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“Spelling it Out”: The Design, Delivery, and Placement of Delayed Echolalic Utterances by a Child with an Autistic Spectrum Disorder

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Quantitative research into the phenomenon of echolalia in the talk of children with autistic spectrum disorders has been extensive but has tended to focus on the child in isolation, or has only considered other parties' immediately prior turns. Drawing on conversation analytic (CA) work, we examine one boy's production of three cases of possibly echolalic utterances. Our analysis focuses on wider interactional events, in particular, nonvocal events. Firstly, we examine what it is about these cases which make them echolalic: They apparently constitute announcements of how words are spelled which, in the activity, appear to be irrelevant. Nevertheless, we show how they are connected to locally prior talk. The utterances are demarcated prosodically from prior talk by slower delivery at increasing volume. Secondly, we show how each production of these utterances is tied to a specific interactional event: namely other parties taking control of a mobile robot which the child has been handling.

This study aims to explore the nature and function of apparently echolalic fragments of talk produced by a child with an autistic spectrum disorder. We present an analysis of these fragments of talk, focusing upon how they work interactionally. Our study involves attention to all parties' vocal and non-vocal conduct, and to the sequential organization of that activity. Prior to presenting our analysis, we shall consider previous research on the phenomenon of echolalia in persons with autism, including differences in its conceptualization and management over time.

Currently conceptualised as a spectrum of behaviourally-defined syndromes, autism (American Psychiatric Association, 1994, *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed. [DSM-IV]) is commonly described in terms of core developmental impairments in language/communication (verbal/non-verbal), impairments in social interactional skills, and a propensity towards restricted, stereotypical and repetitive activity. It is commonly proposed that these core features are typically accompanied by a diverse range of so called secondary symptoms, such as elevated sound sensitivity, gaze aversion, stereotypical movements, and a lack of pretend play.

The nature and development of language impairment in autism has been a matter of ongoing debate, complicated somewhat by the heterogeneous range

of individual symptomological presentations. Much of this debate hinges on the extent to which key features of autism reflect developmental delay, or are qualitatively or quantitatively distinguishable from behaviours observed in apparently neurotypical individuals.

Accumulated empirical evidence suggests delayed but broadly typical patterns of *lexical* and *syntactic* development in the speech of persons with autism; the language deficit is now broadly positioned in the realm of *pragmatic* skills (e.g., Baltaxe, 1977). However, some linguistic activities have been singled out as inherently problematical for these children; for example, the sparseness of autistic children's lexicon of emotion has been assessed and inferred in relation to their responses to face-processing experiments (for review see Baron-Cohen, 1995). Moreover, children with autism are often described as displaying affective responses that are unusual or inappropriate (for discussion see Loveland & Tunali-Kotoski, 1997).

Another noted feature is dysprosody, believed to represent a lack of access to the meaning inferred by prosodic variation in talk and/or the inability to use prosody to display meaning. In speakers with autism this is often reported in terms of flat prosody, with individuals displaying little variation in their pitch range or word stress (see Fine, Bartolucci, Ginsburg, & Szatmari, 1991; Provonost, Wakstein, & Wakstein, 1966; Schreibman, 1988).

Many accounts of linguistic functioning in autism incorporate a phenomenon known as echolalia. This term refers to apparently inappropriate, irrelevant or even meaningless repetitions of another's or one's own previous utterances, in which – prototypically – prosodic as well as lexical features are exactly reproduced (Howlin, 1982). The issue is the immediate relevance, design, and placement of such talk. Repetition of one's own or other's talk *per se* is not inevitably pathological; in fact, it is often employed as an interactive resource by other (neurotypical) speakers or in other speaker frames, for instance, as a therapeutic resource in Rogerian counseling. Here a counselor might use repetition of a client's prior talk to denote an "empathetic orientation" to the client in delivering subsequent advice.

The study of echolalia in autism has a long and varied history which extends to the first conceptualizations of the syndrome. In his seminal work, Kanner (1943) highlighted echolalia as a diagnostic feature of autism. He distinguished between two categories of echolalic speech: *immediate* or *delayed* (across turns). In subsequent work, Kanner described a series of utterances by children with his early infantile autism syndrome as "things which have no meaningful connection with the situation in which they are voiced. The utterances impress the audience as 'silly,' 'incoherent' and 'irrelevant'" (1946, p. 242). These apparently private, individualized utterances that were later reproduced in other contexts were not inevitably irrelevant. Sometimes they constituted a plausible (but pathological) mis-generalization or inappropriate reuse of previously heard speech via a range of mechanisms, including substitutive analogy, over-generalization, and restriction.

Other early studies (e.g., Pronovost et al., 1966) tended to present echolalia

as the preferred vocalization mode of children with autism.¹ Echolalia came to epitomize the developmental divergence between speech and language (Fay & Butler, 1968) in autism, in which the production of speech often masked poor comprehension (see Roberts, 1989) of its meaning and use. This led to a presumption that autistic speech was typically “self-serving” rather than socially-oriented.

Conceptions of echolalia and its functions have varied historically. In addition to accounts emerging from clinical practice, Wolff and Chess (1965) provided an early empirical account which divided echolalic utterances into communicative repetition (e.g., “Goodbye, to make a person go away”) and non-communicative repetition (e.g., “After coughing the child repeats his mother’s dictum: ‘You must cough in your hand,’” p. 35), although both were apparently deemed pathological. Thus, some early accounts follow Kanner (1946) in claiming that such utterances involve interpretable but inappropriate generalizations from previous experiences. In light of this, many interventions have attempted to extinguish echolalic talk by advising co-interactants to ignore it. One such account (Provonost et al., 1966) contained the following management advice for these children: “accept a child’s vocalizations and vocal outbursts without comment or penalty” (p. 25). Other early behavior interventions were more proactive, typically involving echo-abatement programs (Schreibman & Carr, 1978).

Whilst earlier research frequently relied upon clinical observations, by the early 1980’s, much more systematic analysis of data was being undertaken. Opinion, however, remained divided, reflecting quite different conceptualizations of echolalia. In particular, Howlin (1982) assumed echolalia to be meaningless, non-communicative, repetition whose occurrence was linked to lower levels of linguistic functioning. However, her contemporaries Prizant and Duchan (1981), who also content-analyzed naturalistic data, offered evidence that immediate echolalia may be used as an interactional resource. In fact, Prizant and Duchan’s study identified seven functional categories of echolalia. They also questioned the practice of echo-abatement interventions, a plea mirrored by Baltaxe and Simmons (1977) in their analysis of bedtime soliloquies in autism.

