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ABSTRACT

A study conducted in two types of laboratory settings and one school setting tested a model of the development of emotional expression. The model included: (1) societal, peer, and family influences; (2) self-factors, such as physiological, affective, motivation, cognitive, and personality variables; and (3) self-mediators, which act as filters through which other variables are accepted or rejected. All these factors are mutually influential and interactive. In the study, heart rate, gender, maternal expressiveness, and maternal anger were investigated as predictors of children's expressiveness. A total of 60 mothers and their children were chosen from a sample of 143 mothers who filled out the Family Expressiveness Questionnaire (FEQ). The 30 mothers scoring highest on both the positive and negative expressiveness FEQ subscales, and the 30 mothers scoring lowest on both subscales, were selected. Study methodology involved tests of these mothers' children's heart rates; the administration of a questionnaire to determine causes, speed, and duration of anger among mothers; and laboratory observations and teacher ratings of the children's emotional expressiveness. The study found that the children whose mothers reported both enduring anger and high expressiveness had the most depressed expressiveness levels. The combination of maternal negative feeling and negative expression appeared to have a greater effect than either factor by itself. Children whose mothers had low maternal anger ratings had the highest scores on positive and negative expression in story-telling situations; on positive expression in event situations; and on teacher ratings of children's happy and angry expressions. (AC)

Maternal Expressiveness & Emotionality:

Socialization of Children's Expressiveness

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Maternal Expressiveness & Emotionality: Socialization of Children's Expressiveness

Goal 1: To present a model describing the development of emotional expression that includes societal, peer, and family influences, and also self-factors that influence expressiveness, such as physiological, affective, motivation, cognitive, and personality variables. These influences and self-factors are overlapping, mutually influential, and interactive. Finally, there are self-mediators that act as filters through other influences are accepted or rejected. Details of this model are available in Halberstadt (in press).

Goal 2: To discuss a study that investigated the relationship between mothers' and children's emotionality and expressiveness (Halberstadt, Fox, & Jones, 1991), and in so doing, investigated several aspects of the model.

Definition of Expressiveness:

Expressiveness is a persistent pattern of exhibiting emotion expressions in a variety of socioemotional situations. Our judgments about an individual's style of expressiveness is based on aggregates of that individual's emotion expressions over time and across situations. Research on emotion expressions shows that people vary their expressions considerably depending on their specific feelings and the rules embedded in the social event; research on expressiveness shows that people also show consistency in their responses across situations.

Assumptions of the Research:

(a) Individuals have styles of expressiveness that are stable/continuous and distinctive, and that individuals are willing and able to ascribe stable self-expressiveness characteristics to themselves.

Peers and close relations and spouses agree with those assessments in 5 studies that I know about. Range of .36 to .53 (Median = .43***)

(Friedman, et al, 1980) ACT & friends: $r(59) = .39^{**}$

(Burrowes & Halberstadt, 1987) modified ACT & friends or spouses:

negative $r(55) = .44^{***}$ positive $r(55) = .53^{***}$

(Halberstadt, Fox, & Jones, 1991) FEQ (as a self-report instrument) & spouses:

$r(86) = .44^{***}$

(Halberstadt, 1991) FEQ (as self-report) & spouses: $r(149) = .36^{***}$

(King & Emmons, 1990) EEQ & peers $r(205) = .43^{***}$

(b) Individuals' expressiveness styles are more than just high and low emotionality; that is, they are more than mere reflections of internal state.

Developmental psychologists are the primary consumers of the assumption that expressiveness is a window into emotionality. And of course, observable expressions do reflect underlying emotion states at least occasionally. However, we know that we don't always show what we feel, nor do we always feel what we show. Thus, we need a perspective that (1) considers expressiveness as a communication style, (2) recognizes the developing dissynchrony of affect and expression during development, and (3) allows us to study the increasing ability of children to modulate their emotion expression to fit cultural expectations regarding their own behavior, and to regulate affective experience itself. Indeed, once this assumption is recognized, we can test the relationship between emotion experience and emotion expression. And at least in questionnaire form, we see a positive but nonisomorphic relationship between emotionality and expressiveness. Range= .07 to .62***, median = .47***

(King & Emmons, 1990) EEQ & AIM: r (46) = .50***
(Halberstadt, Hoeft, & Tesh, 1990) FEQ (as self-report) & AIM:
r(26, 65) = .34 & .50
(Halberstadt, Fox, & Jones, 1991) FEQ (as self-report) & AIM: r(28) = .62***
(Burrowes & Halberstadt, 1987) ACT & Anger intensity: mean r(62) = .07
(Halberstadt, 1991) SEQ & AIM or Gen. Anger intensity:
r(65)= .56*** r(57) = .32*

(c) These styles have some importance for interpersonal behavior.

