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Limitations and transformations of habitus in Child-Directed Communication



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ABSTRACT This article offers an alternative approach to paradigms that cast culture solely as a nurturing influence on children's language development. It proposes a dimensional model of Child-Directed Communication (CDC) to delineate ways in which a community's habitus may impede the communicative potential of children with neuro-developmental conditions such as severe autism. It argues that certain features of Euro-American CDC are ill-adapted for autistic children. Due to inertia, caregivers often find themselves unable to transcend the limitations of CDC habitus. Yet, occasionally, a transformation in CDC emerges that more effectively engages children with impairments. The article analyzes one such transformation forged in the niche of a unique mother–son relationship in India and then introduced in the USA.

KEY WORDS: *autism, Child-Directed Communication, habitus, language socialization*

Introduction

This article draws upon the theoretical frameworks of practice theory and language socialization to analyze the impact of habitus (Bourdieu, 1977, 1990) on the communicative development of children. The article proposes a model of Child-Directed Communication (CDC) and uses it to analyze how certain socio-cultural configurations of Child-Directed Communication may limit or enable children's communicative potential.

Habitus comprises a set of historically rooted, socially organized dispositions that enable persons who have been socialized into these dispositions to interpret and creatively engage in the flow of social practices, displaying a 'feel for the game' at hand. That is, habitus affords both regularity and improvisation in social life, yielding social practices that are 'spontaneously orchestrated' (Bourdieu, 1990: 80). In this article, we examine Child-Directed Communication

as in part spontaneously orchestrated by habitus. We propose that under certain conditions, such as occur, for example, when a child manifests a neuro-developmental impairment such as autism, the habitus of a speech community may poorly serve the communicative development of the child, yet mature speakers may find themselves at a loss to improvise alternative strategies and persist with their default child-directed communicative practices.

A central tenet of language socialization inquiry is that a rich array of open-ended predilections, symbolic and indexical meanings, ideologies, values, emotions, systems of production, institutions, and practices systematically and variably organizes how novices become competent communicators over the human life span (Garrett and Baquedano-Lopez, 2002; Heath, 1983; Kulick and Schieffelin, 2004; Ochs and Schieffelin, 1984, 1995; Schieffelin and Ochs, 1986). For example, in every society, members communicate with children in ways that display how they envision children's normative development, including the communicative skills they expect the child to attain at different developmental milestones. Caregivers interpret the future of their child on the basis of their own cultural experiences, displaying what Cole (2002) calls '*prolepsis*'. Looking at a newborn infant, for example, they project a series of life course abilities or vulnerabilities that the infant does not presently manifest.

In the language socialization framework, the relation of communicative development to culturally saturated life worlds tends to be viewed as neutral to positive. On the neutral side, language socialization research has promoted the culturally relative notion that each community's habitus of communicative codes, practices, and strategies is to be judged in terms of its own socio-cultural logic rather than external sensibilities. On the positive side, language socialization research has supported the cultural psychological notion that cultures selectively 'amplify' certain intellectual, social, and emotional potentialities of human beings:

Man is seen to grow by the process of internalizing the ways of acting, imagining, and symbolizing that 'exist' in his culture, ways that amplify his powers. He then develops these powers in a fashion that reflects the uses to which he puts [them].

(Bruner, 1966: 320–1)

The notion of cultural amplification rests on the assumption that socio-cultural ways of being, thinking, feeling and acting in the world are inherently selective and emphasizes the beneficial consequences of such selectivity for enhancing particular 'powers' of members of social groups.

Neutral and positive approaches to language socialization, of course, do not preclude the possibility that certain novices may remain outliers or 'bad subjects', from the perspective of the normative-leaning population:

It is something else entirely to convincingly document how certain children or other novices come to be what Louis Althusser (1971: 169) would call 'bad subjects' – that is, subjects who do not recognize or respond to calls to behave in particular, socially sanctioned ways.

(Kulick and Schieffelin, 2004: 355)

The present article continues this line of thought concerning 'bad subjects' (Althusser, 1971: 169). While appreciating the integral and positive role of habitus in the development of communicative potentialities, the authors address negative facets of the selective relation of habitus to communicative competence. Specifically, we delineate ways in which habitus can *limit* children's and other novices' attainment of particular communicative skills. It may stretch credulity to accept that a community's habitus may impede the development of communicative behavior deemed critical to participating in that community. Why would members of a community perpetuate communicative strategies that stunt the flourishing of communicative competence (Hymes, 1972)?

When habitus limits communicative competence

There are at least two kinds of situations in which habitus limits communicative competence. In the first situation, limitations may be linked to social asymmetries, wherein certain members are *socially restricted* in their access to socio-culturally organized interactions that could potentially amplify their communicative skills. This set of limitations has been widely discussed and includes restricted access to certain varieties, genres, and media on the basis of race, ethnicity, gender, class, rank, generation, age, or other socially identifying criteria (Bernstein, 1972; Cole, 2002; Cole and Bruner, 1971; Gal, 1992; Goody, 1977; Gumperz, 1982; Heath, 1983; Keenan, 1974; Labov, 1966; Morelli et al., 2003; Scribner and Cole, 1981).

A second situation is rooted in *neuro-developmental conditions* that interfere with the development of communicative competence. In this situation, children (and other novices) have impairments that limit their access to socio-culturally organized interactions that might otherwise potentially amplify their communicative skills. Restricted accessibility is understood here in a psychological rather than a physical sense. The impaired member may have physical access to culturally amplifying situations – indeed, he/she may be encouraged to be an active participant by others – but may be confounded by the flow of actions and meanings due to the neurological patterning of his/her brain. This second situation has considerable ramifications for language socialization theory and for the application of language socialization research to neuro-developmental communicative disorders.

These ramifications form the focal topic of this study. To understand the limitations of habitus in the language socialization of children with communicative impairments, we introduce a model of Child-Directed Communication (CDC) and offer a set of general analytic dimensions relevant to illuminating how such communication is organized across communities and situations. We argue that members of all speech communities are challenged when communicating with children with neuro-developmental disorders. Based on recorded observations of social interactions involving children with autism¹ spectrum disorders (ASD),² we propose that such interactions (1) expose the *limitations* of a group's

CDC; and (2) inspire some members' attempts to *transcend* those limitations and transform practices in an effort to overcome communicative barriers posed by the impairments.

Sometimes transformation of CDC practices arises through a family member's or teacher's own perseverance and evolving communicative strategies. At other times, transcendence beyond the existing communicative repertoire is a product of contact with and attempts to appropriate someone else's strategies for engaging children with neuro-developmental disorders. In this article, we depict innovative CDC strategies developed in India by Soma Mukhopadhyay to effectively communicate with her severely autistic son and subsequently introduced to US children with this disorder, along with their families and teachers. In examining these events, we consider if and how a communicative innovation can eventually become a default communicative practice and can overcome the problems posed by a community's habitus for talking to autistic children.

In their early language socialization study, Ochs and Schieffelin (1984) argued, on the basis of their research in Samoan and Kaluli communities, that many of the grammatical, lexical, and phonological modifications that constitute baby talk as a simplified register (Ferguson, 1977) are not universal, default features of Child-Directed Communication and that as such, these features are not *necessary* input for children to acquire language. The present article returns to these features and argues that certain features of baby talk register may not be *sufficient* input for neurologically impaired children to become communicatively competent. We propose that certain baby talk modifications may actually be ill-adapted for children with autism and that, alternatively, certain modifications that enhance communication with autistic children may confuse typically developing children. As such, this article emphasizes the point that what constitutes simplification depends upon (perceived) requirements of the recipient of communication.

Our generalizations are based upon analysis of approximately 70 hours of video-recorded interactions involving six severely autistic children with Soma Mukhopadhyay, therapists, teachers and parents. The corpus is a part of a larger video-archive collected by the Cure Autism Now foundation³ of children attending a specialized educational center in Los Angeles. In addition to these data, we analyzed 40 hours of video-recorded interactions of five severely autistic children with family members, teachers and clinicians collected by the second author for her National Academy of Education/Spencer research project.

