Synergistic psychology has been proposed as a meta theory for synthesizing different psychological theories into an explanation of how social, cognitive, and biological factors interact in human behavior. The basic theoretical assumption in synergistic psychology is that internalized social interactions become higher mental functions that regulate lower biological functions. The synthesis of psychoanalytic and Vygotskian theories can be woven around six common issues: (1) the interaction of thought and language in cognition; (2) the role of adults as mediators of infant's early object manipulations; (3) the role of internalized social interactions in the regulation of thought; (4) the collaboration of imagination and logical thought in creative thinking; (5) the role of nonverbal unconscious thought in cognition; and (6) the role of internalized social interactions involving speech and object manipulations in the development of self-concept and world view. The teaching of studio art involves the two domains of the craft of art and the conceptual processes of artistic activity. While some may suggest that creativity is a natural attribute of most people that will manifest itself if allowed to do so in a laissez faire manner, the synergistic approach suggests that what is needed is a developmental model of teaching creative problem solving with maximal social interaction and collaboration with the teacher. Future research will investigate the effects of social interaction with adults on the child's object substutions in play. A reference list of 18 items is included. (PPB)
SYNERGISTIC PSYCHOLOGY APPLYED TO ARTISTIC CREATIVITY

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In this paper, a new approach to the study of artistic creativity is introduced and its implications for art education examined. Synergistic psychology was proposed by the Smoluchas (1988a) as a metatheory for synthesizing different psychological theories into an explanation of how social, cognitive, and biological factors interact in human behavior. Synergism refers to the mutually cooperating action of separate substances which taken together produce an effect greater than that of any component taken alone.

The basic theoretical assumption in synergistic psychology is that internalized social interactions become higher mental functions that regulate lower biological functions. Synergistic psychology differs from eclectic psychology which is just an amalgam of theories with no metatheory providing a basis for synthesizing the other theories.

Synergistic psychology provides a neutral vantage point for synthesizing other theories that is not inherently biased toward one or the other theory. This approach has been used to synthesize psychoanalytic and Vygotskian theories (Smolucha, 1988a) and could
be used to synthesize other theories such as Piaget's and social learning theory. The first part of this paper describes the synthesis of psychoanalytic and Vygotskian theories. The second part discusses implications for art education; and, the third part describes how this approach could be used in empirical research on the development of artistic creativity.

The Synthesis of Psychoanalytic and Vygotskian Theories

There are six common issues in psychoanalytic and Vygotskian theories around which a synthesis can be woven. The six issues are the following: (1) the interaction of thought and language in cognition (2) the role of adults as mediators of infants' early object manipulations (3) the role of internalized social interactions in the regulation of thought (4) the collaboration of imagination and logical thought in creative thinking (5) the role of nonverbal unconscious thought in cognition (6) the role of internalized social interactions involving speech and object manipulations in the development of self concept and world view.

Regarding the first point, both psychoanalytic and Vygotskian theories recognize the co-existence and interaction of nonverbal and verbal thought.
For Freud, nonverbal thought is primary process thought which is an innate unconscious form of imagination. Secondary process thought is, for Freud, a verbal form of logical thought.

For Vygotsky, nonverbal thought oriented toward realistic problem solving is the first form of thinking in infancy. During the second year of life this nonverbal thought intersects with vocalizations to produce verbal thought (Vygotsky, 1934/1962, p. 47-48). Verbal thought is at first an external social communication, but at about age seven years its internalization creates inner speech which serves self-regulation.

Vygotsky's theory provides a means of formulating a developmental model of primary and secondary process thought. Freud's description of primary process thought as being innate and not undergoing maturation has been challenged by Vygotsky (1932/1962; 1932/1960) and by contemporary psychologists such as Stern (1985) and Smolucha (1982).

From a Vygotskian perspective the origins of primary process thought in elementary mental functions should be sought out and then its development into a higher
mental function, which could be consciously regulated by inner speech, clarified. Likewise, secondary process thought would originate in elementary mental functions present at birth and mature into a consciously directed higher mental function. The interaction of mental functions in psychological systems raises further questions. Of particular interest here is the collaboration of imagination and logical thought in artistic creativity.

The second issue is the role of adults as mediators of infants' early object manipulations. Psychoanalytic object relations theory (Winnicott, 1971) and ego psychology (Mahler, 1975; Blanck & Blanck, 1979) have provided evidence for the importance of attachments to adult care-takers in the infant's first object relations. The concept of the adult as mediator of the infant's object relations is also found in Vygotsky's works (1932/1960b; 1929/1981; 1933/1984b) and in contemporary Soviet developmental psychology theory (El'konin, 1978).

The role of social interactions with adults in the child's object manipulations extends to the preschool child's play activities. This raises the question
of the role of play in the development of creative imagination. More specifically, how do social interactions with adults during play affect the child's ability to do object substitutions, such as using a stick as a horse, during play. The third part of this paper describes empirical research which is being undertaken to answer this question.

