

**CHAPTERS 3 & 4 OF**  
**THE SOCIOCULTURAL – SEMIOTIC TEXTS OF**  
**FIVE AND SIX YEAR OLD EMERGENT BILITERATES**  
**IN NON-ACADEMIC SETTINGS**

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ABSTRACT

This microgenetic investigation examines the emergent biliteracy and meaning-making processes of two five and six year old children. Through the application of sociocultural methodologies, the study explores the multi-codal, semiotic development of two kindergarteners acquiring Spanish and English within academic and non-academic educational environments. The document includes a brief sociolinguistic history of the focal children's families, their individual induction into the educational system, a chronology of the participants' emergent biliteracy acquisition, and a representative account of semiosis for each child. Results of the investigation include the redefinition of emergent biliteracy as a distinct type of semiotic development involving the larger mastery of sign and speech forms. The participants' emergent biliteracy was found to develop through the interfunctional, scaffolded phases of Oral & Gestural Foundations, Initial Mark-making Processes, Graphic Representation of Descriptive Text, and the Social Construction of Sequential Symbols as Semiotic Signs. The study established the causal-dynamic basis of emergent biliteracy as the need for meaning-making. A list of educational implications provides guidelines for the development of second order symbolism for pre-school – second grade classrooms.

**CHAPTER 3**  
**PHILOSOPHICAL ASSUMPTIONS OF THE STUDY**  
*Assumptions of Qualitative Research*

Because the purpose of education is to enhance understanding, this dissertation study was conducted using a naturalistic or qualitative research framework. Qualitative approaches to investigation contrast with quantitative, statistical or "medical" models in a variety of ways. These research traditions differ in the kinds of questions or issues they address, the means used to investigate such concerns, and the distinctive forms in which research results are presented.

Quantitative research designs, including survey and experimental research, determine ratios and cause-effect relationships between people and phenomena. Findings from the quantitative stance are recorded in numerical reports commonly used by

researchers, private businesses and corporations, governmental agencies, and those individuals or groups funding the research (Stringer, 1999).

On the other hand, scientific research conducted in a qualitative vein investigates dynamic human experience. Naturalistic research seeks to describe social phenomenon within authentic, “real-life” contexts (Bruner, 1983). Qualitative results are presented primarily through written language, with current advocates calling for alternative forms of representation commonly associated with the literary and fine arts (Denzin, 1997). Because of the descriptive nature of this research stance, qualitative accounts are especially helpful in shedding light on complex issues in the social sciences including anthropology, psychology, sociology and education. Findings derived from qualitative investigations assist entrepreneurial, health care, academic and political entities (LeCompte & Preissle, 1993), as well as common social individuals, families, and community leaders (Denizen & Lincoln, 2000).

Within the larger framework of qualitative inquiry, this study draws on investigative modes associated with sociocultural, Vygotskian, and cultural-historical theory and research (Vygotsky, 1978; 1981; 1986; 1987; 1994; 1997; John-Steiner & Mahn, 1996; John-Steiner, Meehan, & Mahn, 1998; Mahn, 1997; John-Steiner, Panofsky, & Smith, 1994; Moll, 1990; 2000; 2001; Lee & Smagorinsky, 2000; Wells & Caxton, 2002). The philosophical roots of these traditions can be found in the works of Hegel, Marx, Engels. The investigation additionally draws on pragmatic and ethical features of action research as outlined by Stringer (1999; 2004). In keeping with contemporary American researchers working within a Vygotskian framework, the study utilizes action research, observational, and anthropological means. This discussion will now turn to a review of the philosophical assumptions reflected in sociocultural research methodologies.

### ***Sociocultural Research Methodologies***

As an historical construct, sociocultural research methodologies originated with the psychological investigations of Lev Vygotsky and his colleagues. Vygotsky dedicated his life’s work to establish a research agenda aligning his theoretical and methodological approaches. Working from a dialectical and historical materialist framework, he asserted:

The search for method becomes one of the most important problems of the entire enterprise of understanding the uniquely human forms of psychological activity. In this case, the method is simultaneously prerequisite and product, the tool and the result of the study (1978, p. 65).

Vygotsky adopted Marx and Engels’ dialectical and historical materialist methodology to formulate his own sociocultural theory of higher mental or psychological processes. In the mid-1920’s, the Russian psychologist relied on his predecessors’ theoretical stance regarding consciousness as a starting point for what would become a ten-year period of prolific investigation. Vygotsky’s goal was to found a new psychology on the tenets of “dialectics and historical materialism as the methodological approach to examine transformations that take place in the development of the human mind” (Mahn, 1997, p. 115-116).

Vygotsky (1978) introduced his research approach in *Mind in Society* by embracing Engels’ critique of naturalistic approaches to history. Outlining the

inadequacies of stimulus-response experiments, Vygotsky rallied for a novel investigatory method based on historical materialism. He advocated a dialectical application, recognizing the two-way relationship between humans and nature as “the keystone of our approach to the study and interpretation of man’s higher psychological functions...serve[ing] as the basis for the new methods of experimentation and analysis that we advocate” (p. 60-61). This methodological basis is founded on three, foundational premises.

*Vygotsky’s First Premise: Focus on Process*

Vygotsky (1978) outlined three principles central to his investigatory approach. The first premise calls for the analysis of psychological processes as active processes instead of objects in that a truly developmental exploration requires the historical study of such phenomena. Vygotsky (1978) clarified: “To study something historically means to study it in the process of change; that is the dialectical method’s basic demand” (p. 64). Instead of viewing development as an accumulation of additive elements, Vygotsky’s method requires “a reconstruction of each stage in the development of the process” (p. 62). By retracing the dialectical sequence of thesis – anti-thesis – synthesis for each stage in the process, the origins or genesis of a psychological process can be identified.

In other words, psychological processes undergo a series of stages in their development. These changes are represented in a dialectical string involving incorporation, negation, and transformation (Mahn, 1997). Sociocultural research requires the investigator to hopscotch backwards through these transformations to discover what Vygotsky (1978) called “the casual dynamic basis” or genetic origin(s) of the process under study. This focus on the origin of the process is called the genetic law of development in sociocultural theory. This research protocol was employed to analyze the emergent biliteracy chronologies and semiotic portraits outlined in chapter 5 of this study.

*Vygotsky’s Second Premise: Genotypic Explanations*

The second premise of a Vygotskian approach to research calls for the genotypic explanation of complex psychological processes as opposed to phenotypic descriptions of their external qualities. True to dialectical logic, Vygotsky (1978) criticized research viewing such sophisticated phenomena as “the arithmetic sum of its elementary components”(p. 66). He warned against confusing phenotypic and genotypic perspectives where psychologists have committed gross errors of interpretation. By solely focusing on the isolated attributes or visible appearances of psychological processes, phenotypic analysis “substitutes relations existing between stimuli for the real relations underlying the process” (p. 67). In contrast, genotypic analysis seeks to explain the essence of psychological phenomena coming into being and passing out of existence.

Indeed, a dialectical approach allowed Vygotsky and his collaborators the opportunity to understand the connections between external stimuli and internal responses that form the basis of psychological processes (Mahn, 1997). By investigating the dialectical dance between external (phenotypic) and internal (genotypic) features, a holistic portrait of psychological processes is allowed to emerge. Vygotsky’s rich plethora of research results arose from his examination of the interconnections between internal and external processes. These investigations included relationships between thought and language, individual and social dynamics, as well as biological and cultural processes (John-Steiner & Soubberman, 1978). The analysis and construction of a

genotypic account was a primary goal in the process of this investigation, resulting in the semiotic portraits presented in chapter five.

*Vygotsky's Third Premise: Active Dynamisms*

The last principle of Vygotsky's (1978) sociocultural approach emphasizes the necessity to focus on active, dynamic processes instead of fossilized forms of behavior. This third premise encompasses Vygotsky's first two principles in that the nature of these "so-called automated or mechanized psychological processes ... are now being repeated for the millionth time" making it "impossible to distinguish between higher and lower forms" (p. 64). Locked into stable pattern since ancient origin, only phenotypic analyses are able to be performed on such rudimentary processes.

Vygotsky (1978) maintained that the study of fossilized behaviors falls outside the concern of a dialectical approach to psychological analysis. He ascertained "the fossilized form is the end of the thread that ties the present to the past, the higher stages of development to the primary ones" (p. 64). Instead, Vygotsky emphasized concentrating on the process by which higher psychological forms are established as opposed to their end results. In short, the aim of his methodology was to understand the origin and the essence of the process itself. This investigation captured the active dynamisms of emergent biliteracy and meaning-making in the semiotic portraits located in chapter five.

In proposing a novel approach to psychological investigations, Vygotsky's three principles linked Marx and Engels' historical materialist view of history to a new scientific methodology in the social sciences. At the same time, the Russian psychologist outlined a framework which, after the reemergence of his work from Stalinist suppression, would guide contemporary efforts in sociocultural research. His focus on explaining complex, dynamic psychological processes through a genetic, dialectical analysis became legacy for researchers interested in the life of the mind.

***The American Psychological Tradition: Dualism & the Sociocultural Dialectic***

Almost eighty years later, Vygotsky's approach offers an alternative for researchers working beyond the dualism of behaviorist and nativist approaches (John-Steiner & Souberman, 1978). As a cultural construct, his method has equally been shaped by sociohistorical processes at its various sites of implementation. While Vygotsky's Russian colleagues maintained the experimental tradition of their mentor, American researchers have applied his approach with the contemporary tools of their time. Therefore, this discussion now locates Vygotsky's methodology within the American psychological tradition, highlighting the dual nature of psychology and need for multiple investigatory means (Cole, 1996).

*Wundt's Call for an Integrated Science*

In the United States, Vygotsky's approach is best conceived as a dialectic emerging from the history of psychology as a whole. As early as 1879 the father of experimental psychology, Wilhelm Wundt, observed a structural dichotomy in the domain (Bruner, 1990; Cole, 1996). At his laboratory in Leipzig, Wundt advocated for an integrated discipline based on two sciences. Wundt's first psychology would provide "an analysis to the contents of individual consciousness into all its elements and a specification of the universal laws according to which these units combine" (Cole, 1990, p. 89). While calling for the study of universal features, Wundt also maintained such fundamental characteristics of the human mind to be exceedingly rare. The psychologist

went on to characterize the methodology of his first science as inappropriate for the study of higher psychological processes. Wundt recognized empiricist methodologies denied the impact of culture in shaping the human mind. He argued that alternative investigatory means were required to account for cognition whose historically situated, sociocultural origins proved inaccessible to researchers.

Therefore, Wundt relegated the study of higher psychological processes and their development to a second science called *volkerpsychologie* or folk psychology (Cole, 1990). Bruner (1990) describes folk psychology to be “a set of more or less connected, more or less normative descriptions about how human beings “tick”, what our own and other minds are like, what one can expect situated action to be like, what are possible modes of life, how one connects oneself to them, and so on” (p. 35). As a conceptual system, the *volkerpsychologie* organizes an individual’s “experience in, knowledge about, and transactions with the social world” (p. 35). People employ this culturally mediated, meaning-making construct to provide order to their world views, including their conceptions of themselves, others, and their lives (Cole, 1996).

Wundt acknowledged specific research processes were required to access the *volkerpsychologie* of individuals under study. Because folk psychologies employ narratology, storytelling, event structures, and event representations as meaning-making processes, he endorsed the use of ethnographic methods and folklore as appropriate methodological tools (Cole, 1990). Unlike the protocols of his first science, research tools assigned to the second science held the potential to account for historical, developmental, and culturally-situated data.