Baby talk and Child-Directed Communication

Language socialization research has argued that speech to young children is organized in relation to a systematic set of historically rooted, socio-cultural practices and that simplified baby talk is one instance of a community's child-centered practice of 'accommodation' to babies (Ochs and Schieffelin, 1984). Similar to the adage 'Beauty is in the eye of the beholder', the present discussion

points out that what constitutes simplification and accommodation in one set of circumstances may not hold in other interactional contexts.

To analyze the socio-cultural configurations of child-centered simplification and accommodation, the sections that follow examine baby talk within an ethnographically informed model of Child-Directed Communication.

Baby talk

At least since Charles Ferguson's pioneering essay on 'Baby Talk in Six Languages' (1964), linguists and psychologists have been drawn to a special register of language directed to a specific population, namely babies. Ferguson's essay inspired a generation of research dedicated to delineating and accounting for the specific modifications associated with baby talk, most notably the simplifying, clarifying and expressive features of this register as evidenced across numerous speech communities (Chew, 1969; Clark, 2001; Crawford, 1970; Cross, 1977; Dil, 1971; Ferguson, 1977; Fernald et al., 1989; Jones, 1986; Newport et al., 1977; Oswalt, 1976; Snow, 1995; Snow and Ferguson, 1977; Takada, 2003; Whyatt, 1994; Williamson, 1979). While some studies were linguistic descriptions of the register in a particular language, others addressed the status of baby talk as input specifically designed to promote language acquisition.

The question of *whether or not*, and *how* linguistic modifications account for children's acquisition of linguistic competence remains an open one. Strict dichotomies between innatism and behaviorism, for example, have given way to approaches that attempt to analyze the interfaces between innate neurological and cognitive proclivities and facilitating facets of communicative environments in which infants are immersed (Bates and Elman, 2000; Cole and Cole, 1996; Fernald, 1992; Gratier, 1999, 2001, 2003; Trevarthen, 1988, 1998, 2003). That is, the contemporary issue is not so much nature versus nurture as how the two together conspire to organize the development of human competence (Boyd and Richerson, 2005).

In addition to the knotty complexities of neuro-biological maturation and nurturance, the status of baby talk as universal input has been challenged by ethnographic studies of communities in which caregivers do not extensively simplify their speech in the presence of infants and young children (Bavin, 1992; Crago, 1988; Ochs, 1982; Ochs and Schieffelin, 1984; Pye, 1992; Schieffelin, 1990; Ward, 1971). Ochs' 1978–79 field observations in Western Samoa, for example, indicated that preverbal children were rarely addressees and that when these children were addressees, caregivers modified their behavior primarily by repeating utterances and actions rather than simplifying the complexity of grammatical forms in use (Ochs, 1982, 1988).⁴

Catherine Snow (1995) noted yet another problem in the baby talk debate, namely the anecdotal character of evidence offered by innatists in support of the prevalence of degenerate input, on the one hand, and, on the other, the paucity of systematic comparative data offered by champions of input across languages

and periods of children's language development. Although linguistic studies of baby talk abound, most of them focus on selective features of the register, e.g. on baby talk lexicon, phonological modifications, or grammatical reductions. As such, it is difficult to compare the scope of simplifications across speech communities. Moreover, as Ferguson (1977) noted, rather than direct observation, much of the cross-linguistic baby talk data consists of indirect reports gathered through interviews with one or a handful of language informants who are asked to recall their own or others' speech to babies.

In addition to these issues, language socialization scholarship has examined baby talk within its socio-cultural and historical context, as a practice influenced by a community's ideologies concerning caregiving, childhood, development, learning, competence, and communication. We incorporate this scholarship into the discussion below in which we introduce a model of Child-Directed Communication.

A model of Child-Directed Communication (CDC)

The hallmark of linguistic anthropology is its assumption that communicative codes, meanings, roles, events, activities, strategies, and expectations are complexly informed by established and fluid, more or less explicit, and partially shared beliefs, values, and dispositions, along with forms of social order that apply in and across situations (Duranti, 1997, 2003; Hanks, 1996; Hymes, 1964, 1972). Linguistic anthropologists view language practices as indexical of members' social positionings and understandings of the worlds they inhabit and help to shape (Hanks, 1990; Ochs, 1992; Silverstein, 1976, 1992). Moreover, codes, modalities, and practices are generally analyzed in relation to a community's ideologically laden communicative repertoire (Gumperz, 1968). In this perspective, baby talk is as much a socio-cultural product as it is a linguistic variety and cognitive process (Ochs and Schieffelin, 1984). Indeed, Ferguson (1977, 1982) captured the socio-cultural character of baby talk by depicting it as one of several possible simplified 'registers' in a group's communicative repertoire.

We propose a model of Child-Directed Communication (CDC), as a theoretical tool for illuminating how members of social groups verbally and non-verbally interact with children. While CDC holds a family resemblance to other concepts in language acquisition and socialization studies, it is more comprehensive:

1. Like baby talk, CDC focuses on social interactions with children. CDC, however, considers *communication with a broad range of children*, from infancy to adolescence, according to local categorizations of human development and the boundaries of childhood.⁵ In its breadth of childhood, CDC is similar to the notion of 'child-directed speech' (Fernald et al., 1989; Snow, 1972, 1995).
2. The analytic focus of CDC *extends the range of communicative modalities beyond speech* to include, for example, gesture, gaze, touch, writing, images, and

music. Lourdes de León (1998) brought attention to the semiotic breadth of child-oriented interactions in her analysis of infant-directed communication in a Tzotzil Mayan community.

3. CDC differs from 'Motherese' (Gleitman et al., 1984), in that it does not limit the role of the speaker to mothers. Left unspecified, the term 'Child-Directed Communication' allows for a *range of communicators*, including various caregivers (e.g. older siblings, extended family, babysitters) and other members of the social network to be included as children's interlocutors.

One drawback of the term CDC is that children may be viewed as passive recipients of communication directed at or towards them. We emphasize here the active role of children in communication (Gratier, 1999, 2001; Lewis and Rosenblum, 1975; Schaffer, 1978; Shotter, 1974; Stern, 1985). Following Duranti and Brenneis's notion of the 'audience as co-author' (1986), even very young children as addressees affect the direction and content of communicative exchanges in which they participate.

Dimensions of CDC

To illuminate the parameters of the CDC model, we propose a set of analytic dimensions relevant to Child-Directed Communication across situations and communities. These dimensions comprise both the socio-cultural matrix of CDC and formal characteristics of CDC varieties. The dimensions include: (1) CDC Ideologies; (2) CDC Habitats; (3) CDC Participation Frameworks; (4) CDC Activities; (5) CDC Semiotic Repertoires; and (6) CDC Artifacts. These dimensions are intertwined in the actual realizations of Child-Directed Communication (see Figure 1).

