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A CASE STUDY OF LINGUISTIC ISOLATION AND QUESTIONS
ABOUT SUBSEQUENT LANGUAGE SUPPORT AND
EDUCATIONAL PROVISION IN THE UNITED KINGDOM

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Abstract: We present findings from a case study of a congenitally deaf, linguistically isolated eight year old girl, Tanya, who entered the United Kingdom at this age with her family from Slovakia. Prior to this date Tanya's hearing loss had not been aided, nor had she attended school; the only language of the home has been spoken Slovak. We explore the educational and communication—including homesign—implications of this case and the possible effects of Tanya's severely restricted access to any form of language from birth until the age of eight on language acquisition.

Key words: Linguistic isolation, deaf, homesign, language acquisition

LINGUISTIC ISOLATION IS A RARE and thus rarely reported condition in which lack of access to language during the first years of life results in long-term limited language acquisition, despite the provision of subsequent language stimulation. Children who experience linguistic isolation fall into three broad groups: children who suffer extreme and protracted deprivation; feral children; and children with a hearing impairment which is not aided sufficiently to allow them access to spoken language and who also do not have access to sign language.

The most famous reported case in the first category is that of Genie (Curtiss 1977): the academic, peer reviewed literature relating to Genie represents by far the largest data set about language acquisition and the impact of linguistic deprivation available for this group of children. Genie was born into an environment where she was deliberately isolated by her father from most human contact and interaction, including language; she was kept alone in a single room, secured to a "potty chair," and beaten when she made any noise. This extreme privation continued until she was thirteen, when she was rescued and brought to the attention of the authorities by her mother. At this stage Genie had no language. The consequences of the deprivation that Genie suffered for her language acquisition are nevertheless contested and not straightforward. In summary, one interpretation is that: despite subsequent extensive medical, psychological, social and linguistic support Genie's language development has remained extremely limited; her lexicon is reported as restricted and her grammatical competence as severely compromised (Curtiss 1977; Newport 1990). An alternative interpretation is that even though Genie appears to have been deprived of access to language, as a result of her severe isolation and maltreatment, the

available linguistic data indicates that she has indeed acquired some aspects of English syntax, that some of her utterances demonstrate hierarchical structural organization in that they employ embedded clauses, and also that her language is rule-governed and appears to demonstrate recursion (Jones 1995). Moreover, for all children who fall into the category of linguistic isolation through deprivation, it is difficult to disentangle the possible impact on language development and language behaviours of the physical, psychological and emotional trauma of this condition from an underlying possible cause attributable to insufficient access to language during a critical period. The scarcity and ambiguity of evidence provided by these cases yields at best equivocal data about the parameters and robustness of a critical period for language acquisition.

The data surrounding the second category of children subject to linguistic isolation, the category of feral children, namely children who have been raised by dogs, wolves, and other animals, is even more scarce than data pertaining to children who suffer linguistic isolation through deprivation; it is more difficult to make judgements about critical age theory from the data relating to feral children than it is from the data derived from children who suffer linguistic isolation through deprivation.

The third category of children who are linguistically isolated is made up of children with a congenital hearing loss that is severe enough to impede access to spoken language and who, for various reasons, do not have their hearing loss aided so that access to spoken language is sufficiently mediated to allow spoken language acquisition to occur, children who also have bi access to sign language. This third category is by far the most robustly documented, since apart from studies of individual acute, chronic cases (for example Grimshaw et al. 1998, Morford 2003, Emmorey & Herzig 1994), there is a substantial body of literature from within the field of deaf education, audiology, and cochlear implantation that reports on the effects of poor and limited access to language. For example, Hammes et al. (2002), in a cohort of 47 children showed that children who underwent cochlear implantation under 18 months of age on word recognition tests were on average 80% successful, with scores on the same test progressively declining for children who were implanted when they were older, then reaching a plateau: so that, between 19 and 30 months children were on average 56% successful, levelling out between 31–40 months and 41–48 months when children were on average 39% accurate. The same cohort of children showed the following pattern for scoring within one chronological year of their norm for spoken language skills following implantation: 70% for the under 18 month group, falling respectively for each subsequent respective older group to 30%, 10%, and then 1%. Svirsky et al. (2004) found from a study of congenitally deaf children implanted between one and three years that children who were implanted at a younger age consistently outperformed older children who were implanted later in terms of speech perception and standardised language scores. Indeed, throughout the literature, this pattern is repeated, indicating that children respond best in terms of effective language acquisition when they have good access to spoken language at the earliest possible age.