#### *The Behaviorist Era: WWII – 1950’s*

In time, Wundt’s vision for a complementary science was discarded, banishing sociocultural and historical dimensions of human existence outside the field of psychology. Instead, standards for acceptable research were based on a methodology of empirical experimentalism (Cole, 1990). This disinheritance produced an extended period in psychological research dominated by myopic objectivism and reductionist approaches. In the wake of WWII, behaviorism subjugated the American psychological scene for almost thirty years (Glick, 1997; Gardner, 1985). The potential of Wundt’s second psychology was disavowed until the late 1950’s when Bruner, Chomsky, and scholars sounded the death knell for behaviorism (Glick, 1997).

#### *The Rise of Cognitivism: 1960’s – 1970’s*

Tensions between psychology’s structural dualism resurfaced at the birth of cognitive science. As a forefather of the movement, Bruner (1990) emphasized the purpose of the cognitive revolution was to replace behaviorism. Bruner and his colleagues sought the radical transformation that had been previously proposed by Wundt; the circle of American scholars intended to return psychology to the study of mind. Leaders of the cognitive revolution saw the movement as “an all out effort to establish meaning as the central concept of psychology” (p. 2). In this manner, their goal “was to discover and describe formally the meanings that human beings created out of their encounters with the world, and then to propose hypotheses about what meaning-making processes were implicated. It focused on the symbolic activities that human beings employed in constructing and in making sense not only of the world, but of themselves” (p. 2-3).

Such a mission required the dissolution of administrative boundaries and disciplinary rivalries among and between psychology, the humanities, and the social sciences. In order to study the nature of mind in a novel manner, academic resources were reorganized in the early 1960's (Cole, 1996). The new psychology also necessitated the use of interpretive research methods from anthropology, philosophy, history, and literature (Bruner, 1990). In 1962, the publication of Jean Piaget's *Thought in the Young Child* transformed developmental psychology. From the mid 1960's through the late 1970's, the verification and refutation of Piagetian concepts occupied the larger psychological debate (Glick, 1997).

However, the genre of cognitive science that came to dominate for a full decade did not resemble Bruner (1990) and his colleagues' original vision. Bruner contended the critical impetus for this shift was "the introduction of computation as the ruling metaphor and of computability as a necessary criterion of a good theoretical model" (p. 4). The post-industrial context in which cognitive science arose promoted conditions correlating the mind with the machine. Mind, meaning, and meaning-making gave way to virtual metaphors of computers, information, and information-processing. As reductionists and behaviorists co-opted the terminology of cognitive studies, the "biological side of psychology associated itself with neurosciences while cognitive sciences view[ed] perception, memory, and thinking as "products of information processing apparatus of human beings" (p. x).

In this manner, Wundt's first psychology came to preside over the potential of an integrated psychology balanced by authentic, relevant, and functional accounts of human experience from his second science. As Bruner (1990) explained: "There could be no place for "mind" in such a system – "mind" in the intentional states like believing, desiring, intending, grasping a meaning. The cry soon rose to ban such intentional states from the new science" (p. 8). Concepts of human agency or action initiated by personal choice, significance, and meaning-making processes were replaced by notions of "goal-directed behavior" devoid of intention. The mind-as-machine metaphor circumvented the original goals of cognitive science, diminutizing the mind into a plastic object.

For a second time in the American psychological tradition, the experimental method reigned as the sole investigatory means endorsed by the domain. As a psychological tool, the empiricist approach views its passive subjects as objects of manipulable inspection. Bruner (1990) charged the religious application of reductionism, causal explanation, and prediction with the "artificializ[ation] of what we are studying to a point almost beyond recognition of human life" (Bruner, 1990, p. xiii). He further asserted the dogma associated with positivist methodology "simply bars us from trying to understand how human beings interpret their worlds and how we interpret their acts of interpretation" (p. xiii).

Over the past twenty years, cognitive science has become increasingly fragmented. The 1980's and 1990's witnessed the emergence of isolated specialties, each with their own specific theories, jargon, experts, organizational bodies, journals, and products. This phenomena has further detached Wundt's first science from its sister psychology, abandoning questions of mind, meaning, and meaning-making to the prevue of the humanities and social sciences (Bruner, 1990).

*Cross-cultural Research and the Marginalization of Cultural Psychology: 1960's – 1970's*

Despite cognitive science's empiricist mandate, a small number of psychologists continued investigating problems of mind and meaning during the 1960's and 1970's. These individuals looked outside psychology to "the new transactional contextualism" occurring in sociology, anthropology, and literature studies (Bruner, 1990, p. 105). Although Bruner's introduction of Vygotsky's *Thought and Language* went largely unnoticed in 1962 (Glick, 1997), Cole, Scribner, John-Steiner, Souberman, and others joined his ranks finding inspiration in the works of the Russian psychologist. Investigations by these scholars were distinguished by significant theoretical, structural, and procedural means. Their interest in development or "the emergence and functioning of psychological processes within the social – symbolically mediated everyday encounters of people in the lived events of their everyday lives" produced a body of cross-cultural experiments during this period (Cole, 1996, p. 103). The larger sociopolitical climate in which they worked additionally supported research investigating the role of the environment on development.

While their work came to be marginalized as a separate "cultural psychology" (Cole, 1990), Bruner (1990) ascertains their objectives were not to dismiss the undeniable impact of genetics or economics on human development. Rather, the goal of the group was "to show how human minds and lives are reflections of culture and history as well as of biology and physical resources" (Bruner, 1990, p. 138). To achieve this end, these psychologists utilized the investigatory tools of Wundt's second science from anthropology and history. This interpretive approach relocated meaning-making as a topical and methodological forefront of their investigations. For Bruner (1990), the complications of studying the mind as both an agent and object necessitated their return to Wundt's original proposal:

The view I have been proposing is an interpretivist one, interpretivist in its view of the activities of those who practice the human sciences and of those whom they study. It takes the position that what makes a cultural community is not just shared beliefs about what people are like and what the world is like or how things should be valued. There must obviously be some consensus to ensure the achievement of civility. But what may be just as important to the coherence of a culture is the existence of interpretive procedures for adjudicating the different construals of reality that are inevitable in any diverse society" (p. 95).

At the end of this era, researchers associated with cultural psychology inventoried the efforts of their investigations. Cole (1996) reports their retrospective review revealed limited understandings regarding the impact of culture on cognitive development. After twenty years of fieldwork, these scholars called for a systematic means so their theoretical and methodological endeavors might streamline "the psychological reality we created through our research practices and the psychological reality of people in their everyday practices" (p. 96). It is important to note their efforts were not without merit: these scholars had pushed beyond the boundaries of cognitive science and were posed on the cusp of the sociocultural revolution.

*The Emergence of Sociocultural Theory: 1978 - Present*

Glick (1997) identifies the publication of Vygotsky's *Mind In Society* in 1978 with the birth of the sociocultural revolution. Edited by Cole, John-Steiner, Scribner, & Souberman, the seminal work delineated Vygotsky's account of the development of higher psychological processes in humans. His theory also provided the venue by which psychologists might unify separate and dueling factions within their field (Bruner, 1990). The main tenets of Vygotsky's sociocultural approach were well received by scholars seeking an alternative to Piaget (Glick, 1997). A considerable portion of *Mind in Society* outlined Vygotsky's methodological approach. As conceptions of "self – as- storyteller" became accepted in academic circles, the empiricist approach made room for interpretive methodologies during the late 1970's and early 1980's (Bruner, 1990).

In 1986, Vygotsky's *Thought and Language* was reissued, firmly entrenching sociocultural theory as a theoretical and methodological presence in psychology. While the contribution of context has always distinguished what are now known as Vygotskian, sociocultural, and cultural-historical approaches, technological and conceptual advances during the 1990's enabled researchers to more appropriately integrate, negotiate, and deliberate the role of culture than in previous decades. By establishing ecological validity in the historical analysis of the mind, such "studies reveal persuasive aspects of mediated action and development that are obscured by experimental analyses based on the method of the first psychology" (Cole, 1996, p. 341). To date, sociocultural theory is the only approach that "provides a clear conception of the role played by culture in general as a theoretical / methodological foundation for the assessment of cultural variations" (p. 90).

In the past fifteen years, significant progress by American and European social scientists have further validated and expanded Vygotsky's approach. Technological equipment has provided researchers with a wealth of investigatory potentials previously unavailable. The development of multi-method designs and interdisciplinary research teams provides social scientists who view culture as the primary influence on human development with the capacity to address macro-level influences within the scope of individual life experiences (Cole, 1996). Moll (2000) additionally concurs, citing changing concepts of human culture as an impetus for novel methodologies. A leading scholar in the field, Cole (1996) urges researchers to "seek out approaches that enlarge the "circle of light" available in which to look for the keys to relationships between culture and cognition" (p. 68).

Sociocultural and cultural-historical researchers have followed suit, employing a multiplicity of methods. A rich record of research attests to this diversity through its many significant topics and creative forms. As an interdisciplinary theory, researchers working within the sociocultural tradition have imported a variety of research methods from their respective fields. These practices have validated the worth of qualitative, interpretive means from Wundt's second science. As Moll (2000) ascertains: "Accordingly, we must study those lived experiences dynamically, so we have also borrowed our methods of study from anthropology, primarily qualitative methods that place us *in situ*, engaged with instead of detached from human beings and sociocultural dynamics whether in classrooms, households or other settings" (p. 258).

Data for sociocultural and cultural-historical investigations has been collected from a wide variety of sources including samples of contextualized behavior, discourse



samples, historical and written records, as well as statistical tests (Cole, 1996). Contemporary research designs have included comparative case studies, practitioner research, non-traditional case participants, and the integration of experimental and ethnographic approaches. Those investigators working within Vygotsky's circle of light have applied theoretical constructs across the human sciences to synthesize their data (Cole, 1996).

#### *The Future of Vygotskian Research*

As more of Vygotsky's writings are translated and made available, clarifications in the corpus of understandings that currently constitute his methodology will be issued. Future sophistication in video and computer technologies also promise to contribute additional insights on the complexity of human relationships in meaning-making (Cole, 1996). In today's diverse society, the dual nature of psychology mandates a careful selection and balance of appropriate, multidimensional methodologies. As both product and process, the application of a specific research protocol is equivalent to the selection of a tool – a psychological tool uniting theory and method (Vygotsky, 1978).

While tensions posing quantitative vs. qualitative, experimental vs. anthropological, scholarly vs. practitioner, and empirical vs. interpretivist stances persist, researchers working within the broader Vygotskian, sociocultural, and cultural-historical community have successfully transcended these dichotomies. The unification of Wundt's first and second sciences is attainable through praxis. As Van de Veer & Valsiner (1991) emphasize: "the most complex contradictions of psychology's methodology are brought to the field of practice and can only be resolved there. Here the dispute stops being sterile; it comes to an end.... That is why practice transforms the whole of scientific methodology" (p. 150). Therefore, the following research study incorporates multiple methodological means characteristic in the spirit of the American Vygotskian tradition.

In unifying the Cartesian split of mind over matter (Mahn, 1997), Vygotsky's methods present a more holistic protocol for researching young children. In drawing on Vygotsky's principles of research, a dialectical materialist approach serves as a philosophical taproot for studies employing microgenetic and action research designs, an interactionist framework, functional systems analysis, and the unity of opposites. As features of the study presented below, this discussion will now provide a brief overview of these characteristics.