This growing focus on the communicative aspects of echolalia contained in the latter of these two perspectives emerged from the development of a new approach to the study of echolalia in which the child’s actions were seen more optimistically as an adaptive response to the constraints of their learning difficulties rather than as an insurmountable barrier to accessing social interaction. Previously, the idea that even immediate echolalia might have utility in albeit non-conventional social interactional encounters had been largely overlooked, but as part of this developing social pragmatic approach (for discussion see Wetherby & Prizant, 2000), a new appreciation of its functional potential emerged.

Fay (1967) observed that echolalia was sometimes modified in part during a repetition, a mitigation practice containing some level of connectedness to external events. Mitigated echoes were characterized as either containing some pronoun revi-

sion or by supplementation of the original utterance. Fay and Butler (1968) mark the emergence of mitigated echolalia in a child's talk as "reflecting developmental progress," and Shapiro, Roberts, and Fish (1970) suggest when it is prominent it marks an increment towards a more flexible use of language. Unfortunately, this research tended to focus on the child in isolation and consequently does not provide a detailed account of the interactional antecedents and consequences of instances of echolalic talk.

More recent research has concerned itself with the placement of echolalia in sequences of talk, most commonly in terms of the interactional precursors to its production. Prizant and Rydell (1984) explored the proximal positioning of delayed echolalia with "dimensions of interactiveness," concluding that it could be used interactively, as a turn filler or even as a protest, but concluded that much echolalia did not involve what they labeled communicative intent on the part of the producer. An interesting development emerged in a study by Coggins and Frederickson (1988), who examined the impact of echolalic talk on subsequent speakers, arguing that a highly repeated utterance may function pragmatically as what they label an interactive bid.

Rydell and Mirenda (1991, 1994) experimentally manipulated levels of "constraint" in sequential precursors to echolalic utterances, observing that high constraint utterances (e.g., directives, other-initiated repair requests) elicited more echolalia. In a case study of a five-year-old boy, Violette and Swisher (1992) experimentally manipulated the effect of linguistic familiarity of lexical items on the frequency of subsequent child echoes whilst varying the level of adult directiveness. Higher levels of immediate echolalia were observed when words with low familiarity for the child were combined with a highly directive adult style. A condition with a highly directive style but which also featured high lexical familiarity produced the fewest immediate echoes.

The contribution of interlocutors' non-vocal activities has also been assessed in a study of the impact of prior eye gaze and body proximity on the production of immediate echolalia in learning disabled adults (Campbell & Grieve, 1978). The authors report that more echolalia was produced when a coparticipant was facing and maintaining eye contact with an interlocutor. Although it is not clear how far this finding may generalize to very young speakers with autism who may also be gaze-avoidant, it does indicate that interlocutors' non-vocal activity may have a role in the production of echolalia, which could be a fruitful line of inquiry in extending our knowledge of the conditions in which echolalia is produced.

As a result of these studies, the functionality of echolalia is now widely acknowledged (e.g., see Roberts, 1989). This focus on the functionality, relevance, and implicativeness of echoic talk in relation to adjacent interlocutor activities, and the breadth of the sampling in many of these studies, have provided important conceptual contributions which constitute a primary source of reference for studies which seek to extend their inquiry beyond the child with autism to the interactional context in which echolalia is produced.

This said, there are some limitations to the informativeness of these studies. Their central focus on the child means that they typically do not provide a detailed account of the interactional antecedents and consequences of instances of echolalic talk. Unfortunately, because transcribed data is not available, we do not have adequate access to how prior turns in these studies were organized, and it is therefore often unclear exactly how the classifications used by the researchers were derived. In addition, we do not know the range and nature of other-activity the echolalic talk is responding to, even where some description or linguistic category has been applied to prior turns. Moreover, in addition to missing vocal details, we are also deprived of the opportunity to examine what non-vocal conduct might have made the echolalic turn relevant, either in its own right or when placed with concurrent spoken activities.

Another noteworthy feature of some previous research is its scrutiny of variables related to the incidence of echolalia, whether as a developmentally transitory phenomenon, perhaps linked to IQ (Fay & Butler, 1968), or as a phenomenon bearing an inverse relation to the complexity of language production (McEvoy, Loveland, & Landry, 1988). More recent theoretical work has attempted to conceptualize linguistic development through and beyond echolalia in persons with autism. Prizant and Rydell (1993) have considered echolalia in the context of a continuum of talk design in a broader category of *unconventional verbal behavior* (UVB). Other types of talk drawn into this category include incessant repetitive questioning and perseverative speech (echolalic or generative talk produced recurrently and lacking an expectation of a coparticipant's response). Finally, UVB encompasses speech that is "characterized by varying degrees of conventionality" (Prizant, Schuler, Wetherby, & Rydell, 1997, p. 573). While this attempt to provide a more serviceable characterization of impaired interactional resources in autism is welcome, the developmental processes involved in UVB and how it is revealed in interaction have been less well-documented. Quite often establishing the purpose of such idiosyncratic utterances is a major challenge for unfamiliar interlocutors interacting with persons with autism and even sometimes for those who are more familiar with the individual. Difficulties in negotiating the meaning of such an utterance can considerably delay or derail the smooth progress of an interaction, thus informing appropriate priorities for intervention programs. A systemized approach to establishing the purpose and function of unconventional talk is central to developing individualized intervention aimed at the use of more conventional forms of expression.

A promising research program which could address some of these issues and provide empirical data to bolster our understanding of the range and practices of UVB phenomena has emerged from Conversation Analysis (CA), which examines the sequential organization of interaction as locally managed by participants in that interaction (e.g., Sacks, Schegloff, & Jefferson, 1974). Although CA research has most typically scrutinized mundane social activity, this type of research has been extended to other domains. One axis of CA work has detailed how participants in

interaction themselves both orient to and renew institutional structures in a culture (see Drew & Heritage, 1992), bearing implications for the study of talk in settings inhabited by children with autism and their carers, teachers, or therapists.

CA studies of ostensibly neurotypical interactants have identified a number of ways in which a speaker may repeat talk from prior turns. The “repetition” or “echoing” of prior or adjacent talk (either within or across turns) can be a serviceable interactive resource which parties to an interaction recognize (for a review, see Wong, 2000). Here repetition can contain prospective functions which make relevant further talk by another participant, or acknowledge the ongoing relevance of earlier talk to the proceedings, for instance, as a “product item” in conversational repair (Jefferson, 1972). In examining the adult facilitation of child language acquisition, Tarplee (1996), commenting upon the development of lexical skills in small children, observed that caregivers may offer back a corrected version of a mispronounced word, and that the “preferred” response is an exact reproduction by the child of the caregiver’s prior utterance.

Couper-Kuhlen (1996) describes intonational features of echoing turn-designs and identifies how the intonational features may facilitate affiliation practices, thus providing an interactional resource for speakers and hearers. Given that they appear to be interaction-facilitating rather than closure-implicative, it seems probable that matching one’s prosodic/lexical resources to an interlocutor is a recognizably deployable interactive strategy.

