interactions as well as track dynamic emotion changes occurring over time. This system, named Emogram, has been used in a variety of settings to provide interventions in areas ranging from employee burnout to traumatic stress. Emogram can be used to provide immediate insight into the emotional responses of individuals prompted by recalled events, current experiences or anticipated events. Emogram utilizes thirty-three facial images depicting three levels of eleven emotions to assess, track and report changes in the following emotions: happiness, interest, surprise, contempt, disgust, shame, fear, anger, distress, sadness, and anxiety. A sample of two images representing two different emotions is provided in Figure 1.

The Emogram assessment process begins by entering an identifying name or number into the program. The subject then selects one of the five presenters incorporated into the system. These presenters are (1) an Anglo female, (2) a Hispanic female, (3) an African-American female, (4) an Anglo male and (5) an African-American male. In general demographic matches are made with the client although there are specific exceptions to this practice.

Figure 1. Facial Expressions of Two Emotions

The client is then instructed that there will be a presentation of thirty-three facial photographs depicting various emotions. The client is not to analyze the photographs cognitively, but rather, to simply answer the following question: „To what extent do you feel the way the individual in the photograph feels?" The client is presented with a data entry screen as shown in Figure 2 and responds by clicking on any one of the response bars that range from „Very Different" to „Very Similar."

Each time a response is entered a new photograph appears on the screen depicting another emotion. There are three photographs for each emotion that differ only in degree. An important aspect of this assessment process is that it does not rely on the client knowing the names of the emotions or having any prior instruction about emotions. The response is essentially guttural rather than cognitive. When a response has been entered for each of the thirty-three photographs the system combines the scores for each emotion mathematically to derive a specific score for each emotion.

The Emogram system measures each emotion on a scale of 1 through 6 with higher scores representing increased strength of the emotion. The system also provides an overall measure of emotional quality (EQ). The EQ score is a composite of all the emotions and is computed as the difference between the pleasant emotions (*happiness, interest,* and *surprise*) and the unpleasant emotions (*disgust, contempt, anger, fear, anxiety, shame, distress,* and *sadness*). The EQ score ranges from -100 to +100 with positive scores being more pleasant and negative scores more unpleasant.

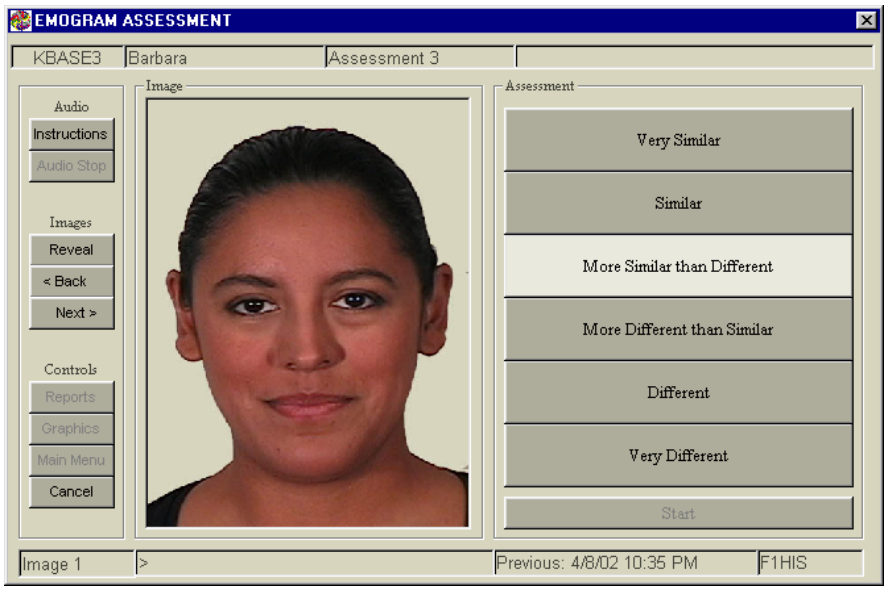


Figure 2. The Emogram Assessment Screen

3. Interpreting Measures of Emotions

Measures of emotions based upon judgments of concordance with images of expression offers an enhanced method for assessment; however an appropriate method for analyzing the interactions of emotions and the dynamic changes in emotions which occur over time is still needed. Therefore, concepts and tools derived from nonlinear systems theory must be used to analyze and interpret the emotion measures and their changes over time. Recent advances in applied nonlinear systems theory provide the appropriate concepts and tools.