#### *Microgenetic Research Designs*

Scientific inquiries conducted on children's thinking processes have long been equated with developmental psychology. Ironically, Siegler & Crowley (1991) suggest theories in child psychology have been limited or even misinformed by the very research methods the field has employed to account for growth or change. By relying on cross-sectional and longitudinal designs, developmental transformations are indirectly assessed revealing "more about the stability of individual differences" through "snapshots of the process [taken] from time to time" (p. 607).

Berk (2001) agrees, stating that in order to understand changes in children's psychological processes, social scientists and educators need more than widely spaced sketches of change. To extend the metaphor, a motion picture would more appropriately record and reflect children's psychological development than isolated glimpses of the process under study. In a break from traditional longitudinal research, Piagetian, Vygotskian, and information-processing psychologists now advocate microgenetic

designs in an effort to more adequately investigate developmental phenomena (Siegler & Crowley, 1991; Berk, 2001).

Mistakenly considered a new form of research, microgenetic methods were first proposed by the forefathers of developmental psychology, Heinz Werner and Lev Vygotsky (Siegler & Crowley, 1991). In the mid-1920's, Werner devised "genetic experiments aimed at depicting the unfolding of successive representations that made up psychological events" (p. 608). Vygotsky (1978) praised Werner's methodology as an important contribution to scientific research.

Vygotsky's (1978) own research framework produced explanations of internal, psychological processes by "return[ing] to the source and reconstruct[ing] all the points in the development of a given structure" (p. 65). He noted that these trajectories might "be limited to only a few seconds or even fractions of seconds" or extend across a longer period of time, depending on its complexity (p. 61). Vygotsky (1978, p. 61) called his microgenetic approach the "experimental-developmental" or "experimental-genetic" method (Cole & Scribner, 1978, p. 12).

Contemporary definitions of the microgenetic method emphasize particular features of the design. Siegler & Crowley's (1991) definition includes "a high density" of "observations spanning a period of rapid change" (p. 608). In their approach, both quantitative and qualitative changes are then analyzed for data. In contrast, Wertsch (1985) describes the microgenetic investigation as a "very short term, longitudinal study" requiring "observations of a subject's repeated trials in a [single] task setting" (p. 55). Other researchers have emphasized the processes of learning or development as a participant's behavior moves through successive transformations (Panofsky, 1999; Siegler & Crowley, 1991). For the purpose of this investigation, the microgenetic research design is defined as a form of scientific inquiry that seeks to capture, relate and explain "process in flight" (Vygotsky, 1978, p. 68).

Regardless of the time frame involved, microgenetic designs have emerged as significant tools in cognitivist and sociocultural research. Siegler & Crowley (1991) stress the design's potential in "reveal[ing] the steps and circumstances that precede a change, the change itself, and the generalization of the change beyond its initial context" (p. 608). Panofsky (1999) additionally values the fruits of microgenetic studies as a powerful lens for identifying nuances in adult-children mediation. Both psychological domains have employed microgenetic methods to investigate learning and development.

In general, microgenetic inquiries arising from the cognitivist tradition have centered on specific skill and strategy development. Sociocultural researchers have utilized Vygotsky's experimental-genetic methodology to investigate the acquisition of cultural tools and socialization practices in context. Recent microgenetic studies have included explorations in mathematics, memory, scientific reasoning, map drawing, novice-expert interactions, private speech, and other important areas (Fletcher et al., 1998; Berk, 2001; Siegler & Crowley, 1991).

A collective view of microgenetic evidence on children's psychological processes is best described as compelling. Chief among these findings is the fact that after the period of infancy, changes in children's thinking do not correspond with specific ages as previously thought. Larger individual differences have been observed in strategy selection and use among children of the same age (Fletcher et al., 1991). Further, strategy use tended to be more multidirectional and complex with developmental changes

appearing in a gradual fashion. Fletcher, et al. (1991) ascertains these observations suggest, “the distinct shift in thinking characteristic of stage models of development is inaccurate” (p. 2).

Microgenetic results have also challenged assumptions specific to the qualitative features of psychological processes. Findings have questioned notions that children learn from failure or in the absence of formal or informal instruction (Siegler & Crowley, 1991; Panofsky, 1999). As the evidence from microgenetic studies accumulates, psychologists and educators are called to reconsider prior conceptions of children’s psychological processes and development. The use of a microgenetic framework aligns this study with these goals. Rethinking these foundational beliefs can only lead to transformations in the actual organization of child, developmental, and educational psychology as well as the applied science of education.

#### Action Research Designs

Action research has been described by Greenwood & Levin (2000) as "multi-method research" using "methods from as many disciplines as necessary to address the problem at hand" (p. 93). Action research is a form of scientific inquiry merging theory and practice to enhance the lived experiences or *perezhivaniya* of its participants during and after the research process. This genre of research has been described as a collective, educational process (Kemmis & McTaggart, 2000) co-generating understandings through collaborative, communicative interchange (Greenwood & Levin, 2000). Social individuals, policymakers and groups use findings from action research to execute informed decisions.

In keeping with Aristotle’s notion of practical reasoning, action research deals with “how to act rightly and properly in a situation in which one is confronted” (Kemmis & McTaggart, 2000, p. 569). The research genre is grounded in the philosophy of American pragmatism: Dewey, James, and Peirce wrote of the need to align theoretical abstractions with everyday, lived experience (Mills, 2000). Since the 1930’s, action researchers have employed tools from anthropological and social sciences research (Mills, 2000) to resolve social problems and address the needs of distinct groups (Greenwood & Levin, 2000). Over the past twenty years, educators have adopted action research approaches in their classrooms, schools, and institutions to produce powerful investigations with profound social effects (Anderson, Herr, & Nihlen, 1994).

The ethical stance inherent to action research parallels the original motivations for this study. A central premise of action research suggests “the mere recording of events and formulation of explanations by an uninvolved researcher is inadequate in and of itself” (Stringer, 1999, p. 7). As co-participants, action researchers locate themselves within the natural processes of the investigation. Similarly, action research assigns a validating, active role to cooperating participants as opposed to viewing social individuals as separate, uninformed, passive subjects. Professional expertise is considered valuable, but not superior to the knowledge, understandings, or meanings of participants involved in an inquiry. As such, the voices and values of participants, no matter how young, are considered central to the research process and its eventual results (Greenwood & Levin, 2000).

The goals of action research played an important role in the integration of Stringer’s (1999; 2004) ethical and pragmatic features in this study. Denizen & Lincoln (2000) portray action researchers as social scientists “committed to a set of disciplined,

material practices that produce radical, democratizing transformations in the civic sphere” (p. 32). By observing, reflecting, and re-presenting the lived experience of its young participants, the overall objective of the study sought to discover and relate “the real, material, concrete, particular practices of a particular people in particular places with an eye towards changing particular practitioners’ particular practices” (Kemmis & McTaggart, 2000, p. 595).

In recent years, social criticism has targeted the relationship between universities and larger society. In some circles, traditional academic research is perceived as having failed or abandoned the average citizen. Ironically, the stigmatization of applied research by so-called “pure” sciences has widened the gap between the “ivory tower” and communities’ universities are responsible to serve. Within this environment, action research offers “a promising way of moving the academic social sciences to socially meaningful missions” (Greenwood & Levin, 2000, p. 86-87). The relevance of action research lies in its ability to “create[s] the valid knowledge, theoretical development, and social improvements that the conventional social sciences have promised” (Greenwood & Levin, 2000, p. 86-87). Indeed, the current educational climate necessitates “a more democratic, empowering, and humanizing approach to inquiry” with more socially responsible, ethically conscious, and meaningful results (Stringer, 1999, p. 9).

Toward this end, this investigation integrates the common ends of action research and sociocultural research methodologies. The actual means by which this goal is achieved are elaborated in the following chapter.

#### *An Interactionist Framework*

John-Steiner, Panofsky, & Smith (1994) note microgenetic methods have impacted how educational theorists conceptualize language and literacy acquisition. Their interactionist framework outlines theoretical and methodological assumptions in keeping with participatory action research and microgenetic designs. As an interdisciplinary, sociocultural approach, interactionist frameworks emphasize social sources of development with a dialectical approach to analysis. In this manner, the interactionist approach offers an alternative to nativist and behaviorist models of language and literacy.

True to its name, an interactionist perspective focuses on communication as the means by which social individuals acquire and master linguistic and literate practices. This sociocultural approach underscores the functional use of language in authentic cultural contexts. Knowledge is considered to be situated; meanings are co-constructed through culturally situated practices inside historical contexts. Development is seen as “a changing system rather than as a result of polarity between genes and environment” (John-Steiner, Panofsky, & Smith, 1994, p. 4). Ethnographic and sociological methods are employed to capture and investigate speech acts and literacy events as they occur in process. Data collection and analysis target processes rather than products. In this manner, interactionists approach align their goals with Vygotsky’s experimental-genetic method to unify dichotomies and provide “a more authentic account of human functioning” (p. 4).

Sociocultural researchers working in an interactionist vein “study social interaction, the developmental relationship between language and thought, and the shifts in mutuality and expertise over time in learning and development” (John-Steiner, Panofsky, & Smith, 1994, p. 13). As such, the interactionist approach is especially

appropriate for this research study in its focus on how meaning is co-constructed by emergent biliterates.

### Functional Systems Analysis

In addition to action research, microgenetic, and interactionist approaches to research, many sociocultural investigations employ functional systems analysis. Unlike research methodologies that isolate psychological processes into separate, exclusive phenomena, a functional systems approach considers cognitive processes as constituents of complex, interdependent systems. Functional systems analysis takes psychological processes otherwise considered dichotomous or dualistic in nature and integrates them through a dialectical lens (John-Steiner, Meehan, & Mahn, 1998). By interweaving independent or contradictory processes, functional systems analysis offers an alternative to one-dimensional, linear conceptions of psychological processes and cause-effect accounts of development. (Mahn, 1997; John-Steiner, Meehan, & Mahn, 1998).

Functional systems theory originated during the mid-1930's (John-Steiner, Meehan, & Mahn, 1998). Vygotsky further developed the theory into a methodological approach when examining the interdependence of physiological and psychological phenomenon in the investigation of disabilities (Mahn, 1997). Vygotsky's writings on concept development in children and the zone of proximal development (ZPD) resulted from his explorations in functional systems. After his untimely death, Luria further elaborated functional systems analysis in his explorations with brain-damaged individuals and the cerebral cortex (John-Steiner, Meehan, & Mahn, 1998).

Luria's contribution to functional systems analysis rests on two premises as outlined by Mahn (1997). The first premise asserts that "a particular task can be performed by variable means or mechanisms" (Mahn, 1997, p. 61). This phenomena is illustrated by the interchanging roles of speaking, listening, reading, and writing in the development of literacy. Second, Luria postulated that "a functional system is complex, existing on different levels with an interplay between inwardly directed and outwardly directed impulses" (Mahn, 1997, p. 61). In using a functional systems approach, the researcher must identify and explain links between phenotypic or external behaviors and genotypic or internal processes (Vygotsky, 1978). Luria characterized development by transformations in the structure of and relationship between psychological processes "or, in other words, the 'interfunctional organization'" (Luria, 1973 in John-Steiner, Meehan, & Mahn, 1998, p. 2).

