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Family paper sculpture, adapted from family therapy, is presented as a way to illustrate and actively draw students into exploration of family systems theory concepts such as membership, subsystems, flow of information and activity, hierarchy, personal influences, and adaptation. Examples are given from data collected from over 500 university students.

In contrast to many academic disciplines, family life education clearly holds both cognitive and affective goals. It aims to make students not only better informed and more analytical, but also more skilled in applying such knowledge toward the understanding and improvement of their own family relationships (Olson & Moss, 1980).

The family systems approach has particular potential to help students realize this dual goal because it has been developed by both scholars and therapists. Unfortunately, textbooks on family relationships generally devote little space to discussion of theory. Family systems theory, because of its relative youth, is often completely omitted. Because of the important role family systems theory currently plays in research (e.g., Holman & Burr, 1980; Klein, Schvaneveldt & Miller, 1977) and therapy (e.g., Olson, Sprenkle, & Russell, 1979) we have adapted a family therapists' technique, “family sculpture,” to teach family systems concepts.

The purpose of this paper is to present and discuss this technique as it has been used in various family life education courses. First, major concepts of family systems theory are defined. The mapping project is then described, followed by discussion of ways our students have mapped their own family systems and how the family sculpture task has enabled us to stimulate personal growth in both the cognitive and affective domains.

Family Systems Theory

Systems theory is a structuralist approach used in both the natural and social sciences (Broderick & Smith, 1979; Plaget, 1970). Rather than limiting focus to isolated relationships between isolated variables, it focuses on complex networks of patterned interactions between definable units and their specific environmental contexts. Systems analysis considers how the system processes information coming in from its environment and how the system maintains itself as a definable, adaptive entity. In developing and using systems concepts here we will limit ourselves to family systems.

In family systems, society is the environmental context and individual family members are the component units. The environ-
mental context provides the definitional framework for adaptation—family systems which are adaptive in one society may not be in another. Individual family members are themselves complex systems, but here they are treated simply as enactors of family systems, without concern for their individual internal structure. Table 1 lists some basic constructs of family systems theory.

Bell (Notes 1 & 2) has recently formalized a two-dimensional “paper sculpture” task for research and clinical work. She directs families to create a joint family sculpture on a standard board, using circles of paper to represent individual family members and pre-cut, color-coded pieces of yarn to show positive and negative connections and boundaries. In reviewing Bell’s work we saw the potential of paper sculpture for family life education. The picture freezes the system at a given point in time, allowing reflective analysis of the system’s characteristics. A two-dimensional representation can be done by one family member without either requiring the presence of the others or revealing the sculptor’s perspective to them. (While the latter is a valid goal of family therapy it is not a necessary part of family life education in classroom.) After some experimentation we chose not to follow Bell’s lead in standardizing the format. Standardization of the format would be necessary for quantitative analyses of the sculptures. However, for our purposes, we felt that standardization would unnecessarily limit the variety of ways in which students could represent their perceptions of their families.

The change from physical to paper sculpture obviously loses the kinesthetic and tactile dimensions of the experience. Physical family sculpture can be done in class by roleplaying paradigmatic family types. The paper method, however, is more appropriate

### Table 1

<table>
<thead>
<tr>
<th>Structural Characteristics</th>
<th>Process Characteristics</th>
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<tr>
<td><strong>Boundaries</strong> — define the units</td>
<td><strong>Permeability</strong> — quality of a boundary; optimal is semi-permeable (neither enmeshment nor disengagement)</td>
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<tr>
<td>— regulate the flow of information and activities</td>
<td><strong>Adaptability</strong> — ability to make appropriate structural changes in response to development-mental growth or situational stress while maintaining system definition and self-regulation</td>
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<tr>
<td><strong>Subsystems</strong> — various differentiated alliances which can be activated to serve particular family goals</td>
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<tr>
<td><strong>Hierarchy</strong> — basic organizational patterns through which the family behaves</td>
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*aFrom Beavers (1977), Broderick and Smith (1979), Carter and McGoldrick (1980), Kantor and Lehr (1975), Minuchin (1974), and Olson, Sprenkle and Russell (1979).*
for a student's sculpture of his own family as a class experience. Only the student is likely to have strong emotional involvement in his particular family and thereby others are unlikely to be strongly affected by participating in representing it. More importantly, a paper sculpture is far more confidential than a group presentation. With good teacher-student rapport and assurance of confidentiality, students delve deeply into their personal family systems.