3.1. Discrete state space

Nonlinear science makes use of a concept called State Space which describes the current dynamic state of a system over time. From this view, the individual emotions are seen as changing and interacting with each other. In this application a "state" is defined as the dynamic combination of two or more emotions. When two emotions are shown in interaction they can be mapped on a phase plane as shown in Figure 3. For example, an increase in Contempt combined with a decrease in Shame constitutes a unique state.

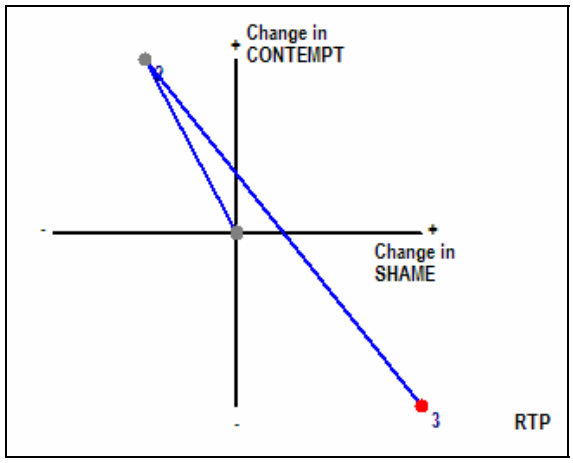


Figure 3. Phase Plane of Emotional Interaction

Similarly, a decrease in Contempt combined with an increase in Shame constitutes another entirely unique state. When expanded to include the dynamics of all eleven emotions one can see that the myriad of states increases rapidly. Though complex, the states are mutually exclusive and exhaustive. State space provides a means of defining the unique dynamic condition of the system at any moment and the sequence of dynamic conditions through which the system has passed.

The phase plane is the most basic tool in the non-linear toolbox. It is used to reveal the dynamic behavior of a system over time. This image, relating changes in contempt to changes in shame, plots the attribution one applies to a particular event. Because contempt is directed toward others and shame is directed to the self, the dynamics of these two emotions reveals the way in which an individual assigns accountability.

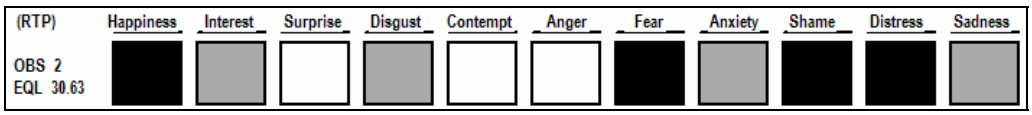
Each axis on the phase plane measures changes in one of the two measures. The origin is coordinate *0,0* representing no change; positions to the right or upward represent increases, those to the left and downward represent decreases. Any point on the phase plane represents the state of the system at a moment in time describing precisely how the relationship between the two measures is changing.

The trajectory on the phase plane is produced by plotting points at the intersections of the changes in each of the two measures over time and then tracing a line from each point to the next. The dynamic behavior of the two measures in interaction is revealed by the changing position of the trajectory on the phase plane.

Phase planes are not just another way to present data. They provide a precise description of the system at each moment in time and they can be related to specific management intervention strategies. For example, any point in Quadrant 2 (the upper left quadrant) reflects an *increase* in Contempt and a decrease in Shame by some specific amount. This combination of dynamic changes provides sufficient information

to permit *interpretations* to be attached to the phase plane. An appropriate interpretation for Quadrant 2 may be "the individual is assigning more blame to others and less to the self."