Many studies have found expressiveness to be associated with a host of other factors including people's occupational interests (Friedman, et al., 1980), physicians' success at recruiting patients (DiMatteo, Hays, & Prince, 1986; Friedman, et al., 1980), mothers' effective interactions with their infants and subsequent positive infant outcomes (Diskin & Heinicke, 1986), lack of loneliness in males (Christian & Worell, 1989), popularity and friendship (Buck, 1975; Riggio, 1986), and mood contagion to others (Friedman & Riggio, 1981). Thus, expressiveness appears to be an important aspect of individuals' socio-emotional composition, and the development of expressiveness styles in individuals over the lifespan appears well worth further exploration.

Models describing the development of expressiveness:[1]

Here is a depiction of an early model that expresses my original beliefs about expressiveness development very well.

Insert Figure 1 about here

My more current thinking about expressiveness development is depicted in Figures 2 and 3, and is described in detail in Halberstadt (in press).

Insert Figure 2 about here

These figures identify many socialization influences. Some of these are broadly based, such as societal influences; others are closer to home, such as peer influences, and the family influences just described. Second, there are many internal state self-factors which are associated with expressiveness such as physiological, affective, motivational, cognitive, and personality factors. Finally, there are self-mediators that affect individuals' expressiveness levels by mediating the influence of socializing agents as well as modulating the influence of internal states.

That the ellipse representing societal norms and values for expressiveness encompasses the other ellipses suggests that the individual's own norms and values for expressiveness are affected directly by societal patterns for expression communicated via the media, school, and other institutionalized structures, as well as indirectly, by societal patterns for expression communicated via the family and peer norms, values, and behaviors, which, in turn have an influence all their own. The family expressiveness and peer expressiveness ellipses are also overlapping, suggesting that they may be mutually influential and possibly interactive with each other in their influence on self-expression.

In the more complex model, I have dropped out the sources of family and peer influence in order to include the four general socialization processes that seem to be the mechanisms by which family, peer, and probably societal expressiveness influence the individual.

Insert Figure 3 about here

Self-factors. The model also identifies many *self-factors* that influence expressiveness; these include physiological, affective, motivational, cognitive, and personality variables. These are represented in the rectangle in the lower part of the model. At least some of these influences are moderated by each other; gender, for example, may moderate the influence of age and vice versa, and knowledge of display rules may influence one's value for expression and vice versa. The self-factors are also partially encompassed by the societal expressiveness ellipse in order to suggest that some of the self-factors develop within, and thus are influenced by, a societal context. The overlap and permeable boundaries with the other two socialization ellipses suggests the influence of family and peer socialization processes as well. Finally, the self-factors are also mediated by the individual characteristics of autonomy, need for approval, and awareness of socialization contingencies. For example, the ability to self-regulate one's expressiveness style may not be activated unless one is interested in obtaining approval from socializing others.

Self-mediators. There are also self-factors that affect individuals' expressiveness levels by mediating the influence of socializing agents as well as modulating the influence of internal states. These *self mediators* are represented as the closest area encircling *self-expressiveness,* and include autonomy, need for approval, and awareness of socialization contingencies. That is, the values and behaviors of society, family, and peers only influence the individual to the degree to which the individual is receptive to those messages.

One test of the model:

Several aspects of this model are tested in a study investigating the relationship between mothers' and children's emotionality and expressiveness (Halberstadt, Fox, and Aaron, 1991). In this study, we investigated a variety of factors (heart rate, gender, maternal expressiveness, and maternal anger) as predictors of children's expressiveness, as measured in two types of lab settings and in school.

Method

Subjects and FEQ. Sixty mothers and their children were chosen from a sample of 143 mothers who filled out the Family Expressiveness Questionnaire (a reliable and valid measure of emotional expressiveness in the home, Halberstadt, 1983; 1986). The 30 mothers scoring highest on BOTH the positive and the negative expressiveness subscales, and the 30 mothers scoring lowest on BOTH the negative and the positive expressiveness subscales, also blocked by gender, were chosen. The difference between the low- and high- expressive mothers was highly significant ($t(58) = 14.29$, $p < .001$, suggesting that our selection procedure was successful.