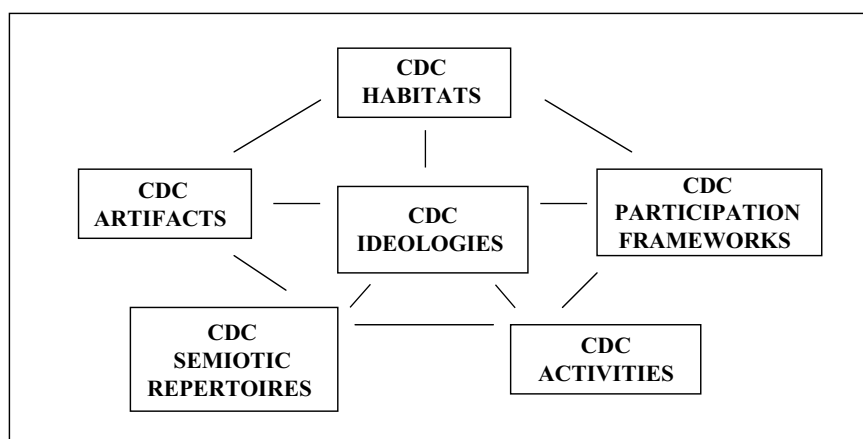


FIGURE 1. *Child-Directed Communication: a model*

1. CDC IDEOLOGIES

Like other communicative practices, communication with children is organized by implicit and explicit beliefs and values linked to codes, modalities, and social positionings of persons involved in a communicative exchange. Language socialization studies indicate, for example, that in multi-lingual communities, caregivers and other community members exhibit preferences in the codes used in CDC in specific situations. In some communities, the preference is tied to the desire for very young children to acquire the prestige variety in the communicative repertoire (Garrett, 1999; Paugh, 2001). In other communities, members link codes used in CDC to different desired attributes. For example, the villagers of Gapun, Papua New Guinea, use the lingua franca Tok Pisin to instill 'save' (knowledge and social sensitivity) and the vernacular Taiap to instill 'hed' (willful autonomy) among their small children (Kulick, 1992). In addition, communities may prefer certain CDC codes on the basis of the age and gender of the child. In a New York Hasidic community, for example, male and female babies up to three years old are primarily addressed in Yiddish. From three years onward, however, boys are immersed in Hebrew and Yiddish, while girls are addressed in English and Yiddish (Fader, 2001). Situational constraints also organize CDC, especially code preferences tied to school, religious, and other institutional settings (Baquedano-Lopez, 2001; Howard, 2004; Moore, 2004).

In addition to ideologies associated with code choice in CDC, social groups may have sensibilities concerning simplification and accommodation towards infants and children in general (Ochs and Schieffelin, 1984). For example, the Kaluli (Papua New Guinea) expressed surprise when Bambi Schieffelin reported that American caregivers simplify their speech when addressing babies, themselves believing that infants' exposure to adult speech is needed to 'harden' them to face the challenges of the social and physical environment (Schieffelin, 1990). In rural Samoan communities during the 1970s, caregivers generally did not address infants and small children in a simplified manner, nor did they generally attempt to clarify children's unintelligible utterances. Simplification and accommodation of this sort were more appropriate when communicating with adult foreigners, who merited deference (e.g. missionaries, government officials, researchers) but not when communicating with children, perceived as lower in rank and, as such, expected to accommodate to more mature members of the community (Ochs, 1988, 1991). These ideological orientations are but a few of the cultural influences on CDC.

2. CDC HABITATS

Every social group constructs habitats that differentially organize children's access to communication (Chavajay and Rogoff, 1999; Rogoff et al., 2003). Communication may be limited or facilitated by various *micro* and *macro* ecological niches in which children at different developmental stages dwell. Micro habitats include both *corporeal* niches (e.g. infant held upright, laying down or otherwise on back, hip, in arms, on lap, in front of chest, etc.) and

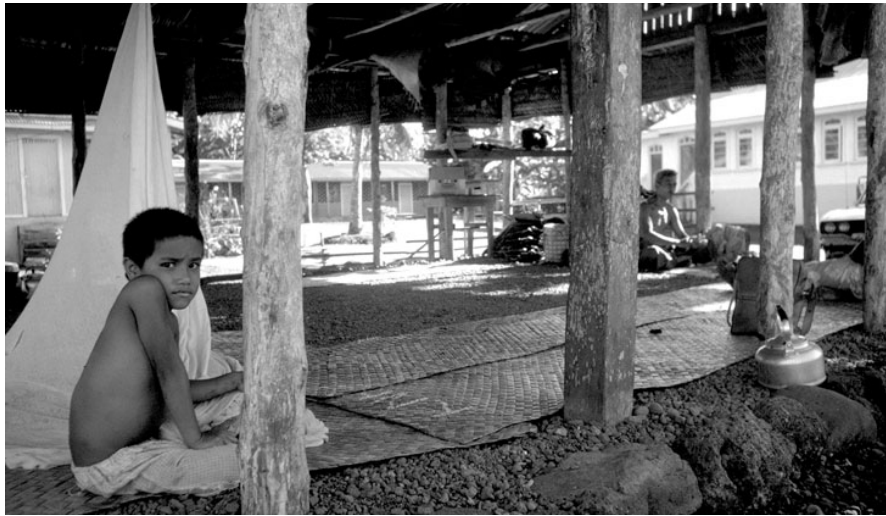


FIGURE 2. CDC macro habitat: open space of Samoan house
Source: Photo by Alessandro Duranti

material niches (e.g. infant beds, slings, blankets, carriages, seats, etc.). Macro habitats include architectural structures and landscapes, among other environments. Houses with exterior and interior walls and doors, for example, demarcate relatively sharp boundaries of children’s visual and auditory access to communication. Alternatively, houses with little or no exterior or internal walled divisions, as in a classic Samoan dwelling (Figure 2), expose children to a wide scope of communication (Ochs, 1988). Both in and outside of houses, activities take place in preferred locations and children have differential access to these activities according to local expectations regarding children’s territorial range.

3. CDC PARTICIPATION FRAMEWORKS

CDC is constrained by preferred configurations of participation (Goffman, 1981; Goodwin, 1990; Phillips, 1972) in social interactions involving children at different points in their maturity and children with different social identifying properties (e.g. gender identity). Participation framework may refer to communicative and activity-specific roles that children and other participants assume in an interaction. It may also refer to corporeal alignment of participants in relation to each other as well as to artifacts and spaces relevant to the situation at hand.

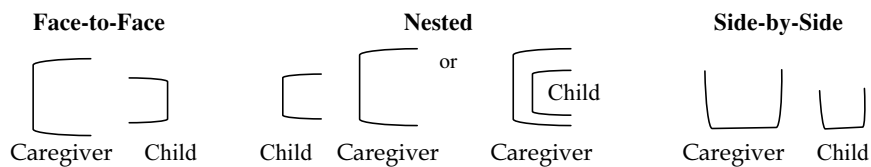


FIGURE 3. CDC participation frameworks



FIGURE 4. *Face-to-face participation framework: child oriented to attend to caregiver*

It is the corporeal arrangements of social interactions involving children that we consider in this article. Several types of socio-culturally organized corporeal arrangements involving children are represented in Figure 3, including face-to-face, nested and side-by-side interactions.

Face-to-face dyadic exchanges between caregivers and infants prevail in many communities, indexing that infants are considered possible interlocutors with communicative intentions, as in Figure 4.

In other communities, infants and small children are generally oriented outward, facing in the same direction as their caregivers in nested or side-by-side alignment, as in the Samoan community in which Ochs conducted her ethnographic study (see Figure 5).



FIGURE 5. *Nested and side-by-side participation frameworks: child oriented facing outward to attend to others*

Source: Photo by Alessandro Duranti

In this community, babies generally were not treated as viable conversational partners, and the socialization emphasis was to encourage children to face and attend to others as a basis for expected deferential conduct later in their development.

Outward orientation is related to another relevant feature of CDC participation framework, namely the prevalence of multi-party interactions involving infants. Among the Kaluli, for example, small children are frequently recruited to participate in triadic exchanges, in which either someone ventriloquates for the child a message directed to a third party, or the child is prompted to repeat an utterance to a third party (Schieffelin, 1990). Zinacantec Mayans also involve young children in such exchanges: de León (1998) notes that infants display active involvement through eye gaze and vocalization when caregivers prompt them to call out utterances to a third family member.

4. CDC ACTIVITIES

When members of social groups communicate with children, they do so in the context of ongoing, past, and projected social activities, such as greetings, songs, games, teasing, soothing, questioning, prompting, instructing, describing, explaining, storytelling, and so on. Language socialization research has begun to articulate the kinds of activities in which children of diverse developmental and social status participate and the organizational impact of such activities on both CDC and children's developing communicative skills. While caregivers universally involve infants and more mature children in a range of social activities, the prominence of particular activities and the expectations regarding caregiver and child involvement in these activities vary across situations and social groups.