This finding, however, prompts a number of important questions: language acquisition does not appear to be an all or nothing process, since children exposed to language stimulus from all three language isolation categories do appear to have acquired some language, but

| Frequency | 250hz | 500hz | 750hz | 1khz | 2khz | 4khz |
|-----------|-------|-------|-------|-------|-------|-------|
| Right | 40db | 55db | 90db | 95db | 115db | 115db |
| Left | 45db | 65db | 95db | 100db | 115db | 120db |

Table 1. *Tanya's audiogram.*

what, if any are the aspects of language that appear to be tied to a critical time frame? Do children who are linguistically isolated and acquire even only a limited amount of language pass through similar early stages to children who acquire language normally? Communication can occur without language, at least without language understood as being human language, but to what extent, if at all, can this human proclivity towards communication, be distinguished from, or to what extent is it part of, the human language acquisition process?

So far, we have only discussed spoken language; there is now a substantial body of research in human sign language, which convincingly demonstrates that children acquiring sign language as a first language pass through the same stages, albeit in a different modality, as children acquiring spoken language (Pettito 1987, Pettito & Marentette 1991, Mayberry & Squires 2005). Moreover, there is also evidence to suggest that children coming to sign language late, from a background of linguistic isolation, experience problems like those of children with normal hearing suffering linguistic isolation who are then exposed to spoken language. For example, Emmorey and Herzig (1994) note that Anna, who was born deaf, developed homesign, and was introduced to American Sign Language (ASL) at 16, was unable to acquire the syntax of the language; and Morford (2003) discusses the cases of two deaf children who had developed homesign and were then exposed to ASL at 13 years, 7 months and 12 years, 1 month at a school for the deaf, with both children having significant problems with comprehension and the syntax of ASL after seven years immersion in an ASL environment. These cases of deaf children raise the same questions noted earlier about the level of language that children might be expected to develop, given a linguistically isolated background; too, the significance or insignificance of a human proclivity towards communication, demonstrated through the development of homesign, within the acquisition process. Indeed, research has shown that delays in children's lexical and syntactic development, regardless of modality, can impact on other forms of cognitive development, such as theory of mind, which in turn can slow the development of overall communicative competence (Schick et al. 2007). It is with these questions in mind that we turn to Tanya.

2. **METHOD.** We were notified of Tanya by the Deaf Education Service in a Local Authority in England. At the time of assessment Tanya was eight years and three months old, the second of seven children from a monolingual Slovak speaking family who had arrived in the United Kingdom from Slovakia four months prior to our knowledge of Tanya. Three of the children including Tanya have a hearing loss, and another sibling has a visual impairment. Tanya's hearing loss was diagnosed in her first year, but she was not aided until she entered the United Kingdom, aged 7 years, 3 months, nor did she attend school in Slovakia. Tanya's audiogram is reproduced in **Table 1**.

Since normal conversation is generally around 60dB, Tanya's audiogram indicates that only the sounds of speech in the lower frequencies will have been available to her and these

| Draw-a- | Man | Woman | Total |
|----------------|-----|-------|-------|
| Raw score | 30 | 25 | 55 |
| Standard score | 105 | 89 | 97 |
| percentile | 63 | 23 | 42 |

Table 2. Tanya's scores on the Goodenough Draw-a-Man test.

only poorly when good acoustic conditions and a single sound source prevailed. Whilst this may have been sufficient to access the prosody of the language that surrounded her, and also, with attention to lip patterns, for her to be taught a few words, her hearing thresholds at 750Hz and above rule out the opportunity for Tanya to acquire spoken language, given that her hearing loss was not aided prior to 8 years, 3 months. In effect this means that Tanya has been linguistically isolated, as described above. This prognosis broadly matches our findings when we observed Tanya and interviewed Tanya's parents through a Slovak interpreter. They reported that Tanya was able to say "mama," "radio," "house", and "papa" in Slovak, which she did in front of us whilst pointing to those objects: these words were easily intelligible to the interpreter who had no prior knowledge of Tanya and her family.

Following assessment of her hearing Tanya was fitted with a single Phonak Eterner 311AZ hearing aid in her left ear; impacted wax in her other ear made bilateral fitting impossible at the time of assessment. Whilst it was impossible to gauge aided thresholds through listening tests, ordinarily achieved through a procedure where the patient repeats English words with accuracy scored according to syllabic reproduction by the patient, the aids were programmed to enhance hearing to produce aided thresholds of around 25db at 500Hz and below using the Siemens Unity system. Digital aid technology remains, however, unable to provide Tanya with aided thresholds better than around 45dB for frequencies above 750Hz, given her audiogram, according to readouts from the Siemens Unity. This means that in addition to problems that Tanya might experience processing language because of her linguistic isolation she will also find accessing spoken language problematic through her hearing aids.