It is conceivable that a speaker with restricted speech might deploy a smaller range of practices more frequently or use interactional resources garnered from surrounding or previous talk/activity, pragmatically “recycling” what the producer may have seen as effective in another context or circumventing difficulties in word recall/production (for discussion of the talk of an aphasic man, see Goodwin, 2003). This limited repertoire may inevitably result in a greater apparent frequency of “repeated” utterances, although the utterances may be modified by resources such as prosody to provide a locally-relevant meaning.

This notion that repeated speech may be an important interactional resource for impaired speakers and their interlocutors has underpinned applied CA inquiry involving speakers with autism. Careful CA analysis including attention to prosody and phonation has revealed that interlocutors of a boy with autism (“Kevin”) used forms of turn design which encouraged the child to repeat the utterance (Local & Wootton, 1995). They note that “unusual echoes” are “routinely treated by the adult as empty and non-meaningful,” a view which is congruent with professional perspectives. Importantly, this work suggests that echolalia may be a *joint production* to serve specific interactional conditions yet be sensitive to the child’s limited spoken repertoire.

Wootton (1999) explored what he describes as “non-communicative” echolalia in a boy with autism, which he notes most typically has “regulative and disciplinary connotations” (p. 362) and mirrors the prosody of previous adult delivery of this talk. Wootton also explores how the placement of embodied action

is linked to delayed echolalic utterances, demonstrating the utility of scrutinizing both talk and embodied action.

Tarplee and Barrow (1999) characterize and detail the deployment of echolalia as a resource for intersubjectivity, exploring the ways in which delayed echoes may be used for initiating sequences of interaction. In comparing the practices produced by “Kenneth,” the participant in their case study, with those of Wootton’s (1999) participant, one important implication is that the “echoic” is an interactional resource that may be differentially deployed and oriented to in relation to local interactional conditions. Kenneth’s echoes were found to initiate sequences of interaction (often concerning characters in a particular cartoon) in which his delayed echo was repeated (and sometimes modulated) by his mother. This flexible deployment raises questions about a notion of pervasive pragmatic impairment as the primary source of language difference in autism.

In a study of a related phenomenon which they label *formulaicity in autistic language*, Dobbinson, Perkins, and Boucher (2003) identified three types of formulas across participants which the authors remark “are suggestive of a continuum of productivity” (p. 305). The first was labeled *prosodic formulaicity*, and used to mark particular discourse functions; the others were labeled *lexical formulaicity* (discourse functions being varied by pitch direction) and *cross conversational formulaicity* in relation to topic. Considering the relative contributions of gestalt and analytic language processes in typical development, Dobbinson et al. note that the language products of the speakers with autism they observed reflect both the preferential use of a normative linguistic operation and of “rigidity not usually encountered in non-impaired language” (p. 305). This conflation of culture-typical language practices with the rigid or unusual reflects others’ impressions of the language of the more verbally-able speaker with autism (see Prizant et al., 1997).

In this study of three utterances produced by a boy with autism, we aim to consider what design features make an utterance “hearable” by interlocutors as echolalic. The utterances we will examine here are of a type that may engender adult praise or other reward when uttered by a child learning phonetics. They are characterized here as *spelling assertions*; in other words, as containing some claim to knowledge about the vowels present in some common words. These will be considered in terms of the activity in progress, for example, the co-management of topic and temporality. This emphasis on co-management implies that our analytic gaze will not rest entirely or even principally on the child with autism, although we do need to establish how the participant with autism has chosen to construct and manage the activities in which any echolalic talk is embedded. In so doing, we may elucidate what qualities or organization might make other participants (or indeed research analysts) mark any segment of this talk as problematic or pathological; however, understanding the activity will ultimately entail the examination and description of *all* co-participants’ actions and orientations to the actions of other participants.

Finally, we will investigate the extent to which this activity is relevant or

unrelated to the ongoing proceedings, especially to those that precede it sequentially. If it does orient or have relevance to the ongoing proceedings – in what way(s) and by what means is it anchored to those events?

RESEARCH CONTEXT

The data explored in this paper have been collected as part of the *Aurora Project* (see Dautenhahn & Werry, 2000, 2004; Werry, Dautenhahn, Ogden, & Harwin, 2001; also <http://www.aurora-project.com> for the goals and motivation behind the Aurora Project), concerned with developing therapeutic applications for mobile interactive robot platforms. A key aim is to simplify otherwise-complex interaction in order to increase its accessibility for children with autism. The data discussed in this paper emerge from an experimental trial to assess the therapeutic potential of a particular robot platform (see below). An important rationale for choosing to re-examine an extant data set collected for other purposes is the minimal intrusion upon potentially “vulnerable participants” in comparison to collecting a new data set.

A number of participants were involved in the trial that is the subject of this paper. The child participants all had autistic spectrum disorder diagnoses with complex learning needs that could not be met in supported mainstream education. These special needs confer eligibility for enrollment in a UK special school, in this case a residential establishment for primary age (5-11yrs) children with autistic spectrum disorders.

Our pupil participants were firstly “Lenny”² and secondly “Colin.” To address participant welfare and operational needs, the children and mobile robot platform were joined by two computer-science researchers, represented as E1 and E2 in this data, and a school staff member, Tanya (T).

Although we do not have access to diagnostic or clinical assessment data which profile Lenny’s linguistic and other functioning, in the videotaped material we have available for research, we have observed a range of behaviors consistent with the diagnosis of an autistic spectrum disorder. The film provides examples of competences and some more unconventional behavior in the core categories of language and social interaction, together with activities suggestive of more restricted/ritualistic behavior patterns.

Firstly, Lenny demonstrates a range of interactional competences, especially in the management of turn taking. Within the turn taking structure he produces and responds appropriately to a wide range of different utterance types. His talk includes interrogatives (“how can it see me?” and “why’s it stopped?”), directives (“go away”), requests (“C’n I go home”), and preliminaries to assess another’s orientation to a topic he is proposing (“Y’know that robot”).

In terms of non-talk communication, he is also able to use pointing gestures

declaratively and direct his gaze to select a recipient of his talk (see also Dickerson, Rae, Stribling, Dautenhahn, & Werry, 2005). He is apparently able to differentially design talk for coparticipants with different participation statuses. For example, he is prone to issue bald commands to the robot platform (e.g., “swear” and “rip the carpet”) and sometimes Colin (“go ‘way”). In contrast the talk addressed to Tanya most often takes the form of *wh*- or *how* interrogatives or informings about his own current activity (e.g., saying “circle the robot” while running around the robot platform and looking towards Tanya). Despite evidence of some good pragmatic competences in the linguistic domain, there is also a series of apparently echoic utterances that are the subject of analysis below.