As Ochs and Schieffelin (1995) noted, caregivers who routinely expect pre-verbal young children to engage in proto-dialogue (e.g. question–answer exchanges, as in Figure 4) usually take on most of the work of maintaining the conversation by securing and sustaining joint attention through movements, gestures, eye gaze, and vocalizations; extensive simplification of their message form and content; and attempting to clarify and/or provide appropriate glosses for child utterances. In these proto-dialogical exchanges (Bates et al., 1979), pre-verbal children are both drawn into conversational activities that lie well beyond their communicative, social, and cognitive skills and are exposed to massive communicative accommodations. In so doing, such caregivers socialize pre-verbal children to both take on *complex tasks* and expect that others will *scaffold* these tasks.

Alternatively, in other communities, proto-dialogue with pre-verbal children of the sort described above is not a prominent communicative activity (Crago, 1988; Heath, 1983; Ochs, 1988; Pye, 1992; Schieffelin, 1990; Scollon and Scollon, 1981). Rather than others accommodating to young children in a child-centered social universe, children are socialized to pay attention to and accommodate to others. In rural Samoa, pre-verbal children who could not sleep or displayed negative emotions were soothed or sometimes admonished, but

generally caregivers did not position preverbal children for dialogic exchanges, nor was it a usual practice for caregivers to attempt to gloss or clarify unintelligible utterances. Moreover, the Samoan caregivers generally did not involve very young children in activities in ways that would so challenge their capacities that a caregiver would be obliged to heavily scaffold the child's involvement. Instead, young children were socialized to learn complex activities through repeated observations until they more or less could carry out an action. Children's performance of activities was then monitored and, if deemed necessary, subject to error-correction. The prevalence of public attention to and correction of children's errors observed in Samoa contrasts with a preference for making invisible children's mistakes in U.S. families and schools (Sterponi and Santagata, 2000).

5. CDC SEMIOTIC REPERTOIRES

Generally, researchers analyzing communication directed to infants and other children focus on language and, in particular, on spoken language. In addition to language, however, members of social groups draw upon a broad semiotic repertoire in communicating with children from birth on (Goldin-Meadow et al., 1999; Trehub and Nakata, 1999). This semiotic repertoire includes, among other forms, somatic, visual, vocal, and musical resources, along with artifacts that mediate and enable these resources. Semiotic resources may be used independently but often are coordinated in cross-modal, kinesthetic communicative activity. It has been argued that resources such as caregivers' pointing, eye gaze, facial expressions, rhythmic movements, and vocalizations reinforce one another to enhance joint attention and/or message comprehension in the early stages of child development (Brand et al., 2002; Clark, 2001; Crown et al., 2002; Fogel et al., 1999; Gogate et al., 2000; Mumme et al., 1966; Rutter and Durkin, 1987; Schaffer, 1978; Schaffer et al., 1983; von Raffler-Engel, 1977; Zukow-Goldring, 2001).

As the term 'baby talk' implies, research on language modified for infants and young children emphasizes speech as a default modality, delineating the phonological (including prosodic), morpho-syntactic, lexical, and discourse features of such speech registers. It is expected that typically developing children will benefit from these modifications and eventually become competent interlocutors. In communities that do not heavily rely upon baby talk registers, infants and young children are constantly exposed to a wide range of language varieties, modalities, and practices that constitute the complex communicative repertoire of the social group. As noted above, children in these communities are vigorously encouraged from birth to face outward and attend to what others are saying and doing. Their developed attentional skills at an early age may serve them well, in that these children become competent speakers of their language in the normal time frame (Ochs, 1988; Platt, 1986; Schieffelin, 1990).

As Ferguson noted, each community that routinely uses baby talk organizes somewhat differently its simplifying, clarifying and expressive features. We list in Figure 6 selected features of English-based baby talk used by middle-class Euro-

PHONOLOGY	reduced sounds, slower pace, vowel lengthening, reduplication, exaggerated intonation, high pitch, longer pauses, increased rhythmicity
MORPHO-SYNTAX	simple, short sentences, reduced inflections, use of diminutives and other affect markers
LEXICON	reduced lexicon, use of endearments
DISCOURSE	vocatives, repetition, yes–no questions, fill-in-the-blank questions, ventriloquating for child, expansions and candidate understandings, talk about here and now, segmentation of tasks and propositions into parts, polite directives, praising, tokens of gratitude

FIGURE 6. *Selected features of Euro-American baby talk (English)*

American caregivers, because this register is well documented (Cross, 1977; Ferguson, 1977; Fernald et al., 1989; Fisher and Tokura, 1996; Gleitman et al., 1984; Shatz, 1983; Snow, 1995) and relevant to our analysis of the limits of cultures.

In general, Euro-American caregivers, especially mothers, often slow down their pace of delivery, lengthen vowels, and speak in a high pitch to enhance a child's interactional involvement. They also tend to speak in shorter and syntactically simplified utterances, although they use extensive affective morphology. On a discourse level, Euro-American caregivers make great efforts to engage young children through attention-getting devices such as vocatives and repetitions. They scaffold the child's participation through discourse strategies such as posing yes–no and fill-in-the-blank questions, ventriloquating projected utterances for the child, offering more fully formed expansions and candidate understandings of the child's utterances, talking about here-and-now topics, and segmenting tasks and propositional content into manageable components. These modifications are accompanied by frequent displays of politeness in directives, praising, and tokens of gratitude (Junefelt and Tulviste, 1997).

6. CDC ARTIFACTS

In many communities, CDC is mediated by a range of artifacts, including alphabet and number diagrams, books, writing tools, video- and audio-recordings, children's computer games, toy calculators, simplified musical instruments, and other objects. In Samoan communities, for example, many young children are socialized into literacy and Anglo world-views through a

pictorial representation that pairs a letter from the Samoan alphabet with an image associated with Anglo secular and religious worlds (Duranti and Ochs, 1986). In Koranic schools in Northern Cameroon, the *alluha*, a wooden plank with inscribed verses from the Koran, is used by Fulbe teachers to instruct children as young as 3 years of age (and usually by the age of 6) in Muslim devotional practice in Arabic. These artifacts are used in the CDC practice of 'guided repetition' where children recited, memorized and eventually reproduced Koranic texts, while being socialized into the moral and religious values of their community (Moore, 2004). It has also been abundantly documented how young children across numerous communities are socialized into literacy and genre through book- and computer-oriented activities with caregivers and peers, and how class, gender, and ethnicity organize the use of these artifacts (e.g. Gee, 2003; Gutierrez and Stone, 2002; Heath, 1983; Wolf and Heath, 1992).

As such, artifacts mediate children's acquisition of semiotic resources of their communities, including alphabets, numerical systems, musical genres and notations, moral and spiritual imagery, and other symbolic representations. In addition, CDC artifacts mediate children's learning to orient to multiple cues in caregivers' gaze, facial expression, and timing, and to coordinate shared attention with caregivers in culturally appropriate ways that are critical for a child's developing social and cognitive skills and communicative competence (Rogoff, 1990).

Euro-American habitus and autism

In this article, we have proposed that Child-Directed Communication can be systematically examined across the socio-cultural dimensions of ideologies, habitats, participation frameworks, activities, and semiotic repertoires. These dimensions are variably organized by a community's habitus, which accounts for members' default conduct when communicating with children in novel or unexpected circumstances. We suggest that communicative habitus is not neutral with respect to its influence on children's development, in the sense that habitus does not necessarily maximize communicative potential. In this section, we demonstrate how certain features of the habitus associated with Euro-American CDC may limit the communicative potential of certain children with autism spectrum disorders.