When more than two emotions are examined, it is easiest to view the complexity of multiple emotional responses as a set of state spaces as shown in Figure 4. Each of the blocks in Figure 4 indicates the change in one of the emotions from a prior assessment. Specifically, the change in emotion is computed as the current emotion measure minus the previous measure with positive changes indicating an increase and negative changes indicating a decrease in the strength of the emotion. When the emotional strength is unchanged from the previous assessment then no change has occurred and is noted as such in Figure 4.



Key: Black=Increase, White=Decrease, Grey=No Changes

Figure 4. State Space Matrix

3.2. Multidimensional and interacting

These approaches provide the necessary qualities to appropriately analyze the changes in emotions. They capture the incrementally evolving nature of emotions in that each new measure is compared to the prior measure of that same emotion for the same individual. This self-referencing approach is essential if one expects to assess a single individual and it stands in contrast to a norm-based approach which would apply statistics to compare an individual to a sample from a given population. By plotting the changes in two dynamic measures, the phase plane and the State Space Matrix reveal the underlying dynamics which would not otherwise be apparent.

Because interpretations can be drawn directly from positions on the phase plane or the State Space Matrix, it follows that some recommended interventions- *prescriptions for action*- can also be attached to each of the unique states. Doing so does require that the context of the analysis be known. For example, if Contempt increased and Shame declined for a traumatized individual, that unique state may relate to a prescription stating "Confirm the appropriate assignment of blame to others and reinforce the realization that the client should not blame the self." This prescribed action and the interpretation on which it is based flow directly from the changes in the underlying data. Both of these tools, therefore, provide a means for converting the complex dynamics of the emotions into descriptive interpretations and recommendations for action. This approach, which constitutes a dynamic form of

clinical pathway construction, has been applied in other rehabilitation settings (Priesmeyer & Sharp, 1995).

To analyze eleven emotions dynamically it is necessary to consider selected combinations of emotions. Fortunately, Lazarus has provided considerable discussion about the interactions of emotions and we can apply his analysis to construct a meaningful knowledge base that automatically interprets changes in emotions.

4. The Use of Emotion Measures in Clinical Settings

The importance of emotions to our mental and physical health and our dearth of understanding about emotions prompted the National Institutes of Health (NIH) to issue a Program Announcement calling for research on emotions in every division. Research requests have recently been issued by the National Institutes of Mental Health, Aging, Alcohol Abuse, Child Health, Drug Abuse, the National Cancer Institute and the National Institute of Neurological Disorders (NIH program call here).

There is new-found interest in emotions and how they affect the human condition. This new interest springs from recent insight into the biochemical basis for emotions and new understanding of the "mind-body" connection. Candace Pert relates emotions to memory in this way: "I'd say that the fact the memory is encoded or stored at the receptor level means that memory processes are emotion-driven and unconscious (but, like other receptor-mediated processes, can sometimes be made conscious)" (Pert, 1999). Elmer Green of the Mayo Clinic relates emotions and the physical state with this comment: "Every change in the physiological state is accompanied by an appropriate change in the mental emotional state, conscious and unconscious, and conversely, every change in the mental emotional state, conscious or unconscious, is accompanied by an appropriate change in the physiological state." Emotions are integral to the physiological and mental condition of an individual; they both reflect and influence the physical and mental states.

Traditionally, emotions have been valued in psychotherapeutic settings where the focus is on coping and improving one's mental health. Prior uses of Emogram have also been in these clinical setting such as rape crisis centers and for treatment of post traumatic stress disorder, anger management, and substance abuse (Mudge, 2003; Capps, 2005).

All of these are situations in which one is trying to provide therapeutic interventions for a diagnosed mental health condition. In all of these applications, the measures of an individual's emotions provide valuable information that is used by the clinician to guide the treatment.