Heart rate. During a lab visit, children provided measures of their heart rate and heart-rate variability while sitting quietly and while watching a segment of Sesame Street.

Anger Questionnaire. Mothers also reported the most frequent causes of anger, and the speed to anger, duration, and intensity of anger toward and from particular targets (spouse or child) in the home in a questionnaire derived from Averill (1982).

The anger questionnaire was comprised of 9 parts. Developed along the Averill (1982) model, the questionnaire began with one question about how often the mother becomes angry at another person and a second question about what percentage of those experiences were mild or trivial. These two questions were followed by a description of the most recent experience in which the mother felt angry at any family member, and the intensity, speed to anger, and duration of the anger experience. The next 8 sections all involve the same questions regarding anger within various dyadic relationships within the family. The eight relationships were: "you to your child's father", "your child's father to you", "you to your child", "your child to you", "the father to your child", "your child to the father", "your child to sibling(s)", and "sibling(s) to your child".

To help mothers focus on specific behavioral events, rather than global guesses, they began each section by identifying the most frequent cause for anger in the relationship (e.g. being late all the time, money matters, arguing about how to bring up the children, not cleaning up, lying, wanting something that the other person vetoed). Then mothers filled out the quantitative assessments of frequency, duration, intensity, and speed to anger.

Thus, we had two types of information about children's mothers. We had a measure of mothers' expressiveness and a measure of mothers' internal state experiences of anger. These measures were not highly intercorrelated (median $r(49) = .14$), suggesting independence of expressiveness and emotionality (at least for these measures).

Observations of children's emotion expression. The children experienced a series of emotion manipulations. The children were unobtrusively videotaped while being interviewed about happy, sad, and fearful events in their lives, and while experiencing three social situations designed to elicit happy, disappointed, and apprehensive feelings in the lab. Videotapes were rated by two judges on Likert-type scales and were also EMFACS coded.

For each interview sequence, the child was asked to tell about a time when s/he was very happy (sad/ scared). The child was then asked to think about that experience (for 30 seconds), while the experimenter worked on her own task. The child was then asked about his/her emotion experience again. When the child was finished speaking, the experimenter began the emotion-eliciting event for that emotion.

For the happiness event, the children were shown a magic coloring book whose pictures appeared to change from color to black and white or to disappear altogether.

For the sad/ disappointing event, the children were promised their choice of one of three desirable gifts to take home; however, the experimenter could not initially find the gift (a la Saarni, 1984; Cole, 1986). After a 3-minute period, the gift was found by another experimenter.

For the apprehension-eliciting event, the children were confronted with an oddly-dressed confederate who spoke and acted in a very peculiar manner. The confederate came into the lab wearing a plastic garbage bag over her clothes, was barefoot, and asked for directions to a shoe store. After speaking in a somewhat confused manner, she asked the child what the child was doing, and left after the child had a chance to reply.

The children's videotapes were then coded using global ratings on 1 to 9 Likert-type scales and EMFACS codes (Ekman & Friesen, 1978). Raters proved to be highly reliable. To increase the stability of the scores, all negative expressions in all three interviews (or events) were summed to comprise a Negative score and all positive ratings in all three interviews (or events) were summed into a Positive summary scores.

Teacher ratings of children's expressiveness. Teachers rated the children for happy, sad, fearful, and angry expressiveness in school, using the same four measures: frequency, speed to anger, duration, and intensity. Perhaps because these were global assessments without identification of specific behavioral referents, these were highly intercorrelated (median $r(49) = .63$, $p \leq .001$).

Thus, among our "independent" variables, we had two kinds of socialization variables -- maternal expressiveness, maternal anger, and two self-factors -- gender and physiological responsiveness (heart rate). We also had three kinds of dependent measures. We had (a) the global ratings of children during the interviews and events, (b) the more molecular EMFACS scores of children in the interviews and events, and (c) the global teacher ratings of the children's behavior in school. The two self-factors, gender and physiological responsiveness, as measured by heart rate and heart-rate variability, revealed very few effects, and I won't discuss them further here. I focus instead on the maternal expressiveness and anger measures.