Lenny’s social behavior presents many challenges for those interacting with him during the trial. On many occasions he does not appear very sensitive to the needs and interests of others. Rather than trying to facilitate joint activities with his peer pupil Colin, more typically he either ignores him or tries to bar the latter’s access to the robot platform.

Later in the trial Lenny frequently lifted or tried to otherwise impair the functioning of the robot platform even when adults make it clear that this is not acceptable behavior. On some occasions Lenny or one of his limbs has to be lifted away from the robot platform. Following this at one point Lenny defends himself (or in Goffmanian terms, his *face*) against an imputed charge of bad behavior from Tanya (“be nice”) by aiming a kick towards Tanya and declaring (“I am being nice to it”).

In terms of emotional expression, Lenny seems to have at least some access to the resources with which such expression is typically managed. He utilizes a wider pitch range than many of the children in the trial, and produces prosodic patterns that are hearable as representing particular affective states (e.g., “move” bellowed to the robot in what is interpretable as an angry tone). There is one instance of swearing and insulting language, delivered with culture-typical prosody. What is more conspicuously absent here is the production of the English lexicon of affective states, which may reflect at least some difficulties in emotional relatedness.

Beyond possible delay in social-emotional development, there are other features displayed that might be thought of as iconic in children with autism. When apparently distressed (following loud speech of his own), he covers his ears and closes his eyes for a lengthy period, apparently not seeking interaction with others. Towards the end of the trial Lenny spends a good deal of time repeatedly undertaking body rolls. The design and management of this activity is reminiscent of the solitary, stereotyped behavior frequently associated with autism. In summary, although in many respects Lenny presents as a more able child in comparison with many others on the autistic spectrum, even in this short activity he does produce patterns of behavior that are congruent with the syndrome.

The second child participant, Colin, spends most of his time around the periphery of the action, although when given the opportunity he does attempt to manually move the robot platform around the room. He frequently appears to be

visibly monitoring the other participants, particularly Lenny, yet does not seem to be using his gaze to gain others' attention to his activities. We observe little variation in Colin's facial expressions while he is on camera; he doesn't seem to display readily readable signs of distress or pleasure. He does not verbally address other participants during the trial, and eventually moves to the other side of the room to stare out of the window for a lengthy period.

Tanya is a young woman who provides classroom support at the school. In accordance with the instructions given to adults supporting the children during the trial, she mainly intervenes (calmly but clearly) to set boundaries on what might be deemed unacceptable behavior, for example, on activities that could damage the robot or may pose some risk for the children themselves. These interventions are sometimes followed by suggestions of more appropriate activities. Tanya does respond to questions from Lenny, typically, fairly concisely. She also on occasion takes control of the robot, presumably to demonstrate its capacities to the child participants. She does not directly address Colin.

Finally, the rectangular Labo-1 robot platform is 28 cm wide, 38 cm long, and 15 cm high, weighing 6.5 kg. It has a wheel at each corner and a turret-like structure in the middle covering some of the internal wiring. At the front end there are movement sensors and vision sensor units mounted on a stalk. To the rear of the platform there are a number of function buttons, distance sensors, and a LED panel. The robot changes the direction of its movement when these sensors detect the presence of an obstacle (e.g., a chair leg or the outstretched hand of a participant).

These trials were undertaken with pairs of pupils in a small carpeted room with a glazed door at one end and large windows at the other, located in the residential accommodation of the school. Under the windows were some seats generally occupied by adult participants, flanked by two cameras used for videotaping the session. The data recording priorities were robot performance and child/robot interactions. Because of the specific focus, the video recordings seldom capture the activity of the mainly seated researchers unless the researchers directly intervene in the activities in progress, for instance, to prevent damage to the robot.

In a typical trial, staff and children were first briefed as to the nature of the activity they would be engaged in, the briefing for children was presented in a manner commensurate to their developmental level, after consultation with the staff who knew them best. Staff participants were given specific instructions as to how they should manage themselves and the pupils during the trial. Pupils, either singly or in pairs, were brought to a room by staff members and introduced to the researchers. For the benefit of other experimental studies for which these trials were initially designed, some children (although not those in this trial) experienced another condition in which they were offered a red "truck" to play with either prior to or after being introduced to the robot platform.

The trials were organized as "free-play" sessions, with the adult participants present briefed to be minimally involved with the children. Child participants

initially had little information as to the functional capacities of the robot or what activities they might engage in during the session. In this context they had considerable freedom to decide how to proceed.

In the sequences examined from the Aurora pairs trials' data set, only a tiny minority of utterances produced were hearably echolalic. While this may be peculiar to our sample, it may also be related to the nature of the activities in progress. It was noted above that high levels of adult directiveness paired with unfamiliar activity content can be associated with increased levels of echolalia (Violette & Swisher, 1992). Even though the activity may have been novel, the low constraints on child choices may have elicited less echolalia. Rydell and Mirenda (1991) also report that high constraint was linked to the production of the majority of the echolalia they observed in their study.

Although this activity was much less structured than would be typically presented to children with autism during educational interventions designed around the needs of pupils with autism, the trials generated some spontaneous social negotiation about who should have control of an attractive scarce resource (the robot platform) at any time. Children can and did initiate interactions with adults and sometimes repaired failed bids to engage the adults, although this was highly variable among the children. Thus the sessions provide a rich source of data from which to explore and describe the childrens' interactional competences.

The excerpts considered here were the only examples in the data set available which the researchers identified as clear instances of echolalic talk, either immediate or delayed. This selection does not preclude the presence of other examples in the data, since a single incidence of an utterance that is treated as echoic in the child's other social worlds and appears relevant to the ongoing proceedings in these trials may not be identified as such here.

Transcription practices are based on an extended version of the Jefferson system (see Appendix 1), drawing on the layout used by Goodwin (2003). The precise organization of the transcript has been considered in light of the representative qualities of the chosen layout (for discussion of politico-organisational considerations in transcription, see Ochs, 1979).

ANALYSIS

In this section, we will explore three extracts featuring talk doing spelling assertions by Lenny (L), the child with autism described above, in a non-spelling context. We will initially look at the organization of each of the "problematic" turns along with their surrounding turns and then will consider their common features.

Case 1

9 L: EXCUSE me got: an O:W IN IT:

Case 2

10 L: <p:lease 'as go:t (.) an: A: ↑IN IT >

Case 3

1 L: (unclear) 's gotta AN OWH IN ↑I::T:
|
((scream pitch))

We will begin our analysis by examining the first utterance that is a candidate instance of echolalia. Here our analysis will examine the design of the utterance and will consider what is echolalic about it as well as its features which conflict with received approaches to echolalia. We will then examine aspects of how copresent parties orient to the utterance. Finally, we will examine aspects of the non-vocal conduct within which the utterance occurs.