Tanya's cognitive ability was assessed through a number of formal and informal procedures. These included observations of Tanya during her audiological assessment, during which she failed to be conditioned by and comply with the protocols for a headphone test, so that her hearing levels had to be gauged via performance testing, a method of assessment ordinarily reserved for children aged between 0 years, 7 months and about 3 years. At the time this was taken to be a possible indication of low cognitive ability. Her failure to follow any of the protocols for any of the tests for non-verbal reasoning conducted by the Educational Psychologist and her low score on the Raven's Progressive Matrices (Raven et al. 1998), placing her in the bottom 5% of the population for non-verbal cognitive ability, tended to support this original possibility. Later evidence, however, contested this view. Her results for the Goodenough Draw-A-Man test (Harris 1963), designed as an IQ test having a high correlate with the Binet and Wechsler (*ibid*) indicates normal intelligence for her age. Tanya's scores are given in **Table 2**, together with her performance on the Draw-a-Woman.

Tanya's family also reported that she was able to follow the routines of the household independently, such as making her breakfast, choosing her clothes, playing with her siblings, watching television, and that she also expressed preferences, made choices and communicated her wishes, likes, and dislikes about these and other domestic matters. These behaviours are much more consistent with Tanya having an age appropriate IQ than a cognitive ability indicated by her score on the Raven's Progressive Matrices. Similarly, on a visit to the home, Tanya learnt how to play tic-tac-toe independently, despite never having encountered the game before. For Tanya to do this meant that as well as being able to remember and follow the rules of the game, she also had to anticipate and make informed choices based on her understanding of the rules and her opponent's strategy. Again, this is much more consistent with Tanya's IQ being normal for her age than her cognitive ability being limited to the bottom 5% of the population.

Finally, we observed Tanya playing with her 13-year-old sister, Olanda, through a two-way mirror, and recorded their interactions on video tape. Olanda is also congenitally deaf. She was diagnosed as such when she was two and was fitted with aids, which she wore only intermittently. From the age of five she attended a special school in Slovakia where the medium of communication was through spoken language.

During the recorded session the girls played with a hairdressing doll's head; they were also provided with pens, crayons, paper and other toys. We later analysed the 45-minute video and coded the first ten minutes of their interactions. The recording revealed that despite the fact that both girls made sounds, the communicative content of these sounds seemed to be limited to one of accompanying gestures, particularly the following: accompanying gaining attention through gestures and body orientation, accompanying emphatic communication, and accompanying points of surprise. Many of the sounds that Tanya made seemed to be babble, that is pre-linguistic verbal behaviour typical of the language development of normally developing children with normal hearing. Babbling has also been observed and discussed in other deaf children, for example by Oller et al. (1985) and Scheiner et al. (2004), and would therefore seem to be a natural stage in linguistic development; however, this stage does not normally occur at around 8 years of age, and given the level of Tanya's language development would appear to be a vestigial behaviour which is not necessarily indicative of future language development. Indeed, Bebko, Calderon, and Treder (2003) note that deaf children may idiosyncratically incorporate behaviours into their own communicative related activities, which is what Tanya may have done with regard to babbling, especially as we observed its occurrence when Tanya was on her own, and also that it was disregarded by her sister when she was present. Again, this may indicate the vestigial nature of babbling for Tanya rather than it being the precursor of more systematic future language growth.

3. RESULTS. In this section we concentrate mostly on our findings from the analysis of the video of Tanya and Olanda (Appendix 1), during which we limit ourselves to the first ten minutes of the recorded play.

We begin with a general observation. Language can be structurally characterized by its possession of a lexicon and morphological and syntactic patterns that are fairly consistently

applied, resulting in grammatical strings. This structurally distinct quality of language – its lexical, morphological and syntactic components – is important in relation to our description of Tanya's communication with her sister: the structural quality of language helps us make what seem to be important distinctions between the nature of Tanya's homesign and communication through language. Homesign tends towards gestures that are largely dependent upon context for meaning; its gestures are often imagistic and immediately referential to surrounding objects and activities. Nuances of meaning in homesign are on the whole produced by gestural emphasis rather than the employment of a range of lexical items, morphological inflections or syntactic devices, which homesign tends to lack. Similar points about the difference between language and homesign have been made by other researchers including Schembri et al. (2005), Emmorey and Herzig (2003), and Okrent (2002). On this basis it seems clear that Tanya's communication is not language.