However, the value of the information contained in the emotion measures is not limited to clinical settings. Information about emotional responses can be applied in business settings. Rather than focusing on corrective interventions, knowledge of emotional responses can inform managers and marketers about their employees, their customers, and about their own decision-making.

5. The Use of Emotion Measures in Management and Marketing

Emotions provide information about our appraisal of the relationship we hold with our environment. Rather than limit our interest in emotions to those conditions when they are problematic, our understanding of them can be used to construct conditions that reinforce the pleasurable emotions and minimize the strength of unpleasant emotions. This possibility has wide spread implications for management and marketing. It means that managers need to be aware of the basic emotions and how individuals respond in business settings. It also suggests that there is a major dimension to the experiences of employees and customers that is not now being addressed. The emotional dimension of all players in the business environment is not being managed. We can be much more proactive in designing conditions that improve productivity and performance in the workplace, in designing products that solicit pleasurable emotional responses, and in understanding emotions and how they influence our own decision-making. The role of emotions in each of these situations is described in the following studies.

5.1. Implications for improving organizational climate

The complexity of today's business environment often accelerates professional demands on workers thus increasing employee stress. Even under the most desirable conditions increased levels of workplace stress represent considerable economic, social, and psychological costs to employees and employers. Left unmanaged, negative personal consequences of stress in the workplace include mental and physical exhaustion, fatigue, irritability, decreased productivity and diminished quality in work-related performance. As a result of the debilitating impact on the individual, the work product, and the organization, effective management of workplace stress is essential to the growth of a healthy, vital, business community. Our first case involves the daily emotional reactions of an employee in a stressful work environment. This example provides a perspective on the larger issue or organizational stress and organization climate.

The phase plane in Figure 5 provides a trajectory depicting the emotional dynamics of a medical professional who deals primarily with review and approval of major medical claims at a large health insurance agency. The job involves the highly stressful task of reviewing contested claims and detailed medical records to determine the appropriate level of payment to the insured. Twelve to fifteen complex cases are examined each day. The primary stress on this job is due to the heavy case load and the pressure to process cases in a timely manner.

Each of the points on the phase plane in Figure 5 represents the emotional state at the end of each workday. The initial assessment was a neutral baseline taken on Sunday with the subsequent six assessments represented the following six workdays. The phase plane reveals the interaction of Happiness and Contempt. These two emotions were singled out for review because "contempt for management" was

identified as the primary obstacle to her job satisfaction. The measure for Happiness serves as an indicator of job satisfaction.

