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Main Articles

Discourse cohesion in sign and speech*

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Abstract

This paper describes the development of discourse cohesion in bilingual children, through an analysis of narrative discourses produced by hearing children of deaf parents (HCDP) in both British Sign Language (BSL) and spoken English. Reference mechanisms in both languages are described in the context of recent work on narrative and discourse organization development in spoken and sign language. Discourse cohesion is achieved in each language through different surface mechanisms, while following a similar underlying organization. The differences in use of referring expressions observed between two children reflect development across both languages in the ability to control and manipulate reference within discourse. Describing acquisition of cohesion mechanisms by bilingual hearing children of deaf families provides a unique opportunity to ask questions about developing two languages with cross-modality differences. An early development of language appropriate narrative devices is reported while apparent differences between languages, in the relative phase of discourse organization development within the same child is suggested. A second question is addressed concerning the impact of bilinguality through an examination of language mixing across modalities.

Key words

BSL

development

discourse

Introduction

This paper focuses on aspects of discourse cohesion in the signed and spoken narratives of two children acquiring BSL and English. First the general field of narrative development in children is discussed, highlighting the major stages in the development of this use of language. Then the discussion will progress to concentrate on the acquisition of reference organization in narrative discourses, in particular in studies of bilingual children. Following this, past work on the language development of hearing children of deaf adults is discussed. In the next section a description of cohesion through the use of reference in both English and BSL is given as well as a consideration of the cognitive aspects of this ability within the Karmiloff-Smith (1985) three phase developmental sequence of discourse organization. Examples of cohesion mechanisms produced in BSL and English narratives by hearing children of deaf parents are described. Finally the development and use of reference devices in BSL and English are explored in terms of language “independent” and language

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“interaction” factors. First it is argued that the children are at different stages in their development of discourse between BSL and English. This implies that the developmental model proposed by Karmiloff-Smith needs to be extended. Secondly there is an influence of spoken English on the articulation of BSL discourse. This influence appears in the use of sequential rather than simultaneous morpho-syntax.

Narrative development

Work on narrative development in young bilingual children has grown to a large extent out of the broader field of interest in monolingual first language narrative development. Narrative involves the later stages of language acquisition, at the time when children begin to construct cohesive discourse (e.g., Bamberg, 1987; Berman & Slobin, 1994; Orsolini, 1990). Within the present framework, narrative is taken to be a particular use of language, while the term “discourse” is a term used to describe a particular analytical level of language structure involving the conjoining of several utterance strings across the sentence boundary. Discourse, in its most general sense, is defined as the coherent joining together of a string of sentences to form a cohesive extended unit of language (Karmiloff-Smith, 1985).

The creation of cohesion in discourse as a linguistic problem involves the language-based devices of anaphora, connectives, and simultaneity markers amongst others. These are devices which tie a span of sentences together as a unit. The combining of reference mechanisms to achieve cohesive discourse as part of an interacting system develops late in children’s language acquisition. Cohesion markers work at the “local” or “intra/inter-sentential level” (within and between sentences) as well as at the “global” or “total discourse-structure” level. The achievement of referential cohesion is particularly necessary for marking in language that events happen to the same character/protagonist and in the same spatial scene. Despite several studies in this area, developmental trends in children’s use of referential expressions are still far from being firmly identified.

Stages in narrative development

Children begin to formulate what can be, loosely-termed, “discourse” some time after the use of two word sentences, which generally appears at the end of the second year. However, mature discourse skills, such as the encoding of simultaneous events, shifting perspectives on events and discourse packaging continue to be developed well into late childhood and beyond. Early use of particular linguistic structures paves the way for mastery of other possible functions that structure can serve in narrative (Karmiloff-Smith, 1979). In the context of linking events across discourse, children need to apply the same mechanisms, used to describe present referents, for the description of nonpresent referents and their interaction in longer stretches of connected language. Bamberg (1987, p. 1) writes:

Linguistic knowledge of lexical semantics and syntactic rules forms the building blocks out of which narrative is constructed; we expect the child first to acquire linguistic knowledge and then to apply this knowledge (in the form of semantics/syntactic building blocks) when acquiring the ability to tell narratives.

A recognized crucial linguistic developmental milestone is the use of decontextualized language (e.g., Orsolini, 1990). This marks the child’s progress from talking about

Table 1

Summary of narrative genres, age of observed use and related study

<i>Narrative genre</i>	<i>Age</i>	<i>Related study</i>
Retelling past events in dialog	2 years	e.g., Eisenberg (1980)
Personal experiences in monologue	3 years	e.g., Umiker-Sebeok (1979)
Decontextualized prestructured monolog	4 years	e.g., Berman and Slobin (1994)
Fantasy on-line monolog	5 years	e.g., Orsolini (1990)

the “here and now,” to the “there and then.” Decontextualized language is usually taken to mean describing the progression of events marked in the past. Eisenberg (1980) places children at around 2 years when they first begin to talk about past events, while Miller and Sperry (1988) describes children at 2;6 to be ordering past events in their language. At the age of 3 or 4 years, before children construct extended discourses, they narrate past personal experiences to others. Typically, at this age young children construct “proto” narratives in single sentences with little or no coherence, in terms of propositional content, or cohesion, in terms of the joining together of language to form discourse.