Over the past two years we have used the family paper sculpture task with more than 500 undergraduate and graduate students. The classes involved have ranged in size from 8 to over 200, covering the topics of marriage and the family, parent-child relationships, adolescent development, and family systems in crisis. At times it has been used as an in-class activity, in which the students do their sculptures informally and then the instructor discusses previously collected paradigmatic examples without collecting or directly evaluating the student's sculptures. We have found, however, that assigning the paper sculpture as a take-home project with about a week to complete produces much more complex and reflective sculptures, a higher level of classroom discussion, and better performance with family systems concepts. The directions for the take-home project are given in Table A. Students are asked to cut out shapes rather than to draw them on the paper so that they can try out different spatial arrangements to find the one that best represents their view of their family.

A standard-sized piece of colored paper is provided in order to have some homogeneity of format and to provide color contrast for visibility.

The written directions are accompanied by a few examples in class to indicate the range of possibilities. This can include role play of physical family sculpting. Class discussion can suggest different ways to represent similar situations, and issues of who is and is not to be included and why. The students are encouraged to represent their families in their own ways.

**Characteristics of Family Systems as Shown in Students' Family Paper Sculptures**

The students' paper sculptures express aspects of both family structure and family process, including definition of component units and subsystems, information and activity flow, hierarchy, personal characteristics, and adaptation. The examples given below are only illustrative, for the purpose of creating awareness of the applicability of family systems concepts to real individual families.

**System Components**

Parents and siblings are virtually always included in student family sculptures. Exceptions are parents who have abdicated the role (e.g., a parent who has broken contact after divorce, or a parent who died long ago), and older siblings who have married or moved far away. It is noticeable

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**Table A**

Directions for the Family Paper Sculpture Project

1. Decide what family you will picture (family of origin or procreation). If you have more than one family for some reason, you may do both.
2. Trace and cut out circles on a plain piece of paper, making enough for yourself and each person or set of persons or things you want to include. There are no restrictions on whom you include or how you symbolize them. (Parents, siblings, neighbors, pets, your father's golf game—whoever or whatever has a significant effect on the family.) If you wish you may vary size, shape, or color of the units to express yourself more fully.
3. Label each circle. A single circle may have only one name or more than one if you see those people/things as a unit.
4. Arrange the circles on the colored paper provided so they express the relationships you feel in your family. When you feel comfortable with the total arrangement, firmly glue them in place.
5. Draw any boundary or connecting lines you feel complete the picture.
6. Attach a page explaining what you have done. Explain who the components are (age, sex, relationship to you, why included), why you arranged them as you did, the meaning of any connecting or boundary lines, and of any special uses of size, shape, or color.
7. Finally, list any people you left out that you might logically have included and explain why you left them out.
that it is role abandonment, not geography or new family ties, which is usually associated with exclusion of a parent. Stepparents and stepsiblings are also almost always included, though often only as a somewhat disowned attachment of the remarried parent. Their rare exclusion seems to be because of emotional indifference rather than hostility or conflict. The inclusion of grandparents, aunts and uncles, or other extended family appears to be dependent on the importance of these people to other family members, with no consistent pattern due to relationship status.

Peers (same or opposite sex) more often appear in the sculptures of those who present themselves as either somewhat on the edge of the family system, or absolutely central to it, as if they were a separate hub with everyone else revolving around them. Many sculptures include non-people, ranging from God or church, to pets, jobs, avocations, and even personality traits (e.g., the girl whose mother’s circle was underlapped by a black circle indentified as “Mom’s over-protectiveness,” which the girl saw as a force creating much of the tension in the family).

Subsystems

Variety and breadth of family functioning are visually apparent in the number and complexity of subsystems indicated. Some students show only their nuclear family, each member faithfully linked to each other, and all bounded by a single circle. Few dynamics can be observed in the sculpture. This may accurately reflect the family, or may be the result of a lack of awareness in the student. Many sculptures are much more complex. The student sculpture shown in Figure 1, for example showed six nuclear family members, an in-law, two young nieces, a lifelong family maid, a boyfriend, two girlfriends, a neighbor, and two parental avocations. Intensity of color was used to show that kin ties were one type of organizing principle for the student.
Solid lines represented closer ties and more time spent together, and dotted lines meaning weaker ties were used to show other alliances. Altogether, ten subsystems are shown. Organizing principles include blood relationships, interests, and various degrees of emotional bonding and sharing of time.