In all, during the first ten minutes of the video, we recorded 49 distinct communicative actions. Most of these are by Tanya. The communicative actions are numbered and described in the order that they occurred in Appendix 1, with a second number after the number of each chronological action indicating the time of each action after recording commences. A number of related difficulties in terms of the distinct identity of each communicative action are immediately obvious when looking at Appendix 1. The first of these is that what would normally be considered paralinguistic activities, such as body orientation, eye contact and laughter are integral to the meaning and even composition of each communicative action. An example of this is given in (1).

- (1) 1.41 TANYA directs eye contact and body orientation to OLANDA and points to section of doll's hair

Ordinarily in language the arbitrary and formalised nature of its structure help us to distinguish between single and multiword utterances. How, then, should (1) be characterized: as a single or a multiword utterance, though perhaps multi-component communicative action would be a better description here? Whilst only a single gesture occurs in (1), namely the act of pointing, the communicative intent of (1) is dependent upon Tanya's eye contact and her body orientation in relation to her sister, with the semantics of (1) being something along the lines of: we should be working on this section of hair. We only know about the semantics of (1), however, because it is embedded in subsequent communicative actions: in (2) Tanya is frustrated by Olanda's failure to follow Tanya's directions in (1); and in (3) Tanya explicitly expresses dissatisfaction with where her sister is working, by wagging her finger over the section of hair that Olanda is combing, and then picking up a different section of hair.

- (2) 1.45 OLANDA ignores TANYA; TANYA responds by pointing to own eyes and directs fingers to section of hair
 (3) 1.52 TANYA wags finger over section of hair she is working on and picks up another section of hair

This embedding of semantic content in other communicative actions makes it all the more difficult to satisfactorily distinguish individual gestures from each other. This does not seem to be the same for language, in which the categories contained within the lexicon and the principles that determine their combination, through the syntax of language, allow for the relatively clear identification, for example, of verbs and arguments. We can see this if we attempt to paraphrase (1), with the imperative sentence in (1)ʹ.

(1)ʹ Olanda, work here.

In (1)ʹ the verb has two arguments. The first of these is the subject, “Olanda,” associated with the thematic role of agent (or indirect agent, since as the sentence is in imperative form, the direct agent is Tanya). The second argument is the adverb, “here,” which is associated with the thematic role of location. (1)ʹ can be split into these parts because of the stability of the language structure; this allows us not only to readily identify the referent of “Olanda” but also to attribute different properties to “Olanda” through a predicate structure, “Olanda is happy,” which can be inflected for modality, “Olanda will be happy,” which can be consistently applied to all subjects, for example “Sandy is not happy,” allowing for abstract comparisons, “All people should be happy,” and so on. It is much more difficult, however, to identify the different components of (1). It is not very satisfactory to suggest that the subject of (1) is determined by the eye contact that Tanya engages her sister with, nor by the orientation of Tanya’s body towards her sister, nor by the combination of these communicative actions. This is because the semantics of (1), in which Olanda is identified as the subject (the indirect agent of the imperative communicative action) only occurs when both eye contact and body orientation are combined with the pointing gesture, as a unified and meaningful interaction. Even that, though, is not enough to make Olanda the indirect agent of (1), since the action of pointing is only meaningful in the context of the hairdressing doll’s head, and the position that it holds within this communicative context.

Whilst in a sense it is easy to declare that Tanya’s homesign lacks the category proper noun, or more generally, N, this misses the point: the way that Tanya’s homesign appears to function means that there is no place for the category N, nor is there a place for any of the other categories traditionally associated with language. Unlike language, Tanya’s homesign appears to depend on immanence, and because of this the particular meaning attributed to even concrete objects, such as the hairdressing doll’s head, occurs within a specific communicative context and therefore also within a specific time-frame. Again, this is markedly different to the way that language works. If, however, our analysis of homesign is correct, we might expect Tanya to have particular difficulty in acquiring those aspects of language where time and identity are abstractly signalled and realized, namely aspects of language that deal with tense and case. Indeed, in the literature to which we have referred dealing with children who have been linguistically isolated, difficulty in acquiring these and other related aspects of language does seem to be a common factor.