Although the retelling of personal experiences may mark the first use of narrative, it is only one such genre of narrative language. The ability to recount past events relies on using language away from the “here and now” and the ordering of events along a time line from past to present, amongst other mechanisms. Yet narrative does not need to be placed in the past. Fantasy narratives, which have no previous event or prestructured whole to fall back onto, often take place in the narrative present and move backwards and forwards in time related to the nature of the scenario. Fantasy narrative requires different skills to those for relating past experiences.

For non-autobiographical narratives containing several fictional protagonists, other linguistic as well as general cognitive skills, are needed. While the ability to relate events where you, as the narrator, took part in the event, requires a different form of representation and linguistic coding to the fantasy type narrative, where protagonists exist only within the confines of the narrative. Although the linguistic devices used to encode and elaborate reference and action may be similar across these two narrative genres (personal experience and fictional narratives) the necessary underlying representation and pragmatic skills may differ greatly and be acquired at differing ages. This distinction has not often been overtly expressed in the literature on discourse development. In summarizing the above information several narrative genres are reported in the research literature (these appear in Table 1 above).

Previous research on children’s narrative development has focused on several linguistic domains: the identification and clarification of nouns (Menig-Peterson, 1975), the orientation of the addressee to the context of narrative (Peterson & McCabe, 1978), the use of decontextualized language (Heath & Branscombe, 1986) and also the understanding of the structural properties of narratives (Applebee, 1978; Botvin & Sutton-Smith, 1977; Gardner, 1982; Orsolini, 1990). These studies have looked at narrative development from varying perspectives. A picture of narrative as a multilevel task has emerged. Narrative in terms of the organization of discourse involves several “local” or sentence level, as well as more “global” or intersentential linguistic mechanisms.

In narrative, the type of language production necessary for the establishment of characters and their positions, both spatially and temporally in context, is referred to as referencing. This area has been investigated from varying perspectives (Bamberg, 1987; Bennet-Kastor, 1986; Berman & Slobin, 1994; Hickmann, Kail, & Roland, 1995; Karmiloff-Smith, 1985; McCabe & Peterson, 1985; Stenning & Michell, 1985; Umiker-Sebeok, 1979). Cohesive ties link a series of related sentences together. One major issue in the literature concerns the ability to encode protagonist interaction across discourse, using the variety of linguistic cohesion devices available to the child from the language they are developing.

Referencing within narrative has been shown to be a relatively late ability to develop in children (e.g., Karmiloff-Smith, 1981, 1987). Children appear first to use referring expressions as deictic references and later progress to the use of referring expressions with intralinguistic functions. The present discussion focuses on the function of reference maintenance through the use of referring expressions. Maintenance refers to all subsequent mentions of a referent after an initial overt introduction. Karmiloff-Smith (1985) proposes a three phase developmental sequence in the use of reference maintenance when narrating events from picture-book stimulus material.

1. Before approximately five years old, children use a “bottom-up” organizational strategy, focusing on sentential relations between referents. In their construction of narrative they are guided by the pictures themselves rather than by discourse-internal constraints. References are therefore made through the nonlinguistic context (e.g., through deictic references to the book) rather than anaphorically.
2. In the next phase children after five years old use a strategy of marking one referent in their narratives as the “thematic-subject.” This rigid discourse strategy marks the emergence of a “top-down” organizational processing and suggests that the children are becoming increasingly more sensitive to global discourse constraints. In practice Karmiloff-Smith describes children using pronominals in utterance initial position to mark a main protagonist while organizing other aspects of the narrative around this theme.
3. During the last developmental phase older children and adults use a more flexible organizational strategy through both “bottom-up” and “top-down” processes. At this point children are successfully able to balance the competing needs for cognitive resources coming from both “local” and “global” discourse organization.

This picture of a protracted development in the use of referencing, ties into the extended functions that these referring expressions begin to take on during the development of narrative.

Narrative development in bilingual children

Compared with phonological, morphosyntactical, and lexical development, there has been less work on bilingual children’s language development at the discourse level. Genesse (1989) points out that less attention has been given to discourse and pragmatic aspects where perhaps bilinguals are most able to demonstrate their control of two linguistic systems. Although detailed studies of narrative development on bilingual children are rare, it appears that when exposed to both languages in a constant and consistent manner these

children go through similar stages in their acquisition of each language as compared to monolingual speakers of each of their languages. At the same time there is an early sensitivity to those aspects which differ across languages (Aarssen, 1996; Dart, 1992; Verhoeven, 1991, 1993).

Dart (1992) describes a four-year-old French/English bilingual who makes language appropriate choices of linguistic forms at her disposal between both her languages to describe unfolding events. In contrast, Akinci and Jisa (1999) in a rare study of properties of discourse in bilingual Dutch-Turkish children, concluded that the syntactic patterning of story content in Turkish was somewhat delayed when compared with their monolingual-speaking peers. More work at this level of language acquisition is needed to establish norms of development.