In pursuing this claim, we focus on specific features associated with Euro-American CDC ideologies, participation frameworks, and semiotic repertoires. As documented in numerous studies, these features of the Euro-American CDC habitus are sketched in Figure 7.

To summarize, Euro-American habitus for communicating with young children is organized by an ideology of physical, cognitive, and socio-emotional accommodations and interventions oriented to promoting children's development and well-being. To this end, Euro-American caregivers generally interact with infants and young children in face-to-face arrangements,


IDEOLOGY		<i>accommodation & intervention</i> to promote child's development - presumes child will develop - presumes kinds & levels of development
PARTICIPATION FRAMEWORK		<i>face-to-face</i> as default communicative orientation  caregiver child
SEMIOTIC REPERTOIRE	MEDIUM	<i>speech</i> as default medium for both caregiver & child
	REGISTER	<i>baby talk</i> - slowed, lengthened speech - heightened positive affect

FIGURE 7. Relevant features of Euro-American CDC

attempting to secure their eye gaze and attention. Moreover, Euro-American caregivers frequently use the baby talk register features of slowing down the tempo of speech and heightening the expression of positive affect.

We have come to question if all of these features of the Euro-American CDC habitus constitute the ideal environment for severely autistic children. Our position is an outcome of our observations of how one such child responded to a therapist who used this communicative habitus compared with how the same child responded to an adult educator from India who used a different CDC strategy. While both adult interlocutors evinced an ideology of accommodation and intervention to enhance the communicative competence of the autistic child, the default participation frameworks and semiotic repertoires they deployed to this end differed in consequential ways.



FIGURE 8. *Lev with a speech therapist (left) and aide*

Euro-American CDC as therapeutic practice

While autism profoundly impacts communication between autistic children and family members, therapists, and educators, such communication is also shaped by interlocutors' habitus for communicating with children. Indeed, a neurodevelopmental condition such as severe autism magnifies default communicative practices, as interlocutors struggle to establish and maintain social contact with profoundly autistic children. Interlocutors maximize familiar strategies to get their message understood and to glean the child's possible thoughts and emotions.

Amplification of Euro-American CDC habitus can be observed in clinical interventions directed towards children with severe autism. We focus on therapeutic deployment of the following important features of Euro-American CDC: (1) *face-to-face orientation* as the default participation framework; (2) *speech* as the default semiotic medium expected for both child and adult, supplemented by gesture and touch; and (3) *the slowing and lengthening of speech* and *heightening of positive affect* (e.g. exaggerated intonation and praise) as default baby talk modifications.

Consider, for example, the use of these CDC strategies by a speech therapist working with 9-year-old Lev⁶ in a university clinic.⁷ Lev was diagnosed with severe autism as a toddler, had never verbally communicated with family members and others and was clinically assessed as mentally retarded. The excerpt above is not meant to be representative of U.S. speech therapists but rather illustrative of cultural continuities between Euro-American caregiver–child and therapist–child communication. The excerpt depicts Lev participating

Participant	Behavior	Selected CDC Features
Therapist:	<i>((facing children, holding up a flashcard with "Jamie" written in cursive, covering all the letters but "J" with fingers, smiles))</i>	FACE-TO-FACE
Boy 1:	Juh! ((“J”))	
Therapist:	GOO↑ ::: ↓D!	SLOW, LENGTHENED SPEECH, PROFUSE PRAISE
Therapist:	<i>((moves flashcard to face another child, Boy 2))</i> WHAT SOU:ND↑	
Boy 2:	Juh! ((“J”))	
Therapist:	GOO :: D!	SLOW, LENGTHENED SPEECH, PROFUSE PRAISE
	<i>((turns to face Lev))</i> <u>Your</u> turn!	FACE-TO-FACE
Lev:	<i>((looks down and to the right, away from the flashcard, pats right hand with left several times))</i>	
Aide:	<i>((holds Lev's head to face therapist and flashcard, and points to flashcard, then holds down Lev's hands))</i> Try Lev.	FACE-TO-FACE
Lev:	/ ε l / ((“L”))	
Therapist:	Good TRY↑::: ING↓!	SLOW, LENGTHENED SPEECH, PROFUSE PRAISE
Aide:	<i>((nods several times))</i> ° Good boy °	PRAISE
Lev:	<i>((pats right arm with left hand again))</i>	
Therapist:	<i>((faces group, opens mouth wide, slowly demonstrating how to articulate sound /e/ for letter "A"))</i> LOOK! <i>((keeps mouth wide open, turns to face Lev))</i>	FACE-TO-FACE SLOW TEMPO
Boy:	/ a i / ((“I”))	
Therapist:	<i>((turns to face Lev, holding flashcard))</i>	FACE-TO-FACE
Aide:	<i>((holds Lev's head to face therapist and flashcard, points to flashcard))</i>	FACE-TO-FACE

Participant	Behavior	Selected CDC Features
Lev:	/ ɪ e /	
Therapist:	((softly, articulates the sound with her mouth wide open)) / e:::/ ((“A”))	SLOW, LENGTHENED SPEECH
Boy:	/ e:::/ ((“A”))	
Lev:	[/ ɪ ε / ((“A”))	
Aide:	[(touches Lev’s chin)	
Therapist:	((looks at Lev, holding up flashcard, softly, articulates the sound with her mouth wide open)) / e:::/ ((“A”))	FACE-TO-FACE SLOW, LENGTHENED SPEECH
Boy:	/ e:::/ ((“A”))	
Therapist:	((eyes wide open, smiling, touches Lev, whispered, affectionate voice)) Very nice ↑try↓!	FACE-TO-FACE PRAISE

in a group activity in which the speech therapist asks children with different communicative impairments to pronounce the name ‘Jamie’, which is written on a flashcard that she holds up in front of her, as shown in Figure 8. She begins by asking the children to pronounce the sound represented by the letter ‘J’.

An important characteristic of this sequence is the speech therapist’s alignment with the children in a *face-to-face* orientation. She uses this participation framework to obtain eye contact from the children and to focus their attention on both the flashcard in front of her and her mouth as she articulates each sound of the word (‘Jamie’) to be pronounced. As each child attempts to respond to the task, she rotates her torso, face, and flashcard towards that child (Figure 9).

As symptomatic of severe autism, Lev evinces difficulty maintaining face-to-face orientation to the therapist and attending to her face and the flashcard that she is holding in front of her. Lev’s aide holds his head in a fixed face-to-face position to assist him in assuming the expected eye gaze and body orientation.

A second notable characteristic of this sequence is that *speech* is both the primary medium of communication for both therapist and child and the focus of the clinical intervention. This, of course, is to be expected, given that this interaction transpires in a speech therapy clinic. Like many children with severe autism, Lev has diminished oral motor control (Dawson et al., 2000) and displays great difficulty articulating the sound elicited by the therapist. His aide touches his chin to help him in this task.

Third, the speech therapist displays a prevalent feature of Euro-American

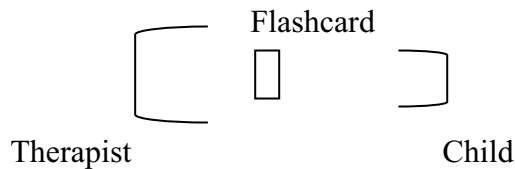


FIGURE 9. CDC participation framework with flashcard

baby talk register, namely *slowing down the tempo* of the communication. She slowly elicits and pronounces each of the sounds that compose the word 'Jamie'. She lengthens her vowels in both her modeled and spontaneous utterances, e.g. '/ e:::/', 'GOO:: D!'. The therapist takes time to display the shape of her mouth before modeling the sound to be pronounced by the children. This practice, however, is sometimes ineffective for Lev, who at times looks down or to one side and pats one hand over another. Given the autistic proclivity to focus on details and the inability to grasp higher order structures, the focus on individual sounds and the slowing down of the pronunciation task may interfere with Lev's understanding that the individual sounds compose the whole word 'Jamie' and the trajectory is to pronounce the word in its entirety.