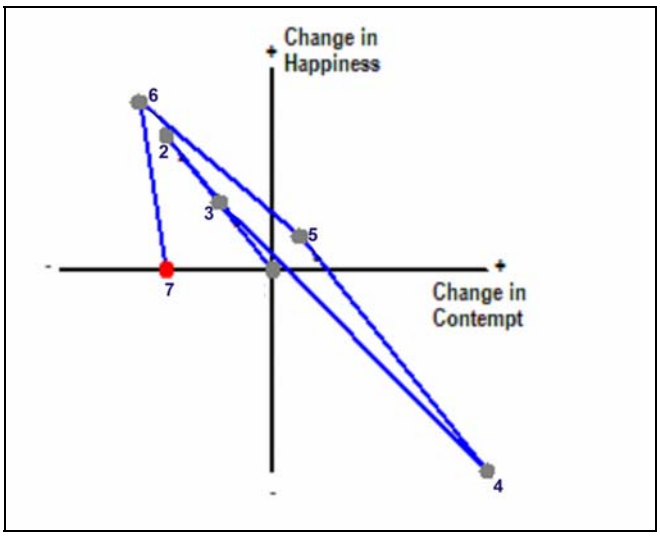


Figure 5. Phase Plane of Daily Workplace Emotions

After each day's assessment we obtained a narrative from the subject that serves as a cognitive explanation of the emotional responses. Position 2 represents the end of the first day in which Happiness increased and Contempt declined. The subject stated "I was happy. I went in early enough that I could leave early today." The Happiness may correspond to being "glad to get off work." Position 3 reflects a continued increase in Happiness and a continued decrease in Contempt. The subject stated "I spoke with my manager and she told me not to try and handle things myself but to ask [for help]. Another nurse will start part time to help." This promise of assistance resulted in the increased Happiness and a positive attitude toward management. The following day was problematic due to staffing and equipment problems. Position 4 is associated with the narrative "Tired, had to struggle today because Dr. "X" is out all week. Also, all systems were down so I have double the work to do." The next day brought the following narrative "I feel like I am drowning. I went in today thinking I would get help but didn't." The increase in Contempt is noted at Position 5. Position 6 depicts a strong increase in Happiness and a substantial decrease in Contempt. The subject summarized her day by stating "Decided to delegate some of my work out to my supervisor and to the new nurse." The additional support resulted in the decreased contempt. Finally, Position 7 which shows no change in Happiness but a continued decrease in Contempt is described by the subject's comment "I have 12 to 15 cases and can catch up and get ahead. It should be a good day tomorrow."

This singular example using only two emotions provides insight into the emotional dynamics that all employees experience on a daily basis. When one imagines all the emotional changes at work in all employees each day, one begins to appreciate the scale of the emotional dimension of work. It is also possible to see here the effectiveness of the phase plane and the ease by which it reveals the underlying, unspoken feelings of an individual at work.

Applied systematically within an organization it is possible to profile emotional measures by department or job type, emotional measures by day of week, and collective emotion measures for all employees. Additionally, emotion measures such as these can be related to other organizational data such as performance, absenteeism, and safety.

5.2. Implications for product design

Just as individuals respond emotionally to experiences in the workplace customers respond emotionally to products. Knowing the emotional reaction to a product has profound implications for marketing managers. For our illustration here we will use the concept of Emotional Quality (EQ) introduced earlier in this article. Because the Emotional Quality captures the overall emotional response it can be said that a product's appeal is reflected in the Emotional Quality score which ranges from +100 (highly pleasurable) to -100 (highly unpleasurable) with zero representing a neutral response.

In addition to the Emotional Quality each of the individual emotions provides meaningful insight relative to the context of the study. When evaluating products, the interpretation of each emotion can be stated as given in Table 2.

Table 2

Emotional Implications for Product Design

Happiness	Supports consumer's desires
Interest	Draws and holds attention
Surprise	Offers unexpected features
Disgust	Has distasteful features
Contempt	Creates bad feelings toward product or manufacturer
Anger	Product should be eliminated
Fear	Product has specific threatening features
Anxiety	Product has features that solicit unspecified fears
Shame	Makes customer feel incompetent
Distress	Customer needs more help with the product
Sadness	Product creates a feeling of personal loss

For the purpose of illustrating the value of emotion measures with regard to product we report the results of a small study involving a product called Dondolo. Dondolo is a horizontal support structure of unique design for the human body. It is of high quality materials consisting of a wooden support frame, an angular body support

frame, and cushions. The product is made in Austria. The model tested has a floor level frame, a body support frame capable of accommodating one adult, and three cushions consisting of a full length body cushion, a separate cushion for the legs and a cushion for the head. The tested model had medium blue fabric color. An image of Dondolo is provided in Figure 6.

Dondolo is a unique biofeedback device. Because of its design, it responds to the breathing pattern of the individual. As an individual breathes, the thoracic diaphragm rises and falls causing a shift in weight that oscillates between the upper and lower body. Dondolo responds to this transfer of weight and begins a linked oscillation that promotes regular deep breathing and a lower respiration rate. Lying in Dondolo is a rather profound experience.

Figure 6. The „Dondolo" Recliner

Eleven individuals participated in our study. Each person took an Emogram baseline and then reclined in Dondolo in a private room for five minutes. A subsequent Emogram assessment provided post-measures and allowed us to compute the changes in the Emotional Quality and changes in each emotion for each individual. The computed measures are provided in Table 3.