Bilingual in two modalities

Hearing children of deaf parents (HCDP) represent a special population from which we can ask questions concerning the linguistic and cognitive underpinnings of language, as well as the language acquisition process itself. These children live in homes where sign language is the principle means of communication, as well as being exposed to spoken language through siblings and other relatives, baby sitters and hearing neighbors. Prinz and Prinz (1979) describe the acquisition of spoken English and American Sign Language (ASL) in a hearing child with a deaf mother and a hearing father from 0;7–1;7. This early study claimed an advantage of several months for the acquisition of first signs over words and described a similar pattern of lexical acquisition to spoken language studies. Jones and Quigley (1979) report parallel acquisition of English and ASL question forms in two HCDP comparable with their hearing and deaf peers respectively. In a more recent study Siedlecki and Bonvillian (1993) focused on the acquisition of ASL phonology in eight HCDP between 0;6–1;6 which supports previous studies of deaf children's acquisition of ASL phonology (Boyes-Braem, 1973; McIntire, 1977). Petitto and colleagues (e.g., Petitto & Herscovitch, 1999, submitted; Petitto & Katerlos, 1999, submitted) has argued that HCDP acquire all aspects of ASL and English on an identical maturational timetable. This includes early manual and vocal babbling, as well as the first sign and word within hours of each other. The early development of lexical items in these children is reported by Petitto to be both "mutually exclusive" in that some items are expressed only in one language for a protracted period, while others are "overlapping" across both languages from the concept's first appearance.

In studies of HCDP acquiring sign languages other than ASL, a similar bilingual development has been observed. Ackerman, Kyle, Woll, and Ezra (1990) provide data from eight HCDP acquiring British Sign Language (BSL) and spoken English from 0–3;0. They report the emergence of the first sign at 0;11 and first ten signs at 1;1, supporting the earlier study on ASL by Siedlecki and Bonvillian (1993). In work on BSL, Gregory (1994) provides a detailed description of Lucy, a hearing child with a deaf father and a hearing mother from 0;11–1;6. Her acquisition of BSL and spoken English was somewhat advanced in comparison with her peers. At 1;0 she was using two signs BED, BATH and three words *ta-aa*, *mum-mum*, *dad-dad*. Gregory reports, (as does Petitto), that early on in development some signs and spoken words were produced simultaneously, such as TEDDY/*teddy*, TICKLE/*tickle*. In children acquiring two spoken languages this is an impossible stage in development, given the obvious constraint of having only one mouth.

At 1;2 Gregory reports a rapid growth in vocabulary with 26 signs and 14 words, of which some were articulated simultaneously. Around 1;4 Lucy began to be creative in her sign usage inverting the sign for TREE to refer to a chandelier. At 1;7 her simultaneous sign/word constructions apparently tailed off, as Gregory argues, when she began to implement morphology in both languages.

The discussion now turns to models of discourse organization development before describing options for reference to person within BSL grammar.

Models of discourse organization


Clibbens (1992) has described the organization of reference across narrative as an amalgamation of several discourse processes, rather than a concentration on a unitary channel of processing, that is, sentential or discourse. This conceptual framework has also been used by Karmiloff-Smith (1985), Orsolini (1990) and Orsolini, Rossi, and Pontecorvo (1996). Orsolini et al. (1996) write that a referent's "predictability" (ease of identification) can be a function of the pragmatic dependencies within surrounding discourse, that is, verb semantics, structural parallelisms. Older children are more able to integrate the current clause into the immediately preceding discourse context and, importantly, appear also to be more sensitive to the addressee's access to referents' identities. It is this control of several levels of discourse organization, as well as a pragmatic awareness that separates 5 year-olds from 9 year-olds. Older children seem to be choosing NPs, not only for their coreferencing qualities, but also because they contribute towards a referent's semantic content linked to the context generated by the previous clauses. This point marks a current move towards combining work on children's developing cognitive capacities with their developing linguistic ones. In language tasks, which require the construction of extended discourse, it is the control of multiple referents within a changing discourse that highlights the relationship between these two developing processes.

Cohesion in British Sign Language

Signers achieve cohesion in sign language through linguistic forms designed for communication in the visual modality. These forms exploit a morphosyntactic system articulated in the space surrounding the signer (see appendices for notation conventions). Signers exploit spatial locations for the articulation of morphosyntactic mechanisms (see Bellugi, Lillo-Martin, O'Grady, & van Hoek, 1990; Pizzuto, Giuranna, & Gambino, 1990; Supalla, 1982; Sutton-Spence & Woll, 1999). The major difference between English and BSL relates to the possibility of simultaneous as well as sequential or linear morpho-syntax in BSL.

For example in BSL, because signers can use two hands, their own body, and face when signing, the utterance THEY-LOOK-AT-ME is articulated as a single movement. This complex predicate encodes subject, object, and verb simultaneously rather than sequentially as in spoken language (see Morgan, 1996, 1998; Sutton-Spence & Woll, 1999, for more details).