In addition, the speech therapist displays the Euro-American baby talk characteristic of *heightened positive affect* conveyed through exaggerated intonation and effusive praising. The two come together in the utterance 'Good TRY↑::: ING↓!', in which the pitch dramatically rises and falls in one intonational contour and the praise is given for attempting rather than succeeding at a task. This level of affective intensity may overwhelm children like Lev, who are susceptible to sensory overload and may be inclined to withdraw (Bogdashina, 1981).

In summary, the speech therapist does not simply draw upon existing features of Euro-American CDC, she pushes them to the limits in an effort to develop children's speaking skills. For example, that the flashcard is positioned in front of her body and that Lev's head is braced to gaze towards the therapist and flashcard indicate an extreme insistence on face-to-face alignment. Similarly, speech is not only the primary medium of communication; it is a heightened articulatory performance. Moreover, slowed tempo as a simplifying strategy is taken to the point where facets of a single sound within a single word are produced and held suspended in time. Finally, praises, perhaps to build the children's self-esteem, are plentiful – 45 percent of the therapist's utterances – and lavish.

Transforming habitus in communicating with autistic children

The dispositions that compose the habitus of CDC are not static; rather, members continuously improvise ways of thinking, acting, and feeling in relation to children's life worlds as they inhabit and construct them. Consider in this light a woman from Bangalore, India, who, in an attempt to penetrate the barriers of

severe autism, transformed socio-cultural dispositions for communicating with young children.⁸ Working with her severely autistic son, Tito, educator Soma Mukhopadhyay transcended the parameters of the baby talk register associated with her Bengali speech community. Educated Indians such as Soma acquire not only a local language such as Bengali but also Hindi as a national language and English as an international language. From the time her son was diagnosed with autism, Soma used mostly English to develop a way to communicate with her son.

Like its Euro-American counterpart, Bengali baby talk is characterized by slower pace of speech, vowel lengthening, and exaggerated intonation (Dil, 1971). When interacting with infants and young children, Bengali caregivers use simple, short sentences, repetition, vocatives and directives, and talk about the here-and-now. Its expressive features include affect suffixes, special address terms, kin terms, names, baby talk lexicon, high-pitch, cooing, and onomatopoeia (Chatterjee, 1999). Like Bengali-speaking caregivers, Soma greatly accommodates her speech for children with severe autism. Her method heavily relies on simple, short sentences and extensive use of directives and repetition. For example, the mean length of Soma's utterances when communicating with autistic children is 3.02 morphemes per utterance, in contrast to 12.01 morphemes per utterance when she is conversing with a researcher.

Soma's innovations, however, lie in the use of certain strategies for simplifying and expressing affect that diverge from those characterizing Bengali baby talk register. Her communicative *modus operandi* when interacting with severely autistic children displays the following innovative dispositions: (1) the default participation framework is *side-by-side* (rather than face-to-face), with gaze primarily directed to focal object in front of participants; (2) the primary medium of communication expected of the child is *pointing to symbols* on a letter or number board, while the adult interlocutor primarily uses *speech* supplemented by gesture and touch; (3) *the letter or number board* is a central *artifact* mediating the communication between the adult and the child; (4) the adult uses *frequent, rapid, accentuated prompts*; and (5) *praising*, while frequent, is *restrained*.

Soma's approach, referred to as the 'Rapid Prompting Method' (Mukhopadhyay, 2003), involves tactile, visual and linguistic stimuli that focus the severely autistic child's attention on written alphabetic and numerical symbols, which the child is repeatedly and rapidly prompted to indicate through pointing in response to specific questions intended for instructional purposes or for conversational exchange. The method has been used with numerous severely autistic children and appears to 'get through' to many who had been considered mentally retarded and essentially non-verbal.

Consider, for example, how Lev, whom we saw previously in speech therapy, responded to Soma's attempts to teach him English grammar. Recall that 9-year-old Lev had never shown the ability to communicate through language and was considered mentally retarded by clinicians. In the following exchange, Soma and Lev are seated on a couch next to each other, with an English grammar workbook and a letter board on Soma's lap (Figure 10).



FIGURE 10. Lev with Soma Mukhopadhyay

Participant	Behavior	Selected CDC Features
Soma and Lev:	<i>((sitting side by side on couch, Soma to the right of Lev))</i>	SIDE-BY-SIDE
Soma:	<i>[((looking down at the workbook open on her lap)) [Now what is left?</i>	GAZE AT FOCAL OBJECT
Lev:	<i>[((looking away to left side))</i>	
Soma:	<i>[((pulls Lev's upper arm towards her)) [>Only four are left<</i>	ELICITS ATTENTION TO FOCAL OBJECT
Lev:	<i>[((looks in direction of workbook))</i>	
Soma:	<i>[((looking down, reading from the workbook))</i>	GAZE AT FOCAL OBJECT
	<i>[["The <u>ca</u>r is almost out of <u>what</u>-" ((moves workbook closer to Lev))</i>	ELICITS ATTENTION TO FOCAL OBJECT
Soma:	<i>((taps Lev's upper arm)) C'mon!</i>	RAPID PROMPT
Soma:	<i>[((reading candidate answers from the workbook and pointing to the page)) [Ga:s?</i>	ELICITS ATTENTION TO FOCAL OBJECT
Soma:	<i>[((pointing)) [ma:d,</i>	ELICITS ATTENTION TO FOCAL OBJECT
Lev:	<i>[((moves right hand with index finger extended towards workbook page, looking towards page))</i>	
Soma:	<i>[((pointing)) [bag,</i>	ELICITS ATTENTION TO FOCAL OBJECT
Soma:	<i>[((pointing)) [sat,</i>	ELICITS ATTENTION TO FOCAL OBJECT

Lev:	[((<i>index finger touches page several times</i>))	CHILD POINTS
Soma:	[((<i>pointing</i>)) [rag,	ELICITS ATTENTION TO FOCAL OBJECT
Soma:	[((<i>pointing</i>)) [had	ELICITS ATTENTION TO FOCAL OBJECT
Soma:	[((<i>looking down, taking letter board out</i>)) [okay.	
Lev:	((<i>moves right hand towards letter board</i>))	
Soma:	((<i>positions the letter board in front of Lev, looks down at letter board, holds Lev's right thigh</i>)) [((<i>shakes board while Lev's fingers are touching letter board, looks at Lev</i>)) [Was almost out of? <u>C'mon!</u> ((<i>looks at letter board</i>))	ELICITS ATTENTION TO FOCAL OBJECT RAPID PROMPT
Lev:	[((<i>looks directly at and points with index finger to letter on letter board, then briefly glances sideways at Soma and then looks back at letter board</i>))	CHILD POINTS TO SYMBOL
Soma:	[((<i>shifts gaze from letter board to Lev's face, then back to letter board, nodding</i>)) [“G::”,	GAZE AT FOCAL OBJECT & INTERLOCUTOR
	[((<i>looks at Lev</i>)) [very <u>good</u> ? ((<i>looks at letter board</i>))	GAZE AT CHILD PRAISE
Lev:	[((<i>looking at and pointing to letter on letter board then briefly glances at Soma</i>)) [Ehn- (.)	CHILD POINTS TO SYMBOL
Soma:	((<i>shakes board</i>)) <u>What</u> is it	ELICITS ATTENTION TO FOCAL OBJECT & RAPID PROMPT
	[((<i>nodding, looking at letter board</i>)) [“A::”,	GAZE AT FOCAL OBJECT
Lev:	[((<i>lifts finger off letter board and glances at Soma then back to letter board</i>))	
Soma:	((<i>even voice</i>)) Very good.	PRAISE
	“G” “A”?	
Lev:	((<i>points to letter on letter board and looks at Soma</i>))	CHILD POINTS TO SYMBOL