Three repeated-measures ANOVAs, each with maternal expressiveness and maternal anger as predictor variables were conducted. For two ANOVAs the dependent variable was children's expressiveness during storytelling and emotion-eliciting events, as measured by either global

codes or EMFACS scores. For the third ANOVA, the dependent variable was children's emotion expression in school, as measured by teachers' ratings.

Results

Maternal expressiveness. These ANOVAs revealed several effects. Most interesting are the interactions between maternal expressiveness and children's positivity of expression. In the laboratory settings, these interactions showed up whether the children were storytelling or experiencing the events, and whether the children's expressions were measured by global ratings or the more molecular EMFACS coding (*Fs*(1,56) = 11.33 and 6.97, *ps* ≤ .001 and .01, for global and EMFACS judgments, respectively.) The post hoc simple effects analyses indicated that the interaction is largely due to children with low-expressive mothers showing greater positive expression compared to children with high-expressive mothers (*Fs*(1,56) = 15.14 and 5.26, *ps* ≤ .001 and .05, for global and EMFACS judgments, respectively).

See Table 1 here

In school, the interaction between maternal expressiveness and children's positivity of expression was also significant (Pillais *F*(3,45) = 3.18, *p* ≤ .05). This interaction appears to be due to children's differences in anger expression: children with more-expressive mothers tended to express more anger in school than children with less-expressive mothers (*t*(49)= -2.39, *p* ≤ .08, with Bonferonni correction).

Because of these findings for school behavior, I went back to the laboratory settings and counted up just the anger expression of the children. Because the storytelling and events were attempting to elicit happiness, sadness, and fear/apprehension, and were fairly successful in that regard, anger expressions were not very frequent. Thus, I analyzed the presence of anger as a dichotomous variable, and found that children of more-expressive mothers were significantly more likely to show anger than children from less-expressive mothers ($X^2(1, N=60) = 7.20$, $p \leq .01$) when EMFACS coded.

Because this study included only mothers who were simultaneously low positive- and low negative-expressive or were simultaneously high positive- and high negative- expressive, we do not know whether the effects are due more to mothers' high(low) positivity or mothers' high(low) negativity. For example, it may be that parental negative expressiveness is the information most received by or incorporated by children. Our attempts to disentangle the influence of maternal positive and negative expressiveness, however, emphasized the importance of overall expressiveness.

Maternal Anger. Mothers' frequency, intensity, duration, and speed to anger toward their children were not highly intercorrelated (median $rs(56) = .20$) with each other and therefore were kept as separate indices. Although intensity and speed to anger were not at all related to children's expressiveness, frequency and duration were. I will describe just the results for duration today. (Incidentally, the composite anger score for the family, over all the relationships excluding child's anger towards other family members, provided results that are a bit stronger than those that I will present today. I will report about mother's anger towards her child today only, although the composite is a more stable score, because it is more conceptually clear what is being measured.)

The ANOVAs revealed several effects. For the global ratings, a main effect for anger duration indicated that children whose mothers reported more enduring anger were less expressive than children whose mothers reported less enduring anger ($F(1,56) = 6.76$, $p \leq .01$). This main effect was modified by an interaction between maternal anger and children's positivity of expression. In the laboratory settings, these interactions showed up whether the children were storytelling or experiencing the events, and whether the children's expressions were measured by global ratings or the more molecular EMFACS coding ($Fs(1,56) = 6.09$ and 5.05, $ps \leq .05$, for global and EMFACS judgments, respectively). The post hoc simple effects analyses indicated that the interaction is largely due to children with angry mothers showing less positivity compared to children with less angry mothers ($Fs(1,56) = 9.95$ and 6.20, $ps \leq .01$ and .05, for global and EMFACS judgments, respectively).

See Table 2 here

In school, the interaction between maternal anger and positivity of expression indicated a very weak trend of differences by emotion (median Pillais $F(3,45) = 2.08$, $p = .12$). Though weak, there may be a difference in children's fear expression: children whose mothers report more anger may tend to express more fear in school than children whose mothers report less anger ($t(49) = -2.51$, $p \leq .06$, with Bonferonni correction). Again, I went back to the laboratory settings and counted up just the fear expression of the children. There were very few fully-formed fear expressions as measured by EMFACS, but raters did identify fear expressions in their global ratings, which included body and voice as well as facial expression). These global ratings did not, however, indicate differences in fear expression based on mothers' enduring anger.