Extract 1 involves Lenny (L), his staff support Tanya (T), another pupil Colin (C), who does not speak, and the mobile robot platform (R). Peripheral are two researchers (E1 & E2).

Extract 1 (Aurora Pairs 14:56:53-14:57:16)

Non-Vocal Activity

Above Line of Talk: Speaking participant

Below Line of Talk: Non-speaking

1 R: excuse me please ((monotone))

2 (-----+--)
└──────────┘

L ((looks up towards T))

((looks down towards R))

|

3 L: ↑How d'you know where I am.

4 (-----+-----)

|

L ((looks up at T))

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13      (-----)
      L          X ((starts clapping))
      _____
          ((starts 'stiff' running))
          XXXXXX
          ┌───┐
14 L: urhrrrrhhhhhhh

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Initially we will focus on the possibly “echolalic” features of the utterance “excuse me got an ‘o’ in it” (Line 9). There are three such features: lexical format, topic, and prosody, similar to the qualities noted by Dobbinson et al. (2003) in their account of formulas in autistic language.

Firstly, as becomes apparent subsequently from Cases 2 and 3, the utterance appears to be an instantiation of a stock lexical format, in that it is arranged as a target word + verb (to get) + vowel + “in it.” Although we cannot establish if the first utterance here (Case 1) is strictly-speaking treatable as echolalic, (i.e., having been previously-heard/produced by Lenny and now “inappropriately generalized”), this extract and the subsequent two presented bear topical and semantic similarities that allow them to be collectively investigated as echolalic talk. It should be noted that the inclusion of this initial extract here as what autism researchers label *delayed echolalia* is largely justified by *subsequent* similar rather than repeated *earlier* utterances.

Secondly, as previously mentioned, the utterance appears to undertake an abrupt change in topic, mainly from talk relating to the robot’s conduct to talk about spelling. Previously talk has concerned aspects of the robot’s conduct: for example, Line 3 initiates a sequence about how the robot knows where Lenny is which Tanya closes with her answer (Line 5), and in Line 7 Lenny starts to initiate another sequence about why the robot said what it did. However in Line 9 the target turn undertakes an abrupt shift in topic in now issuing a statement about the spelling of “excuse.” In addition to its topical abruptness, the utterance is also sequentially abrupt in that it prevents the progression of the sequence which Lenny’s prior talk initiated.

Thirdly, the utterance shows a prosodic shift involving slower delivery and a marked increase in volume. This prosodic organization is somewhat noteworthy here because Lenny’s talk in Lines 7-9 is delivered with progressively increasing volume and emphasis, with an upgrade in emphasis as the target vowel (“O”) is articulated. In this respect there is an observable prosodic shift in the onset of the “echolalic” utterance that mirrors observation by Wootton (1999) of his participant, Kevin.

Does this prosodic organization alone indicate the utterance’s concurrent treatment as problematical or echolalic? In assessing the local relevance of this prosodic organization, coparticipants can access their experience of the deployment of elevated volume as an interactive resource, for example, to mark key issues, such

as “anger” or opposition, or in alerting others to danger, even where, as Goodwin and Goodwin (2000) note, the turn contains no emotional lexical components at all.

Although the utterance has these echolalic features, there are respects in which it shows links to conduct in the setting which problematise labeling it echolalic. Concerning the design of the turn, the target of Lenny’s spelling assertion may bear some semantic relation to an earlier mechanical utterance by the robot at Line 1 – “Excuse me please.” Its local relevance may be connected to this prior turn, despite intervening turns forming what may be designed by Lenny and Tanya as an extended insertion sequence, topicalising the robot’s spatial knowledge.

What opportunities for participation does Lenny’s talk create and how do co-present parties orient to it? Given the accumulation of challenges or even echo-indicative markers for hearers outlined above, collectively the internal features of this turn could be treated as problematical rather than as within an acceptable range of turn design. In terms of the behaviorist orientation on which typical autism educational technologies are founded in the UK, Tanya as an “expert carer” might be mandated or even encouraged to ignore talk which she deemed echoic, irrelevant, or inappropriate. She ignores a later incident where Lenny loudly swears repeatedly, giving an impression of performing to an audience. Although this remains unclear, there is some suggestion that she might not be reading the utterance as simply echoic at this stage.

When Tanya self-selects as next speaker (Line 11), she chooses to respond to the sequentially last-positioned echoic talk in Lenny’s previous utterance rather than responding to the prospectiveness of the prior-delivered un-addressed question. Rather than marking the design or delivery of Lenny’s now complete turn as troublesome, or giving any overt indication that she receives it as irrelevant or echolalic, she orients to the informational content. Thus Lenny’s assertion is seen to be treated as strictly topical and contestable rather than irrelevant. The prefacing of her turn with “No” (given the available option of prefacing with a more affirming/positive reading), the absence of other problem markers, and the sharp refutation (rather than citing the source of the error) all mark her overt disapproval of Lenny’s proposition. It is hearable as a highly exposed correction rather than embedded correction.

Interestingly, her negation turn contains many of the elements of Lenny’s lexical/syntactical structure with fairly minimal grammatical restructuring, bearing some similarities to how Fay (1967) defines *mitigated imitations* as a class of echolalia. Its proximal position to Lenny’s prior utterance assists its reception as orientation to the talk of a prior speaker. Some classes of repeated talk, for instance, doing mutuality with others’ stories (see above), are marked by concurrent or adjacently-placed repetition. Secondly, there is evidence elsewhere in the CA literature (e.g. Pomerantz, 1984; Tarplee, 1996) that correction involves repetition of prior talk and the participants themselves recognize it as such. Thirdly, it may also be pertinent that the inappropriateness of the repetition in autism is linked to its frequency/placement.

However, issues of relevance cannot be adequately addressed in lexical terms alone. Consider the delivery of Lenny's utterance at Line 9. His prosodic choice is a slower, crescendo-like increase in volume. This is sharply juxtaposed by Tanya's next turn offering at Line 11, her response delivered at lower volume in a fairly flat prosody. The prosodic selection highlights the contrast between his utterance and hers, possibly marking the correctability of another aspect of Lenny's assertion: it is also inappropriately loud.

Although Tanya has treated what may subsequently come to be reconceptualized as an echolalic utterance as prospective (in requiring correction), her turn design does not appear to contain the machinery to elicit further interaction, unlike that of the adult interlocutor of Tarplee and Barrow's (1999) autistic participant Kenneth. In subsequent talk (not shown on the transcript), Tayna directs Lenny to the robot.