The functioning of subsystems can be understood by noting that the student has placed herself in six of the ten subsystems. The effect is to give her a variety of resources for dealing with issues. Does she need male advice? She can turn to her father, a brother, her boyfriend, or her neighbor. Does she need the perspective of an older person? If her parents are not available just then she has her sister or the maid to approach. And so on. The depth and breadth of her resources fulfill the criterion of “requisite variety” discussed by Broderick and Smith (1979).

The Flow of Information and Activities

This issue, treated globally as “closeness,” and discussed by Olson et al. (1979) as cohesion, dominated the organization of the sculptures. One of the surprises for the students was how nontrivial decisions concerning placement could be. Many reported having drafted several versions before deciding on a final one. Others needed more than one configuration to capture the complexity. For example, the simple sculpture shown in Figure 2 was created by a young woman whose mother had died eleven years before. The girl was not at first fully conscious of why she had felt impelled to show two families. The visual impact of her sculpture was that sometimes the student was in the mother role in the family, but at other times her aunt was in that place. Though the girl had never articulated this to herself, it is also expressed in her explanation of her sculpture.

“I have placed myself a bit closer to my dad since I am the only girl, and have always shared my thoughts and feelings with him concerning him, my brothers, myself, our family situation in general, and other day to day events. Because of our family situation I have taken on a great deal of responsibility in our home—I have placed myself in the middle of my brothers as I am close to each of them and have sort of helped guide them along. I never wanted to be looked at as a mother figure, I just wanted them to be raised well, perform ‘good’ acts, know right from wrong and act accordingly. I have separated my brothers because they are not real close.”

Her aunt, who took charge for doctor’s appointments, driving the children to activities and such, was really a great-aunt on her mother’s side who lived close by and no longer had children of her own in the area. The family sculpture portrayed her role in serving instrumental needs of the children without becoming an integral member of the original but disrupted nuclear family. If the sculpture had included only version one, the temptation to see the girl in the mother’s role would have been great and, in fact, if the aunt had not been there to serve as she did, the girl might have had to slip more into the role.

Very common in our population of late adolescents was a visual portrayal of the “emptying nest.” Younger siblings were clustered close to the parents while college-

![System 2 (given lower position by the sculptor) rotates System 1 and detaches Dad. Aunt replaces Sister, who is added on the side. An interconnected structure is replaced with single lines of attachment to Aunt.](image)

Figure 2
Multiple Systems in a Family with a Deceased Mother

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age or older children were given peripheral positions with distance often correlated with age. Where there was conflict over the growing separation, the student often drew in barrier lines or agonistic double arrows. Some were able to differentiate the connections or antagonisms as emotional, financial, or decision-making dependence, or commitment based in interests, principles, or activities. Structural differentiation was apparent in the contrast between typical portrayals of family disruption due to death and to divorce. In the latter case students most often placed themselves in the middle between “his side” and “her side.” At times the student expressed tension and being caught in the middle through the use of agonistic arrows. Others portrayed alliance with one side or the other through exclusionary boundaries. Occasionally, the student portrayed himself or herself with peer alliances in the center, essentially disconnected from the two parental groups with himself or herself integrally in each. Fewer yet indicated any cooperative bonding lines between the two sides. The overwhelming picture was of oppositional disruption.

In contrast, the death of a family member was typically portrayed with a continuing or even increased unity in the system. One approach was to include the deceased in their normal places but to indicate the unique status by crosshatching their circles or making them a hollow ring. The system was not altered, though the person’s lack of totally normal presence was acknowledged. Another approach, designed independently by several different students, was to put the family system in an encircling trajectory. The visual impression was of an orbiting object. The student explanations communicated a sense of the omnipresence of the deceased, or of being surrounded by the feeling of his or her love. In these cases, the deceased continued to contribute to the sense of integration of the system, though without a specific functional role. There was no obvious relationship of these two patterns of symbolism to time since death.

Hierarchy

The focal quality of the spousal subsystem was apparent in the overwhelming typicality of presenting the two parents as linked and either at the center or the top of the sculpture. Many students expressed verbally that they had intentionally given them this position to symbolize their role as the nucleus of the family. A functional distortion of this appropriate hierarchy is depicted in the sculpture in Figure 3. It is the retrospective sculpture of her family of origin by a 26-year-old married woman troubled by her parents’ divorce. The second brother (third of four children born within 5 years) was a gifted athlete. The student’s explanation states:

All family members flow toward the younger brother, then through him to each other via football activities. Every member was a participant and contributor: that brother as player, Dad as coach, Mom as team Mother, my older brother as league

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STUDENT DESCRIPTION: “All family members flow toward my younger brother, then through him to each other through football activities.”