Some relevant examples of BSL morpho-syntax are outlined here. When signing, signers may locate an index for a referent by directing different signs towards locations in

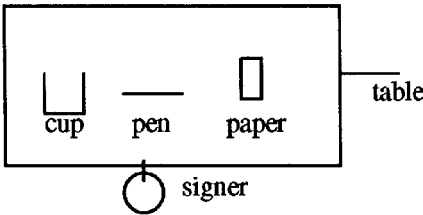
- (4)
- | | |
|---|------------------------------------|
| ØØ >> | |
| # aLOOK _b | ‘...(he like) # looks at (her)...’ |
|  | |


The general marker of shifted reference is an eye-close preceding the verb (ØØ), as well as some indication that there has been a shift in locations for example, a slight body or head movement. In the gloss this is marked with # preceding the shift. (See Engberg-Pedersen, 1995; Gee & Kegl, 1993; Morgan, 1996; Morgan, 1998; Roy, 1989; Winston, 1995.)



Another modality-specific feature of sign language is that locations in sign space, as well as functioning as morphosyntactic indices, are also used by signers to describe topographic layouts. Signers may articulate a noun phrase in an area of sign space which simultaneously encodes the object’s label as well as its spatial position, if important in the discourse context.

For example a signer describing the relative positions of several objects on a table, first signs TABLE then signs each object, followed by a proform for each object which is placed at a location in sign space matching the real world topographic layout he or she is describing. A proform sign stands for a class of objects which share the same perceptual or semantic features as each other for example, “long thin object”, “animal”. In describing the scene schematized in Diagram 1, the signer first names the objects and then places the proforms as in (5)

Diagram 1: Use of spatial locations to describe topographic layouts



- (5) TABLE CUP PROFORM-ROUND-OBJECT-FRONT-LEFT PEN PROFORM-


 LONG THIN-OBJECT-FRONT-MIDDLE PAPER PROFORM-FLAT-OBJECT-



 FRONT-RIGHT

The referential devices and strategies compared across languages and children are summarized in Table 2.

Table 2

Comparison of referential devices between languages

Referential device	BSL	English
Referent establishment	MAN IX	'a boy'
Pronominals	MAN... THEN PRO	'George _a ... him _a '
Verb inflection	_a LOOK _b	Only 3rd person inflections
Verb phrase anaphor	DO - SAME	'did it'
Shifted first person reference	# _a LOOK _b	...said 'go to bed now'

Narrative discourse across modalities

A description of HCDP and their development of discourse cohesion in narrative represents a unique opportunity to look at similarities and differences between sign and spoken language in this domain. The present study looked at two HCDP and their use of referential devices for the construction of cohesive discourse, within the narrative genre.

Method

Subjects

Sam is a hearing child with deaf siblings of native signing deaf parents. At the time of data recording he was 7;1. Cloe is a hearing child of native signing deaf parents (with a deaf sibling). At the time of data recording her age was 9;10. Both children were judged to have native competence in both languages. This judgment was a subjective one, made by the author after consultation with the parents of the children, who report that the children are not involved in any English language based remediation in the school setting. Their use of BSL was again subjectively evaluated as being age appropriate. Further work with this bilingual population will necessitate a comprehensive language assessment in both English and BSL, although BSL assessment, at present, is difficult, as such BSL tests are still in development (Herman, 1998).

Procedure

A short picture book narrative, "The Paint Story," was elicited from each child (see Appendix 2 for stimulus material). Sam retold the story in English then BSL and Cloe told the story first in BSL then English. There was a gap of two hours between the two retellings. After first going through the stories with questions and clarifications of content with an adult, a second adult asked for the whole story to be retold from memory. The second adult made it known that she was unaware of the content of the picture book. For the BSL version both adults were known to be deaf and native signers and similarly for the English version both addressees were hearing native English speakers. This procedure differs from most previous research using picture books to elicit narratives with children (e.g., Hickmann, Kail, & Roland, 1995). Not having the book present while retelling the story means that children were relying more on memory during retell. The reason for choosing this methodology over others relates to the nature of sign language discourse. Previous work has shown that deaf children will use the surface of a book as a signing space, using pictures as referents and moving signs between two dimensional representations of people and places

on the page itself (e.g., Loew, 1984; Morgan, 1998). They tend not to construct a sign discourse in signing space. More importantly looking down at a book during narration means that eye-gaze features, considered important for discourse in BSL, cannot be interpreted. All data were collected on video and then transcribed in both languages by the author. A second English/BSL bilingual transcribed the four narratives and over 90% consistency was found between transcribers. A coding system was used to record relevant use of spatial mechanisms, this system was developed in a larger project examining first language acquisition in deaf signing children (Morgan, 1998).

Results and Discussion

English narrative

This section concentrates on the achievement of discourse cohesion through person reference devices. Although the picture book “the paint story” provides a relatively simple task in terms of cognitive and/or semantic processing, it does represent a fairly complex morphosyntactic task, in terms of the encoding of reference between the three characters: “girl, boy, mother.” In English, the children are somewhat helped by the pronominal gender distinction option, whilst BSL does not mark gender on pronouns.

The younger child produced an English narrative, which within the Karmiloff-Smith (1985, 1981) model would place him within the 1st stage of discourse development. Although he uses several anaphoric expressions these are limited to pronominals. The use of pronouns appears to be entirely deictic.

SAM/PS/7;1

Child: (1) they are painting // (2) he paints her face // (3) she paints his face // (4) is this the end?