We had been asked to analyze Dondolo by its manufacturer to assist him in developing his marketing strategy for the product. We learned that Dondolo has significant and varied emotional influences on individuals. We found it causes either (1) a reduction in the physical and negative emotions which commonly elevate with fatigue and stress or (2) a reduction in emotional containment.

We were able to identify a quality of the product previously unknown by the manufacturer. We found that subjects who typically detach from their emotions are not able to remain detached while lying in the Dondolo chair for five minutes. The product seems to solicit the emergence of any kind of masked emotions.

Table 3

Changes in Emotions Resulting from Dondolo Experience

Subject	E-Quality	Happiness	Interest	Surprise	Disgust	Contempt	Anger	Fear	Anxiety	Shame	Distress	Sadness
1	-20.93	-0.77	0.23	-0.47	1.70	1.05	0.00	-0.70	1.76	0.95	0.00	0.94
2	0.44	0.90	-1.00	0.30	-0.23	0.00	0.23	-0.18	0.53	-0.53	0.24	0.23
3	5.84	-0.65	1.29	0.47	0.00	0.47	-0.94	0.00	0.18	0.35	0.58	0.00
4	17.01	1.77	0.53	0.77	0.00	0.00	-0.23	0.00	0.47	-0.23	0.23	-0.29
5	-1.54	0.00	0.71	0.00	0.06	0.48	0.24	0.00	0.06	0.00	1.00	0.71
6	4.95	-0.53	-1.89	0.53	0.00	-1.24	-1.00	-0.82	-0.23	-0.94	-1.71	-1.06
7	-4.55	0.00	-0.29	-0.06	-0.23	0.00	0.00	0.29	0.06	0.58	-0.18	0.35
8	-17.45	-0.95	-0.59	-1.17	0.00	-0.11	-0.58	0.00	1.17	-0.70	0.00	0.00
9	5.39	0.18	0.12	0.47	0.00	-0.23	0.23	-0.29	0.18	0.06	-0.30	0.24
10	24.31	1.24	0.18	1.71	-0.71	-0.29	-0.23	1.41	-1.06	-0.65	0.47	-0.35
11	-7.95	0.24	-0.29	-0.29	-0.18	0.24	0.00	0.53	1.47	-0.11	0.29	0.00

We concluded that Dondolo is a type of physical "biofeedback device" that could be used effectively by psychologists and counselors. Counselors would not need to spend time guessing the masked emotions of their clients, instead they can concentrate on rendering advice and techniques that will help the clients understand and manage their emotions. We therefore recommended that a new marketing strategy for the company should address this new market (psychologists and counselors) internationally.

5.3. Implications for decision-making

Our final example of how measures of emotions can be used effectively in business relates to the way emotions influence and inform our decision-making. Emotions make important contributions to the decision making process. They direct our attention to important events that demand a decision, they provide useful information about the desirability of alternative courses of action and they often provide the motivation necessary to implement a chosen course of action. In this way emotions pull us into and through the decision making process and the implementation of our decisions.

As previously stated, Emogram can be used to test the emotions associated with anticipated events. It can, therefore, be used to identify the emotions associated with each alternative in a decision. Again, the meaning of each emotion is context specific and, in this case the interpretation of each emotion can be described as shown in Table 4.

Testing the Emotional Quality of alternatives within a decision making context reveals the emotional responses associated with that alternative and provides a basis for evaluating and understanding the emotions that are influencing the decision. Knowing the emotions allows one to effectively process and examine their legitimacy and to make decisions based on both cognitive and emotional information. We present a single

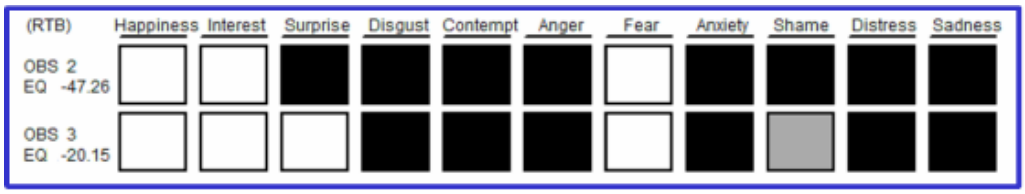
case study to illustrate the process of evaluating emotional responses to alternatives within a decision making context.