Soma:	(((nods)) ["S",	
Lev:	((looks at Soma, smiling))	
Soma:	(((looks down at workbook on lap)) ["Gas"!	
Soma:	Very good!	PRAISE
Lev:	((looks away to left side))	
Soma:	(((reading out loud from the workbook and writing the word "gas" in the workbook)) ["The car was almost out of <u>gas</u> ".	
Lev:	(((claps hands, looking away to left side))	
Soma:	((even voice)) Very good.	PRAISE

The first observation to make is that while Soma heavily scaffolds Lev's participation, he displays remarkable linguistic, communicative and socio-cultural knowledge. On linguistic and communicative levels, Lev manifests understanding of the meaning of 'The car is almost out of what-' both as a proposition and as a directive to which he is expected to supply a response. He also appears to understand the candidate status of the words read by Soma as possible responses and the expectation that he should select one of the words as the correct one. In addition, he appears to understand that to communicate the word that he believes to be correct, he needs to point to each of the letters that spell the word on the letter board. Further, in pointing correctly to the letters that spell the word 'gas', he displays knowledge of spelling. Moreover, Lev displays the socio-cultural knowledge that 'cars can almost run out of gas.' All of these displays of competence challenge common clinical assumptions that non-speaking, severely autistic children are necessarily non-verbal and mentally retarded. We turn now to CDC practices that appear to bring forth these potentialities.

In aligning *side-by-side* with the child, allowing the child to *point* to rather than utter symbols, using *rapid frequent prompts*, and delivering *moderate praise*, Soma's CDC practices are in a striking variance with those of the Euro-American speech therapist, whose communicative orientation was characterized by face-to-face corporeal positioning, speech as the default semiotic medium, slowed-down speech tempo, and profuse positive affect.

Soma's approach appears to be effective with profoundly autistic children such as Lev precisely because it does not insist that the children manifest person-to-person eye gaze and spoken language. The *side-by-side* participation framework allows the child to primarily orient to the letter or number board rather than to the interlocutor's eyes and face, alleviating social demands during instruction and freeing the child to maintain attention on the intellectual task at hand (see Figure 11).

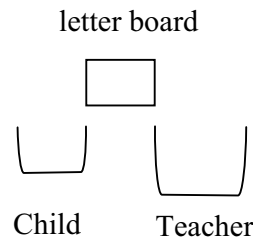


FIGURE 11. CDC participation framework with letter board

It is important to note, however, that in the exchange between Soma and Lev, Lev does not gaze exclusively at the letter board. Instead, Lev briefly but systematically glances at Soma each time he points to a letter on the letter board, as if checking to see if she is approving or not. When he points to the final letter 'S' in spelling the word 'gas', he glances at Soma, smiling, then turns away and claps his hands, indicating his sense of accomplishment and pleasure of approval. These fleeting moments of seeking and registering social feedback suggest considerable social awareness on the part of the severely autistic child. The side-by-side participation framework promoted by Soma may provide children like Lev with the freedom to initiate direct social contact with interlocutors through side glances, while their primary body orientation remains towards an object of focal attention.

The letter board is a central *artifact* mediating Soma's CDC approach. When responding to Soma's questions, Lev is not asked to speak but rather to communicate through spelling the answers on the letter board that consists of a grid of letters of the alphabet. The child is expected to *point* to each letter of the word that correctly answers the question posed (Figure 12). When Soma instructs mathematics, she uses a number board in the same manner. Soma's acceptance of pointing as a sufficient referential act for a child with severe autism diverges from other clinical interventions, most of which view pointing as a merely transitional medium leading to speech.

After Soma reads out the question from the textbook, she gives Lev a series of *rapid, accentuated prompts* (e.g. 'Cmon') to point to the letters that spell the correct response. In addition to verbal prompts, Soma uses non-verbal techniques to the same effect, including pulling the child by the upper arm, grasping his thigh, and shaking the letter board to secure his immediate attention. The use of prompting is not exclusive to Soma's approach. Indeed, increased reliance on prompts characterizes talk directed to communicatively impaired children more generally (Snow, 1995). Soma's frequent prompts, however, are delivered in staccato fashion and in rapid succession, and the child is expected to rapidly respond. Working with Lev and other children, Soma often urges them on with hurried directives such as 'Come on, >fast fast fast<!', '> Show show show show fast!<', '>Come on tell me< Show!', 'Come on show! >Come on<!', and 'Come on



FIGURE 12. *Pointing to the letter board*

>go ahead<!' The rapid, rhythmic manner of delivery is integral to the philosophy of Soma's approach. In a teaching video (Mukhopadhyay, 2003) and in an ethnographic interview conducted by the authors, Soma indicates that her speech style, especially prompting, is designed to drown out other forms of stimulation that distract the child from the task at hand. It may well be that the accelerated rhythmic pace is attractive and even soothing to children with severe autism, who have a tendency to engage in repetitive, rhythmic activity as a means of self-regulation (Bogdashina, 1981). The therapeutic properties of rhythm have been explored in other clinical interventions, such as music therapy for children with autism (Aldridge, 1996; Trevarthen, 1999; Trevarthen et al., 1996).

In addition, Soma's Child-Directed Communication is characterized by *measured praise* for Lev's accomplishments. There is nothing remarkable in itself about this phenomenon, until it is compared with the profuse praise delivered by the speech therapist in the earlier excerpt. The use of exaggerated praise, which is a feature of Euro-American baby talk, for a 9-year-old autistic child positions him as an immature interlocutor on a par with very young children. Alternatively, Soma's praising strategy is relatively age-appropriate for Lev and the other children with whom she interacts. Soma's abiding assumption is that severely autistic children have intellectual abilities, in some cases exceptional, albeit obscured and difficult to access. Her controlled delivery of 'Very good' along with nodding approval each time that Lev points to a correct letter is reminiscent of teacher's evaluations of elementary school students in classrooms in India and elsewhere (Alexander, 2000; Mehan, 1979, 1985). Soma's modulated praise is attuned to the autistic vulnerabilities to sensory overload, especially in social situations. The affective level may contribute to Lev's ability to monitor Soma's evaluative responses to his actions and eventually display his own positive evaluation of his successful performance by smiling and clapping his hands.

These strategies arise from Soma's *transformations of socio-cultural habitus* for communicating with children, motivated by parenting a child with severe autism. Soma's accommodations creatively respond to autistic impairments: Lev is able to coordinate his pointing with her directives, he points to the desired correct letter, and he monitors Soma's evaluation of his indications.

While not a panacea for the communicative obstacles facing severely autistic persons, the *modus operandi* established by Soma has vastly improved the social and intellectual universe of children like Lev. Three years after intensively working with Soma, Lev is now home-schooled in subject matter appropriate to his age. His teachers have appropriated much of Soma's CDC framework. During a history lesson, for example, one of the teachers sits *side-by-side* with Lev on a couch, reading passages of the textbook and holding a letter board in front of him so that he can *point* to the letters of words that answer questions. When he correctly designates a letter, the teacher affirms by simply uttering 'Yes' in an *even voice*. When his attention wanders, she *prompts* him to 'Look!' The teachers, however, have themselves transformed Soma's practice, in that they do not speak rapidly to Lev; do not use tactile prompts (e.g. pressing the child's thigh), but do explicitly alert him to a mistake by saying 'No' when Lev points to an incorrect letter.

These modifications indicate the following non-mutually exclusive possibilities: first, the teachers appear to have adjusted Soma's CDC practice in ways that are compatible with Euro-American CDC habitus (e.g. slowed tempo), which in turn implies a homeostatic pull on an innovative practice. Second, rapid tempo and tactile prompts appear to be no longer essential to securing and maintaining the child's attention, which in turn implies that the child may have developed a higher level of interactional competence and that the CDC practice has evolved in response to such development. Third, side-by-side participation framework, along with pointing as the primary semiotic medium, and restraint in praising continue to be deployed in this modified CDC practice, which in turn implies that these features may be selectively attuned to severely autistic children's communicative potentialities.