So far we have mainly focused on the ongoing spoken aspects of the interaction between Lenny and the staff member Tanya, and have largely neglected the sequential import of other participant's less prominent activities. Colin (C) has been silently roaming around on the periphery of the action. A few moments after Tanya's answer, Colin moves forwards as the robot nears him (Line 6). Just prior to Lenny saying "excuse" (Line 9) Colin grasps the robot with both hands (Line 7 – starred). Colin proceeds to lean over the robot and plants one hand on the ground next to it. Immediately after this action, Lenny starts his spelling assertion. What appears to be important then is that the initiation of Lenny's echolalic talk occurs at a point of dramatic change in his opportunities for participation in this setting (cf. Lerner, 1995). He has previously had exclusive access to the robot, which has been the focus of his attention and his talk with Tanya; now, however, Colin has entered the scene and deprived him of access to the robot. If Lenny's spelling assertion is a counter challenge to Colin, it is successful as Colin moves back immediately.

This fragment therefore suggests that Lenny may be using his spelling assertion as a response to a challenge to his opportunities to participate with a locally significant object and possibly as an attempt to manage others' participation. The two other cases provide further evidence for this.

Extract 2 occurs a few minutes later in the trial. It again features Lenny (L) and Colin (C) and the mobile robot platform (R). Colin is standing by the glazed door in the room, looking down, and Lenny is kneeling on the floor, facing Tanya (T) who is partly off camera. Also present are the two researchers (E1 & E2).

Extract 2 (Aurora Pairs Lenny & Colin 15:00: 07-15:00:20)

Non-Vocal Activity

Above Line of Talk: Speaking participant

Below Line of Talk: Non-speaking

1 E1: you can ↑cha:se it 0maybe0.

L (('walking' on
knees towards R))

2 (-----+-----+)
[] []

L ((leaning ((grasping R))
forward over R))

3 R: hello there

T ((extends/ ((Glances
retracts towards L))
palm
towards R))

4 (-----+)
[]

L ((sits up))

5 R: please

[]
*T ((RH palm towards R))

6 T: 0um0

T ((raises palm, palm & gaze track R's reverse))

7 (-----+-----)
[]

R ((reversing))

8 (L:) >igh<
[]

R ((rotating right))

T	((palm & gaze following R's rotation))	
9	(-----+--)	
L	((slight head movement))	
	((looks up to T))	((look to door?))
	((looks down to R))	((Looks to T))
10	L: < p:lease 'as go:t (.) an: A: ↑IN IT >	
T	((looking towards L))	((looks down to R))
		((looks at L))
11	L ((Glances round at E1?))	((looks down at R))
	(-----+-----+)	
T	((swaps hands looks down))	((looks to L))

Here again Lenny produces a spelling assertion (“please ‘as got an A in it”) at Line 10. This turn has some lexical and prosodic similarities with the talk in Extract 1, Line 9. In terms of the latter, we see the reproduction of the slower delivery and also increasing loudness/stress (crescendo) as Lenny highlights the vowel (“A”) in his spelling assertion. This prosodic mimesis extends to the rhythmic reproduction of Lenny’s utterance in the last extract; even though there are lexical substitutions, the basic hearable prosodic structure is preserved, not least by retaining the morphological structure of his prior utterance. These mimetic qualities contribute to a potential coparticipant hearing the utterance as being echoic of his prior talk, a point we will return to in the next extract.

Moving beyond the features of intra-turn design, one aspect that marks this segment as distinct from the last is the differential contribution of others’ turn design. On this occasion there is no attempt by Tanya to treat it as a knowledge-claim inviting other-assessment, rather its management is congruent with behaviorist orientations towards echolalic utterances: in other words, it is ignored.

Are there comparable other-designed activities surrounding this example? In this sequence E1 has delivered an activity suggestion “you can chase it [the robot] maybe” at Line 1. Although the addressee isn’t directly identified, the context,

activity selection, and turn design would suggest the child participant(s). Following this invitation, Lenny commences some activity which involves leaning over the robot at L2. However, Tanya soon appears to undertake control of the robot's movements by manipulating its light/heat sensors with her hand, a process that Lenny is almost certainly by now familiar with. The economy of possible turns with the robot (only one operator can provide information to the sensors at once) means that Lenny must wait for a turn.

Tanya's actions here are largely undertaken without gaze towards Lenny to assess his receptivity to her actions, undermining any possible construal in terms of Tanya doing a demonstration for her pupil. At Line 4, for example, she commences the activity looking down at the robot. Her activity continues for some seconds whilst Lenny simply sits back. When she does gaze in his direction at L10 (we cannot assess if he has done anything to elicit this as we only have a back view), he subsequently produces the progressively amplified spelling assertion.

Although superficially it is possible to assess Lenny's utterance as merely irrelevant to ongoing events, it is arguably more interactionally-embedded than a purely lexical analysis of its location and form might suggest. Lenny is faced with the problem that Tanya's gaze is largely occupied with monitoring her own hands operating the robot's movement via its sensors. Lenny may read Tanya's gaze towards him at Line 4 as an invitation, possibly inviting him to take a next turn at operating the robot. Furthermore, it is a common form of doing politeness to preface some kind of request (e.g., for an activity turn) with a politeness token such as "please." However, the robot has just produced the utterance "please" (Line 5), and given that Lenny has previously reproduced an immediately prior utterance by the robot (Extract 1), the word may relate to that.

On another level, Tanya's response to the start of the utterance (moving her gaze to Lenny, thus making it unavailable for the task of monitoring and thus contributing to the control of the robot) may be a response that Lenny could have predicted from his previous experience. Given that Tanya's attention now appears to be distributed elsewhere, Lenny is then faced with a difficulty in re-securing it. His prior experience of the impact of a spelling assertion (as in Extract 1 above) is that it does secure her attention, and thus is likely to distract and disrupt Tanya from undertaking her current activity. In these senses Tanya's course of action may have inadvertently had a role in eliciting what ultimately becomes hearable as an echolalic utterance. As in Extract 1, Lenny's production of hearably echolalic talk follows another taking control of the robot platform.

This time however Lenny's spelling assertion is apparently not received and acted upon as relevant to the proceedings. Some indication of Lenny's intention that the utterance might relevantly impact upon other participants' activities might be assessed from his glance on completion towards camera 1, presumably at E1 who is off camera and who has at the beginning of the sequence invited him to a chase action with the robot. Here coparticipants apparently treat Lenny's utterance as problematic: that is not response-indicative or as implicative of curtailing their

E1 ((extends hand ((pushes R
towards R)) back))

5 R: hello there (--) hello there

E1 ((withdraws hand))

L ((raises eyes))

6 (-----+-----+)

*T ((extends hand towards R))

((raising ((leans ((sits ((looks
LH, back)) up)) down
closes raises
eyes)) hands
to ears))

7▶L: <(unclear) 's gotta AN OWH IN ↑I::T:>

((scream pitch))

R ((moving forwards))

At Line 6 Tanya again takes control of the robot platform by extending her hand towards it. On this occasion it is more difficult to assess if Lenny might have had an opportunity or an invitation to take over this activity, since Tanya is largely off camera at this time, with only her hand extension visible to viewers.

