Communication in Context: A Case Study of Simon in the Classroom and the Fifth Dimension

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Preface

Throughout my work with the Fifth Dimension and this research study, there have been a number of people who have contributed to making these experiences possible.
First, I want to thank the children and the adults at Espedalsskolan for allowing me to be part of a unique experience. Without their support and involvement this study wouldn't have been possible. Always open to suggestions and willing to discuss with an open ear, a special thanks to Monica Nilsson and Berthel Sutter. A warm thanks to Mohamed Chaib and Anne-Katrin Svensson, whose support and advice were irreplaceable. Last, but certainly not least, a special thanks to the people at LCHC for their constant support and for introducing me to the Fifth Dimension-a project that is multi-faceted with regard to the processes of communication and learning.

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Introduction

Understanding why certain behaviors are demonstrated in certain environments is a phenomenon that has intrigued a consortium of researchers. Whether sociologists, psychologists, anthropologists, etc. it is apparent that there are still many unanswered questions. As researchers, if we are to discuss the environment as a contributing factor that may influence behavior, we must consider the factors that contribute to the development of one's surroundings. Moreover, examining the environment as a system where behavior is a reflection of an individuals conception of their role in that system, links aspects of behavior and communication together. In other words, by examining verbal and nonverbal behaviors and considering interaction and feedback as key factors that influence ones behavior, the field of interpersonal communication provides a deeper insight about the way conceptions of roles are formulated and displayed in specific contexts.

In this paper I discuss the possible role of social representations and interpersonal communication on a child's understanding of what is acceptable and unacceptable conduct in both his classroom and an afterschool program called the Fifth Dimension. The child, Simon, is the subject of my research because of the discrepancy between his behavior demonstrated in one context compared to the other. Considering that the findings of this research may be irrelevant if applied on a more universal level, I stress the point that this research should be viewed as a case study. Furthermore, this case study was conducted by analyzing a child's personal history in relation to two specific contexts of communication.

With regard to analysis, I discuss the components of his fourth grade classroom and an afterschool program, the Fifth Dimension, in connection to the model used in Activity Theory. However, uncovering the factors that may influence Simon's behavior is only part of the concern I have presented here. I am also exploring possible explanations regarding why certain behaviors are demonstrated depending on the system of activity. The subject in this study, Simon, is one component of the activity system. His interactions are crucial because they are used to uncover other parts of the environment around him. An environment that is given meaning by the people in the system. Specifically, I'm interested in Simon's possible definition of the classroom and the Fifth Dimension because his behavior suggests that his representation of each is different. To conclude, I stress the importance of looking beyond Simon's interactions and toward two activity systems to illustrate modes of communication that reinforce behavior.

Background

During 1996-1997, I had the opportunity to work at the Laboratory of Comparative Human Cognition in San Diego, California, with a project known as the Fifth Dimension.[1] As an after-school program, intended to promote play and learning, the concepts of the Fifth Dimension (5D) have been adapted to a variety of settings. Not only has this program been successful throughout California and other parts of the United States, but on an international level as well. In particular, the Fifth Dimension is currently running in Ronneby, Sweden at an elementary school called Espedalsskolan.

The Fifth Dimension in Espedalsskolan began as a result of contacts made between people from the University of Karlskrona/ Ronneby, a headmaster, and certain elementary school teachers who were interested in having a 5D site. After constructing artifacts for the Fifth Dimension and having the 3rd, 4th, 5th, and 6th grade teachers choose children to participate in the program; the Fifth Dimension began on January 28, 1998. Children who didn't have access to computers at home and/or were believed could benefit socially and academically through collaborative work with college students and other students were chosen as potential participants.

Previous to my work as site coordinator in the Fifth Dimension at Espedalsskolan, I had participated in a third grade class at the school once a week. My involvement with both the third grade class and the Fifth Dimension allowed me to work with children who I was familiar with in both activity systems. Meaning, I had the opportunity to work directly with children in both a classroom and a 5D site. In particular, the behavior of one ten-year-old boy, Simon*[2], seemed to dramatically change between the two kinds of environments. Running between other pupil's desks, talking when the teacher was explaining a lesson, fighting in the hallway, he appeared unfocused and undisciplined in the classroom. It appeared that he could only be calmed down when his personal assistant (another teacher who worked specifically with him everyday) was present. However, in the Fifth Dimension I noticed that he was concentrated on certain computer games and engaged with students and certain children without the presence of his assistant. His teachers who visited the Fifth Dimension and claimed that he acted differently in each situation confirmed my observations. One teacher

1.The 5th Dimension is an after school, computer orientated program for children between the ages of 7 to 13 years old. The development of what today is the Fifth Dimension was started in 1987 by Professor Michael Cole and Peg Griffin in San Diego, California. The theory behind the program is based on Lev Vygotsky's Zone of Proximal Development (Zoped). In the 5th Dimension, as well as in the Zoped, learning is promoted by collaboration with more advanced peers. The concepts of artifacts as mediational instruments are crucial in the development of the program.

expressed that he was "his best" in the 5D. Located meters away from one another, there were features of each activity system that influenced his performance in some way. As a result of these observations, I questioned what factors contributed to this change. Thus, the following research questions resulted.

Research Questions

It is important before defining my research questions to say that I do not claim that one environment is better than the other. Rather, my field of interest lies in the features of each activity system, similar or different, and how they pertain to one particular individual. By looking closely at the classroom and the Fifth Dimension as two separate systems and revealing their defining characteristics, my thesis will address the relationship between environment and behaviors from the perspective of activity theory, which is grounded in cultural-historical psychology. From my initial understanding, it appears that cultural-historical psychology emphasizes the way in which individuals interpret and understand their surroundings based primarily on social interactions. Furthermore, activity theory addresses the importance of mediating artifacts by using the activity system as a unit of analysis. Although both theories address issues related to my research questions, it should be emphasized that the importance of this study is grounded in the field of communication. As a result, I intend to reveal aspects of communication, including the formation of social representations of the classroom and the Fifth Dimension, which may have a direct impact on behavior. Using the triangular model adopted by a number of activity theorists as the basic unit of analysis to describe human activity, my aim is also examine Simon's social interactions in the context of two specific activity systems. Briefly stated, my main research questions revolve around focusing on the activity system in which Simon is the subject. Two activity systems that reveal factors that influence the relationship between communication and behavior.

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2. For reasons of confidentiality, all names have been changed

Introductory Considerations

It is evident that the discrepancy in one child's behavior has served as the basis for my research questions. Before discussing the reasons for this discrepancy or the methods employed to understand and deal with these incongruities, I stress that this study is not a critique of the school or the people working with Simon. Considering that Simon's actions are unlike the one's demonstrated by other children, it is understandable that a number of methods have been employed to provide an environment that is conducive to learning. Being unaware of laws, restrictions, or other psychological factors when working with a child like Simon, it is important that my conclusions are based solely on my own observations. In other words, looking for the people or the person to blame for these discrepancies is futile when considering that providing an environment that encourages learning and development has been the goal for the people involved in Simon's life.

The Fifth Dimension

Before describing the intricate details of the Fifth Dimension, I will provide a brief background to where the initial ideas for this project began. They include the role of Michael Cole and Peg Griffin as the key designers whose guiding theoretical principles were based on the work of Dewey and Vygotsky. In 1986, the focus of the project was on the social context of the use of technology, which would provide optimal conditions for children's learning and development (Cole & Nicolopoulou, 1993).

According to Cole, creating a "model culture" where the interplay of norms, rules, artifacts, and people (both children and adults) provided an optimal environment for development. One of the goals of the Fifth Dimension was to provide an afterschool activity that complemented "in-school activities" The overall goal was to provide an activity that furthered a greater proficiency in reading, writing, and computer literacy. In order to achieve this goal, they designed an after-school program targeting 6-14 year olds, which served as a foreground for computer-integrated activities that combined both the elements of "play" and education. Therefore, software and board games that were both educational and appealing to the children were key factors. Along with these concerns was the fact that the program needed to be accessible to all children regardless of social and economic constraints, which may have prevented children from having the opportunity to use computers in an environment other than the classroom. Therefore, this program is often looked upon as a supplement to classroom education, rather than as a substitute.

In addition, it is important to stress Vygotskys' and Deweys' belief that, whether in a classroom or afterschool program, an integral part of children's learning takes place in an environment that provides materials and activities which are both rich in content and appealing to children. Also vital to understanding the theoretical background in the Fifth Dimension, is the emphasis on Vygotsky's zone of proximal development. .

Vygotsky describes the concept as: "*It is the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Griffin, P., Cole, M., 1984).*

Moreover, the zoped is socially constructed, where collaboration is a key component in making this developmental process successful. It is evident that creating an environment that facilitated zopeds served as a fundamental component in the development of this activity. Although the structure of each Fifth Dimension site is unique and diverse, the emphasis on collaboration, interaction, and creating optimal conditions for zopeds is universal within the Fifth Dimension.

In order to understand the inter-workings of the Fifth Dimension it seems appropriate for one to adopt the perspective of a child participating in the Fifth Dimension for the first time. As a result, the following description will provide a general overview of the Fifth Dimension site. Because the intention of this chapter is to provide the reader with theoretical background relevant to my study, I present the Fifth Dimension site in Ronneby, Sweden as an illustration of the concepts previously mentioned (See Figure 1 for an overview of the Fifth Dimension and its' relation to the triangle).

Stepping into the Fifth Dimension, you will notice a dozen or more children 6-14 years, working side by side, alone, or with an adult on a range of activities. Although these activities primarily involve computer games, boardgames such as Yatzy, Chess, etc. are found on a bookshelf in one corner of the room. In the middle of the room, a large wooden table is a center for children to congregate. Here, they work with one another or their adult "partners" to draw, write letters, etc. Among the adults, (undergraduate and graduate students from the University), one adult will approach you, introduce himself/herself as a "site coordinator" and will offer to walk you through the 5D.

First, you will be introduced to the maze. As a miniature labyrinth, the maze contains a number of rooms, labeled one through twenty. In each of the rooms there are one or two tasks

that one should complete before moving to the next room. These tasks or adventures are found in a book labeled "Task Cards". These "taskcards" or "adventure guides" accompany each activity, providing the participant with a list of criteria which enables them to complete either the beginner, good or expert levels. Although, one has the option of moving to another room after completing the beginner level, completing the expert level provides the child with the opportunity to serve as a qualified mentor to another child in the same room. In combination with playing the game, the task card provides one with the obligation of writing to someone, looking up information in an encyclopedia, and most importantly sharing the knowledge with someone else. More importantly, one has the opportunity of creating ones own taskcard for a game. Meaning, in order for the child to feel that they play a significant role, it is important that they have a direct connection to the structure in the Fifth Dimension. Likewise, the maze and taskcards serve as examples of mediating artifacts in this activity system.

Progress of ones journey through the labyrinth is written down on a paper version of the larger maze. In this Fifth Dimension site, a small booklet is also given to each child. The booklet allows the child to both keep track of their place in the maze, but also to use as a means to record specifics of the game. Both the booklet, sometimes referred to as a "passport", and the paper maze are contained in individual folders. In order to keep ones place in the maze, each child chooses a miniature figurine (a car, boat, and person), that is labeled by the child and serves as a marker in the maze. Thus, keeping track of ones place in the game or following the maze, is one of the rules or procedures associated with the activity.

As a member of the Fifth Dimension, you will also be introduced to the concept of the Zarfen. The Zarfen represents the cyber space non-gender entity that acts as a benevolent overseer in the Fifth Dimension. The Zarfen lives in the Internet, writes to the children via e-mail and through letters. The Zarfen's home page reveals the Zarf's history in Ronneby, Sweden and encourages the children to write to him/her with questions concerning software, the Fifth Dimension, or on a variety of other non-Fifth Dimension related items. For example, recipes, hobbies, and information about favorite bands and movie stars is shared. As a result of the Zarfens involvement in the Fifth Dimension, task cards often include writing to the Zarf. It is important to note that the Zarfen is called different names depending on the site in which he/she resides. However, the role as a virtual patron to each site is constant.