A final indication of the rather embryonic stage of Tanya’s communication skills is the relative lack of iconic gestures in her homesign. As Tolar et al. (2007) note, the use of icons by deaf children and the ability of both deaf and hearing children to interpret icons

develop with age. Iconicity is, however, usually a productive feature of both sign and homesign by the time deaf children enter school: the virtual absence of icons in Tanya's homesign, at eight years of age, would therefore seem to underline the extent of her language delay.

4. DISCUSSION. The Local Authority charged with providing for Tanya's educational placement and support are keen that she receives the most appropriate linguistic input in the most beneficial educational environment. Tanya's family also want the best educational and linguistic outcomes for Tanya. Indeed, the inclusion of families in early language intervention programmes has been shown to have a significant influence on the success of language outcomes for deaf children (Sarant et al. 2009). Questions about whether Tanya should receive education through British Sign Language in a specialist school for the deaf, or whether she should be educated in a local mainstream school where the curriculum is delivered in English, but where some sign language input might be provided, are pressing. It is impossible to give categorical answers to such questions. Other factors also have to be considered, including the social impact that education in a specialist sign school for the deaf would involve because of the daily taxi journey of around two hours, taking Tanya away from the children in her area, with whom she might otherwise make friends and establish support networks. If Tanya was to learn British Sign Language (BSL), and it was to become her main form of communication, Tanya's family would also need to learn BSL in order that she did not become isolated in her home.

A key and unanswerable question bearing upon the decision about where and how Tanya should be educated is: will she be able to acquire spoken language? The evidence that we have reviewed about linguistically isolated children is far from conclusive, since such cases, as we have discussed, are rare. Nevertheless, we know of no cases in the literature where children who have been linguistically isolated have gone on to acquire the full grammar of a target language. Moreover, any effect of a critical period for acquisition of a first language ought to have as much bearing on the acquisition of a sign language as well as a spoken language. There are, however, two additional considerations that are important. The first is that Tanya's access to spoken language is at best partial, given the current level of digital aid technology: for a number of reasons a cochlear implant is not an option for Tanya. The second consideration is the difference that we have tried to demonstrate between homesign and language. Whilst BSL has the same linguistic structure as other languages, including spoken languages, in the sense that it has a lexicon, morphological and syntactic regularities—a structure which appears to be absent in homesign—it would probably be easier for Tanya to acquire some of the elements of this structure, even if only partially, through BSL rather than through a spoken language. This is because some aspects of BSL lend themselves to iconicity and the here and now in a way like the way that Tanya's homesign seems to depend on immanence. Doubtless, those responsible for Tanya's education will want to move Tanya's communication beyond the context of the immediate and the concrete. This important move would seem to us to be more difficult to encourage and develop for Tanya in a communication system that only abstractly articulates this level of linguistic competence, such as English: that some parallels already exist between BSL and

homesign is likely to make access to communication beyond that which is perceptibly and immediately present for Tanya a more possible achievement.

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APPENDIX

The first number refers to the chronology of the communicative action; the second number refers to the time in minutes and seconds (taken from the recording) at which the communicative action occurred.

- (1) 1.41 – TANYA directs eye contact and body orientation to OLANDA and points to section of doll's hair
- (2) 1.45 – OLANDA ignores TANYA; TANYA responds by pointing to own eyes and directs fingers to section of hair
- (3) 1.52 – TANYA wags finger over section of hair she is working on and picks up another section of hair
- (4) 2.10 – TANYA turns to OLANDA and gestures with sweep of hand over section of dolls hair being combed, which looks to require some significant effort
- (5) 2.40 – OLANDA orients self by raising upper body in chair (appears to be response to previous gesture by TANYA)
- (6) 2.59 – TANYA taps OLANDA then points to where working on hair: both nod (appears to be an agreement: if so refers to at least previous three conversational turns)
- (7) 3.39 – TANYA “singing” and verbal “clicking”
- (8) 3.49 – doll slips on table, TANYA shakes head, OLANDA laughs