Contemporary sociocultural theorists recognize Vygotsky and Luria's efforts in developing theoretical approaches and research tools that incorporate contradictory and integrated processes within such frameworks (John-Steiner, Meehan, & Mahn, 1998). A functional systems approach allows enough room for a multidimensional analysis and an integrated synthesis. Both of these complementary research processes are needed to appropriately examine developmental change. In doing so, the methodology distinguishes itself from deficit ideologies inherent to nativist paradigms. Instead, functional systems analysis additionally "accounts for the varying conditions under which humans acquire systematic concepts and the ways they relate them to both their everyday experiences and the sociocultural practices of their communities" (John-Steiner, Meehan, & Mahn, 1998, p. 2). Whether interweaving separate psychological processes or examining transformations and transactions between stable and evolving systems, functional systems

analysis supercedes the limitations of linear conceptions of development as represented in the semiotic portraits resulting from this study.

### The Unity of Opposites

A final feature of sociocultural research brings this discussion full circle to the philosophical roots of the Vygotskian method. Returning to the tenets of historical materialism, Vygotsky's dialectical approach distinguishes itself from reductionist methods in psychology and linguistics. In contrast to the isolation and decomposition of dichotomous entities, sociocultural methods explore relationships between seemingly contradictory or diverse processes. Through the unity of opposites, phenomena is viewed as conjoining constituents of larger dynamic systems or wholes.

Vygotsky (1987) criticized "atomist and functional modes of analysis" that deconstruct complex psychological processes into their alleged elements (p. 2-3). Drawing a parallel to the chemical breakdown of water into hydrogen and oxygen atoms, the psychologist illustrated why similar analysis of psychological processes leads to false and potentially harmful notions regarding development. To use Vygotsky's (1987) own metaphor, an individual will not comprehend the nature or laws of water (H<sub>2</sub>O) by examining its two hydrogen and one oxygen atoms in their elemental form. The analysis of psychological processes into disparate elements destroys holistic properties of the phenomena under study, introducing characteristics or features previously not evidenced. For example, the complex psychological process of reading is not attributable to a reader's isolated ability in decoding the diagraphs /sh/, /wh/, or /th/ in the English language.

Further, the analysis of disparate elements fosters the notion that psychological processes function independently without interruption or variance (Vygotsky, 1987). In this manner, "the development of consciousness was seen as determined by the autonomous development of single functions" (p. 1). This view of consciousness remains inappropriately founded in a mind-as-machine metaphor where psychologists or linguists, like their automechanics, are allegedly able to remove and inspect the parts of a psychosocial engine onto the floor of a laboratory. Vygotsky ascertains the very essence of psychological development cannot be found in isolated elements or functions, but in the interactive, interdependent, and ever-changing connections of the total system.

Calling these relationships as well as their transactions and transformations the focus of sociocultural research, Vygotsky (1994) asserted "in science the analysis into elements ought to be replaced by analysis which reduces a complex unity, a complex whole to its units" (p. 341). Mahn (1997) highlights the Russian translation of Vygotsky's (1987) use of the term *edinitiy* for unit, emphasizing the existing connections between opposite or diverse processes. These connections are revealed after sectioning the whole into irreducible components.

Vygotsky (1994) described units as "such products of analysis which do not lose any of the properties which are characteristic of the whole, but which manage to retain, in the most elementary form, the properties inherent in the whole" (p. 342). He provided the example of a cell as the unit of biological analysis for living organisms. As a unit the cell is not the equivalent of its body, however, it contains characteristics of the body that cannot be further reduced without destroying its essence. Vygotsky (1987) described the unity of opposites occurring where two processes "manifest a unity but not as an identity" through complex transactions (p. 280). At the same time, he maintained each opposite

process could not succumb or dominate the other. Analysis of the unity of opposites employs investigative protocols that seek to identify both distinct and syncretic processes constituting complex wholes. This study identifies listening, speaking, reading, and writing as the units of biliteracy.

The breadth of Vygotsky's explorations into the science of the mind is replete with examples where seemingly opposite processes unify to create transformative systems. Vygotsky's research into the relationship between thought and language and their subsequent development in children produced two distinct units for contemporary investigations. This discussion now returns to the concepts of word meaning and *perezhivanie* as unities of analysis for the sociocultural study outlined below.

#### Word Meaning as a Unit of Analysis

Vygotsky (1987) established word meaning as a unity of analysis through his examinations into the relationship between thought and language. Traditionally, research in child psychology separates meanings from the sounds of words into contrasting semantic and phonetic categories. Analyses of these domains contributed little to understanding the linguistic or conceptual development of children. However as mentioned previously, Vygotsky's investigations focused instead on speech as a means of developing understanding, meaning, and communication in childhood.

Identifying verbal thought as the dialectical synthesis of thought and language, Vygotsky sought out the irreducible construct that united word and sound. Word meaning emerged as a unit embodying "both generalizing thought and social communication interchange...It [word meaning] permits true causal-genetic analysis, systemic relations between the growth of the child's thinking ability and his social development" (Vygotsky, 1987, p. 5-6). Word meaning lies at the heart of the unified processes of thinking and speech, uniting opposites including first and second language acquisition, oral and written speech development, as well as everyday and scientific concepts (Mahn, 1997). Word meaning provides a powerful lens into the sociocultural and semiotic texts of this study's participants.

#### Perezhivanie as a Unity of Analysis

The second unity of opposites central to this study involves the interrelation between the child and their environment. In juxtaposing these two separate entities, Vygotsky (1994) noted that external influences, in and of themselves, rarely have a direct impact on the psychological processes or personality development of children. Instead, the emotional-intellectual relationship a child formulates with and assigns to the environment ultimately determines the profundity of its influence. As previously discussed, Vygotsky (1994) used the Russian term *perezhivanie* to capture this integrated, experiential state of lived experience. Through the unity of *perezhivaniya* (plural form of *perezhivanie*), sociocultural research "investigates not just the environment and laws regarding its [the environment] framework, but the role, meaning, and influence on child development" from the standpoint of the child (p. 338). What is important is the integration of internal and external states in this unity of analysis. Vygotsky (1994) summarized *perezhivanie* as "an indivisible unity of personal characteristics and situational characteristics" at the forefront of the lived experience of the child (p. 342).

As significant tools for sociocultural research, the concepts of word meaning and *perezhivanie* offer researchers two holistic units of analysis. When considered in relationship to each other, word meaning and *perezhivanie* provide intersecting and

interdependent means to explore the developing mind. The two units also retain an intimate connection: Mahn & John-Steiner (2002) point out the concept of word meaning served as the foundation for Vygotsky's investigations into *perezhivanie*. While *perezhivanie* presents a larger construct reflecting the contextual system of the environment, word meaning offers the means by which the lived reality of the participant might be understood (Mahn, 1997).

In metaphoric terms, a child's *perezhivanie* might be considered a temporary house for their experience of a given event. Word meaning provides the windows through which researchers might access the lived experience of the child. Mahn (1997) affirms the "meaning that students ascribe to their experiences can be analyzed by looking at the unity of thinking and speaking in word meaning" (p. 368). Mirrors inside the residence, seen through the windows of word meaning, might be said to reflect external factors outside the home that ultimately influence the development of the child.

Vygotsky's emphasis on verbal language remains central to his theory and methodological approach. His work in distinguishing meaning and sense highlights the role verbal signs play in the meaning-making process. In order to identify *perezhivaniya* of participants, Mahn & John-Steiner (2002) encourage the use of multiple data sources including student work, journals, oral interviews, observations, and transcripts of speech. At the same time, Vygotsky (1994) recognized children are not always able to fully conceptualize or communicate their *perezhivaniya* in a way adults might understand. This phenomena holds equally true for young children and individuals acquiring heritage, bilingual, and second languages and literacies. Therefore, data collected from these research participants focusing on word meaning warrants the inclusion of other sign systems.

#### Word and Image Meaning: Unity in Sign Systems

In order to address the developmental levels and emergent biliteracy proficiencies of participants in this study, a third unity of opposites was utilized to comprehensively access *perezhivaniya* of the focal children. In an expansion of Vygotsky's concept of word meaning, visually-based empirical materials were analyzed for their image-meanings. These image meanings were then considered in conjunction with oral and written data sources. While psychological research has historically dichotomized visual and verbal forms of communication, sociocultural research supports the integration of these data. Vygotsky's (1981) description of psychological tools encompasses a wide array of multi-modal, coded sign systems. John-Steiner's (1995) theory of cognitive pluralism further establishes the multiplicity of semiotic means as culturally based approaches "varying in sense modalities, formality, and style" (p. 7).

Vygotsky's own explorations into early literacy practices and the pre-history of written language underscored the significance of visual signs in children's initial writing development. His investigations noted children's meaning-making abilities at work in the dialectical interplay between thought and visual representation. Mahn (1997) summarizes the role of image-meaning noting that once children understand speech can be illustrated through pictures, the meaning of the verbal sign is isolated and synthesized in the abstracted features of their drawings. By focusing on the communicative intent of verbal and visual sign systems as a unity of analysis, a more holistic vantage can be gained in accessing the *perezhivanie* of the young, emergent biliterate child.



### *Summary of Methodological Assumptions*

In sum, the methodological assumptions underlying this investigation are derived from sociocultural and participatory action research methodologies. The study employs means from the scholarly body of both traditions including qualitative, investigative protocols based on the following features: (a) the use of ethnographic measures (b) the application of dialectical logic (c) a microgenetic research design (d) an interactionist framework (e) the analysis of functional systems and (f) the unity of opposites in the analysis of research results. This discussion now turns to the description of the actual research protocols employed in the study.

## **CHAPTER 4**

### **OBJECTIVES OF THE RESEARCH INVESTIGATION**

Cole (1996) describes the goals of Wundt's second psychology as a combination of "theoretical understanding and practical results" applied in the "service of fellow human beings" (p. 286). Towards this end, the primary objective in conducting this research study was to implement a highly scientific, ethical investigation to benefit its young participants. While this goal might seem naïve or simplistic, its political intention is held in contrast to the exploitative manner in which children are unknowingly used as research subjects in today's schools.

The combination of sociocultural and action research protocols implemented in this study provided a venue through which both the rights and developmental needs of the focal children were respected. The application of these research genres honored the lived experience / *perezhivaniya* of the children as individuals and family members. A Vygotskian framework afforded the implementation of a rigorous, systematic, and significant investigation on emergent biliteracy and meaning-making. The objective of directing research outcomes to educators and policymakers was additionally realized through action research protocols (Stringer, 1999; 2004).

#### *The Research Question*

The first step in designing a qualitative investigation is to formulate a theoretical statement or line of inquiry. In keeping with my experience as a learner and classroom teacher, the research question for this study was written as follows:

**What semiotic means are employed by emergent five & six year old biliterates during the meaning-making process in non-instructional educational settings?**

This question focused my interest in how kindergarten-aged students make meaning when acquiring the processes of listening, speaking, reading, and writing in two languages. In other words, I wondered what semiotic modes they employed inside and outside the regular school setting.

Across the course of the study, a series of sub-questions emerged from the main question. These inquiries included: What is literacy? What does the initial acquisition of biliterate proficiencies look like? How do second language learners construct meaning? Under what circumstances do emergent biliterates make meaning and how can it be facilitated inside and outside the academic context?