Conclusion

This article has brought together the *language socialization* thesis that society and culture organize communication with children and the *practice theory* argument that habitus organizes how members perceive, appreciate, and act in relation to specific situations. This synthesis has allowed us to outline a model of Child-Directed Communication (CDC) that specifies analytic dimensions relevant to the structuring of the enduring dispositions that constitute members' habitus. Variably realized across situations and communities, these dimensions include CDC ideologies, habitats, participation frameworks, activities, and semiotic repertoires.

Our analysis has focused on the impact of habitus on Child-Directed

Communication, illustrating how CDC habitus is at once limiting yet open to transformation. The limiting properties of CDC habitus arise from the effects of its historical origins, habitus being a product of established social orders, modes of representation, and meanings that members appropriate in the course of their cultural apprenticeship and continue to dynamically reconstruct through situated social practices. Specifically, when historically and autobiographically rooted dispositions characterizing CDC habitus are transposed from encounters with typically developing children to encounters with severely autistic children, the dispositions may result in *hysteresis*, that is, a 'discrepancy between habitus and field in which conduct remains unintelligible' (Bourdieu and Wacquant, 1992: 130).¹⁰ Operating under conditions of inertia (Bourdieu and Wacquant, 1992: 130), CDC habitus may fail to equip caregivers with the means to perceive and effectively act upon autistic children's communicative capacities. In particular, the following dispositions of Euro-American CDC habitus may compound (rather than minimize) the communicative difficulties associated with severely autistic children's impairments: face-to-face body orientation, speech as the primary semiotic medium for the child, and caregivers' slowed speech tempo and profuse praise. Bourdieu notes that the hysteresis of habitus becomes apparent at times of historical crisis (1977).¹¹ We suggest that severe neuro-developmental disorders may engender structural lags in members' communicative dispositions and practices on a par with historical upheavals in political order.

Alternatively, habitus is open-ended and vulnerable to potentially radical transformation. When crisis situations render habitus relatively ineffectual, members may feel helpless to cope with situational exigencies and their sense of order may be undermined. Amidst this experiential upheaval, a disciplined, empirical orientation towards the circumstances sometimes emerges and brings about a shift in habitus. On a small but significant scale, such a transformation took place first in India and then in the United States when the mother of a severely autistic boy revised commonly held assumptions about this disorder and initiated an alternative set of CDC practices attuned to severe autism. These practices include side-by-side body orientation, pointing to symbols as the primary semiotic medium for the child, and caregivers' rapid prompts and restrained praise. Albeit with extensive scaffolding, autistic children heretofore considered incapable of verbal expression point to symbols to convey academic knowledge, spiritual beliefs, political opinions, and feelings about their place in the world. While these practices remain controversial in the world of clinical interventions, the approach has been gaining in popularity across the United States as an alternative system for accessing severely autistic children's social and intellectual potential.

Examining how family members, teachers, therapists and others communicate with children with severe autism offers insight into the limitations of habitus and the capacity of members to transform it. It remains to be seen, however, if and how a CDC approach forged in the niche of a unique mother–son relationship in one country will restructure the CDC dispositions of caregivers in

another country, and, in turn, if and how these caregivers will transform innovative CDC practices introduced through global contact.

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NOTES

1. Autism is a life-long disorder that hinders the development of sociability and social use of language (Tager-Flusberg, 2000, 2003). Impairments in reciprocal social interaction, especially non-verbal communicative behavior such as eye-gaze, facial expression and body posture are characteristic of this disorder (APA, 2000). Infants later diagnosed with autism are often reported by parents not to babble (Landa, 2000) and not to look up when called or approached, giving the impression of being 'deaf' (Frith, 1989; Sigman and Capps, 1997). Studies of home videos indicate that these children engage less in face-to-face interactions than typically developing children and are less likely to follow others' pointing gestures (e.g. Adrien et al., 1991; Baranek, 1999; Maestro et al., 1999, 2002; Osterling and Dawson, 1994; Werner et al., 2000). That children with autism often look away when others attempt to make eye contact may be attributable to their use of peripheral vision (Courchesne, 1987). The ability to disengage and shift visual attention may also be impaired (Harris et al., 1999; Landry and Bryson, 2004; Townsend et al., 1996). The children rarely seek to share a focus of interest (joint attention); proto-declaratives, i.e. pointing to indicate an object of interest, which typically appear at approximately nine months of age (Bates et al., 1979; Foster, 1990), are usually absent in the early communicative repertoire of autistic children (Curcio, 1978; Tager-Flasberg, 1993). The children may develop unusual non-verbal strategies for requesting, such as leading others by the hand to an object. Even if they do learn proto-imperative pointing, (i.e. pointing to an object for instrumental goals), they do not shift gaze from the desired object to their communicative partner (Mundy et al., 1986). Language is delayed or limited, and approximately 40 percent of those with autism never develop the ability to speak (Centers for Disease Control and Prevention, 2000). Cognitive development of children with autism is hindered by impairments in sensory processing and integration. The children are easily overloaded by sensory stimuli and evidence difficulties integrating visual, auditory and kinesis information from their social environment (e.g. Hughes et al., 1994; Ozonoff and McEvoy, 1994). To soothe themselves, autistic children often engage in repetitive body movements such as

rocking and hand flapping (e.g. Bogdashina, 1981). They have difficulties attending to relevant information and focus on details rather than the larger whole, evincing an information processing style characterized by a 'weak central coherence' (Frith, 1989; Happe, 1994). Moreover, children with autism have difficulties with planning and executing actions (Hughes and Russell, 1993; Russell, 1997; Turner, 1997). Children with autism are drawn to structural regularities and often are interested in train timetables, time-keeping and chronology, calendars, taxonomies, music notation, and other stable informational structures. They show the same passion for constancy in their own lives and insist on sameness of their environment and routines, often to the detriment of other family members. These preferences for structural regularities are likely to be reinforced by the children's superior visual, and often auditory, memory (Frith, 1989; Happé, 1994).

2. ASD is considered to be a 'spectrum' disorder because it encompasses children sharing the same underlying deficit but with greatly varied levels of functioning (Frith, 1989; Wing, 1996). The diagnosis of Asperger syndrome is given to those children who exhibit impairments associated with autism but do not have a language delay. The children who manifest autistic impairments together with delay in language development are usually given the diagnosis of autistic disorder, or autism.
3. Video-recording was conducted under the direction of Portia Iversen.
4. Given that Samoan has a C-V phonological format, phonological simplification of the sort described in baby talk is built into the language structure.
5. While the term 'baby talk' has been applied to other social contexts (e.g. talk to lovers), it highlights babies as designated addressees.
6. A pseudonym.
7. The data segments analyzed in this section are part of a video-data corpus provided by the Cure Autism Now foundation.
8. Soma Mukhopadhyay's work has recently received wide media attention from programs such as (2001) BBC World Service/'Inside Story' series, 'Tito's Story'; (2002) *New York Times*, 'Science Times' series, episode 211, 'Autism'; (2003) NBC, *Sixty Minutes* and (2004) *Sixty Minutes II*, *Breaking the Silence*.
9. The notion of 'field' for Bourdieu involves

a network, or a configuration, of objective relations between positions. These positions are objectively defined . . . by their present and potential situation (*situs*) in the structure of the distribution of species of power (or capital) whose possession commands access to the specific profits that are at stake in the field as well as by their objective relation to other positions (domination, subordination, homology, etc.).

(Bourdieu and Wacquant, 1992: 97)

Childcare in its many institutional realizations, including families, schools, and clinical programs, may be seen as fields with their own networks of social positions and power asymmetries.

10. Anthropologist E. Valentine Daniels also notes that witnessing extreme violence 'is a shock that impairs habitus . . . and resists . . . the recuperative powers of culture' (1998: 68–9).

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