Having the Zarfen as the overseer, the traditional roles of "teacher" and "student" or "adult" and "child" are not defined in the Fifth Dimension. Meaning, sometimes children's knowledge of a particular game will surpass their adult's counterparts. As a result, children are

encouraged to voice their opinions and work in a collaborative manner with their "older" companions. However, it is important that this interaction take place not only between the adults and children, but also among the children themselves. Thus, a constant flow of interaction occurs between adults and children, children and children, or children and the Zarf.

Moreover, the Zarfen is used as a mediating artifact to minimize power struggles among adults and children in the Fifth Dimension. In other words, this mythical entity oversees discussions regarding position in the maze, disagreements over games, task cards, or other issues that may require an authority figure to intervene. One of the reasons why this is crucial in the Fifth Dimension is the emphasis on creating a program where the distinction between “adult” and “child” is replaced by the single term, citizen.

The Fifth Dimension has often been referred to as a miniature society, compromising a multiple of ages, interests, and cultures. One important part of this society is the focus on equality of roles. In other words, the Zarfen's primary role in this make-believe society allows conflict and frustration to be shifted towards an imaginary entity rather than being elevated and solved by someone older. Therefore, the focus at the Fifth Dimension is not simply on completing as many rooms in the maze in the room, attaining expert on each game, or the computer software itself. Rather, it is making the boundary between play and learning less defined and broadening it to include both adults and children.

Theoretical Background

Defining mediation in relation to Cultural-Historical Activity Theory

In this section, I will discuss the concept of mediation, more specifically artifact-mediated action, as a fundamental part of cultural-historical activity theory. Looking at the development of this theory since the early twentieth century, it is apparant that the initial tools used to define the relationship between the individual and the environment have expanded or extended to incorporate "other" concerns. I use the term "other" to distinguish considerations or situations that were not accounted for by the forerunners of cultural-historical activity theory.

Recognized as one of the leading founders of the school of cultural-historical psychology, Lev Vygotsky formulated a completely new approach to the relationship between the individual and their environment. According to Vygotsky and his colleagues, in particular A.R Luria and A.N. Leont'ev, an individuals relationship with their surrounding is mediated

by tools, otherwise called artifacts. Thus, the individual never reacts directly to their environment. Instead, through mediating artifacts humans are both shaping and being shaped by these tools. It is evident that the notion of mediation is crucial when describing the historical development of behavior. Consequently, if we are to discuss mediation as a crucial factor in relation to behavior, then of equal importance in the process of development is the context that both the mediation and the conduct occur.

Early on, cultural-historical psychology presented a novel idea of using mediating artifacts to change the relationship between the subject and an object. Although the concept of tool mediation was not an original idea presented to Russian cultural-historical psychologists in the 1920's, Vygotsky and his colleagues made the concept of mediation central in the development of human activity (Cole, 1996. 104-111). By adding a mediating artifact, Vygotsky changed the linear formation of the relationship between the subject (individual) and the object (goal), as in the field of behaviorism that stresses a stimulus response reaction. Instead, he used a triangle to illustrate the factors that facilitated human interaction, mainly activities that were social in nature and determined by the specific norms and expectations of a culture. Luria, writing in 1928 about the role of tool mediation to cultural-historical psychology stated that in order to find the solution to a task, one uses certain tool, or artifacts, as a medium to accomplish the activity. In other words, " 'natural' ('unmediated') functions are those along the base of the triangel,'cultural' ('mediated') functions are those where interactions between subject and object are mediated by an auxiliary means, at the vertex of the triangle (Cole & Engeström, 1993). Furthermore, the distinction between collective activity and individual action, made by Alexei Leont'ev in the 1930s, became crucial to understanding human behavior. Moving from this individual approach toward human cognition and activity, Leont'ev incorporated the collective or the community into what he called an activity system. The term activity system was initially used as a basic unit of analysis for individual activity, but it was not until the 1970s that the definition expanded to include a larger focus on the interplay between individual and collective activities (Cole & Engeström, 1993).

Activity Theory

Initiated by influential Russian psychologists, Activity Theory, an approach to learning and development that is grounded in cultural-historical psychology, gained significant attention by researchers in the west. In particular, Engeström (1987) expanded the three dimensional figure to include the concepts of division of labor, rules, and community. The interaction between all the parts was described as follows:

" For activity theory, contexts are neither containers nor situationally created experimental spaces. Contexts are activity systems. An activity system integrates the subject, the object, and the instruments (material tools as well as signs and symbols) into a unified whole." (Engeström, 1993,67)

Illustrating the crucial componets that define an activity system, the triangle provides a basic unit of analysis for human activities. Furthermore, the following components of the triangle are defined by Engestrom (see Figure 1). The **subject** refers to the individual or the group whose point of view is accounted for in the analysis. The **object** refers to the ”raw material” at which the activity is directed. According to Leontiev, the object is not necessarily understood by all individuals, rather goals are associated with individuals and the object is carried out by individual actions (Nilsson, 1999, 14). Subsequently, the object is molded or transformed into **outcomes** with the help of physical and symbolic, external and internal tools, also referred to as **mediating instruments/artifacts**. In addition, the **community** includes a number of individuals or subgroups who share the same general object . The **division of labor** refers to both the division of tasks between the members of the community and to the vertical division of power or expertise. Finally the **rules** refer to the explicit and implicit regualtions, norms and conventions in the activity system (Engestrom, 1993).

In terms of addressing the topics of individual and collective activities, activity theory, according to Cole and Kaptelinin "*was developed as a psychological approach dealing almost exclusively with individual activities (Leontiev, 1978). However, there have been several attempts to extend this approach to cover activities of supra-individual entities, for instance, groups, organizations, and communities, as well (e.g. Engestrom, 1992). So far, there has been little overlap between studies of individual and collective activities from the point of view of Activity Theory."(Cole and Kaptelinin, 1997, 2)*

In other words, traditionally theoretical approaches to behavior in a social context have focused primarily on the individual. Considering that individuals bring personal experiences and understanding to new situations, it is understandable why their role would be vital in comprehending behavior. Furthermore, it would be virtually impossible to uncover the psychological reasons why certain behaviors are demonstrated in certain contexts without years of data and analysis. Although the importance of such processes are crucial, I stress the activity system as a counterpart to the development of behavior. Likewise, if the individual becomes the exclusive focus, we lose the importance of the interaction between both the individual and the activity system they are working in.

If we assume that behavior is both socially constructed and context specific, Vygotskys definition of the "general law of cultural development is both applicable and appropriate;

" 'The history of the development of signs brings us, however, to a far more general law that directs the development of behavior. Janet calls it the fundamental law in psychology. The essence of the law is that the child in the process of development begins to apply to himself the very same forms of behavior which others applied to him prior to that. The child himself acquires social forms of behavior and transposes those on to himself.'"
(Cole and Engeström, 1993, 6)

The idea that the child acquires social forms of behavior, brings me to the point of discerning or distinguishing appropriate from inappropriate behavior in an activity system. Vygotsky, in a further discussion on "the general law of cultural development" distinguished between two phases of cultural development. The appearance of the first occurred on a social plane, between people (interpsychological category) and the other occured on an individual psychological plane (intrapsychological category). However, Vygotsky pointed out the importance of internalization as a powerful transforming factor that could change the structure and function of the process of cultural development. (Cole, 1996, 110). In other words, there are two factors directing behavior in an activity system. On one hand, the individual component must be accounted for, but on the other hand it is the collective group that forms the group's identity.

The formation of group identity is illustrated by Cole and Kaptelinin's discussion on intersubjectivity. The "life cycle" of intersubjectivity or group identity involves three distinct phases. The first phase, "pre-intersubjectivity", occurs when activities are carried out alone and the goals of the individual outweigh the objectives of the collective. Intersubjectivity occurs when activities are coordinated among individuals, thus providing an atmosphere of collaboration and joint effort. "Post-intersubjectivity" can be viewed as the outcome of participating in a group. Perhaps it is the development of new skills or facts that the individual acquires and transfers to individual activities. Thus, the "life cycle" of intersubjectivity is complete.

In summary, to relate behavior and social context to the development of collective activities, it is important to discuss the relationship between the individual and the group. In short, Cole and Kaptelinin state:

"It is proposed that the mechanisms underlying the influence of social context on learning and development are mutual transformations between individual and collective activities...learning is determined by an interplay between individual and collective activities... While people enter collective activities for a number of personal reasons, such activities often develop according to their own logic, so that learners have to coordinate two different perspectives-the individual view and the collective view. In the process of such coordination learners can acquire new personal meanings, strategies, and skills." (Cole and Kaptelinin, 1997, 1).

Using Vygotsky's terminology, Cole and Kaptelinin are addressing the two-step process in aquiring a new abilitiy; both the inter and intra-psychological funtions. If we consider the acquisition of behavior as a new ability, it follows that the same processes that shape learning and activity, would also shape behavior (Cole and Kaptelinin, 1997, 1).

Consider Engeströms statement: *"Between the components of an activity system, continuous construction is going on. The human being not only uses instruments, they also renew and develop them, whether consiously or not. They not only obey rules, they also mold and reformulate them and so on" (Engeström, 1993, 67).*

Evidently, the idea of continuous construction is crucial in the development of activity systems. Construction that shapes and may transform the entire system. Not only is the system itself modified, but the meaning attached to certain components of the activity may be altered as well. Behavior demonstrated or shaped by one network of activity may not mean the same thing in another. Consequently, the meaning attached to certain components may not be relevant in another setting. The idea of exchanging information about the meaning of these components is crucial to the field of communication.

Interpersonal Communication

Thus far, I have discussed behavior in relation to activity theory. Here, I present interpersonal communication as a developmental process that influences the role one plays in a system of activity. First, consider the broad definition of communication according to the Penguin English Dictionary: " *1. a verbal or written message 2. (the use of a common system of symbols, signs, behaviour, etc for the) exchange of information 3. a system (e g of telephones) for communicating 4.techniques for the effective transmission of information, ideas, etc. " (Penguin Books, 1985, 164)*. From this definition it appears that the purpose of communication, without regard to the context, is to exchange and transmit information

through either words, signs, actions, etc. Consequently, this information may directly or indirectly affect the relationship between participants.

The importance of this relationship in the process of interpersonal communication is addressed by Reardon when he states*: "Viewing interpersonal communication as an activity in which the participants shape the outcome of each interaction has come to be known as the relational view of interpersonal communciation (see Watzlawick, Beavin, & Jackson, 1967, Millar & Rogers, 1976; Parks, 1985). From this perspective, the unit of analysis for communication research is the relationship rather than the individual source or receiver of a message. The focus is on what people do with, not to, each other during interaction." (Reardon, 1987, 17).*

In other words, focusing on people's interactions not only provides information about their relationship to one another, but also the way they communicate. The term interpersonal communication denotes a way of communicating that develops as people get to know each other on a more intimate level. Through what is said, how it is said, and the actions taken by an individual, we are able to infer this relationship. As a result, both nonverbal and verbal modes of communication are fundamental to interpersonal communication.

In Where Minds Meet, Reardon discusses the importance of personal feedback, interaction, and intrinsic and extrinsic rules on the developmental process. In this case, personal feedback refers to the communicator's responses, either verbal or nonverbal (body language)[3], towards someone else's actions. Thus, this relationship requires at least two people; an initiator and a respondent. As a result, examining interactions are crucial when discussing interpersonal communication.

Reardon describes interaction as *" communication in which the action of one person influences the actions of the other(s). When two people interact, the behavior of the second depends, to some extent, on the behavior of the first" (Reardon, 1987, 14)*. The connection between communication and behavior is given explicitly in this statement. From this comment, one can conclude that an individuals response to another person, either verbally or through body language, communicates what is appropriate and inappropriate conduct in each others presence.

[3] Reardon discusses the work of Ekman and Friesen in relation to the classification of nonverbal behaviors. The behaviors are divided into five types: emblems, illustrators, adaptors, regulators, and affect-displays. See page 42 in Where Minds Meet for more information.