#### *Significance of the Research*

As previously noted, bilingual, heritage, and second language learners comprise a significant and growing percentage of the U.S. public school population. Despite

increases in the number of multilingual children, educators are unprepared to appropriately address the educational needs of their linguistically diverse students.

At the same time, biliteracy proves to be a neglected topic of educational research (August & Hakuta, 1997). While the small body of research findings cited in the second chapter of this document has begun to address this gap, questions regarding the nature of meaning-making by emergent biliterates remains an unexplored domain of inquiry.

### ***Benefits of the Study***

The ultimate value of qualitative research lies in the use of its findings to benefit its research participants (Denizen & Lincoln, 2000). In lieu of present gaps in the professional literature, this study's careful documentation of young children's emergent biliteracy acquisition and meaning-making processes provides critical information for parents, educators, and policy makers (Denzin, 1989).

On a smaller but no less significant scale, the research study directly benefited the research participants in several ways. First, time spent with the researcher provided no-cost, high-quality childcare outside the financial reach of the working class families involved in the investigation. Second, the focal children and their family members visited several educational attractions and cultural sites within their city. Third, the study offered access to materials, equipment, and resources in a manner that positively enhanced the participants' artistic, linguistic, and literacy development. Some of the participants began to incorporate the regular use of the local library into the social practices of their family as a result of the investigation. Fourth, the children were able to pursue developmental tasks and personal interests often thwarted by the need for safety in high-crime neighborhoods. Most importantly, the research participants enjoyed a happy, stimulating, and educational summer vacation together.

### ***The Context of the Study***

Because the goal of qualitative research is to understand human processes and social phenomenon, qualitative researchers abandon contrived, laboratory settings to collect empirical materials within authentic, natural settings (Bruner, 1983; Denzin, 1989; Vygotsky, 1978). The empirical materials from this investigation were collected from a variety of settings between July 9 and August 13, 2002. Accordingly, data gleaned from these sources cannot be extrapolated outside the larger context from which it was gathered.

The larger context of the investigation is best conceived as a collection of dynamic, overlapping spheres collectively in motion along an historical trajectory. These economic, cultural, and linguistic circles constitute smaller social contexts, comprised from distinct and common social phenomenon. Because the interfacing contexts have been elaborated in chapter five, only a brief description of these contexts is provided in the section below.

#### ***The Economic Context***

The study took place in a large, southwestern city of approximately 440,000 inhabitants. The research participants represented the residents of a working-class, inner-city barrio assigned the pseudonym of Gallegos. The Gallegos neighborhood is called home by a majority of Mexican-American and Native American families and elderly Latino residents who purchased their homes during the 1950's. In the past ten years, immigrants from Mexico and Central America have added a tier to its traditional class structure.

### *The Cultural Context*

Youth activities, neighborhood organizations, and church groups provide venues for neighborhood residents to celebrate their youth and multiple cultures. The local elementary school has been identified as a national prototype of dual immersion or two way Spanish - English bilingual enrichment programs. Two of the study's secondary participants graduated from the school's program. In keeping with the best research on educating second language students, the school curriculum additionally emphasizes the development of its students' multiple intelligences (Gardner, 1993). The school represented in this study has been issued the name Mariposa Elementary.

### *The Sociolinguistic Context*

Despite a strong sense of familial and cultural pride, English hegemony is rapidly replacing the linguistic heritage of families from Gallegos. This linguistic shift has long been observed among Native American and Hispanic / Latino / Chicano populations in the Southwest. While such changes historically occurred across four or five generations, it is not uncommon today for language shift to occur in one generation (Wong-Fillmore, 2000). The majority of elders from the Gallegos barrio speak in Spanish. For the most part, their daughters and sons employ English as their dominant language. While individuals of this generation might possess a receptive understanding of Spanish, many adults speak their heritage language with minimal proficiency. Linguists have warned an advanced form of language erosion will befall communities like Gallegos if a concentrated intervention to retain their unique dialect of Spanish does not occur (Crawford, 2004; Cummins, 1996).

Such rapid language loss often creates crisis between family members. Without a common, communicative venue, social ties essential to the development of individual and ethnic identities can become threatened and dissolve (Wong-Fillmore, 2000). Under such conditions, the intergenerational transmission of values and wisdom must compete with social texts promoted by peer and street cultures. The psychological survival of youth, as in individual and collective identities, can become vulnerable to destructive perspectives espoused by the mass media. Because local, state, and national media often incorrectly portray Hispanic-Latino and working-class experience in a derogatory manner, the children of Gallegos are susceptible to the violence of a psycho-developmental bind. The cumulative weight of anti-immigrant, assimilationist, and racist, sexist, and linguistic messages often propels children to abandon their heritage languages and literacies (Wong-Fillmore, 2000). Fortunately, the Barrio Gallegos is served by parents, community leaders, and educators working to counter the corrosive effects of internalized hate.

### *The Participant-Researcher*

It was in such a role I was awarded the opportunity to conduct this research study. Under most conditions, an "outsider" doing "insider research" would not be extended such a privilege nor at so close a view. Regardless of education, expertise, or experience, researchers involved in scientific investigations cannot just waltz into a community and collect data. This is especially true for qualitative research. While the lived realities of the children and families in the study are far more significant as the focus of this work, it is important readers understand my position and role in the research process.

### *The Researcher as a Doctoral Student*

In retrospect, a lengthy selection process afforded me the opportunity to pursue this investigation. After working for eight years as an elementary educator in another state, I decided to pursue a doctorate in multicultural, bilingual and English as a Second language education. As a 13th generation, Irish Chicagoan, I was fortunate to have the support of a Chicano professor in my department. He reached across ethnic and cultural boundaries to acknowledge my efforts to create equitable, culturally relevant, and linguistically appropriate learning environments for children. Despite my intermediate proficiency in the Spanish language, this multicultural educationist recognized my previous teaching experience with Mexican national, immigrant children. He understood the joy, commitment, concern, and sense of duty I brought to my work with bilingual and second language learners. Through his mentorship, I gained the trust of a coalition of bilingual educators from the Barrio Gallegos.

### *The Initial Role of "La Maestra"*

Over a four-year period, these relationships eventually led to the offer of a half-time, kindergarten position at Mariposa Elementary School. It was an honor to be associated with the outstanding staff serving the Gallegos community. Most community members regard teachers from Mariposa Elementary with an elevated sense of respect, rarely evidenced in schools across the United States. In keeping with their Mexican-American and Mexican heritages, residents continue a longstanding tradition of ascribing authority, high culture, and wisdom to its teachers.

This social practice includes Gallegos' younger, Chicano parents and extended family members. Teachers at Mariposa Elementary are held in high esteem because of their fierce and sustained commitment to address the students' many needs. A variety of programs exist at Mariposa Elementary that target the physical, emotional, and intellectual growth of the children. The administration, faculty, and staff maintain a longstanding advocacy for the cultural and linguistic development of their students before, during, and after the academic day.

I first met the primary and secondary research participants of this study in my capacity as a kindergarten teacher in 2000. Because Mariposa experienced a surge in enrollment after the first forty days of school, the principal hired a fourth, full-time kindergarten teacher. This resulted in the redistribution of the three original kindergarten classrooms after the first few weeks of the school year. However, new students continued to enroll after October first, making it necessary to hire an additional half-time teacher.

### *The Kindergarten Class*

Due to a state-created teacher shortage, very few candidates were left to fill the half-time kindergarten position. A full-time substitute with a bachelor's degree in secondary social studies education was hired to work with an overflow of twelve kindergarteners. After a month or so, Mariposa's principal began to search for the substitute's replacement because the woman was unkind to the five year-olds. The limited amount of instruction the substitute had provided was not developmentally appropriate or relevant to preparing the children for first grade. Therefore, when I took over the small class in mid-December, I was either the third or fourth teacher the children had been introduced to in four and a half months.

Because of limited funds from the state, Mariposa could only provide the children and their families with a half-time program. As a result, our kindergarten class met for two and a half hours together each morning. Aside from our work in Spanish and English literacy, the kindergarteners also attended physical education, library, recess, and lunch in accordance with state law. In lieu of their tumultuous induction into the formal education system, the children required time and patience to grow into the high expectations I held for their work and behavior choices. An equal amount of time was necessary for the families to become comfortable with myself as their child's third or fourth kindergarten teacher.

By the end of February, my kinders were making daily, significant strides in their biliteracy development. In March, however, it was also clear the majority of students would not be prepared to begin first grade. The principal and counselor encouraged me to enroll the students in summer school and set steps in motion for to retain several of the children.

We had come so far together and the end of the school year was rapidly approaching. I began to consider how I could develop a study that would achieve several ends: First, I wanted to continue to assist in my students' biliteracy development. Second, I wanted make a contribution to an area of research that would assist families and educators. Third, I personally needed the satisfaction of knowing the children who had opened up to me would feel confident, capable, and strong on the first day of the upcoming school year. With parental, university, and committee approval, these objectives became a reality in this investigation.

#### *From Teacher to Facilitator: A Shift in Roles*

During the study, my role transformed from that of an educator directly responsible for teaching a prescribed curriculum to the position of an informed, familiar facilitator. Despite this shift, it is important to recognize the status and accompanying power I continued to be proscribed as "*la maestra*". My work as a public school teacher afforded the privileged, insider position that was gifted to me as a researcher-participant. This status and its accompanying relationships provided the necessary access that often prevents microgenetic research from occurring (Siegler & Crowley, 1991).

Undoubtedly, the cultural meanings ascribed to me as a single, educated, English-dominant female impacted the implementation of the study. The participants' interpretation of who I was as a social individual, educator, and researcher shaped our interactions and relationships as much as my own Spanish language deficiencies, cultural illiteracy, and differences in world view. However, I believe that the relationships I forged with the primary and secondary participants of the study between December and May positively effected the final processes and outcomes of the investigation as a whole (Stringer, 1999; Anderson, Herr, & Nihlen, 1994). This was evidenced by the trust established between the children and I, the respect I earned in the eyes of their family members, and the children's continued progress in biliteracy acquisition.

#### *Role of the Researcher*

My first responsibility as a researcher-participant was to act as a caregiver for the health and well being of the participants (Stringer, 1999). Conducting research with young children requires fluctuating attention between the smallest of details and large-scale concerns. Toward this end, I carried a cell phone, first aid kit, and emergency

contact numbers at all times. Data collected in the summer heat necessitated advanced planning to prevent dehydration and over-exposure to the sun.

As a caregiver, I was also responsible for maintaining positive group dynamics. About mid-point in the study, the behavior of one participant was negatively impacting the experience of another child. While my original plan was to collect data from one collective group of participants, the child's inappropriate behavior called for the separation of the focal children into two distinct brother-sister dyads. All further research protocols were replicated with each pair. This action maintained the continued approval of all the research participants as well as the integrity of the study as a whole. In the long run, the flexibility to execute this qualitative decision ultimately enhanced the children's experience as well as the resulting structure of the research design.

My second responsibility as a researcher was to facilitate experiences that lended themselves to biliterate, multi-codal meaning-making on the part of the participants. In other words, my role was to nurture conditions and create environments in which the children might explore, acquire, and construct understandings through a variety of means. Toward this end, I coordinated and chaperoned five visits to non-academic educational sites adjacent to the children's neighborhood. These experiential sessions included trips to the local Museum of Natural History, an Aquarium, a Zoological Park, the Museum of Fine Arts, and a Children's Science Center. Our time during these excursions was spent viewing, experiencing, and discussing the exhibits in a leisurely fashion.