(Note that Dad is excluded from a Mom-Children boundary, and connects with the unifying son at a separate point.)

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Figure 3
Dysfunctional Organization in a Later-Divorced Family
scorekeeper, two sisters as snack bar attendants and big rooters. The activity was seasonal, but "off season" we would remain close through other games such as cards, knowing the season would come around again.

That brother is now a professional football player. This and the parental divorce almost appear as simple logical consequences of the family structure. The boy's athletic skill, rather than the parental subsystem, organized the family. The father is excluded from the parental subsystem. Varied subsystems are not present. This portrayal helped the student to accept her parents' sense of lack of personal nourishment in the family.

Personal Characteristics

Shape, size, and color most often were used to express characteristics of persons, the kind of things most often expressed through posture and facial expression in physical family sculpture. For example, one student portrayed his emotionally nurturant mother as a heart shape and his less accessible father as a stop sign. Another drew his 18-year-old "baby sister" in a cradle between his two parents and put those three on one "iceberg" and himself and his college-aged brother on another. Size was often used to represent the student's sense of the importance of a person, or to express power. Typically, those with more attributed importance or power were portrayed on disproportionately larger shapes. Color was sometimes used to express stereotypes (e.g., blue for males and pink for females,) or emotional tone (e.g., black or brown for a gloomy, pessimistic person, and yellow for a bright, cheerful one.) Color was also often used to

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Figure 4

Developmentally Different Perspectives of a Family System

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symbolize linkage, as in Figure 1, or by making the circle of children of two colors each of which belonged to one parent.

**Adaptation**

It must be remembered that these sculptures represent solely the student's perspective, which most often is the perspective of late adolescence. When the perspectives of other members of the family are available, there are contrasts. For example, one freshman woman did the paper sculpture shown in Part A of Figure 4. She portrayed a sense of the centrality of her parents, their unity in the family business, and the growing extension of adolescent children into independent lives. Her mother suggested the alteration shown in Part B, which shows more differentiation of the two parents and their spheres of activity and includes a married sister living some 700 miles distant because of continuing emotional and economic dependency not perceived by the student.

Many students commented that their families had changed since they were children and they did not know which family to represent. Some mapped their families at different points in time, with thoughtful interpretations of the effects of restructuring in the system. The differences in the two versions of the family presented in Figure 4 suggest that although there may be real changes in family systems over time, some of the changes may be changes in perspective accompanying maturation. This is consistent with our previous research which showed that children differentiated roles and functions within the family as they reached successive cognitive levels (Wedemeyer, Bickhard, & Cooper, Note 3).

A major function of family life education is to guide adolescents along this path of differentiation, from the child's global acceptance or rebellion to the adult's shouldering of specific responsibilities and their consequences. Family paper sculpture, by presenting an accessible version of the total family system, enables the students to contrast the functional structure of their families with examples from other students or paradigmatic cases, and to consider different ways for their families to be.

### The Functioning of Paper Sculpture in Family Life Education

The family paper sculpture assignment described above has provided a context for discussing the basic concepts of family systems and applying them to one's personal family life. In doing so it also appears to satisfy the six steps outlined by Olson and Moss (1980) for the process of family life education. Because it is a visual task actually designed and executed by the student it both illustrates and demonstrates the nature of the family system. Components and relationships must be defined in order to carry out the task. It is the student's subjective perspective and interpretation (reaction) which are solicited. By doing the project early in the semester and then linking the sculptures with principles or information presented in class, the students are drawn into connecting course material to their own family lives.

Informal student evaluations indicate that the task successfully induces the active struggle and risk-taking which Olson and Moss (1980) describe as an index of integration of cognitive and affective learning. Many indicated that the task was much harder and more interesting than they had expected it would be at first. An overwhelming majority described it quite positively, saying it gave them new insights and appreciation of their families. A fairly small number of students, however, were resistant to the task. Some did it, but reported that it was very painful. One or two expressed defensive anger, either refusing to do it, or questioning our right to pry into their personal lives. In resolving these instances we have either allowed the student to do some other, less personal project, or suggested they map a hypothetical family, to demonstrate the concepts without relating them to their personal lives.

### Reference Notes


REFERENCES


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