Furthermore, Reardon discusses the role of rules as a guiding factor in determing interaction. Rules, in this case, are divided into intrinsic and extrinsic. The author differentiates intrinsic rules as " *standards of behavior developed by people to guide how they communicate with each other. They are peculiar to a particular relationship*. " Whereas, extrinsic rules are "*imposed on the relationship by other people or by the situation. They are often social constraints*.". For example, an intrinsic-relationship would occur between two friends who might avoid certain topics because they may disagree and want to avoid a confrontation. An extrinsic-relationship would probably occur between two acquaintances, who would more likely be influenced by social norms and role expectations because they wouldn't have the element of familiarity. In this case, personal information would less likely be exchanged when compared to the intrinsic-relationship (Reardon, 1987, 16). However, both types of relationships illustrate that interpersonal communication should be viewed as both an activity and a process of communication that occurs between people. In other words, if we focus solely on the cause-effect aspect of communication, we risk not including interaction as a vital part in the process of communciation. The importance of interaction to the process is reflected when Reardon says "*communication, whether interpersonal or mass, is much like a game in which the moves of each player affect the moves of the other players. They do not do something to each other, but rather with each other" (Reardon, 1987, 17).*

In summary, interpersonal communication is a result of interactions between participants in an activity. These actions are guided by a combination of verbal and nonberbal behaviors, feedback, and intrinsic and extrinsic rules.Whether we discuss interpersonal or other types, the overall purpose of communication is to express one anothers thoughts and feelings by exchanging information. Specifically, the relational view of interpersonal communication, which I have focused on, stresses the importance of interpersonal communication as an activity that is jointly constructed and negotiated by the participants in the activity.

Social Representations

Social representations, in relation to the process of communication, provide a possible explanation why certain environments or activity systems illicit or encourage certain behaviors. In Social Representations (Moscovici, 1984), various authors propose that social representations are created through interactions with others and are linked to both behavior and cognition. In addressing the same phenomenon involving the creation of social representations, Durkheim, an early sociologist, postulated that social representations are based on a collective awareness or a consensual universe where members are equal. Similiar to an activity system, where classification and categorization of objects or instruments are re-formulated and re-negotiated by the group, social representations bring meaning and

understanding to objects or images that may be foreign or abstract. Now, if we use an activity system as an object that is unfamiliar and foreign to an individual(a child in this case), what types of reasoning or instruments will the child use to make sense of the world around them?In other words, what types of behaviors would a child illicit in order to bring understanding to the situation presented to them?

I have briefly discussed the role of social representation in the creation of forming meaning in an activity system. To sum up, social representations highlight the perspective that understanding how to interact or behave in a situation is understood in relation to the conceptualized image of that system. If an individual or individuals are unsure about their relationship or role in a particular system, it follows that their behavior would not be congruent with others. Consequently, the social representation of the system would not be shared by the group, thus making it virtually impossible to bring understanding and create group identity. Perhaps, the overall effect would be a system of conflict. A system where, as Cole writes, ” *the relevant order of context will depend crucially upon the tool through which one interacts with the world, and these in turn depend upon one's goal and other constraints on action.” (Cole, 1997, 137).*

Discussing Activity Theory in the Context of Communication and Behavior

To sum up, I have briefly discussed activity theory, interpersonal communciation, and social representations as separate points of consideration. As factors that influence the development of meaning in systems of activity, I have inferred that there is a plausible relationship between the three. In explicit terms, if we emphasize the idea of mediation in activity theory, or as Kuuti states: ”A key idea in activity theory is the notion of mediation by artifacts (Kuutti 1991). Artifacts, broadly defined to include instruments, signs, language, and machines, mediate activity and are created by people to control their own behavior,” we must consider who, what, and through what proceesses these artifacts have been defined.

Activity theory, interpersonal communication, and the conception of social representations focus on the importance of social construction with regard to activity and the formation of meanings.. Simply stated, social representations are images/meanings that conventionalize objects by giving them form, understanding, shape, and bring standardization and categorization to them. They are called social representations because they are created through interactions with others and are linked to both behavior and cognition. Moreover, the relationship that develops between participants in the activity, not only directly influences their actions toward one another, but their relationship to the system itself. Thus, the way they

communicate or convey information about their role and their relationships is demonstrated through their interactions. Similarly, activity systems are recognized and shaped by the interactions that go on within them. As a result, an activity system can only be recognized and categorized when one examines the relationship between the activity itself in relation to the other parts. Thus, just as words take on certain meanings depending on the individuals who use them and the situation they are presented in, activity systems are also defined and shaped by both the individual and the context. Consider the phrase Fifth Dimension. To the physicist, the term may conjure up mathematical equations and formulas, to a parent the term may signify an afterschool computer program, to the child the word may simply imply a place to play games, and for the researcher, the undergraduate student, the word holds another meaning.

Considering the viewpoint of the child, it is reasonable to infer that his/her behavior would reflect the association the child has formed with the word. Playful, excited, loud, energetic, and active are words often used to describe a child's behavior in the Fifth Dimension. Now, contrast the child's perception of the word Fifth Dimension and the words used to describe his/her behavior. Are they similar to a researcher working in the field of child psychology or an undergraduate student studying child development? Supposing that their perceptions are different, can one assume that they don't share the same social representation of the system, although they work together to create the activity?

Cognitively, a social representation of an activity system implies that a common image has been shaped, in part, by the relationship the group shares with the activity. In other words, the idea that activities and meanings are formulated through communication and interaction involving a number of constituents is essential to understanding this relationship.
If one accepts that the relationship between the individual and the activity evolves through a process of communication and interaction between the constituents of the system, perhaps the resulting behavior of the individual follows the same pattern. One can assume that behavior of both the group and the individual would be a direct reflection of the representation one has towards the activity itself.

Assuming that past representations will influence present ones, just as the development of present activity systems may be influenced by the past, the phenomena of social representations can not occur in isolation. Furthermore, just as certain words are insignificant without being used in relationship to a specific context, particular activities are meaningless unless performed in specific contexts. The examples to illustrate both points are numerous, but I use an example from a recent trip to Italy.

Sitting at a restaurant in Rome, I heard an unfamiliar accent from the table adjacent to the door. When the waitress looked perplexed and asked, "What?" in Italian, the man proceeded to raise his voice louder. Perhaps believing that she would eventually understand him, his voice grew loud enough so that eventually all eyes were focused on the man. The interplay between the waitress and the foreigner went on for about two minutes until the man threw up his hands in frustration and left. Evidently his inability to communicate in this context determined his ultimate course of action.

Consequently, the expression of frustration or emotion illustrates the importance of the relationship between meaning and activity. Anyone who has traveled abroad can attest to the fact that certain customs, rituals, or activities in one context may or may not carry the same meaning in another. Arriving ten minutes, perhaps even half an hour, may be considered "fashionably late" in one place and terribly rude in the other. Using a fork and knife simulataneously while eating or eating with one's hands may be considered the proper way to eat in one context and primitive or odd in another. Discussing tribal rituals involving fertility rites or rites of passage in Africa and South America in cultural anthropology classes, I can attest to the number shocked, surprised, and perhaps horrified expressions that some of my classmates demonstrated while watching film footage. Although significant events in a variety of cultures, they were discussed as strange, disgusting, and primitive. Using the term primitive, which was widely used in the early twentieth century to describe many non-Western civilizations, seems extremly debatable today. As a result of people's understanding that what is foreign or strange in one context is perfectly normal in another, the practice of using the word is questionable. Just as social representations change with respect to time and the introduction of new concepts, activity systems are also influenced by these factors. With this in mind, it is safe to assume that behavior also changes in relation to both time and the introduction of new concepts/objects. Thus, behavior appears to be in direct relation to both phenomena.

Whether words or activities, both provide a system of social exchange. An exchange that is negotiated and transformed through the processes of communication and interaction. Therefore, one can not discuss the relationship of the individual to the activity unless we consider the context (the activity system) and the possibility of shared social representations.

Putting the Classroom and the Fifth Dimension in the Middle

The subheading of this section is based on the chapter entitled "Putting Culture in the Middle." Found in Cole's book, Cultural Psychology, this chapter explores aspects of culture that qualify them as activity systems. Among a number of topics, the author discusses culture in relation to "*the basic mediational triangle in which subject and object are seen not only as "directly" connected but simultaneously as "indirectly" connected through a medium constituted of artifacts(culture)" (Cole, 1997, 119.)*

Addressed in this manner, culture is discussed by Cole as an activity system where artifacts and artifact-mediated interactions serve as fundamental constinuents. Furthermore, artifact-mediated behavior and context function as integral units of culture.. The term culture invokes a number of meanings, depending on both the field of discipline and research. In any case, it is crucial that the terms culture and context are well defined in relation to this study.

Within the chapter, Cole relates culture to the creation of "*a garden, in this sense, brings together the notion of culture and that of context, providing a concrete model for thinking about culture and human development." (Cole, 1997, 144)* . Linking the "microworld" of the single plant to the "macroworld" or the external surroundings, Cole uses the metaphor to examine the relationship between the individual and the other constinuents of the subjects environment. The garden metaphor links us to an organic, ecological system in which all things being connected, constitute a garden. Without the right tools and a fertile environment, growth is impeded. Finding the right balance or the rigth conditions to stimulate development are the challenges presented to the farmer. In the realm of education, these concerns are addressed by a countless number of groups and individuals.

So far I have presented a general connection between context, behavior, and culture. Moving from the general to the specific, the following paragraphs will address the features of two activity systems; the classroom and an afterschool activity program called the Fifth Dimension. In discussing the main features of the classroom environment, I will examine them in relation to the four main qualities provided by Brown et.al. (Brown, A.L. et al., 1993, 199) under the heading "The ethos of the classroom." It is undeniable that the atmosphere of every classroom provides a unique environment. One in which behavior is just as specific as the context in which it is demonstrated. Keeping this in mind, I intend to provide a generalized representation of the classroom, or as Brown describes, " *a community of learners" (Brown, A.L. et.al., 1993,199).* First, Brown states that the search and discovery of

knowledge is shared. As a joint responsibility shared by all in the classroom, every community member is responsible for knowledge. Second, there is a mutual respect that is earned when the members participate in a shared and responsible way (i.e. turn taking). Third, group discussions and activities develop shared and negotiated meanings. In turn, the group creates a common identity. Finally, classrooms are places of ritual, where a shared representation of the surroundings creates a familiar and cohesive system. As a member of this community, supporting the common and shared identity of the group, one would expect that conduct unnegotiated by the group would appear unnatural and intolerable. Thus, an individual could not be considered an acting member, but one who functions outside the group. In this case, who or what would mediate this behavior or resolve the conflict?

In other words, if a classroom is seen as an activity system, distinguished by the interplay of mediating artifacts, participants, rules, community, division of labor, object, and outcome, it is foreseeable that a system of conflict may occur when the relationship between components is unclear. As a result, the system may collapse, the components of the system may be re-formulated, or new systems will be created to compensate for the old ones.
In an article entitled ”Social responsibility in the classroom: The presence of social representations in communication and interaction, the author states: "*One thing is certain, neither learning nor development take place in a social vacuum. The fact that the classroom, over a length of time, is inhabited by groups of children and one or more adults means that learning and instruction not only involve intellectual but also social process...This means not only are English and mathematics taught, but also skills such as social responsibility, conflict resolution, and leadership” (Hägglund, 1999, 2).* Consequently, social responsibility, conflict resolution, and leadership serve as qualities defined and maintained by the activity system itself. In this case, the classroom serves as a tool for learning and developing behavior that is conducive to maintaining social cohesion.

Thus far, I have presented a generalized picture of the classroom and the Fifth Dimension as examples of two unique activity systems. In addition, I have presented elements of cultural-historical theory that serve as the basis for Activity Theory. As a result, the components of the triangle, used as the basic unit of analysis for human activity, are discussed in relation to the features of these two contexts. Contexts, where the behavior of one child will be discussed in relation to the system of activity around him.

Research Design

Although the following sections address aspects of methodology and methods I used while conducting my research, I present here the overall design of the project. The research took place at an elementary school, Espedalsskolan, in Ronneby, Sweden. My fieldwork in the school began on October 6, 1997 when I attended a third grade class. Initially my fieldwork was driven by the sole desire to keep a written account of the events in order to provide a final summary at the end of the year. At the time, I was unaware of the subject for my current research. As a result, the observations recorded were not intentionally collected in relation to this thesis. However, these observations serve as a crucial method in my data collection.