Within a day or two of each experiential session, the dyads and I convened in the craft room at the city library. During these representational sessions, the children were provided with a variety of art and writing utensils, materials, and supplies. The participants were encouraged to represent meanings from the experiential session through these semiotic means. I financed all fees, materials, and foodstuffs for both the experiential and representational sessions.

During our sessions together, I participated as a supportive guide and reflective agent in the construction of the children's positive self-esteem (Stringer, 1999). Transcriptions of interchanges between the children and I revealed a high frequency of speech acts characterized as affirmations, validations, confirmations, conceptual echoes, and incidences of praise. These discourses wove collaborative self-texts or meta-literacies regarding each of the children's current and potential emergent biliterate proficiencies.

Interaction with participants in such dynamic roles positions the qualitative researcher as a co-participant in the investigation (Stringer, 1999). Unlike quantitative claims of detached objectivity, action research honors the interdependence between the investigator and her co-participants. Ultimately, the nature of relationships with the children and their families impacted the implementation and final results of the study. Therefore, it is important to mention the Anaya and Chavez families' lived experience / *perezhivaniya* of my role as a researcher.

#### *The Anaya Family's View*

Tono's family viewed my role as a researcher from a utilitarian perspective. The Anaya family cast me as an educated caretaker willing to spend time with their son. This perspective was not entirely different from the family's definition of my position as a kindergarten teacher. The Anaya children were always ready and waiting for our excursions together. Their parents listened to briefings on our activities and the

investigation itself without much comment. The family was grateful to have a caring, trustworthy individual to provide high quality daycare free of charge.

#### The Chavez Family's View

The Chavez family initially viewed my role as a researcher with curiosity and uncertainty. While I had followed all necessary protocols explaining the research objectives, procedures, and ends in an appropriate manner, the concept of educational research was new to Beto's relatives. Because of their lack of familiarity with educational research, I explained to the Chavez' family that Beto's participation would teach me how he and children like him learned to read and write and make sense of the world when learning two languages. I additionally explained that with the family's permission, I would use data collected from a variety of sources to write an account of how Beto first learned to read and write in two languages. I explained this learning story or microgenetic account would then be used to teach other educators how best to support heritage, bilingual and second language children. The Chavez family especially liked being involved in a project they knew would assist other children from their homeland of Chihuahua, Mexico.

In an extension of my previous role, the family continued to define and call me *la Maestra* or the teacher. This formal role additionally evolved as I earned the Chavez family's trust. As secondary participants, Beto's relatives were able to more fully experience my personal demeanor and sincere intent outside the institutional setting. His mother and sisters accompanied us on three experiential visitations, allowing the family to further witness extended interactions between me and the children. In addition, Beto and Teresa carried artwork, books, and laughter home from our representational sessions at the library. Simply put, the participants enjoyed themselves and it showed.

#### Cultural manners & relationship.

Traditional Mexican culture places a high value on courtesy. While this Spanish cognate is easily translated to English, as a social practice, *la cortesía* is observed very differently by the most polite American. Lafayette de Mente (1996) describes the dynamic of *la cortesía* as "a high standard of refined, stylized manners, effusive hospitality to guests and a gentle and generous nature" playing "a central, vital role in the lives of people on every level of society" (p. 70). My role as *la maestra* and as the primary researcher of the investigation transformed about mid-point in the study when to refuse another invitation to lunch would deeply offend Senora Chavez in both a cultural and gender-based manner.

At first, crossing this relational threshold to break bread with the family was difficult for me. It was not that I was unfamiliar or uncomfortable with the language or culture. Rather, the cumulative effect of years in academia tugged at me. I was surprised to discover how strongly I had been socialized into an empiricist ideology. This temporary role conflict also pointed to the very real possibility I would be served another family member's dinner portion. The situation required I confront my own childhood experiences with hunger and notions regarding poverty.

In short, our first lunch together enhanced the Chavez family's conception of me. Personal information was requested and supplied, allowing family members to see me as a person instead of a title. For my part, academic pretensions tend to dissipate over hotdogs, ketchup, baked beans, and Tapatío sauce. In achieving a less formal level in our relationship, I was given the gift to see my own self through new eyes. By the end of the

study, my role as a teacher and researcher-participant expanded to that of an adopted aunt and *madrina* (godmother). These relationships continue to this day.

### ***The Participants***

In qualitative studies, the social scientist purposively selects research participants whose life experience involves the phenomenon they are studying (Stringer, 1999). By the end of May 2001, five parents of my kindergarten students provided permission for their child to take part in the investigation. Two of the eight original students were not asked to participate because of weekly reports of child abuse and neglect I was required to make as a teacher to the municipal Police Department and Child Protective Services agency. One remaining kindergarten student moved and could not be reached.

Therefore, the study's original proposal identified two girls and three boys as the primary participants or focal children.

#### *Participant Drop-Outs*

By the time the study was approved by the University of New Mexico in July of 2001, the mothers of the two girls rescinded their participation due to competing day care arrangements. A third child began our investigation, but did not continue after the first few sessions. His father had an established history of spousal and child abuse. During the previous spring, the child arrived at school one morning with a swollen black eye. After the child identified his father as the source of injury, I reported the incident to local authorities. Once investigated, the father angrily confronted the assistant principal and me in front of the school.

When securing parental permissions, I was therefore very explicit with his mother that the protocols of the study required my reporting any suspected instances of child abuse. While I was never informed why the child stopped attending our sessions, I suspect this was the reason no one answered the phone or door when I repeatedly attempted to contact the participant's mother. When considering the benefits of the study to the participants, it is noteworthy that issues surrounding childcare, health, and safety prevented five out of seven children from potentially participating in an enriching summer activity.

#### *Participant Drop-Ins*

At the same time, two additional children can be described as "dropping in" to the investigation. The involvement of these secondary participants came about through unanticipated events. The original proposal designated secondary participants as the focal children's immediate and extended family members. These individuals included the primary participants' parents, grandparents, aunts, uncles, siblings, and cousins. The role of such secondary participants was considered to be minor at the onset of the study.

However, during our first visit to the library, I was surprised to learn the older sisters of the two focal children planned to accompany us. These early adolescents were initially sent to discipline the focal children if they became unruly. As time went on, the girls asked to participate in the activities alongside their brothers.

Because the sisters were considered secondary participants, the collection of data did not deliberately video or audiotape these children. However, interactions between the focal children and their sisters were invariably captured on tape. In transcribing the tapes, their interactions proved to be highly significant. Subsequent permissions from the University of New Mexico's Institutional Review Board allowed these unplanned dialogues be admitted to the data. While the original focus of the investigation remained



intact, the flexibility of an emergent, qualitative design permitted the opportunity to consider the total breadth of potential data.

#### *The Families*

In total, six participants from two families were involved in the study. Pseudonyms were assigned to both group and individual family members. The brother-sister dyad from the Anaya family consisted of Antonio (Tono) and Marisol (Sol). Chavez family participants included Umberto (Beto) and his sister Terecita (Tere). Beto's mother Juana and his eldest sister Miranda accompanied us during a few of the experiential sessions. These two women also served as peer consultants in the translation and interpretation of the data.

#### *Similarities Between the Families*

A certain symmetry is observed when comparing the families of the participants. Both the Anaya and Chavez family hold fast to their Mexican-American roots. As residents of the Gallegos barrio, the families take pride in their working class status. Spanish and English are spoken in both homes. Bilingualism and biliteracy are valued and practiced by extended family members. In both families, mother and father live in the same household with three or four children. Because the two families lived within five blocks of each other, all four of the elementary age participants attended Mariposa Elementary School. A final similarity notes the focal children and their older sisters to be the same age.

#### *Differences Between the Families*

The families of the primary participants also differed in significant ways. Several generations of the Anaya family were born and raised in Gallegos. Their family history dates back to the original settlers of the region. On the other hand, while the Chavez clan had worked in the area for several generations, Beto's immediate family had only permanently immigrated to the barrio nine years prior to the study.

In terms of language use, the Anaya family employed English more often than Spanish during their everyday interactions. At the same time, the family actively seeks to preserve and regain their heritage language of Spanish. In contrast, the Chavez household utilizes Spanish as their dominant language. The acquisition of English as a second language is highly esteemed by Beto's relatives, but not at the expense of their native language. In terms of political outlook, Toño's family is best described as urban Chicano, while the Chavez family strongly identifies with Mexican Nationals from rural areas of Chihuahua, Mexico.

#### *The Focal Children or Primary Participants*

#### *The Position of the Participants*

After University approval was granted, the study commenced in July of 2001. Both the primary and secondary participants in the study were considered "cultural experts in their own settings" (Stringer, 1999, p. 8). To the greatest extent possible, the focal children and their family members served as co-advisors in designing and executing the processes of inquiry. These aims were not difficult to achieve in that the research approach easily aligned with my teaching style from the school year. Also, without the demands of a mandated curriculum, the children were able to assume more agency in our study than in the regular classroom.

### Instructions to and Roles of the Participants

The following instructions were executed for the primary and secondary participants of the investigation.

#### Parental consent forms.

I designed the permission forms as a means of detailing study protocols for the secondary participants. The consent form was written in English and Spanish in a manner maximally understandable to the participating parents. Before securing signatures, I spent forty-five minutes to an hour with each focal child and their mother reading and discussing its contents. This protocol was important for three reasons.

First, I wanted the secondary participants to have a solid understanding regarding the objectives of the investigation. In the past, researchers have misinformed or misrepresented their purposes to individuals unfamiliar with academic jargon in English or Spanish. While I wished to clarify any questions or concerns before the study began, I also sought to solidify a trust agreement with the parents in a manner that was significant for them.

Second, I wanted the families to have a very clear notion of what our activities together would entail. The parents were assured I would take every measure possible to ensure the health, safety, and happiness of their children.

Finally, I wanted to set a precedent for co-participation with the parents that would extend across the study. It was essential to strip away the formality of the documents, protocol, and my position as a teacher and researcher to focus on the children as our cooperative interest. At the end of these meetings, our common objectives were established. The parents, children, and I agreed the investigation would provide a fun and stimulating summer experience for the focal children, continued engagement in the biliteracy acquisition process for the primary participants, a means to collect data regarding their children's emergent biliteracy and meaning-making processes, and a final document or account that could be shared with educators.

#### Roles of the focal children.

When the study permissions were finally issued, the focal children and I met at the library to discuss our project together. In the craft and children's rooms, the primary participants were provided the opportunity to manipulate the technological equipment used to collect data and become familiar with the environment.

We toured the rooms where our representational sessions took place. I explained that just as the focal children were learning to be better readers and writers in school, I was studying to be a better teacher of reading and writing at the university. We discussed how their parents had given permission for them to be my teachers for the summer. I told the children that just as they had to write stories in our kindergarten class, I would be writing a book that had stories about them.

Next, I spread out a large collection of art supplies, writing utensils, and craft materials across a long table. I informed the children that we'd be visiting the zoo, the aquarium, a science center, and two museums together. I noted that after each visit, we'd return to the craft room. I explained that the participants could use all the materials on the table to show what things they learned or thought were interesting, meaningful, or significant from our trip. We discussed potential projects that included writing songs, creating books, drawing posters, assembling puppets or mobiles, or choreographing

dances. Unlike school, the children would be able to decide what they wanted to create from the materials on the table.