This time the spelling assertion at line 7 does not commence with a candidate word to contain his target vowel; rather he inserts what sounds like a filler syllable in that slot. Peters (1997, 2004) notes a parallel phenomenon in young children's use of fillers, where protomorphological stage children use filler syllables to mirror appropriate morphological forms from the language they are mastering. This morphological preservation supports a reading that the syntactic, lexical, and

prosodic/rhythmic format of the previous examples are broadly reproduced here. There are two departures from the prior format here: although it is presented more slowly than other non-spelling talk, the current utterance is delivered at an apparently higher volume, and the stress commences earlier. Notwithstanding these differences, the broad preservation of form offers hearers' support for semantic links to those earlier utterances.

The challenges presented to recipients in deciphering this first word invite a reading as somewhat ambiguous talk. This may direct hearers away from attempting to assess/access any semantic truth that might otherwise be their concern here. Paired with the now-familiar delivery format, the utterance can be hearable to interlocutors (and analysts) as functionally similar to those in the previous two extracts. Additionally, it may be hearable as a reformulation/upgrade of Lenny's prior actions which may be received as inferring some action trajectory whilst its nature remains opaque. To this end the utterance could also function strategically, the non-transparency of the target object (coupled with increased volume) may function to distract co-participants from their current activity, allowing Lenny to regain the robot (as it may have done in Extract 1). This variation in turn design then tentatively hints at a strategic trajectory in the design of these echolalic turns, as some upgrading occurs following apparent repeated offences on the part of others, although much more data would need to be examined to adequately assess this.

Another matter worthy of comment is Lenny's body posture subsequent to delivery of the utterance. Lenny covers his ears and appears not to be attending to others' activity. It is possible to read this as evidence that the utterance is self directed or self-serving (see above) in some way. However, its placement after delivery of his utterance and the competing possibility that Lenny may experience auditory input more intensely (as has been suggested in autism research) means he may be simply overwhelmed by the volume and intensity of his own utterance.

Prior to this third similarly-constructed utterance there has been a brief verbal interchange concerning Lenny's behavior towards the robot (Lines 1-3). Lenny sits looking towards the robot while first E1 (Line 4) and then apparently Tanya (Line 6) control the robot movement with their hands. Once again, the hearably echolalic verbalization is produced when control of the robot is not with Lenny. Similarly, this utterance doesn't immediately give Lenny control of the robot; Tanya continues to operate the sensors with her hands for another seven seconds, followed by a general injunction "Don't move it" that doesn't appear to be directed to anyone in particular.

What then is common or discontinuous about the observations we have made about these three events? Firstly, all these problematic utterances are marked by similarities in design and topical content which may make them hearable as mimetic. A target object word (or substitute syllables) is sequentially succeeded by some declaration about the vowels featured in it. In prosodic terms we see a pattern of volume management that contains parallels with the delivery of anger or protest.

Secondly, the structure of the prosodic organization suggests an identifiable

action trajectory within each case, but also across them. This is evident in the management of volume. In the first two examples there was a notable upgrade in volume on production of the target vowel. More generally, the volume progressively increases within and across turns and can be readable as projecting types of emotionality such as anger or distress. In the absence of comparative data, it remains an open question as to whether this is a specific design practice that denotes the utterances' problematic status to interlocutors. Irrespective of Lenny's intention, it may be available to coparticipants to assess them as related and having sequential import by framing them in this design trajectory. In this way the echolalic design might offer up a prosodic emotionality which could shape or influence coparticipants' alignment to Lenny's problem (Goodwin & Goodwin, 2000).

Thirdly, all of the utterances are related to the opportunities for participation at the times in which they occur, specifically access to the robot platform. In the three examples, the two utterances which are disattended by Tanya fail to bring Lenny immediate play opportunities with the robot. In the first scenario of this kind, it was the peer child, Colin who subsequently relinquishes control.

DISCUSSION

This study has examined three instances of "spelling assertions" in the talk of a child with an autism spectrum disorder. In addition to examining how this talk is designed, we have been particularly concerned with how it is occasioned, and how it is sequentially embedded in ongoing activities. We have shown that the spelling assertions occur at a specific interactional juncture, namely when another party takes control of the robot platform's sensors.

We have proposed that this spelling assertion talk is echolalic. Although the cases examined are not prototypical examples of echolalia, they show characteristic features such as repetitive, formulaic content, and prosody. The lexical unconventionality of Lenny's utterances has parallels with Kanner's (1946) categorical construct of *irrelevant* and *metaphorical* talk, discussed above. Despite our appreciation of Kanner's exceptional observational skills, his choice of the term "irrelevant" was less helpful, so to avoid misunderstanding, his category label was not adopted here. Prizant et al.'s (1997) term *unconventional verbal behaviors* initially appeared to be an attractive alternative. Whilst it could encompass the apparently inappropriate lexical choices, it overlooks the non-lexical aspects of this phenomenon. An alternative characterization is that of *formulaic talk* (Dobbinson et al., 2003). Lenny's talk is formulaic in the sense that he uses truisms that are not tied to the local context; however, Dobbinson et al. use *formulaic talk* to refer to units of talk that are semantically fitted but invariant in form.

Lenny's spelling assertions have design features and functions that more closely match accounts of echolalia than those assigned to the other categories we have discussed. Consequently we have chosen to adopt the label *echolalic* in describing these utterances. Nevertheless, this label does not adequately capture

the activities we describe. Finally, although the variations across turns suggest that Lenny's talk is describable as mitigated echolalia on some level, we have avoided assigning this additional label to these turns as they would not appear to strictly meet the criteria for doing so.

Given some evidence that echolalia is often superseded developmentally by the emergence of more flexible interactional skills (see above), its production by a verbally able child like Lenny might be at first sight surprising. One of the noteworthy features of this talk lies in its contrast to Lenny's successful and more typical management of quite a range of reciprocal activities during other activities. Both Prizant et al. (1997), in their account of UVB, and Dobbins et al. (2003), in their description of formulaic talk, indicate that more echoic or formulaic practices can occur along with more flexible talk. Perhaps what might be puzzling to an outside observer is how and when the practices switch, thus this study attempts to explore the immediate events around the transitions between Lenny's echoic and apparently mundane talk.