I begin with an account of the events that have contributed to the data and design of this project. Over the course of eight months I attended a third grade class once every week for eight months. For the first half-hour, I sat in the back of the classroom, next to Simon, listening to the lessons given by the teacher. For the second half hour, I would stand in front of the classroom discussing a variety of topics in both Swedish and English, as well as reading from an English books, or going over previous English material that their teacher had given them. For example, after I had presented the children with a book describing myself in English, they collaborated in making an illustrated book about themselves in Swedish. On each page there was a description of each child, along with a list of their favorite foods, music groups, animals, etc. On one occasion, I brought the class my favorite Dr. Seuss book (a popular children's writer in America). The teacher coordinated reading the book with different assignments in which the children were quizzed on certain vocabulary words from the book. As my presence in the classroom became a regular Monday event, my familiarity with the children manifested itself in a close relationship. A relationship where many of the children would run up to me with open arms, sit on my lap while reading from books, or ask me to look over their homework. Further, many of these experiences were captured in the format of fieldnotes. Noting the general atmosphere, detailed interactions, and reflections, I was able to capture the classroom environment.

With the help of a number of people from the school, a Fifth Dimension opened in the computer room/ library of Espedalsskolan on January 28, 1998. Having the familiarity with the children of the third grade class proved effective when asking for volunteers to join. One particular child, Simon, who showed up continuously in my fieldnotes because he was at the forefront of many activities in the classroom, joined the Fifth Dimension. Through fieldnotes,

I was able to record events related to the Fifth Dimension activity, still without regard to a specific research question. By the end of June, I had written approximately fifty detailed accounts of interaction in both the Fifth Dimension and the third grade class at Espedalsskolan.

Every Friday from 2:00 until 3:30, fifteen to twenty children, ranging in ages 9- 12 would meet in the library for the Fifth Dimension. Along with three to four undergraduate students from the University in Ronneby, the children worked on a variety of tasks, ranging from playing computer games or boardgames or writing letters to the Zarfen to quizzing each other about an upcoming test. My presence in the school, in two separate environments, gave me the unique opportunity to see the children in the classroom in two different contexts. In particular, my focus shifted towards Simon. After my first visit to the class, the teacher and I discussed a number of items, in particular Simon. In the classroom, Simon had a personal assistant. A personal assistant that helped him with his academics, but more importantly tried to keep him focused on the activities in the class. Simons behavior in the class ranged from jumping up on top of his desk, running out of the room, talking and singing when the teacher spoke, to sitting quietly and getting angry at other students if they didn't quiet down when a certain lesson was being discussed.

Although Simon demonstrated some of the same behavior in the Fifth Dimension, it seemed to be on a lesser degree. The question, "Why was he exhibiting this behavior?" was asked and implied by his teacher and the headmaster when they visited the Fifth Dimension and commented that he almost seemed like a different child in this environment. Rather than trying to examine the psychological factors contributing to Simon's behavior, my interest remained in recording the activities of all the children. Although the appearance of a shift in behavior interested me, it wasn't the focus of my initial fieldwork. Also, at the same time that I was describing the Fifth Dimension surroundings, the undergraduates were also taking fieldnotes. These fieldnotes also were used as part of the data analyzed.

The next source of my data, interviews, were collected implicitly in relation to my research questions. As I stated previously, my presence in Espedalsskolan allowed me to develop a close relationship to both the environment and the children. Furthermore, my relationship with the teachers, the personal assistant, and the headmaster provided me with a network of people who had known Simon for a long period of time and could provide more insight into his behavior in the school. Starting in October 1998, I began a series of tape-recorded interviews with the headmaster and the vice headmaster. Although, I had spoken to them on numerous occasions about Simon in both contexts, this was the first documented

conversation. In addition, because Simon was starting the fourth grade, a new teacher and a new personal assistant were also being introduced. The interviews were conducted with the headmasters of the school, Simon's first through third grade teachers, and his present teacher and personal assistant. Both his third grade teacher and the headmasters had known him since he was three years old, while his new teacher and personal assistant had just met him. One concern in the interviews was that the focus would be centered on Simon's personal history, a more psychological perspective on the factors influencing his behavior. Therefore, it is important to state that I didn't' conduct these interviews with the intention of finding an answer to the question about why he behaves differently than the other children in his class, rather I wanted to establish that there was a pattern of behavior in the classroom. As a result, my goal was to have access to a number of episodes, which would support the belief that his behavior in the classroom was a frequent occurrence. Not only did the interviews serve as a way to establish a pattern of behavior, but they also would reveal any changes in his environment that may have influenced a shift in his behavior. Keep in mind, that I am specifically discussing the changes in his environment with relation to school. Therefore, it is my task to interpret these voices in order to develop an insight into the elements that construct his environment and possibly how they affect him.

On one hand, I will be using the fieldnotes in conjunction with the interviews to illustrate behavior that is demonstrated by Simon in two contexts, the Fifth Dimension and the classroom. By looking at fieldnotes from two different sources, over the course of a year, I will present two viewpoints of activities involving Simon. Specific examples will be taken from both these fieldnotes and interviews, which will be analyzed and discussed in subsequent sections. In order to relate the behavior to the activity system, I will use the components of the triangle (rules, community, division of labor, mediating artifacts, object, and outcome) as a basis for the analysis. In other words, the episodes presented will take into account these factors, as well as demonstrating Simon's behavior towards them. On the other hand, these fieldnotes and interviews will also be analyzed with the intention of uncovering possible social representations of the classroom and the Fifth Dimension. I will attempt to reveal the meaning of these environments by examing the factors that constitute Simon's classroom and the Fifth Dimension activity. This means, that I will be making inferences about his possible social representations of the classroom and the afterschool activity based on the constituents of these activity systems. In turn, the fieldnotes and interviews will serve to reveal his behavior in both contexts along with connecting his behavior to the relationship between himself and the activity. A relationship that may reveal the meaning he has attributed to each system of activity.

It is important to say that even though my participation in the Fifth Dimension continues, I am only analyzing the fieldnotes written from January 28, 1998 to May 27, 1998. In part, because they are in conjunction with the time I spent in the third grade class. However, subsequent fieldnotes, written by undergraduates from September 1998 to March 1999 will also be discussed, as well as the interviews taken from October 1998 to February 1999. As I stated before, establishing a pattern of behavior is crucial when discussing relevant factors in one's surroundings, specifically which components are similar or different in other systems of activity. Thus, having the familiarity in both contexts over a period of time provided me with the advantage of witnessing behavior that I could classify as "typical."

Methodology: Ethnography as a Methodology

"...ethnography is understood predominantly as a mode of data collection involving the development of close connections with subjects and situations being studied. While ethnographies would certainly imply all of these things, they also stand for something more. In this regard, it may be more useful to conceptualize ethnography as a methodology rather than a method that is linked to specific world views and approaches to understanding reality" (Prasad, 103).

Grounded in the field of anthropology, ethnography was developed as a technique to understand the relationship between human action within a cultural meaning of system. The phrase "cultural meaning of system" implies that systems are defined, otherwise given meaning, by the culture or society they represent. Refered to as the "trademark of cultural anthropology," by Schwartzman in Ethnography in Organizations, ethnography has functioned as an instrument in revealing the development of organizations, patterns of behavior, and components of diverse societies. In addition, Geertz's contributions to understanding social action and human meaning through ethnographies has emphasized the role of context and understanding behavior by looking at the meanings attached to certain artifacts, social practices, symbolic actions, and so on. Thick descriptions, a term coined by Geertz, signifys fieldwork rich in detail. As an instrumental tool, the descriptions are used to uncover the significance of certain practices or artifacts in a situation.

I use the term ethnography to encompass one type of qualitative fieldword. In-depth fieldwork, notably participant observation through interview and fieldnote analysis, constitute the importance of understanding culture from the participants perspective. Referring to ethnography as a methodolgy, Prasad states that there is *"a strong predilection for extended observation and rich detail in ethnography, it is always concerned with the process of cultural sense-making within any social situation" (Prasad, 103).* Clearly, Prasad is

addressing the way meaning is derived in a specific context; an issue that is crucial when discussing the topic of methodology.

Regarding the key components of ethnography as a methodology, I am focusing on the use of thick description, cultural context, immersion into the area of study, and the importance of microscopic interactions in a local context. Using thick descriptions, ethnographers attempt to understand the formulation of meaning. Meanings that may be attached to words, rituals, interactions, artifacts, etc. Moreover, meanings that may be shared or contested. The role that the researcher assumes is to uncover these meanings, whether there are multiple, complex, or shared interpretations. In other words, the emphasis is on presenting multiple realities. Realities shaped both by individual and group experiences.

In order to accurately understand these realities, a significant level of trust and familiarity must be established between the individuals being studied provides the researcher. As a result, the researcher is provided with a certain freedom. A freedom that allows the researcher to know who and what behaviors or activities are natural parts of the system. In other words, the individuals involved in an activity would most likely question the presence of an outside observer. Most likely the observer would need to ask a number of questions related to who was participating and what occurred in the activity, as well as not being able to acquire the same understanding as someone involved in the activity on a day to day basis. Therefore, the role of the participant researcher is one of interaction, collaboration, and openness toward being part of the system rather than being an observer.

The term thick description implies that describing events in a particular setting, events that encompass the complexities and varied actions of participants, provide a means of analysis. Although the events are subject to the interpretation of the ethnographer, they are grounded in the actions of the participant toward the system. Thus, there must be a balance between what can be seen and heard, and what conclusions can be drawn. In Geertz's words, ethnography is similiar to "*trying to read a manuscript-foreign, faded, full of ellipses, incoherences, suspicious emendations and tendentious commentaries, but written not in conventionalized graphs of sound but in transient examples of shaped behavior" (Prasad, 105).*

Central to ethnography is the significance of context. Clearly, the focus is on the social interactions occuring within a specific time and location. Primarly, practices that influence everyday actions. This means that ethnography is not concerned with making future predictions or universal truths about patterns of behavior. Rather, the concern is with the here and now. With the emphasis on the here and now, it is understandable why the idea of

immersion is crucial in this type of qualitative fieldwork. Getting close to ones subject is evident in the work accomplished by anthropologists in the early twentieth century. Spending months or years in foreign places, learning the language of the people being studied, illustrate the importance of immersing oneself in an unfamiliar environment. Immersion gives the ethnographer the advantage of directly interacting with a culture. But, in order to build relationships that reveal certain perspectives and understandings, a level of trust must be created and maintained. As a result, participant observation is a key component when using this type of methodology.In addition, the importance of specificity in ethnography makes the idea of grand theory meaningless in this context. In other words, ethnographers oppose universal postulates and theories because of the value they place on local interpretation and cultural context. Prasad writes, *"Further, it is only through our understanding of microscopic interactions that any attempt to comprehend macro-structures is at all possible" (Prasad, 109).*

Microscopic interactions: Two Previous Studies using ethnography as a methodology

The following case studies, carried out in two Fifth Dimesions in the United States, are examples of the kind of research that examines interactions on a microscopice level. I have chosen these two studies in order to provide support for my claim that analysing specific episodes of interaction, involving a specific group at a certatin time, reveals more than the interaction itself. These interactions also reveal the factors that influence and shape the activity.

A Microgenetic Study of Learning Activity in the Fifth Dimension

The first study entitled ”A Microgenetic Study of Learning Activity in the Fifth Dimension” was conducted at a Fifth Dimension site located in an elementary school in North Carolina. On one hand, the aim of the study was to "*provide qualitative evidence of the types of interaction contributing to learning" and "glimpse into the process of learning for the participants"* who were playing a computer game called Puzzle Tanks. On the other hand, *"the focus of this microgenetic study is to determine if Engestrom's model can be used to view learning on a moment by moment basis"(Simmons, 1997, 9 and 34).* Both videotaped episodes and fieldnotes from college students (interns) who had played Puzzle Tanks in the Fifth Dimension, were used as qualitative tools to collect data. In Simmons words: " *The interactions between students and interns were investigated in this activity system on the micro level. The game served as the unit of analysis" (Simmons, 1997, 11).* With one exception, the children chosen for this study were all at grade three or above and the students were undergraduates at Applachian State University from an Introduction to Teaching Class.