Afterwards, we experimented with the tape recorders and listened to our voices on tape. I distributed red soccer jerseys to each child. A strip of Velcro inside the front pockets held the tape recorders in place. We explored how the video camera worked and outlined rules concerning its handling. After a sample taping, I ran the recording through the camera so the participants were able to see themselves. I explained that the video, tape recorders, disposable cameras, and any notes I taped or wrote would help me to remember what they taught me during our time together. The children were assured all the tapes and pictures we took would be theirs to keep at the end of the summer. I informed them we would be making a special book out of the photographs for each of them to take home.

At last, we discussed the greater need for the study. I asked the participants if their parents knew everything. After replying in the negative, I asked the children if teachers knew everything. Interestingly, the children were silent. I explained to the participants that there was so much to know about children's thinking and learning that adults hadn't figured out how their minds worked yet. I noted that people called researchers tried to find out more about what kids need to help children do better in school. We talked about how teachers didn't quite know how children learn to read and write in Spanish and English at the same time.

Finally, I showed the participants the physical video and audiotapes. After the summer was over, I explained, I would take all the tapes and write out everything the child had said or did on the tape. Then, I'd use these notes, along with their artwork and the pictures they took to help me write a story about their thinking while learning to read and write in two languages. Eventually, I explained, other teachers would get a chance to read their stories to learn how to help kids in school.

With the exception of direct instructions regarding the handling of the tape recorders, these conversations formed the basis of the explicit instructions that were issued to the primary participants. In keeping with the tenets of naturalistic inquiry, the parents and children both understood that all they would have to do is be themselves and have fun to best assist in the investigation (Stringer, 1999). Contrary to my concerns about collecting data, the focal children patiently accommodated my every request. On occasion, we talked about Mariposa Elementary, the University of New Mexico, and what college life was like. These informal exchanges usually elicited discussions regarding the stories I explained that I would write about their learning. Other than these instances, our focus was placed on the children's experience as active meaning-makers and developing biliterates. In the natural course of events, the primary and secondary participants served as my language teachers, translators, and models in a collaborative and equitable manner (Stringer, 1999).

### *Agreements with the Families*

#### *Ethical Considerations*

Across the course of this investigation, I acted in accordance with all moral, legal, and institutional protocols outlined by the Institutional Review Board of the University of New Mexico. The treatment of all participants additionally aligned with ethical standards for conduct posted by the American Psychological Association (APA, 2001).

### *Deception*

There were no deceptive means, measures, or protocols in any aspect of the research investigation. All consenting parents were informed of study protocol in meaningful verbal and written forms of their dominant language. In addition, all written documents submitted to the consenting parents were read with or to the signing adult in their language of preference.

### *Consent & Assent*

The parents of the primary participants served as the appropriate consenting agents. All research purposes, procedures, and protocols were presented to the parents in comprehensible verbal and written forms of their dominant language. While assent forms from the children were not required, in all cases, the children provided verbal assent. All primary participants received parental approval to participate and be tape recorded, photographed, and filmed.

### *Enumeration / Payment for Participation*

The children and their parents understood they would not be paid for their participation. However, I paid for the children's admission to the educational sites, transportation, and for all materials used in the study. No cost of any kind was incurred by the primary and secondary participants.

### *Confidentiality*

Any and all information obtained in connection with the study that might potentially identify the participants has been protected and will remain confidential. I have taken all necessary precautions to avoid identification of the participants. Pseudonyms were adopted for all participants in the research accounts, as well as the neighborhood and school site.

### *Informed Consent*

The consenting parents were informed, in meaningful verbal and written forms of their dominant language, that their child's name would not be released under any conditions except in the reporting of suspected child abuse or neglect. The consenting parents were told that, like all child care workers, I was obligated to report any suspicion of abuse or neglect.

Parents of the focal children were also informed through comprehensible verbal and written means in their dominant language that they had the right to review or edit video or audio tapes of their child. They understood that I would be the only person who would see or hear the tapes as the researcher.

### *Issues of Ownership*

The parents were informed that upon completion of the investigation, all audio and video tapes of and projects made by the children would be returned. In the event a family did not want these artifacts, I consented to destroy them. The parents of the participants were also made aware I might ask to use the tapes and research artifacts for educational purposes. They were advised that I am obligated to and would request their written permission before using any research artifacts toward this end. The parents were also informed that all data resources, including videotapes, audiotapes, documents, and photos automatically becomes their property at the end of the investigation unless permissions are explicitly given to the researcher.

### *Research Processes*

Our research investigation employed techniques and processes traditionally used in the field of anthropology and the social sciences. Because the study focused on the meaning-making processes of two emergent biliterates, a participant-centered approach was maintained at all times (Denzin, 1989). Naturalistic, constructivist, and interpretive research processes allowed for the collection of “existentially experienced, interactional texts” created by the focal children (Denzin, 1989, p. 8). These texts were supplemented by the children’s school documents, artwork, writing, and photographs as the empirical materials considered in the study.

#### *The Empirical Materials*

As the participant-researcher, one of my roles was to collect empirical materials or information for data analysis. At the end of the study, a diverse collection of resources had been assembled. These materials were derived from my own means and those of the primary participants.

#### *Materials Produced by the Researcher*

Across the course of the study, I recorded field notes on my observations of the children and reflections on the research process as it was actively occurring. I jotted these notes on paper or recorded comments into a hand-held tape recorder when convenient in the field. These cryptic notes were later elaborated with thick description on my computer. The writing process helped to ground my initial notions regarding the research study. The researcher’s journal also provided a venue to address concerns or issues as they arose (Stringer, 1999).

I also kept a research log during the year and half long process of transcribing the video and audiotapes. As I encoded the children’s interactions, behaviors, and speech, I noted interesting patterns, comments, themes, or questions I had on a piece of paper. When I finished transcribing for the day, I spent some time elaborating on these remarks in expanded form. These reflections were supplemented by my anecdotal notes written from the previous academic year. I also videotaped and collected photographs of the focal children during our sessions together.

#### *Materials Generated by the Participants*

The participants also generated empirical materials. These products included artwork, writing, dictated stories, and photographs produced by the focal children. Parents provided permission to secure copies of the children’s schoolwork and institutional documents. Video and audio taping captured speech acts, behaviors, and interactions of both primary and secondary participants. The transcription of these tapes provided a significant amount of data.

#### *The Procedure*

The collection of empirical materials proceeded in a systematic, deliberate routine. Materials were collected in five cycles, with each new period consisting of an experiential and representational session.

#### *The Experiential Sessions*

The five experiential sessions occurred at the following educational sites: (a) a museum of natural history (b) an aquarium (c) a zoological park (d) a children’s science center and (e) a museum of history and fine arts. The objective of these cycles was to obtain “existentially experienced, interactional texts” through the empirical materials

listed above (Denzin, 1989, p.7). A focus was placed on collecting information pertinent to the activities, interactions, and interests of the children. During the experiential sessions, I used a video camera, disposable camera, and hand-held tape recorder to collect research material. Tape recorders were placed in the shirt pockets of the focal children. At the educational sites, the participants were additionally provided disposable cameras to take pictures. The children were instructed to remain in sight of the researcher, stay with a buddy at all times and, refrain from playing with the tape recorders. Video and audio taping began a few minutes before we entered the site and continued through the end of the visit. Because of the sensitive nature of historical artifacts, our visit to the Museum of History and Fine Arts was not photographed or filmed.

#### *The Representational Sessions*

The five representational sessions occurred within one to three days of the experiential sessions in the craft room of city library. As previously stated, the participants were provided with a variety of tools and materials to represent topics, interests, and themes of their choice from the prior experiential session. During this time, I acted as a participant observer, supporting the children's self-selected modes of activity. I also encouraged and supported the children in employing their bilingual-biliterate proficiencies in these sessions.

Empirical materials collected during our representational sessions focused on the activities, interactions, and interests of the children. The video camera recorded footage on a tripod three feet from the table where we worked together. Tape recorders were placed in the focal children's pockets and on the center of the table. These tapes ran continuously from the start to the end of the session. The participants were encouraged to show what topics were interesting to them or what they had learned from our adventure to the educational site. Photographs and photocopies were made of the projects created in the representational activities.

#### *Languages of Interaction*

In terms of the language use, it is important to note that in all these activities, the focal children dictated the language of interaction. This was achieved by careful observation to the specific code employed by the primary participants. With the exception of instances when we were directly engaged in second language practice, I echoed the selection of the children's language choices from exchange to exchange.

#### *The Analysis of the Data*

When analyzing data, the qualitative researcher employs a systematic means of accessing information relevant to the research question (Stringer, 1999). The analysis of empirical materials in this study was achieved in four distinct stages. These phases involved (a) the access of data, (b) an analysis of the children's emergent biliteracy proficiencies from December 2000 through August 2001, (c) a semiotic analysis to identify interpretive themes of the children's perezhivaniya, and (d) the triangulation of data.

With such a substantiative amount of data, it was necessary to sort and bracket significant information during each phase of the data analysis. In this manner, essential features of the children's emergent biliteracy and meaning-making processes were set aside for the presentation of the data (Stringer, 1999).

### Phase I: Data Access

In the first phase, information contained in the empirical materials was made accessible for analysis. The materials were divided into academic and non-academic categories and labeled according to participant, date, and context. Distinctions were identified between those materials generated by the focal children and myself through the use of differing font types.

#### Academic materials.

Several empirical materials were accessed to provide information regarding the children's biliteracy acquisition from the academic year. Both researcher and participant-generated documents were used from the school setting to outline two separate chronologies. The first chronology documented instructional activities and emphases from December 2000 to May 2001. Information from lesson plans, school calendars, and student work was utilized to outline a general instructional account for the academic year.

This instructional chronology was used as a template for a second document outlining the emerging biliteracy proficiencies of each focal child across the academic year. Anecdotal notes, parent letters, report cards, art work, writing journals, official school documents, and other materials were used to construct the account. These academic chronologies included extensive descriptions of the children's biliteracy events and creations during the school year.

The development of these accounts was necessary for two purposes. First, the documents offered an historical review of the children's emerging biliteracy development within an instructional setting in which formal instruction took place. The accounts also supplied information regarding what emerging practices each focal child brought into the study during the summer months.

#### Non-academic materials.

Next, the non-academic materials from our experiential sessions at the educational sites were divided from those empirical items secured during the representational sessions at the public library. These items included materials generated by the children and those items produced by the researcher. The goal of this process was to produce a multi-modal account for each site visit that would incorporate both experiential and representative sessions. Data from the children's materials formed the core of these accounts, while information collected by the researcher framed the portrait of the children's perezhivaniya.

Children's materials from the experiential sessions. First, the children's photographs from the experiential sessions were prepared for the data pool. Before submitting the film for development, I recorded which film rolls were taken by each of the specific participants. After processing, I sorted the pictures into groups according to their photographers. Each photographer's prints were then categorized by event sites.

Once the photographs were sequenced into the order in which they were taken, each visual record was cataloged and charted in a matrix. The photographer, sequence number, and date of execution were noted for each photograph. A description of the visual elements captured in the photographs was also recorded. The photography matrices allowed me to discern what the participants viewed through the lens of their cameras and what semiotic content potentially initiated the recording of the scene.

Audiotapes recorded the focal children's speech acts during our experiential sessions. To make this data accessible, each tape was transcribed. Beto's mother and

older sister provided member checking and participant consultation when I required interpretation or translation.