As indicated above, one explanation for the production of spelling assertions might be that Lenny is using it to display dissatisfaction with what has just happened (i.e., loss of access to the robot platform). For Lenny (and possibly for other speakers with autism who can construct grammatical sentences) echolalia could perform some specialized work not evident in the immediate lexical choices. This may involve conveying information or phenomena (e.g., affective states) that the speaker does not, or indeed cannot, produce in a more culture-typical format in mundane talk. The speaker may choose to accomplish such actions using atypical interactive resources that are open to be treated as meaningful by others in terms of the action he is undertaking.

Lenny may mark (intentionally or otherwise) his discursive transition to echoic talk using the distinctive prosodic features described above. His prosodic choices may offer hearers (and analysts) some insights into what this may be designed to accomplish. The escalating volume featured in these utterances may be more generally hearable as distress and/or opposition. Anger is often delivered with increased volume in non-impaired individuals, such that it is sometimes referred to as "having a shout" about something. The prosodic features of Lenny's spelling assertions suggest that Lenny might be emulating the prosody of anger/protest. Lenny produces these spelling claims on losing control over the robot platform to another participant when a negative affective response to these events may be appropriate or even expected. The possible usage of delayed echoing to do a contesting of another's action is also consistent with Prizant and Rydell's (1984) proposal of a functional category of "protest," and perhaps indirectly "request." Thus one possibility is that Lenny is engaged in marking his displeasure or making a protest, whilst not using the lexical items for the culture-typical expressions of opposition. He might avoid such lexical resources because of their complexity. Such practices would have some congruencies with Kanner's (1946) observation that these children make use of substitutive analogy in a manner that may render utterances irrelevant

to a hearer unfamiliar with the rationale behind the substitution.

Certainly Lenny's non-use of lexical terms relating to affective states would be congruent with previously observed patterns of uneven development in autism, for example of impairments in emotional expressiveness. Treating Lenny's prosodic selections as a primary meaning-bearing resource could support and illuminate previous suggestions that echolalic talk, rather than being a static feature of the language produced by people with autism, can be an interactional resource when delivered with a specific prosodic design.

Putting aside these observations around the occasion of the spelling assertions, this study has broadly confirmed Wootton's observation that echoic talk can be marked and accompanied by prosodic shifts; in this case the distinctive feature was the rising volume. Despite its more sophisticated morphology and extended form, similar to Wootton's (1999) participant Kevin, Lenny reproduces aspects of melodic delivery across echoes, although Lenny's echoes are less adjacent in their location. This suggests that as well as the deployment of echolalia being tied to local events in an interaction, there may be some more common practices deployed by a number of children with autism, indicating that CA studies may hold the potential to characterize more generic factors involved in the production of echolalia. Exactly which resources are used, and how they are deployed by any child in any interaction, may vary according to a number of factors, including the developmental level and skills acquired by the producer, environmental stressors and anxiety levels, and the availability of interlocutors' attentional resources.

The analysis also offers some cautious optimism that some children with autism can perhaps acquire some abstract, metapragmatic skills which in turn might allow what resources they have developed (e.g., echoic talk) to be used pragmatically as interactional resources. The contingencies of co-managing unfolding interaction require participants to flexibly monitor and orient to the activities of coparticipants. Lenny has clearly monitored the changing participation status of Tayna and Colin, and is able to design his own activities accordingly. For example, in Extract 1, he appears to drop a course of action during his turn. This appears somewhat at odds with the frequent conceptualization of children with autism as inflexible and ill-attuned to others' actions.

A key benefit of using CA to conduct this analysis is that it allows us to make more general observations about participants' conduct and competences displayed during the interaction. Drawing on the work of Goffman, sequential analysis also offers information about members' changes in participation status (e.g., Lerner, 1995; Rae, 2001). These require management by the participants which includes analyzing ongoing courses of action and choosing what form of participation to adopt with respect to them. Conversation analysis has the potential to inform an assessment of how well Lenny's practices assist or alternatively hinder the smooth progress of an interaction. CA is also centrally concerned with the meanings coparticipants themselves draw from the interactions to which they are a party, not least since CA has amply demonstrated some of the many ways in which partici-

pants use the content and design of prior turns in designing their own subsequent actions that progress the current activity. Moreover, rather than relying on analysts' instincts in attaching meanings to actions, a CA analysis allows us a further warrant in the information it provides about the specific interactional junctures at which these echoes occur.

However it is uncertain to what extent interlocutors (both learning impaired and those designated neurotypical) might hear these echoes as having an import beyond their lexical presentation, and also what interlocutors may infer from Lenny's actions. We cannot know how Colin and Tanya might differentially hear the import of these utterances with respect to their prosodic design features. We also cannot know how their understandings may have impacted the production of different next actions, not least because there may be other agendas at work such as ignoring certain types of apparently problematic behavior. Colin does withdraw in Extract 1, although Tanya doesn't appear to immediately respond in these terms in Extracts 2 and 3.

Therefore some caution is required in thinking about how these findings can contribute to our knowledge of the phenomenon of echolalia. Moreover, as we have noted above, children with autism may use echolalia as a resource in many different ways, and the limits of inquiry here suggest caution in seeking generalities from such a compact data set. Unfortunately, in the absence of longitudinal data for this child, it is difficult to assess whether these spelling assertions may represent impaired capacity in this child, or perhaps a developmental stage towards a more typical, less gestalt use of language (see Prizant et al., 1997) and/or more sophisticated interactional skills.

Subject to replication in further research, this study offers some evidence that echolalia can function to facilitate others' access to one's own perspectives and positions that they would have not otherwise had acquired given the design constraints faced by an impaired speaker. This would confirm others' suggestions that echolalia could, at least in some instances, be usefully conceptualized as having a role in facilitating social activity, and could be a starting point for interventions developing more commonly recognizable interactional resources for children such as Lenny.

ENDNOTE

¹ It remains an open question as to what extent this amounted to a misunderstanding of institutionalized children's communication and cultural practices.

² Pseudonyms have been accorded to participants to veil their identities.

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APPENDIX I –TRANSCRIPTION KEY

- [Overlapping talk
- (well) Unclear/inaudible talk
- (---) Pause between talk in tenths of a second.*
- >faster< Delivered faster than the surrounding talk/activity
- <slower> Delivered slower than the surrounding talk/activity
- softer○ Delivered more softly than surrounding talk

a::h	Sound sustention
.hhh	Audible inbreath
hhh	Audible outbreath
IN IT	Capitalization denotes increased volume
<u>Got</u>	Underlining denotes word or syllable stress
↑	Rising intonation
↓	Falling intonation
X	Hand clapping

*Where action is shown during silence, the period of silence is shown graphically as a row of dashes, each dash corresponding to 0.1 seconds of duration. Every tenth dash is replaced by a cross to show a duration of one second. For example, a duration of 1.1 seconds is shown as “(-----+-).”

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