Briefly,in the game there are two different sized tanks that hold liquid (the kind of liquid is left up to the imagination). Also, there is a truck in the game that is used to "transport" the liquid. The goal of the game is for the participants to determine the correct amount of liquid that will fill the truck. The players are required to determine the combinations of liquid in the tanks when they are presented with a certain amount of liquid that the truck can hold. As a result, the players must use different strategies to move the liquid between tanks in order to find the correct combination.

In order to collect the data, a video camera was set up at one of the computers and left on for two sessions each day. Along with fieldnotes by the interns, the videotapes, and the observations recorded by Simmons each day, it is evident that this form of data collection was

primarly descriptive. Furthermore, the data was collected over four days, during two forty-five minute session on each day with four different groups of children and two groups of interns. Stressing the concepts of rules, goals, meditating artifacts, community, and division of labor, the data collected revealed the following: In terms of rules and procedures throughout the activity, they were mediated by the maze and adventure guides or task cards (Fifth Dimension "rules" include following the maze and the requirements of the task cards). Thus, the rules and procedures are inherent components of the mediating artifacts (the maze and taskcard). The study also concluded that the primary goals for the children playing the game were "*to have fun, to affiliate with one another, to obtain a t-shirt, to establish a place in the community" (Simmons, 1997, 33).* Moreover, the division of labor consisted of the child and the intern during each session.

The conclusions found above were the result of analyzing the overall environment of the FIfth Dimension. However, the study also focused on a particular dyad consisting of Sean (a second grader) and his intern Daniel to provide detailed evidence of learning strategies. Thus, focusing on the two individuals allowed the investagator to observe the factors influencing the interaction on a micro level.Without going into the details of the conclusions drawn from this study, the author described the episodes of the interaction between Daniel and Sean in relation to the components described in Engestroms activity system.

For example, "*Daniel says nothing but looks at the screen (primary tool) and Sean looks back at the screen (meditaing artifact, primary tool). His face opens into a smile as he sees the tanks and shouts 'No!'simultaneously using the mouse to point to the five unit tank (which is full) and says 'This!'...The work on this puzzle continues in figure 4.3. The dyad begins in a state of confirmation as Sean asks 'so now I empty it in the truck, right?' Daniel then moves the level of collaboration into coordination as he gives the direct instruction 'use your fingers.' " (Simmons, 1997, 37).* It appears that these type of learning strategies encourage learning by both participants and reveal the level of collaboration and cooperation found in the interaction.

To summarize Simmons findings, she states that the study uncovered episodes of social learning of a single dyad playing the computer game Puzzle Tanks. She used the concepts of cultural-historical activity theory and the expanded triangular model used by Engestrom to illustrate the complexity of learning strategies used by adults and children in the context of the Fifth Dimension. Also, Simmons reflects in her study on the value of recording episodes of play. She concludes that through play the child acquires knowledge about the culture around him/her. The culture being the Fifth Dimension in this case and the skill of

successfully playing a game a highly valued commodity in this environment. In other words, Simmons says,"*on the level of microgenesis, a study can reveal the moment that learning occurred and the complex interactions of primary, secondary, and tertiary tools; changes in mood states; levels of collaboration and the meaning of all these things as learning takes place" (Simmons, 1997, 47).* Reflecting on this last statement there seems to be two points that are stressed. It is obvious that the tangible items of artifacts, tools, and people involved are crucial to the establishment of an environment, but there are also the meanings that are learned and attached to these components that shape its' development .

Fantasies of Mystery or Masteries of Fantasy-Playing with CD-ROMS in a Fifth Dimension

The second study discussed in the paper ”Fantasies of Mystery or Masteries of Fantasy-Playing with CD-ROMs in a Fifth Dimension,” addresses the topic of children’s positions of power in the Fifth Dimension. The Fifth Dimension site is located in San Diego, California, at a Boys and Girls Club. Mediated by two CD-ROM games(Sim Town and Sim City 2000), two childrens interactions are explored in connection to the relationship they develop toward other members in this site. The author states: *”I look at the ways in which two kids create and occupy alternative spaces within the 5th Dimension and argue that these alternatives provide them opportunities to occupy positions of power.”* Furthermore, the occupation of power in the Fifth Dimension is of specific interest in this case because one of the children, a 12 year old girl named Freddi is ”disdained by her peers, and Adam a 10 year-old boy stigmatized by the label Attention Deficit Hyperactivity Disorder(ADHD), use their play with CD-ROMs in the 5th D as means to insert themselves within ”fantasies of mastery” (Gack, 1998, 1). In other words, this study focuses on the 5D as a place where the opportunities to express oneself may be different from the the roles they display outside the doors of the Fifth Dimension.

The methodology that guided the research was accomplished through video taped sessions at the site, informal conversations with the kids, and ethnographic fieldnotes. Thus, the author used one year of video data along with three years worth of undergraduate fieldnotes. The observations analyzed focused on the two children as they interacted while playing the CD-ROM games. Both children were chosen because they are considered ”experts” at playing the games, but in general are disliked by the other children (evident by the name ”dog face” the kids call Freddi and the fact that Adam hides in the 5D to escape ridicule about being overweight). The paper also describes some of the implications that being labelled ADHD causes Adam, such as being prescribed a drug and following a behavior modification program at home and school. With regard to Freddi the author describes her in the following words,

”Freddi, who appears pretty and smart to adults, is nonetheless unpopular at the Boys and Girls Club. She acts snobbish and critical of others, the other kids respond by insulting her and calling her ”dog face” or ”Freddi the dog” (Gack, 1998, 7). Despite these labels or prejudices, in the Fifth Dimension both kids and adults acknowledge Adam’s and Freddi’s expertise by asking them for help. Moreover, in the 5D context both children are successful, although beyond the boundary of the Fifth Dimension they are targets for ridicule.

With regard to methodology, the author has selected parts of fieldnotes and video clips to illustrate Freddi and Adam’s display of ”power” in the Fifth Dimension. By power, I refer to Freddi’s ability ”*to locate herself (and her family) within the game of Sim Town, she articulatated a kind of control over her position in the world. She could not control whether she was dropped off at the 5th D or not, but she could exercise control over her family avatars(iconic representations) in Sim Town” (Gack, 1998, 17).* For Adam, his power is demonstrated when ”*kids went to him for help (particularly with Sim City) and Adam chose when, where and to whom he would disseminate knowledge; this gave him access to a kind of power and control…In exercising power over game worlds, Adam developed expertise that had the effect of giving him more mastery over his position in social space” (Gack, 1998, 19).*

Both studies provide detailed interactions that take into account artifacts and surroundings that influence the behavior of children and adults. As microscopic interactions, the use of qualititative data, such as fieldnotes, interviews, and video analysis are useful tools when presenting descriptive rather than statistical kinds of evidence. In particular, the first study was presented in order to demonstrate the way activity theory, specifically the triangular model, can be used to discuss activity on a small scale. The aim of the second study was to show that the boundary separating the Fifth Dimension from other activities is not solely physical. In other words, it may be true that the Fifth Dimension is separated by a wall, but there appears to be another type of boundary. Perhaps, a boundary separating ones position or role inside and outside the confines of this activity system. A role that seems to be negotiated by both the people inside and outside the activity and other components of the system (i.e. computer games). Although a comparision of Adam and Freddi’s behavior inside and outside the Fifth Dimension has not been thoroughly investigated, it is evident that their roles are different, to some extent, in each environment. Likewise, their representation of the Fifth Dimension may be significantly different when compared to a child who is equally successful in both contexts. However, this is pure speculation and a question that could only be answered with subsequent research.

The Process of Evaluation

In the previous section, I discussed the relevance of ethnography to my particular area of research. I briefly described the role of participant observation as a method used to convey accurate descriptions in particular contexts. More specifically, thick descriptions, cultural context, immersion into the area of study, and the importance of microscopic interactions in a local context were mentioned as both tools and factors considered by ethnographies. In the following sections, I will outline my two methods for collecting data: participant observation and unstructured interviews.

Collecting the richest possible data is a key element when taking a naturalistic, qualitative approach to a subject. By naturalistic, I refer to a setting that hasn't been developed specifically to measure one particular behavior. Simply, an environment that has been developed without the intention to illicit or observe certain responses to certain stimuli. As a result, the goal of participant observation is to describe a variety of interactions in order to present a clear picture of the surroundings. Therefore, direct contact with one's subject is crucial when accurately describing and more importantly, understanding the components of an activity. In the book, Analyzing Social Settings, Lofland refers to participant observation as "the process in which an investigator establishes and sustains a many-sided and relatively long term relationship with a human association in its natural setting." (Lofland, 1995, 18).

Whether this means looking, listening, watching, or asking, the researcher must be prepared to interact directly with the surroundings. In order to convey these observations, fieldnotes and intensive interviewing are used to provide detailed accounts of both behavior and interpretations of behavior. Who provides these interpretations is relative to who is affected or witness to certain activities. In order to understand whether Simon's behavior was contingent on simply the people in his environment, I have chosen to interview people who have had contact with Simon for both a long period of time (more than 3 years) and a short period of time (less than a year). Perhaps his familiarity with his surroundings and the people he interacted with would directly affect the way he communicated in these contexts. Likewise, discovering whether or not his behavior changed or stayed the same in relation to the people he interacted is crucial in the process of evaluating both his behavior and the way he expresses himself

Introduction to Findings

Before presenting my findings, I will provide a brief outline of the way in which it is organized and the criteria I used to analyze the data. Because I am discussing the behavior of a child in two contexts, in order to reveal the factors that distinguish these activity systems, the data is presented in a compare/contrast form. In the first section I will discuss Simon's behavior in the classroom, as revealed by the adults that have interacted with him in this context. Rather than preparing a list of questions, the interviews were conducted in an informal, unstructured way. As a result, the adults interactions with Simon were told in a story-like presentation, as episodes of behavior. After presenting these descriptions, I will compare them to episodes involving Simon in the Fifth Dimension, which has been recorded primarly through fieldnote descriptions. The aim of presenting these episodes is to provide the reader with a clear picture of Simons behavior, as well as connecting their observations to features of each activity system. In other words, I have categorized both the conversations recorded and the fieldnotes according to the labels; **behavior toward system, rules and procedures, community of practice, and mediating artifacts.** Not only have these methods provided a good representation of Simon's behavior in both environments, but they reveal certain components of the triangular model used in Activity Theory. Furthermore, they illustrate patterns of communication in two contexts.

Data Presented

Even though each interview was conducted on three separate occasions, I present the stories told by both headmasters (Carrie and Tom), Simons first through third grade teacher (Lela), and his present teacher and personal assistant (Kim and Mike) in a discussion forum. As a forum it may appear that all five individuals were present at the same time, but they were conducted in intervals of two months. Also, I have selected certain portions of the intervals depending on what is relevant with regard to the labels listed above.

Foremost, both headmasters, as well as his first through third grade teacher, have personally known Simon for 3 ½ years. However their knowledge of his family and his reputation for having a personal assistant, from the time he was three years old, preceded his enrollment in Espedalsskolan. As a new teacher at the school, his present teacher has known Simon since September 1998. Although she was informed that he had a personal assistant, she says that she was not aware of the extent of his behavior and "*had no idea what to do about it*." His current personal assistant has been working in the classroom since October 1998. Athough he was initially employed to work as an assistant for the entire fourth grade class his focus shifted toward Simon after a week. Kim says," *At first I though he was only going to be with Simon, but when he came, they (Carrie and Tom) told me that he would be with the whole class…But he (Mike) started to concentrate on Simon and that's better.*"

Simons Behavior toward the System (the classroom and the Fifth Dimension)

Unpredictable, "upside down," and "he's two personalities" are adjectives and phrases used to describe Simon's behavior at school. Tom says, "*When you work with him you never know what will happen because one day he can be very very good, he can be calm, he can concentrate, he sits by himself, but that's not so usual, but it happens. And some day for no reasons as all, as I know, he's upside down…he's just running around, talking, screaming…" Carrie and Tom describe several episodes in which Simon is running through the hallways, screaming, and spitting to stories in which he kisses Carrie on the cheek, is friendly and sweet, or helps solve a crime at the school.*

For example, Carrie tells me a story about a fire in the schoolyard. Afterwards,Simon came to Carrie's office with some kindling from the fire and told her that he had found proof that the fire wasn't an accident. He asked her what he should do with it and she had him to go to "fritids (childcare center downstairs from the classrooms)" and put it into a zip lock bag. After

coming back with the bag he asked her to take care of it. Later that day, he came to her with a lighter and claimed that it was also proof. He wanted the police to have it.