After the children's interactions were recorded in written form, I highlighted the text of each transcription to identify interactions occurring within a two to four foot radius. These utterances were distinguished from speech acts conducted approximately five to ten feet away from the taped participant. Communication located outside the ten foot radius was noted in the transcription through the use of parentheses.

Special attention was noted in the transcription on the selection of Spanish or English by participants as well as instances of code-switching. Pauses, interruptions, and turn-taking practices were indicated to account for stages in the bilingual acquisition process as well as issues related to status, gender, and power. Transcriptions from the focal children's tapes served to organize the multi-modal accounts and semiotic portraits. Information from the photography matrices was cut and pasted into the transcriptions to integrate visual and verbal data sources.

*The researcher's materials.* During our visits to the educational sites, I actively filmed aspects of the experience with a video camera. While my goal was to collect as much empirical material as possible on film, my own selective lenses screened what footage was captured and what was not. This process was complicated by the need to keep all participants within view as we collectively moved from exhibit to exhibit. Because of the difficulty of this feat, the videotapes from the experiential sessions proved to be poor data resources. The experiential videotapes were therefore considered as an auxiliary source of information.

These videotapes were initially transcribed without audio. This allowed me to commit the actions of the participants into a descriptive text. A more thorough transcription of the video was then secured with the audio turned on. The running transcription of the video tapes was saved in an alternative font. In this way, the researcher-produced text was distinguishable from information directly secured from the participants.

A parallel procedure was followed with the photographs I had taken. Similar to the procedure used with the children's prints, I placed my photographs in sequential order. Each print was assigned a number and noted in a separate matrix. The number, photographer, and date of execution were also identified for each photograph. Instead of providing a list of subject matter and corresponding visual elements as I had done with the student-generated photos, I focused on the actions displayed by the participants recorded by my own camera. A statement of two or three sentences was written to describe the activity in each print. I recorded these statements in the font I had used for the videotapes. These notations were later integrated with comments from my field notes and transcription journal.

*The representational sessions.* The empirical materials from the representational sessions at the library were made accessible using the same procedures as those from the experiential sessions. The transcription of audio and video tapes followed the same protocols with one difference. During the representational sessions, the video camera was placed on a tripod in the craft room. The action in these videotapes represented a data source devoid of researcher bias.

Therefore, the videotapes from the experiential sessions were considered participant-generated materials instead of researcher-produced items. After collapsing



the video and audio transcripts into one account, descriptions of the children's creations were integrated into the texts. Finally, the experiential accounts were matched with the representational accounts to produce one cumulative, chronological, multi-modal account for each site visit.

### Phase II: Emergent Biliteracy Analysis: Tools, Processes, & Codes

Once the empirical materials were placed in an accessible format, two types of documents were available to analyze the data. The academic chronologies provided information regarding the children's emerging biliteracy proficiencies during the school year. The multi-modal accounts captured the primary participants' perezhivaniya and meaning-making processes during the experiential and representational sessions. The multi-modal accounts were then reviewed to examine the children's further biliteracy acquisition. This data was attached to the academic chronologies to construct a composite outline of each child's biliteracy development from December 2000 through August 2001.

As "a dynamic display of the main points making up the processes' history" (Vygotsky, 1978, p. 61), the composite biliteracy chronologies were then ready for analysis. The aim of this examination was to discover each child's individual microgenesis and causal dynamic basis for biliteracy acquisition. Therefore, this phase of the research analysis targeted the children's developmental processes. The goal was first accomplished by organizing each chronology into listening, speaking, reading, and writing units representing both Spanish and English.

The chronology was then read backwards and across these biliteracy units to identify the dialectical processes of incorporation, negation, and transformation. The emergence, practice, and appropriation of physical and psychological tools and processes was also tracked forwards and backwards to reveal leaps and revolutions in the children's development. Transactions between individual and social processes, as well as stable and evolving systems, were additionally monitored. In this manner, the origin and major transformations of each child's microgenesis were identified amidst a larger, dynamic account. Bracketed information was set aside for use in the presentation of the data.

### Phase III: Semiotic Analysis: From Signs to Themes

While the second phase of data analysis focused on emergent biliteracy, the third phase emphasized the content of the children's meaning-making processes. A semiotic analysis was conducted to identify interpretive themes from the children's perezhivaniya. This analysis was achieved by coding the biliteracy chronologies and multimodal accounts for motifs in verbal and visual signs. This phase of the research targeted word meanings and image meanings as units of analysis.

The analysis of the children's sociocultural-semiotic texts yielded a list of topics identifying the interests, concerns, and themes of the primary participants. These findings were placed in charts. In some cases, the motifs also revealed the children's conceptual foundations on various topics. Analyses from the emergent biliteracy chronologies were matched to these interpretive themes to identify transactive experiences in meaning-making from the children's perspectives. The motifs were found to correspond with the children's causal dynamic basis for biliteracy acquisition. These transactive episodes and their accompanying texts were bracketed and set aside for the presentation of the data.

#### Phase IV: Data Triangulation

In the fourth phase of the analysis, data from the biliteracy chronologies and list of semiotic themes were triangulated with two additional resources. By tabulating the number of times a motif, issue, or practice was referenced in my own field notes, I was able to confirm the significance of findings from the children's materials. However, because I did not wish to impose my own meaning onto *perezhivaniya* of the primary participants, I referred to the culminating books produced by the children at the end of the study. While data from these student-dictated books was already included in the biliteracy chronologies, multi-modal accounts, and lists of semiotic themes, the procedures involved in the construction of the texts uniquely qualified their multiple use as a means to establish rigor. Therefore, a brief description of the creation of the culminating books is sketched below.

##### *The focal children's culminating books.*

As previously mentioned, the primary participants and I each carried disposable cameras during the experiential sessions. The focal children were actively encouraged to take pictures of items they found meaningful, interesting, or enjoyable. At the start of the study, participants were told they would be able to keep copies of the photographs they recorded. I also explained we would create a book using photographs of their choice at the end of the summer. Photographs were taken at all the educational sites with the exception of one museum where we were restricted from doing so.

Each roll of film was processed to produce two sets of prints. While one group was put aside for my own research purposes, the second set was divided according to each brother-sister dyad. Each pile contained prints recorded by the focal child, their sibling, and myself. Approximately one hundred and fifty photographs were represented in each set.

During our second to last session at the library, each of the brother-sister dyads and I met separately. We spread the entire array of 150 pictures on the floor so each photograph was maximally visible. The siblings took turns selecting four to five photographs at a time for their own personal collection. Interestingly, there was not much overlap in preference of photos between the focal children and their sisters. Both video and audiotapes recorded the order in which the children selected their own group of seventy-five photographs.

At the start of our final session, each focal child was told we would be completing two projects. For the first project, the primary participant was asked to select one photograph from his collection of seventy-five photographs to give to his parents. These individual prints were then placed in a frame and gift-wrapped.

For the second project, each child was informed they could use no more than ten photographs from his personal collection to construct a book. I showed the participant pages where we would temporarily adhere their photographs and dictations until I could type up the final manuscript. This bookmaking process was familiar to the children from the prior school year.

As we began to work together, the primary participants were requested to think of a title for their book. I instructed the focal child to select their first photograph. After choosing among the array of pictures, the child then dictated verbal text for the selected image. I recorded what the child stated in writing on a small strip of paper. After composing the dictation in the language of the participant, I inquired if they would like to

translate the same text into their second language. In those instances where the child assented, the child was encouraged to independently articulate the dictation. After their initial attempt, I scaffolded the correct translation by echoing, stating, and writing the dictation in Spanish or English.

The photograph was then taped onto a page with the dictated sentence strip below it. This procedure was followed until we had composed at least ten pages or the child judged the text to be complete. The session ended with a final confirmation of the book's title. At a later date, I typed out the dictations, pasted the appropriate picture to the assigned pages, and compiled the mass of pages into a book using a reinforced folder. Each child was given a copy of their text while a second copy was produced for research purposes.

The children's selection of photographs and corresponding dictations proved to be an important, internal source for data triangulation and sophisticated rigor. Analyses of the image and word meanings confirmed findings from the second and third phases of data analysis. Both verbal and visual meanings were checked against the biliteracy chronologies, multi-modal accounts, and list of semiotic themes. These triangulating sources validated specific sociocultural and semiotic texts significant to the focal children's perezhivaniya, emergent biliteracy acquisition, and meaning-making processes.

### ***The Representation of Research Results***

The final objective of qualitative research is to produce context and content-specific interpretations from analyzed data. In keeping with the tenets of action research, narrative texts from this study were composed for educational practitioners and policy makers. Therefore, the final outcome of this investigation was the creation of highly detailed, semiotic portraits of the emergent biliteracy and meaning-making processes of the focal children.

#### *Construction of the Final Research Documents*

The work of Denzin (1989) and Stringer (1999) was used to guide the construction of these narrative accounts. Data from the general instructional outline, biliteracy chronologies, multi-modal accounts, and list of semiotic themes were unified into an empathetic record of the participants' perezhivaniya.

The first section sets the scene for the focal children's case accounts. A description of the children's city, barrio, and cultural institutions contextualizes the larger account as semiotic sites and sources of development. Data gleaned from the general instructional account informed this section of the narrative.

The semiotic portraits of the focal children's developmental processes are presented in the second and third sections of the research document. These documents consist of four components. Data gleaned from the lists of semiotic themes was used to introduce each child. Information derived from the general instructional and multi-modal accounts was utilized to relate a brief sociocultural history of the primary participants' families. Information accessed from the general instructional account and biliteracy chronologies informed a description of each child's induction into the formal education system and acquisition of emergent biliteracy proficiencies. The semiotic portraits conclude with a representative account of the primary participants' meaning-making processes, derived primarily from the multi-modal accounts and data triangulation. These semiotic portraits employ thick description of the voice and actions of the children

to “capture the meanings and experiences of interacting individuals” (Denzin, 1989, p. 22).

### *Languages of Presentation*

In contrast to quantitative research modes, naturalistic inquiry seeks to preserve and reflect the authentic voices and experiences of study participants. In conducting research on behalf of Spanish-speaking families, a dilemma arose regarding what languages should be used to present the emic voices of the focal children in the presentation of the data.

On one hand, research protocols require the authentic representation of verbal data. On the other hand, the intention of the study was to produce accounts that would proactively illuminate the meaning-making processes of emergent biliterates for a largely monolingual, English-speaking adult population. While the narratives could potentially be presented side by side in Spanish and English, I was concerned such a format would result in the audience “reading for translation”. The experience of reading extensive amounts of text in this manner holds the serious potential for raising and reinforcing code-based, deficit ideologies by an audience sorely in need of deconstructing their own “language barriers”.

Therefore, in order to honor both the primary participants and the original intention of the study, both Spanish and English texts are incorporated into the presentation of the data. Specific sections of text are presented in Spanish to highlight authentic language use. These segments are translated when their direct meaning is required for the English dominant reader.

In other instances, the translation of Spanish does not occur to retain and relate the integrity of the children’s’ *perezhivaniya*. In these cases, the surrounding text has been crafted to scaffold meaning for the non-Spanish literate. English-dominant readers may potentially transact with these aspects of the document in a manner similar to meaning-makers acquiring another or a second language. On a few occasions, both English and Spanish texts are successively noted, indicating the common practice of code-switching employed by study participants and members of the Gallegos community. The resulting narrative strikes a balance between verificative and instructional purposes for the final document. Toward this end, this paper now turns to the presentation of the research results.