- (9) 3.56 – TANYA engages OLANDA in eye contact and vocalizes twice, OLANDA shrugs (seems to indicate she does not know)
- (10) 4.18 – TANYA points twice at place she is working on hair
- (11) 4.43 – OLANDA gestures to own eyes then extends same arm over doll's head
- (12) 5.08 – TANYA gestures, touches OLANDA with brush, touches her own face, vocalizes, OLANDA shakes head
- (13) 5.41 – TANYA vocalizes
- (14) 5.58 – TANYA continues to vocalize, looks at TANYA, touches OLANDA's hand to gain attention, points to hair
- (15) 6.01 – TANYA continues to vocalize, points to OLANDA and directs attention by pointing towards place in hair where she is plaiting
- (16) 6.02 – OLANDA responds vocally and nods
- (17) 6.03 – OLANDA gestures, with both palms forward, seems to indicate finished
- (18) 6.04 – TANYA vocalizes and OLANDA raises right palm
- (19) 6.06 – TANYA opens both palms and looks at OLANDA: seems to indicate not finished (a mirror of OLANDA's gesture at 6.03)
- (20) 6.08 – OLANDA touches place on doll's head where TANYA has been working
- (21) 6.10 – TANYA looks but does nothing
- (22) 6.11 – HI moves doll's head round and works on place she has indicated
- (23) 6.19 – TANYA has beads and wants to put them in doll's hair, OLANDA still combing so not allowing TANYA to do this, TANYA touches OLANDA with beads, vocalizes, shows OLANDA the bead in her hand, OLANDA laughs
- (24) 6.23 – TANYA sighs, vocalizes, touches OLANDA and seems to indicate with pushing forward of bead gesture towards OLANDA that OLANDA should put the bead in the doll's hair, OLANDA laughs and continues combing
- (25) 6.29 – TANYA puts the bead down
- (26) 6.45 – OLANDA uses both hands to comb, vocalizes whilst engaging TANYA in eye contact, gestures with her head in the direction of soft toys on the table, then uses the same gesture at TANYA, then nods
- (27) 6.48 – TANYA looks in the direction of the soft toys but does nothing else
- (28) 6.49 – OLANDA directs TANYA's attention to something on the table by pointing and vocalizes at the same time
- (29) 6.51 – TANYA does not follow OLANDA's direction, but taps the side of the doll's head with her finger, OLANDA vocalizes and indicates the thing on the table again by nodding at it
- (30) 7.16 – OLANDA engages TANYA in eye contact and vocalizes
- (31) 7.36 – TANYA vocalizes with an exaggerated facial expression, OLANDA laughs
- (32) 7.39 – OLANDA laughs and points across TANYA
- (33) 7.44 – TANYA vocalizes, OLANDA shakes her head
- (34) 8.03 – TANYA gestures: puts spread thumb and forefinger to her mouth and throws this away from herself, as if spitting
- (35) 8.05 – TANYA gestures with a finger over the doll's head, wagging the finger back and forth whilst vocalizing

- (36) 8.07 – OLANDA gestures with her open palm moving it across her body
- (37) 8.11 – OLANDA points to OLANDA with plastic stick, then points back to the doll's head, vocalizes, shakes her own head and looks down
- (38) 8.34 – whilst TANYA continues to plait hair she vocalizes, then raises two bunches in hands: it seems to indicate she wants the hair to stand up in plaits
- (39) 8.58 – OLANDA attempts to intervene in what TANYA is doing; TANYA raises shoulders and vocalizes; OLANDA stops attempt at intervention
- (40) 9.01 – TANYA turns to face OLANDA, makes facial expression and vocalizes; OLANDA works on another section of hair
- (41) 9.10 – TANYA smiling, claps hands, vocalizes, drops plaits and points to what she has done
- (42) 9.11 – OLANDA vocalizes, nods to TANYA; TANYA vocalizes, turns towards OLANDA and raises hands
- (43) 9.16 – TANYA raises plait from doll's head in an exaggerated manner and looks at OLANDA; OLANDA laughs and moves back in her chair
- (44) 9.20 – OLANDA picks up plait dropped by TANYA; TANYA puts both hands on own hips and sits forward in an exaggerated way looking at the plait
- (45) 9.24 – TANYA vocalizes points to self with extended index finger whilst looking at plait, taps the side of her own head with the same finger then points to plait OLANDA is working on, then works on the same plait
- (46) 9.34 – TANYA repositions herself on chair to side, engages OLANDA in eye contact, points to OLANDA with extended finger and points to doll's head in continuous gesture, vocalizes; OLANDA vocalizes
- (47) 10.47 – OLANDA gestures over doll's head with open hand and vocalizes; TANYA grimaces and shakes head
- (48) 10.48 – TANYA vocalizes and again shakes head
- (49) 10.51 – TANYA makes big gesture with left hand and arm raised above head and moving away from body as she has indicated she wants the plaits to stand up from the doll's head, almost coming off the chair as she does; OLANDA laughs