In contrast to this, Carrie describes the following episode:"*One day he (Simon) ran in the room here, the personal room, crawling around the sofa, people running after him…oh you have to see that because that's Simon, laughing (she giggles slightly)… he likes that. He runs away and wants us to run after him." Tom adds. "It's a game."* Both Tom and Carrie continue to reveal stories about finding Simon hiding after he has run out of his classroom. Lela sums up this display of behavior when she comments: "*He's two personalities*." She describes times when he sits on her knee while she is reading a book or runs from the back of the classroom to give her a kiss on the cheek. She contrasts these stories with episodes in which he jumps on top of the desks, makes monkey calls, throws pencils and papers at other students, and rips up his homework when he was displeased with his performance on an assignment.

In addition, Kim comments: "*It's difficult, you never know when he's going to be like this, jumping and he's on the floor and he's talking and singing, can happen anytime, you are never prepared for what to do."*

In comparison to Simon's behavior in the Fifth Dimension, there have been episodes which demonstrate that his behavior in this context is not always congruent with his behavior outside the doors of the Fifth Dimension. The following fieldnote, written by a doctoral student, was written after visiting the Fifth Dimension where she worked with Simon and his cousin Mark on a computer game: *One of the undergraduates asked Mark why he had scratches in his face. Simon screamed from the other part of the room that don't tell…Mark said something silently about a fight." A while later in the interaction the fieldnote continues:" Now and then Mark had been playing around with the other computer in the room. He had asked me about a program I had not seen before. Now he said I want to work with Kid pix. Simon at his machine said, "yea, I also want Kidpix ". He could not find it on his machine and went over to Mark. He asked me if pix is spelt with a x and I said yes. After having explored Marks computer he asserted that there were no kidpix. On the window next to them there were printed hands in different colors which represented chickens (Easter decorations). They started to compare their hands with the hands on the window. (May 7, 1998, MN).*

Although this is one episode describing Simon's behavior, which infers that there is a discrepancy in his interactions with another child, the following sections will illustrate this point further.

Rules and Procedures

Out of each hour and a half session, most of the comments related to the topic of rules and procedures in the classroom. Tom comments:" *He has no rules. He doesn't want to follow the rules. You try to talk to him, he doesn't care about you. Not at all. He's thinking I can do wahatever I want to do because I've always done that.*" Tom continues later on in the conversation," *If he wants to do it, he will. He doesn't think of the other persons in the room. He doesn't think he must follow those rules…when we work in the class with something he wants to do there's no problem, if we're painting a picture there's no problem or playing a game or perhaps writing a paper, but when you're in a big group you can't always do what you want…everything must be as he wants."*

With regard to rules, Lela states: " *He wanted to have very strict rules and he wanted everyone to follow the rules and if they didn't he was the first to say he didn't and she didn't, but he couldn't see himself, that he had done the wrong thing…He wanted strict order, but couldn't see himself."* Simon's focus on himself is evident when Lela retells an incident in which "*I was going to tell a story, he knew the point already when I started, so his thoughts are quick and good because he could say things that I should say in a few minutes because I took it slowly because I wanted everyone to understand…"* She continues by saying that he often thinks about himself and doesn't follow the rules of holding up his hand or not interrupting her when she speaks.

Perhaps the rules of raising ones hand, not speaking while the teacher is talking, not running from the classroom when something is labeled boring by the kids, are unique to a particular classroom. However, the issue of when school begins and finishes appear to be a common procedure. This is a procedure that is not always followed by Simon according to all five interviewees. Kim and Mike describe the process of having to call Simon's mother often because school starts at 8:15 and he comes to school at 9:00. They comment that almost every morning he's late, even after they have called home more than a dozen times. Although they attribute his inability to come to school on time as part of his mother's responsibility, I am demonstrating that coming on time to school is a rule that is not always followed by Simon. As a result, a new procedure is carried out. A procedure that doesn't apply to the other children to the same extent that it does to Simon. In other words, when asked if the other

children are called if they are late, both his past and present teachers stated that this would be an unusual occurrence for them.

One of the implicit rules in the Fifth Dimension follows that when there are two children who want the same game they must learn to negotiate. The maze is often described as one of the ways the process of successful negotiation (without fighting) can occur. However, because the maze is not always followed by the children at Espedalsskolan, the task of a successful negotiation is determined by the members of the Fifth Dimension. I have highlighted the point where the rule is enforced by the 5D community:

When I came back a lot of children, approximately 7 to 8, were gathered around Simon when he was playing "his" new game. Marcus sat next to him. After a while Mark said, 'I wonder if I can play a game.' I said 'why don't you play with Simon?' Mark said 'he doesn't let me.' I asked the crowd if the game could only be played by one at the time and they said yes. I said, 'why not take turns?' Somebody came up with the suggestion that they could change player when they "die". I said to Simon, who was absorbed by the game, that "that is ok Simon Mark can play when you die. He died after a little while but did not want to admit it. ***The crowed screamed noooo as one voice when Simon wanted to continue. Then he said, 'ok then I want to save it****.' I said that's ok, go ahead. After he had saved I asked him to change place with Mark and so he did. He took the headphones and put them on Mark's head and informed him how to play the game! Simon helped and guided Mark through the game." Later in the reflective portion of the fieldnote, the researcher states: " think of Simon's behavior. He has learned a way to dominate interactions and how to manipulate both kids and adults, which is not good for him. But notice his helpfulness towards his cousin! In what way can the artifacts influence and change this? He was controlling the situation with his implicitly threat with aggression. When I took the command the other children could and did express their wishes. The whole situation changed. Simon did not take a fight. The compact support for my actions was probably obvious to him. I never felt I violated S, but I provoked a contradiction in the group that did not result in a conflict but in participation and cooperation. (April 23, MN)*

From this reflection, it is apparent that all four components, behavior toward the system, rules and procedures, community, and mediating artifacts are demonstrated in this situation. Simon's behavior is not only regulated by the members of the Fifth Dimension community, but he is learning that certain behavior is not tolerated as a part of the activity. Furthermore, the game serves as a tool of collaboration, although it initially begins as a source of argument. Perhaps one may argue that Simon's compliance with the communities wishes for him to relinquish the game is an act of fear. Being afraid that the other children may force him to

give up the game, may compel him to stop playing. However, consider that Simon does not physically act out to provoke his counterparts and he doesn't leave the room in defiance. Rather, he slips the headphones over one child's ears and helps him maneuver successfully in the game.

The issue of compromise is another crucial component that allows for the successful development of collaboration and communication the in the Fifth Dimension. The following fieldnote serves as an illustration:

"*As I stepped into the 5D room, I noticed that there were 2 boys from the 5D group that were using the computer that Simon had requested. Simon looked at me and I said,"Okay, we'll make a compromise." "Compromise?" Simon said. As I approached the two boys, I asked them how far along they were in the game. After they told me that they had just started, I explained that we needed to share the time on the computer. Simon smiled and said,"Compromise." Plus, I had brought a new game that I suggested they could try while they waited. The two older boys smiled, took the CD, and I said, "How about if Simon uses the computer until 3:00 and then you can have it until 4:00." "Okay, dokay, " they said… At 3:00, the other two boys (waiting for their turn on the computer) appeared behind Simon and told him that it was their turn. I almost expected a conflict to arise, but was presently surprised, when Simon said, "Okay," finished the last room, and asked the boys which computer they were on. THe other two boys sat down and started up another game of Theme Hospital. Meanwhile, I suggested that Simon and I write down his progress in his passport, after reading the taskcard."(April 1, 1998, AE)*

Similar to other communities where communication, collaboration, and interaction are valued, fighting is not a conducive method to achieve one's goal in the Fifth Dimension. Although this rule may not always be followed, the consequences of such actions must be made clear. The following episode illustrates this point: *Lela asked me how last week went when I had both boys (Simon and Mark) at 5D.(she warned me last week that they were cousins and often had to be separated because they fought in class). I explained that we had some difficulties at first, but that it had been taken care of when they realized that one of them might have to leave it got out of control. Lela told me that she would politely warn Simon again. After telling Simon not to hit Mark, Simon answered in English, "I know, but it was his fault. I won't hit him anymore." Later, when Simon and Mark arrive at the Fifth Dimension, the following occurs: "two students sat between Mark and Simon who were starting to argue about a game. Both of them looked back at me, when the arguing started, and I just smiled and said,*

"remember what happens if you guys fight." The arguing ceased and the boys began playing the same game, but on separate computers. (March 23, 1998, AE)

One respone that has surfaced in the Fifth Dimension when a new activity is introduced is either a negative or positive one. Often the children come to the Fifth Dimension with a preconceived idea of a game or task that they have been waiting to do. However, sometimes the procedures of the Fifth Dimension are not always congruent with those wishes. Take the following episode as an example: *At 3:00, Lenard (site coordinator) announced that it was time for the groups to find their stations and then we would all work together on creating a taskcard for the game. As the groups sat around in circles, Simon walked over and said,"I don't want to do this." "But, don't you want to be able to write your own special guide for the game." Simon smiled and said, "What?" I showed him an old taskcard and said,"See, you and Martin (another boy) are in charge of writing one of these cards with Lenard. Then, everyone who reads it will do these certain levels and they'll know how to play because you wrote down how to do it." Simon. smiled, walked over to Martin and they both went over to a computer with a piece of paper and pen. As Martin started the game, Simon began writing down what he was doing. I walked over to them and Simon said, "See, I'm making a guide." "That's great," I said.(Sept. 30, 1998, AE).*

From these observation, it is apparent that both the classroom and the Fifth Dimension have both implicit and explicit rules and procedures. Depending on the level of collaboration, interaction, and communication that each person in the activity wants to achieve, these rules are either strictly or loosely followed. In other words, rules and procedures are one component of an activity system, but they must be viewed in relation to the other components, specifically the community and certain artifacts and methods that mediate the activity, if these rules are successfully followed.

Simon's Relationship to the Classroom and Fifth Dimension Community

While recalling stories about Simon in the classroom, Tom described the topic of his behavior toward the other children in the following words. " *He hasn't got any friends. They're tired of him. When he plays with someone he can say, 'You're stupid.' He's very angry and screaming." Tom continues later in the conversation: "There's a problem when he's playing with other kids because he doesn't follow the rules. When they have made their own rules in a game, he doesn't follow them. The others are tired of him and say 'go away we don't want to play with you. You must follow the rules.' 'Why,' he says, 'I have my own rules.*'" However, both Tom and Carrie discuss the fact that he has learned certain "social rules." For example, they discuss an episode where he ripped up an assignment. Dissatisfied with his work, he destroyed it. Even though he may take the other children' books or pens to tease them, he never destroys or breaks their property. Both Tom and Carrie seem surprised and comment that they don't know where he has learned this kind of social rule.

Lela discusses Simon's relationship to the other students by saying that at times they are afraid of him because of his erratic behavior. She says: "*he likes to show that he's good…when he saw that he wasn't making the same results as the other kids he gets angry at himself.*" It is this anger that acts at a catalyst in pushing Simon to rip up his assignment or taunt the other children by taking their assignments. But, there are also times when Simon's antics in the classroom result in a room full of laughter by both the adults and children.

The notion that Simon "likes to show that he's good" is illustrated in Simon's interaction in the Fifth Dimension:

I had also brought a polaroid camera to take pictures of the kids for the place markers in the maze. Simon entered the room, saw the camera, and the pictures of the other children. He asked if he could take a picture of the kids who weren't already in the maze and also one of himself. Two boys and two girls from downstairs ('afterschool care') wandered in and Simon and another girl began explaining the maze to them while picking up the place markers and thumbing through the task cards.(February 27, 1998, Annie). The fieldnote continues at this point to describe Simon's role in the Fifth Dimension as a guide for his less informed counterparts. Although this is one illustration of Simon's participation in the 5D community, this is a role that Simon has often assumed on other occasions.