Adult: *and then what happens?*

Child: (5) he poured water on her // (6) her poured water on her...him // (7) their mum told them off

Both referents are introduced through pronouns. There is no attempt at scene-setting or use of overt first mentions through noun-phrases which would allow for later anaphoric expressions to co-refer. There is no use of verb-phrase anaphora through “did the same,” instead there is a repetition of the antecedent verb “paint” (clause 3). Gender distinctions are used, but again discourse cohesion is achieved, rather repeatedly through the overuse of reduced reference mechanisms. Karmiloff-Smith, Johnson, Grant, Jones, Karmiloff, Bartrip, and Cuckle, P. (1993) have argued that before mastering discourse organization, children will use pronouns as corner-stones in discourse structure, rather than providing semantic information within later text to distinguish between referents.

Discourse organization by Sam is quite rigid with no clear thematic subject, thus the addressee is left to fill in missing information. “Rigid” is a term used by Karmiloff-Smith to signify a fixed “bottom-up” discourse organization rather than a more flexible combination of different strategies characteristic of older children. These observations fit the description of discourse produced by children within the first phase of discourse organization, when children rely on discourse-internal strategies to control reference. The

spontaneous repair "...her poured water on her...him" (clause 6) suggests that the child is not only still working on pronoun use but also appears to be monitoring discourse, on-line, for coherence. Although not yet constructing a fully mature narrative, Sam uses those referring expressions available in English for the maintenance of reference. It is the framing of narrative within "contextual information" (Orsolini et al. 1996) that is as yet missing. Thus Sam seems to use a limited number of referring expressions in his English narrative with minimal functions. There is little attempt at establishing pragmatic dependencies within discourse that surround the referring expressions, for example through conserving the same semantic role for a pronoun and a noun phrase across sentences.

The older child (9;10) produces a narrative with more complex use of referring expressions and clearly adopts a thematic-subject strategy, which switches focus between referents through the discourse. Cloe is controlling reference by combining both internal and external discourse and is on the brink of entering the third phase of Karmiloff-Smith's model outlined on p. 5–6.

CLOE/PS/9;10

(1) There's a boy and a girl waiting for their tea while their mum makes the tea // (2) em... the boy was bored // (3) so he got the margarine on the table // (4) and flicked it at the girl // (5) the girl didn't like it // (6) so did the same // (7) and the boy got the gravy // (8) and chucked it on her (gesture) // (9) and the girl started crying // (10) and so did it //

(11) chucked the gravy on top of the boy // (12) and the boy started crying // (13) and their mum came // (14) and said // (15) you are both naughty go to bed now

All three referents are introduced through NPs. Adopting a thematic subject (the boy) at the onset, allows Cloe to mark the two main character perspectives through pronoun/noun distinctions "so **he** got the margarine on the table // and flicked it at the **girl**" (clauses 3–4). The pronoun makes reference back to the initial mention of the boy, while an overt reintroduction of "the girl" (clause 4) means the ellipsed subject of "flicked" (clause 4) is clear. This use of anaphora switches focus from the boy to the girl.

The older child makes choices in the uses of reference forms in keeping with anaphoric constraints in English, but although the organization of referring expressions is more complex than the younger child, it is still not yet fully mature. This child is still mastering the kinds of combinations of global and local discourse strategies outlined by Karmiloff-Smith. The verb-phrase anaphor in the second clause of "the girl didn't like it // so **did the same** //" (clause 6) can be linked to the "flicked it" (clause 4) antecedent but later on in the middle part of the discourse, Cloe attempts to use a verb-phrase anaphor, "and the girl started crying // and so **did it** //" (clause 10). But the interpretation of this anaphoric reference is problematic, especially as there are competitions for meaning coming from the previous verb "crying" (clause 9). Cloe repairs this by repeating "chucked the gravy on top of the boy" (clause 11). These "repairing" structures often indicate that the child is aware of a problem with their use of reference (Karmiloff-Smith, 1993). There are several uses of pronoun anaphora "it" running through the strings of utterances, which Cloe provides with enough surrounding context for their interpretation amongst different competing antecedents. Thus in English she is beginning to control both internal morphosyntactic anaphora while simultaneously managing the more global organization of

semantic cues with strategies proposed by Orsolini et al. (1996).

However as with Sam’s narrative, Cloe appears to be at an intermediary phase in her organization of discourse, having moved beyond the second phase but still developing the skills necessary for mastery of the third phase in Karmiloff-Smith’s model. Looking at the same children’s narrative discourses in BSL emphasizes the need for an expansion of the model first proposed by Karmiloff-Smith, in order to capture these intermediary points.

In the next section discourse cohesion across the two languages and children are compared.

The comparison of sign and spoken language discourse in the same language-acquiring child offers a unique opportunity to ask several questions, the major question addressed at this point is:

What does the development of referential organization in discourse look like in bilingual sign/speech children?