The third issue common to psychoanalysis and Vygotskian theories is the role of internalized social interactions in the regulation of thought. Research on Vygotsky's theory of inner speech and its role in self-regulation provides an empirical basis for the internalization of parental role models as the superego. It also has implications for the internalization of conversations held with art teachers in the development of artistic creativity. This topic is discussed in part two of this paper.

The fourth issue of the interaction of imagination and logical thought in creative thinking has been dealt with in previous papers by the Smoluchas (1986a,b). In summary, we propose that artistic creativity be viewed as a maturation of the child's symbolic play during which imagination becomes a consciously directed
thought process which can collaborate with logical thought in artistic creativity. In our current research we are examining the affect of social interactions with adults on children's symbolic play. In the future we plan on empirically studying the connection between these social interactions during play and the child's artistic creativity.

The fifth issue, the role of unconscious thought in cognition, is an topic that remains undeveloped in Vygotsky's theory. Vygotsky (1930/1982) acknowledged that nonverbal unconscious mentation does occur and that the process of verbalizing nonverbal experience is the essence of psychoanalysis. Further work needs to be done to bring together psychoanalytic research on the nature of unconscious thought with Vygotskian research on consciously directed thought.

The sixth issue is the role of internalized social interactions in the development of self concept and world view. The psychoanalytic literature on the development of self concept and object relations is generally known in the West. Vygotsky also claimed that cognitive development in childhood culminates in the development of self concept and world view.
A synthesis of the psychoanalytic work on this process during infancy and Vygotsky's discussion of it in adolescence could provide a more comprehensive theory of self and world view.

Implications for Art Education

The teaching of studio art involves two domains. The first is the teaching of the craft of art; that is the mechanics of how a painting or sculpture is made. The fact that these techniques can be taught is the rationale for the inclusion of art in educational curriculum. The second domain involves the teaching of conceptual processes related to artistic creativity. It is less clearly understood what this second domain involves.

In most instances studio art teachers approach this second domain using a laissez faire attitude toward the students' experimentations. This attitude suggests that creativity is a natural attribute of most people that will spontaneously manifest itself when restrictions are not imposed.

In contrast, the synergistic approach suggests that posing a problem and allowing the students to work independently toward the problem's resolution
with minimal social interaction is not the most effective procedure for teaching conceptual processes of artistic creativity. What is needed is a developmental model of teaching creative problem solving that maximizes the social interactions that create the zone of proximal development. Vygotsky used the phrase 'zone of proximal development' to describe a higher level of performance that a student can reach through collaboration with a teacher as opposed to solitary and independent effort.

While there are occasions where a group of people have worked on collaborative projects (murals for example), there is a cultural bias favoring works created by an individual artist. There is a general discomfort with the recognition that a work's authorship could belong equally to many people at the same time. However, this team approach to problem solving is not new in other disciplines such as the sciences or business.

In order for students to learn the creative process by collaborating with teachers in making art, the teachers would have to feel comfortable verbalizing and sharing their own inner thoughts with their students.
This externalizing of internal processes is facilitated by the very nature of social interactions; upon reflection after group collaboration many procedures become evident.

Research in Progress on the Effects of Social Interactions on the Development of Creative Imagination

F. Smolucha has begun preliminary research on the effect of social interactions with an adult on the child's object substitutions during play. Vygotsky had identified the child's use of a stick as a horse during play as the beginning of creative imagination (1930/1967, p.7). Subsequently Soviet psychologists have studied the origins of role play in the child's object activity under the guidance of adults (El'konin, 1978, p.158). According to El'konin two stages can be identified in the naming of supplementary, substitute playthings. First, the child names these objects only after an adult has named them. And, second, children name objects after having performed an action with them (1978, p.163-164). Smolucha's review of the Western research literature on play (1988) revealed that Western research has not looked at the effects of social interactions with adults on the child's object substitutions in play.
At this point in Smolucha's study there is no statistical data to report, but the preliminary research shows the direction that we plan to move in. The basic format is to compare object substitutions during solitary play with those occurring during play interactions with an adult. Eventually these behaviors could be correlated with some measure of creativity.

Three preschool children have been observed in a play setting using a standard set of toys (small stuffed bears with a table, chair, and bed, and some blocks and buttons). The first child, Marie, has been observed occasionally from age 6 months to age 3½ years. The other two children, age 2 and 3 years respectively, were observed during one hour play sessions.

During solitary play the imaginary play scenarios were very stereotyped and regressed into sensorimotor play. When an adult entered the play, the children quickly responded to suggestions for scenarios and object substitutions, such as feeding the bears or putting them to sleep. Future research will focus on delineating specific types of object substitutions that correlate with age and identifying the effects of social interactions.
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