Although Kim and Mike agreed that Simon often does what he wishes, regardless of the concerns of his peers, they agree there is one child in the classroom who influences his behavior. Kim and Mike refer to Matthew as Simon's idol. Matthew's influence on Simon is

evident in the following story told by Kim:" *We wanted Simon to pick them up (pieces of paper that he had ripped up from a homework assignment) and say I'm sorry, but he didn't want to do it. Then Matthew told him to pick them up and say I'm sorry. Simon did it, but when I told him and the other kids told him he didn't want to do it. Matthew is his idol."*

The concept of an idol was not defined by Simon's teacher, but I assume in this case that it is someone he looks up to and values his opinion. Perhaps Matthew possesses a quality that Simon wishes he had, but I stress that this is only speculation. However, the concept of an idol, of someone Simon looks up to seems important with regard to self confidence. In other words, this episode illustrates that Simon values Matthew's approval of his actions. Possibly this approval would increase his self confidence because he equates Matthew's approval with someone well done. The issue of self confidence and peer interaction also seems apparent in the Fifth Dimension. The following fieldnote illustrates this point:

Meanwhile, Simon, one of the 5D'ers entered the room and said,"Sorry I'm late Annie, let the party begin!" Simon and I laughed and then he told me that he hadn't made a folder and wanted to do so. Simon told me that he wanted to start in the room with Ignition, after turning around and seeing some other boys playing the game. Standing next to us was another boy in Simons 4th grade class who also wanted to play the car game. Tim asked Simon if they could play the game together. "Okay," Simon said. After the the pairs of boys had situated themselves in front of the computer, Simon and Tim trying to load the game, but it kept crashing, (October 23, 1998, AE)This interaction displays the highly valued commodity of game knowledge in the Fifth Dimension. A child who is skilled at playing a game is often asked for advice or referred to as an "expert" by the other children (See the section on Microscopic Interactions for a more thorough explanation). Therefore, there is usually constant movement between children sitting on different sides of the room in the Fifth Dimension. The movement reflects the fact that whether it is a computer game, board game, or another task, knowledge of these games is a highly respected attribute of the 5D..

Some call them "Carrots," I call them Mediating Artifacts

It is evident that over that last six years, Simon's behavior has been a continuous point of discussion for people involved in his education. Although the interviewees agree that his behavior has fluctuated, nevertheless it has remained a source of frustration and has resulted in a number of efforts to understand and stabilize his mood swings. In Lela's words: " *We learned how to treat him. It was hard for Erica (Simon's personal assistant in the first through third grade) and me. We talked to a psychologist every other week, read books about children like Simon, made up special rules for him…"* Their consultation with a psychologist was discussed by all five interviewees. Although portions of the interviews addressed the issue of Simon's family background and specific psychological issues, this is not relevant to my specific research. Undoubtedly these findings are vital to the individual, but I stress that I am only concerned with the immediate factors in his environment.

A technique, suggested by the psychologist to help control Simon' behavior, was described by all five adults as "holding." Holding is the term used to describe the action of physically constraining Simon when he starts to run away. With regard to this method, Carrie comments: "*When he gets calm after 15, 20 minutes she (the assistant) can speak to him and that's very good for Simon."* All five people interviewed agree that Simon likes to have contact with another person, although he may initially bite, scratch, and curse at them.

Moreover, one of the comments that was repeated througout the conversations is summarized by Tom's statement: " *If he wants to do it, he will.*" My following observations of Simon in the classroom provide an illustration of this comment:

From the onset, the children seemed restless, especially as Simon ran around the room singing lyrics from some new MTV video. I suggested that he sit in the front of the classroom as I read the book. He ran to the front, jumped on my lap, and after a couple minutes he decided to sit on the floor in front of me. From that point on, Simon didn't say one word, but seemed almost entranced by the book. When I stopped and asked the children if they understood and could summarize what had happened, Simon was the first to answer. "Keep reading," he'd say. At 2:00 Lena made the announcement that it was time to clean things up, and we would finish the book next week. Simon walked up, sat on my lap, and proudly said, "I'm coming to the Fifth Dimension today. Don't worry, I won't hit Marcus." Then he smiled and ran out of the room. (March 30, 1998 AE).

One thing that was mentioned repeatedly as a crucial factor in helping to control Simon's behavior was the critical role of a personal assistant. So prominent was this topic in each of the interviews, that I have selected the following quotes to illustrate this point.

Tom remarks: " *We couldn't manage without him (Mike), we must have one personal assistant to take care of him or else he would run away out of school.*" Lela comments on the necessity of an assistant when she states: "*..as a teacher I think it's impossible to have him in a class without an assistant. It's very difficult to have a child like that if you want to keep the class calm and keep them working without breaks…*" With regard to following classroom procedures and rules Tom says, " *We're trying to get Simon to follow the rules. We want him to follow them, but when he's not doing that you have to talk to him and explain the rules and why he has to do it and then Mike tries to make a compromise. Or another way, to talk about something else…he tries to make him forget about the problem and why he was angry."* When asking Mike about his role as a personal assistant he says," *You have to be creative, you have to come with new ideas, so he forgets to run away, he comes with new thoughts*."

For instance, Mike begins telling the following story, " *So I saw a globe, which was broken in two pieces, so I put one piece on my head like a Chinese hat and he laughed and he came into other thoughts, so I took the other piece and set it on his head and we started to read and he forgot what has happened so we had fun. You have to play some.."* Carrie continues*," you have to play a little with him."*

Mike continues further on in the conversation and says:" *We give him carrots…If he has been a good student, he can play on the computer afterward…They (the other children in the class) get angry when they see him in the computer room. They ask him why he's sitting there, but it's a carrot for him because he can't concentrate for thirty minutes."*

When I inquired about the carrots for the other children in the class, Kim told me that they receive gold stars in a book where she keeps track of their behavior for the week. Every Friday, a piece of paper goes home with the child and they must bring it back signed by their parents on Monday. She says that often the children will be allowed by their parents to go to a school dance if they have been "good for the week."

As a personal assistant, Mike talks about a diary that he keeps of Simons behavior. He has also constructed a schedule for him, where every twenty minutes they engage in a different activity. Moreover, if Simon disrupts the class by tapping his pencil or jumping off the desk

during a lesson, Mike will take Simon out of the room where he works on another task. One of my encounters with both Mike and Simon is described in the following fieldnote:

Today I videotaped the third grade class, hoping to use the material as a way to support the information I received in the interviews. In order to make both my presence and the cameras less distractive, I left the classroom and visited the library[4] for half an hour. Fifteen minutes later while sitting with a little girl at a computer, we were interupted by tapping at the window. I looked up to see Simon hiding under a table outside the doors of the Fifth Dimension. He laughed and made faces at the children in the library while his personal assistant wandered the hallway looking for him. Pretending not to see him, I contined playing a game alongside the girl. Eventually the assistant opened the door to the Fifth Dimension and Simon immediately crawled out from under the table. Simon stood directly outside the door of the Fifth Dimension and motioned me to come towards him. As if there is an invisible boundary between himself and the library he leaned forward and asked,"When is it time for our Fifth Dimension?" My response was, "Aren't you suppose to be in class?" Simon runs down the hallway, leaping and jumping while his assistant stands watching him. Mike turns to me and says," He thinks he's a movie star." I later find out that Simon ran out of the classroom after jumping up and down in front of the video camera. When I returned to the classroom half an hour later, I found the teacher reading a story in English, the children sitting in their desks listening intently, and Simon sitting on top of his desk flipping through another book and laughing to himself.(January 27, 1999, AE)

This fieldnote serves as an illustration for Tom's comment when he says:" *He's living in his own world and he's the middle of that world."*Although Mike and Kim use the term "carrots," I am replacing it with the concept of mediating artifacts. From meetings with psychologists to employing the techinque of "holding" to the employment of personal assistants, they have all been attempts to try to mediate Simon's behavior. Furthermore, they have tried to mediate his behavior in a way that would be congruent with the other children in his classroom community. In an effort to find alternative methods to understand and eleviate the discrepencies in his behavior, new mediating artifacts are added. Whether one uses the term "carrots" or mediational tools, they are both used in an attempt to direct Simon's behavior.

Focusing on the concept of mediational tools, the following fieldnotes highlight a computer game, an adult, and a computer as main constituents in the Fifth Dimension. However, it is obvious that methods used to mediate activity in both the classroom and the Fifth Dimension

[4] During the day, the library also serves as a Fifth Dimension for children in the kindergarten and first grade. This is a new edition to the regular school day that was implemented in January 1999.

can be found in rules and procedures and the people that contribute to making these communities unique centers of activity.

The following example demonstrates the way a game is used as a mediational tool to direct Simon's behavior in the Fifth Dimension: *At about 2:15 Simon arrived and immediatly reminded me that I had promised him the Worms 2 game. After assuring him that I remembered, I handed him his letter from the Zarfen. A big smile came over his face, he hugged me and said "Thank you.". Instead of going directly to where the game was, he stood in front of the table with his friend Tobias (age 10) and they read their letters aloud to one another. After reading them, he went over to where the Worms 2 Cd was being played and the other boy handed him the game. Both Simon and Tobias then went over to another computer to load the disk. For the next hour, S. kept his letter close by, at first holding it in his right hand before he sat down to play.(Nov. 17, 1998, AE)*

Regardless of whether we examine the classroom or the Fifth Dimension, the involvement of another person, in this case an adult, can often serve as a viable method in pushing a child to try something new or differnet. For instance. "*In one corner of the room, Simon sat in front of the computer. He seemed extremly concentrated and barely noticed when I sat next to him. After a couple minutes he declared," This is hard, I want to try something new." "I see that you're in room 5 in the maze," I said, "why don't we try Theme Hospital, it's in that room." "I never did that before," he said apprehensively. I think he knew that I was about to suggest trying the game. "But I'll play it with you," i said,"it's one of my favorites." "Okay, we can just try it," he replied. "Right, just try it." As we loaded the game, Simon laughed at the animated professor with the Kick Me sign and said "this looks funny." I began explaining that he should first click on the icons that were flashing. Simon seemed to like the idea of hiring people and selecting furniture for the hospital. After building his first room and selecting the doctor and furniture, the icon stopped blinking. "what do I do now?" he asked. "Remember how we built the other stuff?" I asked," Or, you can just click on the other pictures and see what pops up." After Simon had built a second room, without the help of the icon I commented,"See, you remembered." Simon smiled and said, "Yeah, I'm pretty good at this." For the next half hour, I sat with Simon as he built the hospital. Two other boys from Lena's class, stood behind us, and watched as Simon played. Simon dictated to the boys what he was doing on the screen as the boys pointed and commented on the figures in the hospital.(April 1, 1998, AE)*

Further, the concept of both an adult and a computer, functioning as tools to direct activity and communciation is highlighted in the following examples: *A couple of times S came up with suggestions to Jens how to solve a problem and some of them Jens tried out and they*

*were shown useful. At one moment Simon typed every key on the keyboard in order to get any reaction since the mouse did not work. A little while we thought it would work and J let S take over.Simon once said "this is really cool", but when it did not work he said "this is really meaningless".*On the same occasion the same writer states: *The three of us sat down in front of the computer and Simon was in charge of the keyboard and mouse. Mark kept saying "I am also going to play", Simon answering not negatively and I kept saying, "we are going to take turns". (May 7, 1998, MN)*

Although these examples are accounts of events in the Fifth Dimension, it is important that the issue of people and computers are used as "carrots" or mediational tools when discussing Simon in both context. In the classroom, contact with people, specifically a personal assistant, somewhat regulate Simon's interactions in this system. Not only is playing on the computer a valued reward for good behavior for Simon, but it is also a source of envy for the other children. With regard to the Fifth Dimension, Simon's contact with other people not only is important when discussing issues of self confidence, but people mediate his ability to follow the rules and procedures. Moreover, the computer in the 5D functions as both a source of interaction and a place where Simon can demonstrate his expertise of a game.