Maternal Expressiveness and Anger. There was also a significant interaction between maternal anger and maternal expressiveness when children's expressiveness was globally rated ($F(1,56) = 4.44$, $p \leq .05$). Post hoc analyses indicated that children whose mothers were both highly expressive and angry were significantly less expressive than children of any other group (median $ts(30) = 3.84$ and 1.73, $ps \leq .001$ and .10, for global and EMFACS judgments, respectively). This effect appears to be driven primarily by differences in positive expressiveness, and this showed up for both types of measurement; children whose mothers were both highly expressive and angry were less *positively*expressive than children of any other group (for positive expressiveness, median $ts(30) = 3.93$ and 2.80, $ps \leq .001$ and .01, for global and EMFACS judgments, respectively).

Discussion

In this study, mothers' expression and experience were not related to each other (with "expression" operationalized as overall levels of expressiveness and "experience" as duration of anger experiences), and they appeared to have separate, independent contributions to children's positive expression.

Persistent interactions between maternal expressiveness and children's positivity of expression indicated that children from low expressive families were more expressive of positive emotion than children from high expressive families. And in school, children from less expressive families tended to be less expressive of anger, compared to children from high expressive families. These data suggest a pattern of more positive expressiveness in children from low-expressive families and possibly more negative expressiveness in children from high-expressive families.

I have been referring to the children's outcome measures as "children's expressiveness" because we don't really know if we are seeing children's emotionality or their expressiveness.[2] Although it is always difficult to separate the effects of expressiveness from emotionality, these patterns suggest maternal *expressiveness* may be influencing children's *emotionality*. Parental negative expressiveness may be inherently disturbing to children, dampening or overwhelming their positive emotions and consequently their positive expressiveness (Cummings, 1987; Cummings, Iannotti, & Zahn-Waxler, 1985; Cummings, Zahn-Waxler, & Radke-Yarrow, 1981; Haviland & Lelwica, 1987). And, as suggested by Denham (1991), it may be that being calm provides an optimal parenting style, at least with regard to children's positive expressiveness or emotionality.

Persistent interactions between mothers' enduring anger and children's positivity of expression indicated that mothers reporting more enduring anger had children who were less positively expressive than mothers who reported less enduring anger. These results dovetail nicely with Denham (1987; 1990), who found associations between mothers' reports of anger and their children's observed sadness and between maternal anger and lower levels of children's happiness. Also, like Denham (1987; 1990) the children in the present study did not show increased anger expression as a consequence of maternal anger. Although experiences and expressions of anger that are more similar to their parents' may emerge as children achieve adulthood (see Burrowes & Halberstadt, 1987), during their early years children may find that expressing anger in an angry husehod is maladaptive. Instead, children of angry mothers may become less expressive overall, so as not to instigate a maternal anger incident or, may experience less positive affect as a consequence of living in an angry household.

Although expressiveness and experience each had independent effects, the interaction between maternal expressiveness and maternal anger suggested an important gestalt. Children whose mothers reported both enduring anger and high expressiveness were the children whose expressiveness levels were most depressed. Thus, the combination of both maternal negative feeling *and* expression appeared to have a greater effect than the presence of either influence singly. These results suggest the complexity of the socialization of expressiveness and the importance of examining at least several influences on children's expressiveness simultaneously. It is hoped that future research in this area will continue to test various aspects of the model of expressiveness presented above, in order to identify the most relevant influences in the development of expressiveness.

Footnotes

1. Another wonderful model for the development of expressive behavior, based on a 6-component framework using a computer analog and 17 processes, has been constructed by Zivin (1986). Her comprehensive framework organizes five major theories of emotion and emotion expression. Zivin seeks a synthesis in a fragmented area in socio-emotional development; she identifies areas of consensus regarding normative emotion expression development, and delineates the process by which an emotion expression occurs. Because my model evolves from a communication perspective, I seek my own path, a path biased in favor of socialization processes and individual differences. There are also two excellent models of emotional development, one by Izard and Malatesta (1987), and one by Barrett and Campos (1987).