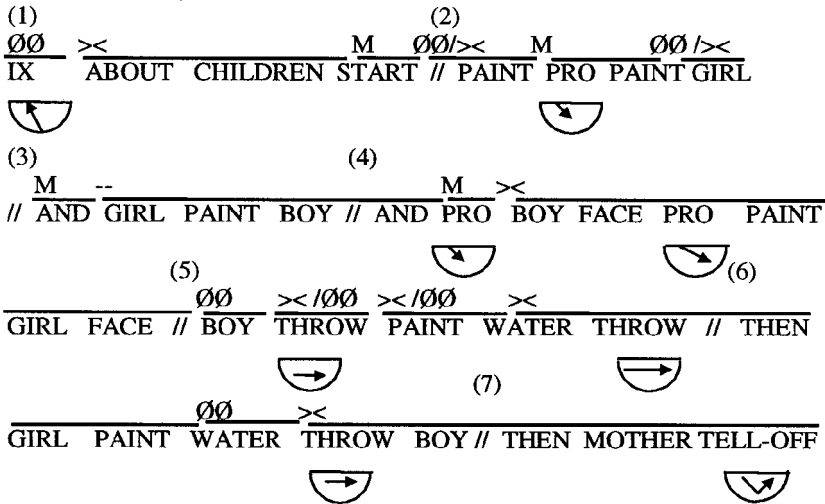
A more complex question arising from the analysis of the BSL and English data in bilingual children is:

Do these children use sign language morpho-syntax in a different way to deaf signing children, through being native speakers of a spoken language?

The two children’s paint stories in BSL were similar in content to their English stories. However the younger child, Sam used more complex referring expressions and anaphoric references in BSL than in English. Thus comparing bilingual children’s discourse reveals differences in phases of development.

BSL narrative

SAM/BSL/PS/7;1



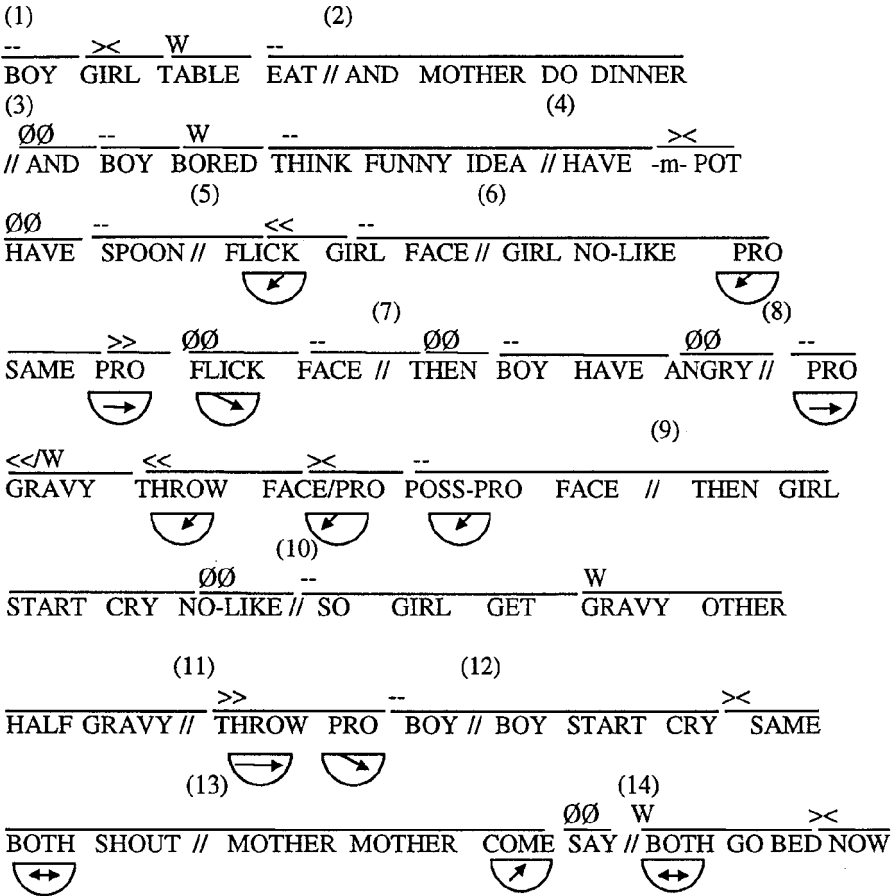
“It’s about children, I’ll start, it’s about painting, he paints the girl, and the girl paints the boy and he, the boy’s face. He paints the girls’ face. The boy throws paint-water throws, then the girl throws paint-water over the boy. Then mother tells them off.”

The initial introduction of events in the BSL narrative by Sam, is marked more overtly than in the English narrative “IX ABOUT CHILDREN START” (clause 1). The theme of the book is introduced by a point towards the book on the table behind. This deictic point is translated as “it” and is only interpretable through reference to the extralinguistic context. In terms of the use of BSL reference mechanisms, there is an area of sign-space allocated to the “boy” referent through pronominal points to the front and left of the signer “PAINT PRO PAINT GIRL” (clause 2), “AND PRO BOY FACE PRO PAINT GIRL FACE” (clause 4).