Table 4

Emotional Implications for Decision-Making

Happiness	The targeted alternative is congruent with decision-maker's desires
Interest	Decision maker seeks additional information regarding the targeted alternative
Surprise	The targeted alternative relates to unexpected consequences or actions
Disgust	The decision-maker seeks to avoid the targeted alternative or persons, places, or activities associated with the targeted alternative
Contempt	The decision-maker assigns blame to persons, places, or activities associated with the targeted alternative
Anger	The decision maker seeks to change or eliminate the targeted alternative or persons, places, or activities associated with the targeted alternative
Fear	The targeted alternative presents a specific, identifiable threat to the decision maker
Anxiety	The target alternative relates to multiple, non-specific threats that suggest ominous conditions or events
Shame	The decision maker associates failures or shortcomings to the targeted alternative and assigns blame to self for these perceived failures
Distress	The decision maker associates vulnerability and a need for help with the targeted alternative
Sadness	The decision maker associates an irretrievable loss and a sense of helplessness with the targeted alternative

In this case an individual in a professional financial position must decide to either join another financial institution or leave the industry entirely. A baseline assessment was taken to capture the emotional state prior to targeting these two alternatives. The subject then focused on the first alternatives (that of joining a different firm) and, after exploration of all the factors involved, took another Emogram to capture the emotional response to that possible course of action. The second alternative (that of leaving the industry entirely) was then considered in depth and a third Emogram was taken to identify the emotional profile associated with that choice. All the emotions associated with each of these alternatives are presented in a State Space Matrix in Figure 7.



Key: Black=Increase, White=Decrease, Grey=No Changes

Figure 7. State Space Matrix Depicting Decision Alternatives

The Emotional Quality (EQ) scores for each alternative are provided in the left hand margin of the matrix. Observation 2 (OBS 2) represents the first alternative, that of changing firms. Observation 3 (OBS 3) corresponds to the second alternative of leaving the industry entirely. Because Emotional Quality scores below zero indicate that the overall emotional profile is unpleasurable, it is apparent that neither of these choices was a pleasurable option for the subject. The second alternative (EQ=-20.15) is the preferred choice only because it is less unpleasant than the first alternative (EQ=-47.26). The subject's better choice was to leave the industry entirely and be prepared to deal with the unpleasant emotions related with that choice. The implications of each of the heightened emotions associated with that alternative can be explored by examining the descriptions provided in Table 4.

6. Summary

In this article we are suggesting that managers and marketers use information about feelings that have been notoriously elusive. Emotions present themselves in such a way that they seem to defy measurement, logical interpretation and control. Yet we have shown here that they can be measured and that information about them can be used in very productive ways. Emotions are the very part of our life that brings it meaning. They direct us. Seeking happiness, affection, recognition and peace and avoiding anxiety, fear, and stress seems to be the great theme of life. For all the real activities and achievements we experience, these amorphous visitors are the ones that provide substance and meaning. These emotions are not limited to our personal lives, they follow us to our place of work and to the marketplace.

Emotions are rarely appreciated and valued as they should be. They are considered by most to be somehow less important than the cognitive and physical aspects of our being. But we are physical, emotional, and intellectual beings and it is suspected that our limited appreciation of emotions is a result of the fact that we know more about the physical and intellectual dimensions than we do of emotions. We focus on physical attributes of products and rarely address their emotion-evoking qualities. We typically address emotional issues only when they become so severe that they impact physical health or ability to function intellectually. The purpose here is to offer a new and constructive approach that allows us to use emotions to inform our business choices.

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