2. Rather than making attributions about the children's internal state, I generally play it safe in calling the behavior we observe "expressiveness".. In another study reported this week, it is quite clear that we needed to make this distinction, with second and fourth graders whose expressions and emotions were distinctively different, at least for negative emotion (Halberstadt, Grotjohn, Johnson, Swanson, & Greig, 1991).

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Table 1

Children's Mean Expressiveness Scores by Situation, Maternal Expressiveness, and Type of Expression

Situation and Type of Expression	Maternal Expressiveness: Low	Maternal Expressiveness: High
Storytelling Situation (EMFACS-scored)		
Positive Expression	3.94	2.74
Negative Expression	.94	1.48
Event Situation (EMFACS-scored)		
Positive Expression	2.65	2.44
Negative Expression	.68	.54
Teacher Ratings of School Behavior		
Happy Expression	4.70	4.70
Sad Expression	3.64	3.42
Fear Expression	3.04	2.91
Anger Expression	2.80	3.72

Note: N = 60 for lab situations and 51 for school scores. Each child participated in all situations. EMFACS means are frequency of expressions per minute. Teacher means are based on 1 to 7 Likert scales. Only EMFACS scores are reported; effects with global ratings were always equivalent or stronger than those found with EMFACS.

Table 2

Children's Mean Expressiveness Scores by Situation, Maternal Anger, and Type of Expression

Situation and Type of Expression	Maternal Anger	
	Low	High
Storytelling Situation (EMFACS-scored)		
Positive Expression	3.92	2.86
Negative Expression	1.33	1.11
Event Situation (EMFACS-scored)		
Positive Expression	2.77	2.37
Negative Expression	.57	.65
Teacher Ratings of School Behavior		
Happy Expression	4.77	4.64
Sad Expression	3.23	3.80
Fear Expression	2.51	3.39
Anger Expression	3.46	3.10

Note: N = 60 for lab situations and 51 for school scores. Each child participated in all situations. EMFACS means are frequency of expressions per minute. Teacher means are based on 1 to 7 Likert scales. Only EMFACS scores are reported; effects with global ratings were always equivalent or stronger than those found with EMFACS.

Figure 1:

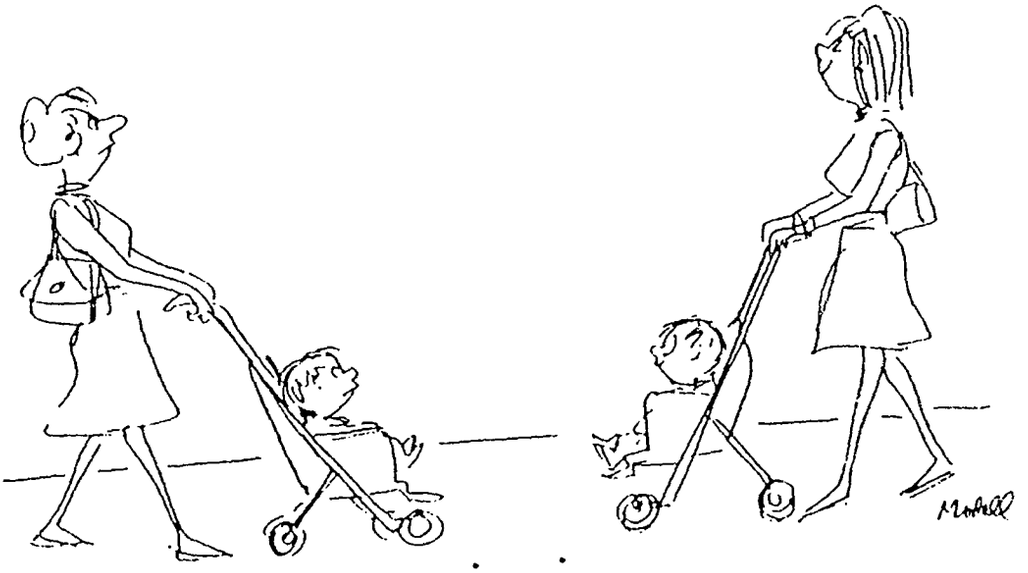
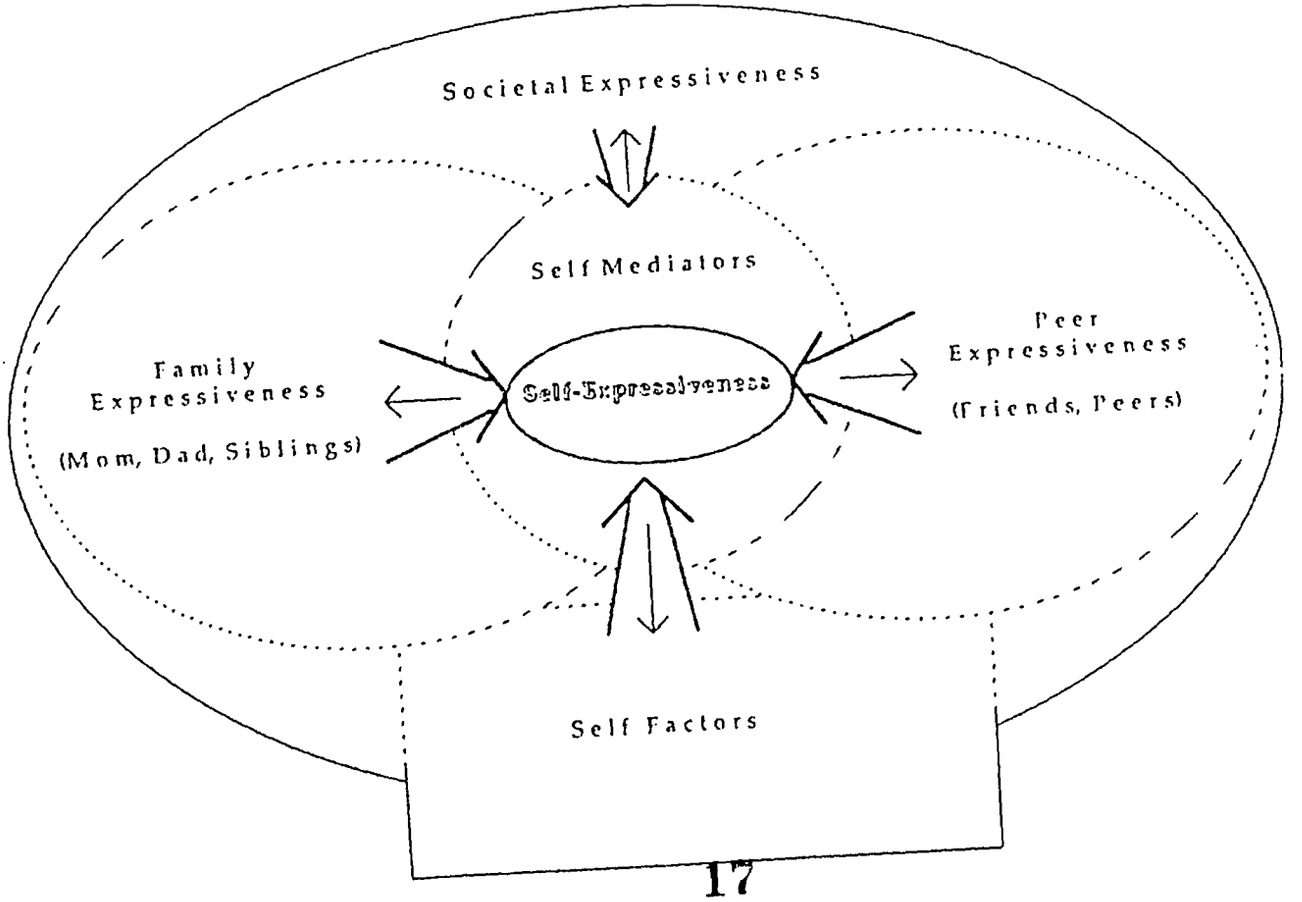
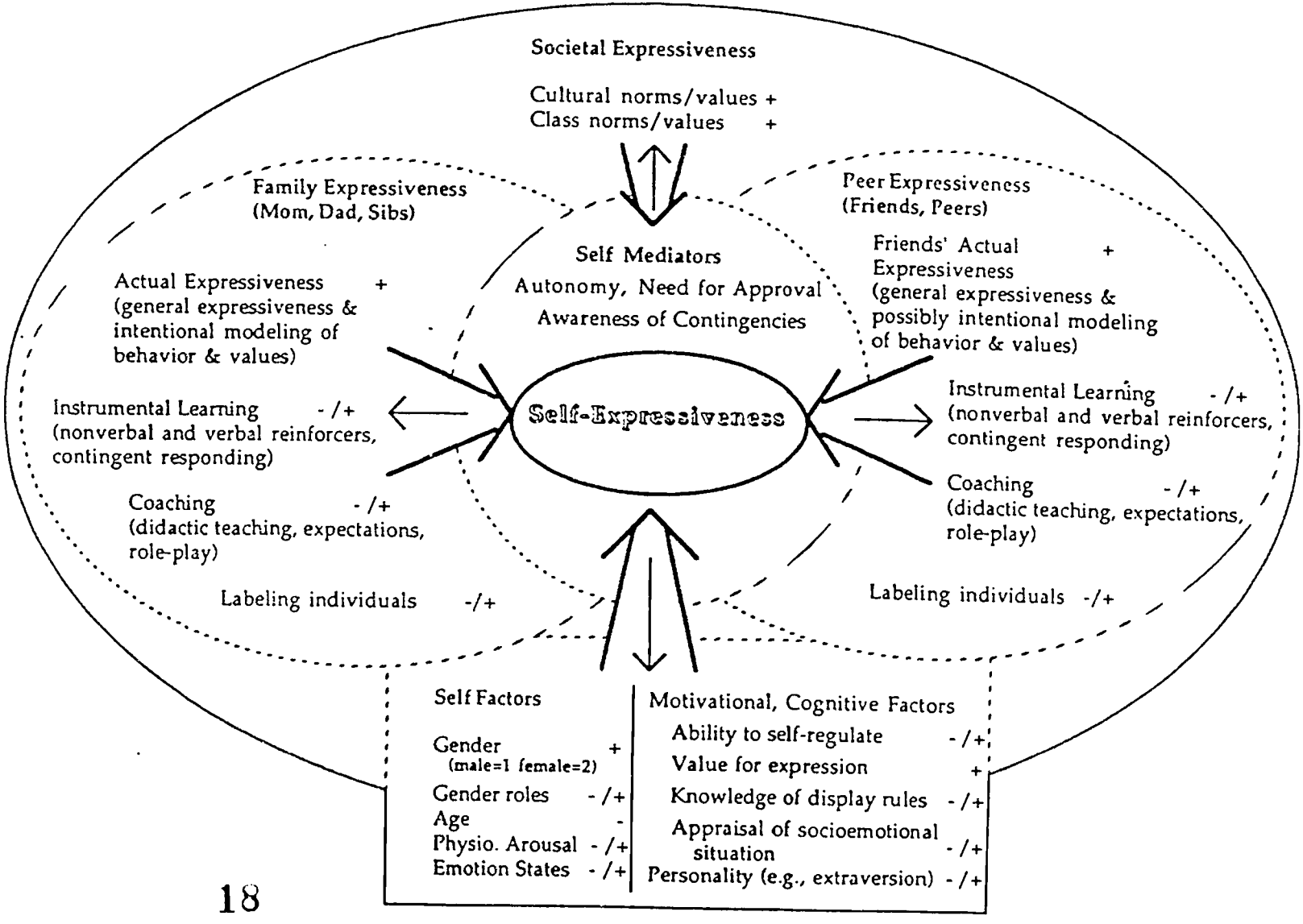


Figure 2:




Societal Expressiveness
Cultural norms/values +
Class norms/values +
Family Expressiveness
(Mom, Dad, Sibs)
Peer Expressiveness
(Friends, Peers)
Self Mediators
Autonomy, Need for Approval
Awareness of Contingencies
Actual Expressiveness +
(general expressiveness & intentional modeling of behavior & values)
Friends' Actual Expressiveness +
(general expressiveness & possibly intentional modeling of behavior & values)
Instrumental Learning - /+
(nonverbal and verbal reinforcers, contingent responding)
Self-Expressiveness
Instrumental Learning - /+
(nonverbal and verbal reinforcers, contingent responding)
Coaching - /+
(didactic teaching, expectations, role-play)
Coaching - /+
(didactic teaching, expectations, role-play)
Labeling individuals -/+
Labeling individuals -/+
Self Factors
Gender + (male=1 female=2)
Gender roles - /+
Age -
Physio. Arousal - /+
Emotion States - /+
Motivational, Cognitive Factors
Ability to self-regulate - /+
Value for expression +
Knowledge of display rules - /+
Appraisal of socioemotional situation - /+
Personality (e.g., extraversion) - /+