These pronouns have no interpretable antecedents until the third clause when “boy” and “girl” are reintroduced. Compared with the deictic pronominal discourse strategy used by the same child in English, in BSL there is more use of anaphora. There appears to be the emergence of a thematic subject strategy in the middle of the narrative through the use of verb-phrase anaphora “BOY THROW PAINT WATER THROW” (clause 5). Here the object of the sentence is tied to the direction of the verb inflection, the girl receives water as she is located at the end-point of the verb’s movement. This is not explicitly articulated but we can, as addressees, fill in the missing information. The verb inflection does not mark reference overtly rather the overt subject preceding the verb provides enough referential information to override the spatial inconsistency. The front-left area of sign-space established in earlier discourse (clauses 2–4) and subsequently used to refer to “the boy” is used incorrectly as the end-point of the verb THROW in clause 5, BOY THROW PAINT WATER THROW. This is an example of a spatial inconsistency and is comparable to the use of person inflections on verb stems, which have more than one possible antecedent in the surrounding discourse. This is emphasized in the following clause where the same direction of movement is used with the same verb phrase but giving the opposite meaning THEN GIRL PAINT WATER THROW BOY (clause 6).

As in his English narrative, this child is not yet taking into consideration addressee needs enough to merit full overt references. Indeed the left-hand side of signing space is repeatedly referenced through pronoun points and verb sign inflections towards this area throughout the narrative. This child in this task is concentrating it seems on distinguishing between referents rather than identifying them through cohesive use of space. There are eye-close markers ($\emptyset\emptyset$) used throughout the narrative to indicate a switch in reference although they are accompanied by redundant overt references through noun-phrases ‘BOY THROW PAINT’ (clause 4). The use of a shifted first person perspective at this early age suggests sign language narrative features are being tuned into, although the development of reference and its combination with sign-language devices is still in development. Sam is at a later phase in his development of BSL discourse reference than was displayed in his English narrative. In BSL he is able to hold a thematic subject through discourse, thus placing him within phase 2 of the Karmiloff-Smith model.

CLOE/BSL/PS/9;10



“There is a boy and a girl at a table eating, mother is making the dinner and the boy is pretty bored so he thinks of a funny idea. He has a margarine pot and has a spoon, he flicks it at the girl’s face. The girl doesn’t like that, she does the same to him, flicks it all over his face. Then the boy gets angry he picks up the gravy, throws it in her face, her face. Then the girl starts to cry, she doesn’t like that, so the girl picks up the gravy, another, half of the gravy, throws it at him, the boy. The boy starts to cry as well. They both shout. Mother, mother comes up and says, ‘both of you go to bed now.’”

As with her English narrative the older child used more complex and varied reference devices than the younger child in BSL. After establishing antecedents, she uses both right and left sides of the signing space to move verbs into: “FLICK GIRL FACE” (clause 5), for locations to move pronominal signs towards: “PRO SAME PRO FLICK FACE” (clause 6). Thus by repeatedly using these spatial locations she creates and reinforces referential loci which are exploited throughout the sections of the narrative. She uses very reduced referential information, such as eye gaze directed towards an established referential location. This accompanies other morphosyntactic devices, as in “FLICK GIRL FACE” (clause 5).

As well as these complex referential devices, she calls upon syntactic anaphoric references such as in the penultimate clause “BOY START CRY SAME BOTH SHOUT” (clause 12). The use of the verb phrase anaphora “SAME” in clause 12 refers back to the verb phrase “GIRL START CRY” (clause 9) and the pronominal “BOTH” in clause 12 refers back to the antecedent “BOY GIRL” in clause 1.

Lastly, there are uses of surrounding discourse context, within which the 9-year-old embeds references to the protagonists of the narrative. These discourse properties refer to what Orsolini et al. (1996) termed “pragmatic dependencies.” For example there are repeated mentions of internal states which function to reinforce the frequent switch references made by Cloe: “BORED” (reference to “the boy” in clause 3), “NO-LIKE” (“girl” clause 6), “ANGRY” (“boy” clause 7), NO-LIKE (“girl” clause 9).

Thus the reference possibilities both through syntactic, morphological and discourse related BSL devices are exploited more fully in the BSL narrative, than in the same task in English. She uses referential expressions within the constraints coming from global and local discourse cohesion, placing here within the 3rd phase of the Karmiloff-Smith model while at an earlier phase in English.

The bilingual development of discourse cohesion in BSL and English

In answer to the first question raised above:

What does the development of referential organization in discourse look like in bilingual sign/speech children?

The use of anaphoric reference in each modality calls on different surface linguistic mechanisms, exploiting word order in English and movement through signing space in BSL. Both languages also exploit the types of pragmatic cues outlined by Orsolini et al. (1996), Clibbens (1992), Foster-Cohen (1994) and Karmiloff-Smith (1985) for the interpretation of reference. Both children are developing these devices across both their languages, yet choosing differing strategies in their narratives. These results would go some way to supporting the Karmiloff-Smith developmental model for discourse.

However looking at discourse organization in a bilingual, bimodal context suggests that the Karmiloff-Smith three-phase developmental sequence should be expanded and refined in order to encompass intermediary stages in development. The use of reference and proposed phase of development described in the above four short narratives are summarized in Table 3. below.

The impact of bilinguality

The second question raised above asked whether these children use features of sign language in a different way to deaf signing children, through being native speakers of a spoken language. There were some examples of morphosyntactic structures not previously reported in comparable deaf adult or deaf child BSL data, possibly implying a bilingual effect. In both children there was an absence of polymorphic constructions used in BSL to describe the “face-painting” scene. In BSL grammar these structures are used to indicate action performed on a body part (face) of one person by another.