Possible Implications

Before discussing possible implications of this research, I stress the point that I didn't set out with the intention of discovering why one child's behavior is better or worse in one or the other environment. Rather, the implications of this research should be looked upon as a possible contribution to ongoing research that explores possible connections between activity theory, interpersonal communication, social representations, or behavior in context. In terms of Simon's behavior, I have implicitly implied that there are some discrepancies between his behavior demonstrated in the classroom and the afterschool activity of the Fifth Dimension. Besides relating episodes of his behavior to the components of each activity system, my intention has also been to reveal a pattern of behavior. A pattern that has been established for the last six years. Although there have been fluctuations, to some extent it is clear that regardless of the people or the environment he still demonstrates behavior that is classified as different, unique, or "unpredictable" in view of the other children around him. Still, the question of why he exhibits behavior that is not consistent between environments or within them is left unanswered.

Disregarding psychological aspects, my suggestion is that Simon has created his own activity system. This is a system that seems different from the members in his classroom community. A system where the components of community, rules and procedures, mediating artifacts, and division of labor don't apply in the same way to the other people around him. Furthermore, in an attempt to understand his behavior, I also propose that through personal feedback, interaction, and intrinsic rules, he has developed a unique social representation of the "classroom" when compared to his peers.

Two Activity Systems

Looking over the past six years of Simon's life in relation to his involvement in school, the label "special" or "different" has followed him. As a result of his unpredictable and seemingly unusual behavior, the adults in his life have tried a variety of methods in order to create an environment that would be conducive to learning. As Lela says, " *We have to make his situation in school as best as possible, so that we can make him learn things."* This goal, applicable to all children in school, doesn't seem attainable without the employment of different procedures. In other words, having a personal assistant, hiring a school psychologist to discuss methods such as "holding," and creating a schedule that is different from the other

children in his class, contribute to a set of personalized mediational devices. In this case, mediational devices are methods used to illicit "good" behavior in the classroom. If we focus on mediating tools as a factor in Simons classroom, we can see that gold stars, sending a note home with a child each Friday for ones parents to sign, or simply the reward of going to a school dance, don't necessarily apply to Simon in the same way as other children. Moreover, if we consider other mediating artifacts that contribute to the process of learning, would they be the same for Simon? Perhaps if we discuss the pen, paper, books, etc., as tools used in the process of learning, they are similar. However, I am considering the process of learning behavior that is considered "normal" in a classroom. Normal in this case means behavior that is employed by the other children in his community of learners. Certainly, allowing him to leave the classroom when something is considered boring in order to perform another task, is not a choice that other students are presented with. Furthermore, a personal assistant who runs after him, who must "play a little" with him in order to somehow make learning "fun" is different from the other children in his community. Whether sitting on top of his desk while the other children sit in their desks, running from the back of the classroom to give the teacher a kiss, or hiding under tables during class time, this is clearly behavior that is not a part of the activity that defines another child's classroom activity.

As a result, I suggest that Simon, with the aid of other adults in his surroundings, has created his own activity system. Before presenting a brief list to illustrate the differences between Simon's activity system and the activity system of his fourth grade class. Also, the list presented does not account for all possibilities, it only highlights specific ones that I have chosen to display. In my opinion, the object of both activity systems is to develop and maintain behavior that is conducive to learning. Therefore, the components of the system should be looked at in regard to this object.

Simon's Activity System	**Classroom Activity System**
Subject……..Simon	Subject……children in fourth grade class
Community…….personal assistant, other children, teacher, psychologist	Community…teacher, other children, personal assistant
Mediating artifacts……personal assistant, computers, note home from teacher, gold stars	Mediating artifacts…….note home from the teacher, gold stars
Rules and procedures…….flexible, determined in part by Simon, negotiable	Rules and procedures……defined, determined by the teacher
Division of labor…loosely defined	Division of labor……easily distinguishable

In summary, I am suggesting that as a result of Simon's unique behavior, a new activity system has emerged in the shadow of a pre-existing one. In other words, there seems to be two different activity systems that are functioning in the same environment. As a result, there is a system of conflict. A system where interactions involving one child and the other members of his community are challenged. Thus, Simon seems to be on the border of two systems, where some of the same features of one system apply to him, while others are unique to his activity. Perhaps, the discrepancy between factors that aid him in the process of learning compared to the other children, results in a discrepancy in his behavior in two contexts.

A Look at Feedback and Interaction in the Process of Communication

When discussing personal feedback and interaction it appears that these aspects of interpersonal communication reinforce Simon's conduct. If we consider feedback given to Simon by the adults and children in his activity system, we must consider both the verbal and nonverbal actions. In my own experiences with Simon and the information provided by his teachers, I have observed that when Simon is "upside down" or acting "abnormally," the first response is to tell him to quiet down or stop. However, when this verbal form of feedback is ineffective, other methods are employed. While being methods that are different from the ones presented to his peers, they also provide feedback that reinforces his behavior. In other words, by allowing him to run out of the room, tap his pencil disruptively to indicate when he wants to leave, and formulate special rules and procedures, Simon has established a way of communicating boredom or disinterest that is supported by the feedback provided in special rules and procedures. If we consider that gold stars and going to a school dance convey to some children that they have done a good job, what tells them that they have done a bad job? Perhaps having their name written on the board, being secluded from their peers, or having a note sent home has a negative connotation. However, in Simon's case these methods haven't been fruitful. As a result, the same ways of communicating a "bad job" to other children is not necessarily the same for him.

As stated before, interaction, according to Reardon is a way of communicating between people where the actions of one person influences the actions of another. Furthermore, if we consider that these interactions convey information about what is acceptable and unacceptable ways of communicating, it appears that the term "communication breakdown" is appropriate when we consider Simon's relationship to the group. In other words, how does the group convey to Simon that his way of communicating his dislikes are inappropriate if the consequences of his actions are different from theirs. The fieldnote abstract describing the groups reaction when Simon refused to switch computers (page 35), demonstrates the importance of group solidarity. In this case, group solidarity signifies that because everyone is treated equally, they are unified. Thus, they support one another when considering what behavior will be tolerated. Although interpersonal communication can focus on the specific dynamics of the relationship between two individuals, I have considered group interaction in this case.

Simon's Classroom: A Social Representation

While discussing the formation of activity systems, I indicated that there were two activity systems operating in the classroom. Further, both activity systems are functioning under the assumption that there is only one. One implication of this is that the relationship between the individuals in the classroom is not jointly constructed. In other words, social representations are created through interactions with members of a community where there is a collective awareness about their relationship to their surroundings. People categorize and conceptualize their surroundings by having a common understanding about their role and the objects or instruments in their activity systems. It is evident that not all of the instruments or mediating artifacts in Simon's environments function in the same way when compared to his counterparts. Therefore, if we take Durkeim's postulate that social representations are based on a collective awareness or a consensual universe where members are equal, we can see that this doesn't apply in this case. In addition, if we examine the differences between the factors that influence Simon's behavior compared to the factors that influence his peers, it is apparent that they are not necessarily the same. Perhaps, the idea of a personal assistant and a child with special rules and procedures is part of the representation that the children in Simon's fourth grade class have internalized. When talking about the other children's reactions to Simon's personal assistant, Lela said," *They don't say anything, they're used to it*." If we consider the meaning that Simon has attributed to the term classroom, perhaps a personal assistant, a special schedule, "holding," etc. contributes to his understanding. Ironically, the methods used to elicit "normal" behavior, compared to other fourth grade children, seem to create an "abnormal" representation of the classroom. This suggests there is a definite connection between behavior and the conception of an activity system. Likewise, the concept

of the activity system is reflected in the behavior demonstrated by the individual. In other words, take Simon's actions of running out of the classroom when something is boring, sitting on top of his desk, or hiding in the teacher's personal room. These actions indicate that Simon's concept of his fourth grade classroom, in part, is not shared. Otherwise, the other children in his class would also express the same types of conduct.

A Closer Look at the Fifth Dimension

Thus far, I have inferred that the discrepancy in Simon's behavior may be related to the development of a unique, more personalized activity system compared to his peers. Likewise, it is an activity system that revolves around the role he plays in it. As a result, I suggested that the meaning he has attached to the concept of a classroom might be just as unique and personalized. Consequently, it would follow that his behavior would also be more unique and different when compared to his peers. Looking beyond the classroom and into the Fifth Dimension, Simon's conduct appears much less radical or unpredictable when compared to the members of this community. I realize that making such a statement leaves room for speculation and the concern that he is only involved in the Fifth Dimension once a week for an hour and a half period of time. One may argue that because this is such a short amount of time and he enjoys computers, it is easy for him to be more concentrated and not display the kind of behavioral changes that are evident in the classroom. I agree that his involvement in the Fifth Dimension is an intense period of time where perhaps he doesn't have the time to act out. However, I recall his personal assistant saying that every twenty minutes he had to change activities because Simon could not stay concentrated long enough to focus on one topic. It is understandable why a child who enjoys working with computers would be drawn to the Fifth Dimension, but it is evident that even when he does not get his way or able to manipulate the rules in the Fifth Dimension to fit his genre of desires, he still stays involved in the activity.

Although I agree that Simon's behavior in the Fifth Dimension is a reflection of his desire to work with computers, I believe that there is another factor that needs to be considered. In the Fifth Dimension Simon is treated as an equal. The same rules and procedures and mediating artifacts apply to him, just as they do for the rest of the members of the Fifth Dimension. Furthermore, because Simon is an equal, where he is part of the collective rather than a key designer of his own activity system, it seems plausible that his concept of the Fifth Dimension

is similar to the community members. As a result, he must act in accordance with what is acceptable behavior. Likewise, acceptable behavior in this environment would be a shared concept by everyone involved in the activity. Therefore, the community would determine what actions would be tolerated. This suggests that Simon would not be considered different or special because the same procedures and rules apply to him.

Further Considerations

Throughout this thesis, I have stressed the point that my research was conducted in an effort to reveal factors that constitute two environments and contribute to an understanding of one child's behavior. After analyzing interviews and fieldnotes discussing the relationship between Simon and the classroom and the Fifth Dimension, I attempted to present the relationship between the development of a social representation (the classroom) and his surroundings. However, there are a number of considerations that should be kept in mind when conducting this type of ethnographic work.

In retrospect, these considerations would most likely make the research presented here more thorough and complete. Given more time and resources, developing another context, similar to the Fifth Dimension would allow a researcher to spend a longer period of time with the subject. I discussed earlier the limitation of observing Simon in the Fifth Dimension once a week for such a short period of time. Thus, the argument that two hours a week of interaction compared to hundred of hours in the classroom is understandable.

Perhaps more extensive interviewing of people related to the subject would establish more in-depth patterns of behavior. Moreover, observing Simon more frequently in the classroom would also provide a stronger image of his relationship to the environment. Also, I would suggest videotaping Simon in both contexts as another method of data collection. Finally, even though I have discussed Reardon's work in Where Minds Meet, I suggest that the work of Goffman, Lewin, Chomsky, and others dedicated to the field of communication research be included in studies similar to this type of research.

Concluding Remarks

It is evident that being labeled special, different, or unpredictable, creates a certain image of the individual. In this case, Simon's label has resulted in a large amount of time, energy, and money that has been invested in order to understand why these labels precede him. It is undeniable that his family background or perhaps his psychology plays a large role in his actions. Perhaps, because Simon has been treated differently, continuously since he started school, he has developed a different concept of what is acceptable behavior. This seems understandable if we consider that he has not only been allowed to develop this concept, but has been supported in his efforts with special rules/ procedures and methods used to mediate his conduct. More specifically, these methods seem to communicate to Simon that even though his behavior is different when compared to his classmates, it is supported by the actions taken by the people around him. However, one can understand the dilemma that the school faces. In an effort to understand and create an atmosphere that is conducive to learning, their efforts have been an attempt to include Simon in a community of learners. Ironically, he appears isolated from this community.

In conclusion, the overall purpose of this thesis was to contribute to a body of research that is concerned with finding the connection between behavior, activity, and communication. In other words, taking into consideration activity theory and the conception of social representations, I attempted to discuss the behavior of one child in relation to the ideas presented by both viewpoints. Although there are a number of questions that arise from trying to uncover the threads of commonality between these two disciplines of thought, it is apparent that understanding the unique phenomenon of behavior requires that one be open minded to exploring these avenues.

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