Table 3

Individual comparison of reference use and proposed phase of development

Child:	Sam		Cloe	
Forms:	BSL	English	BSL	English
Referent establishment	Attempted	Unclear	Clear	Clear
Pronominals	Over redundant use of NP	Deictic use of pronouns	Clear	Clear
Verb inflections	Ambiguous use of sign space	Clear	Clear	Clear
Verb phrase anaphor	Absent	Absent	Clear	Clear
Shifted reference	Attempted	Attempted	Clear	Clear
Discourse organization in Karmiloff-Smith model	Between 1st and 2nd phase	1st phase	3rd phase	Between 2nd and 3rd phase



Here the signer describes “the girl” painting a third person on the face in front and to the left of the signer herself, then mentions the referent overtly (“BOY”) followed by a switch to the aforementioned referent who receives the same verb but in the converse orientation onto the face. These constructions are mastered late in child acquisition of BSL (at 7 years in Morgan, 1998). However they were completely absent in the present data from HCDP. Instead, there was a preference to mark the second part of these constructions with a lexical locative “FACE” rather than using a locative-verb compound.

Sam: “AND PRO BOY **FACE** PRO PAINT GIRL **FACE**” (clause 4)

Cloe: “FLICK GIRL **FACE** // GIRL NO-LIKE PRO SAME PRO FLICK **FACE** // THEN BOY HAVE ANGRY // PRO GRAVY THROW **FACE**/PRO POSS-PRO **FACE**” (clauses 5–8).

These differences in discourse are argued to stem from an influence of a sequential or linear syntax in the BSL of the two children’s narratives. A second difference between the HCDP and deaf adult or deaf child BSL data previously collected (Morgan, 1998) was observed in the BSL of the older child. In her narrative, pronoun and verb anaphora are used cohesively but it is still noticeable that often there is redundant information provided. In the description of BSL grammar on p. 285, Example (3) illustrated the use of an inflected verb sign moving between already overtly identified loci. The locations allow the signer to exploit pronoun clitics within the verb stem. Verbs moving between two referential loci in this way carry syntactic information simultaneously in their movement. Pointing to a locus then moving a verb towards it has a repetition of naming function. “The boy looks at the girl” can be reduced to “he looks at her” in English but can be reduced to an inflected verb with subject and object affixes: (Ø) LOOK (Ø) in BSL. Utterances produced by Cloe such as “GIRL NO-LIKE PRO SAME PRO FLICK FACE” (clause 6) can be described as an example of the English obligatory subjects being carried over into BSL. Thus English

syntax and morphology seem to carry over and influence patterns of BSL use.

It is difficult to determine if these differences are an artifact of the age of the children, the particular forms chosen in these narrative or language mixing. Although these two children are working within the grammars of each language and modality, there are subtle differences between their use of spatial locations and movement of signs, and those in the same narrative tasks performed by their deaf native signing peers. The present analysis has focused on the impact of English on BSL. Follow up work will collect data on English structures apparent in this population's narrative productions to look for sign modality effects upon spoken English.

Conclusions

The use of reference in narrative has been described in hearing monolingual children, bilingual children, and finally hearing children of deaf parents (HCDP) growing up in bilingual environments. This population offers a unique opportunity to study bilingual language acquisition. It is concluded that both the children described above, use reference devices appropriate for their age and the modality in which they are communicating. Although sign and speech require very different referential forms these children already are making appropriate shifts between languages. Thus the simultaneous acquisition of two reference systems is not limited to languages produced and perceived in the same modality. The development of knowledge of discourse can occur across modalities within the same child. At the same time apparent differences in the progress these children have made across languages, argues for an expansion and refinement of current models of discourse organization development.

The interaction between BSL and English in acquisition is complex. For some structures these two children use BSL in different ways to their deaf signing peers. This difference rests in the exploitation of *simultaneous* sign language constructions. This relates to the simultaneity offered in BSL where multiple parts of a sentence may be articulated in the same temporal frame, as described in the previous section on cohesion devices in BSL. There is an influence of a *sequential* organization of morphosyntactic elements stemming from spoken English. This subtle difference becomes apparent when looking at child acquisition of complex verbal and nominal predicates in BSL.

Being a native signer may influence the acquisition of spoken language. More work is needed to tease out where this will surface most. Here, it is suggested that future analysis of the acquisition of spatial language in HCDP, in particular the description of topographic scenes such as in the table layout example previously, may be an avenue towards discovering the impact of sign language on spoken language acquisition.

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Appendix 1

Coding system

LITTLE-GIRL = approximate English gloss of signs. Where more than one English word is required this is indicated through a hyphenated gloss


t-o-m = fingerspelling

"...the little girl..." = English translation, where "..." indicates it is taken from a larger piece of discourse


// (1) clause boundary and number of clause


location / pronominalization


IX/PRO


 = point or referent establishment in front of signer at x


verb morphology


 = left

 = from right

 = across body

 = towards body

 = right + up

 = left + down

eye-gaze

>>
SEARCH = scope of eye-gaze

>< = mutual

- = neutral

<< = right

>> = left

W = down

M = up

∅∅ = closed

-- = squint

<v = down + right

^> = up + left

Appendix 2

The Paint Story

