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Scene-setting and referent introduction in sign and spoken languages

What does modality tell us?

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Previous studies show that children do not become adult-like in learning to set the scene and introduce referents in their narrations until 9 years of age and even beyond. However, they investigated spoken languages, thus we do not know much about how these skills are acquired in sign languages, where events are expressed in visually similar ways to the real world events, unlike in spoken languages. The results of the current study demonstrate that deaf children (3;5–9;10 years) acquiring Turkish Sign Language, and hearing children (3;8–9;11 years) acquiring spoken Turkish both acquire scene-setting and referent introduction skills at similar ages. Thus the modality of the language being acquired does not have facilitating or hindering effects in the development of these skills.

Keywords: language acquisition, narrative, Turkish Sign Language, Turkish

1. Introduction

Acquiring a language means much more than learning the individual words and knowing the rules to form sentences. An important aspect of language acquisition lies in the ability to narrate events in a grammatically accepted way. This ability involves having a command of linguistic structures at the discourse level in addition to the sentence level. It also requires the pragmatic ability to understand how much knowledge is shared with the interlocutor while narrating an event. Thus, children should learn to provide adequate background information to the story that they are about to tell (Menig-Peterson & McCabe, 1978). One way of doing this is to provide such information at the start of the narrative discourse, and to present background information about the events that are about to happen by

specifying 'who', 'where' and 'when' type information (i.e., scene-setting elements; Berman, 2001; Berman & Slobin, 1994). Another way is to use linguistically appropriate devices to mark the identifiability of the referents that are introduced during the discourse. Identifiability, here, refers to the ability of the addressee to establish a link between the referring expression used by a speaker and the concept it refers to (Küntay, 2002).

The analysis of 'how to start a story' constitutes an important feature of the development of both narrative knowledge and storytelling performance among children (Berman, 1995; Reilly, 1992). First, giving a suitable setting to the story means that the narrator is aware of what the interlocutor needs to be able to understand in the narration. Furthermore, it requires a pre-planning of the text as a whole and with a global view of the events to be told. Studies with speaking children show that the younger the children are, the less information they provide to set the scene in their narratives (Berman, 2001; Peterson, 1990; Peterson & McCabe, 1983; Umiker-Sebeok, 1979). However, these studies are conducted with children who are required to translate events presented usually in the spatial-visual modality into sequential segments of verbal output (as in the case of picture-story narrations), thus causing a particular kind of cognitive demand (Berman & Slobin, 1994). Thus, it might be interesting to examine the narrative discourse development in children who acquire a sign language where space is used to talk about space (Emmorey, 2002).

The analysis of 'how to introduce referents' relates to one of the primary issues in discourse studies. For a successful communication, speakers should be clear with respect to who or what they are talking about, and use linguistic devices available in their language accordingly. The proper initial identification of referents is not only crucial for the addressee to understand what the narrator has in mind, but also for the narrator to structure their own discourse. So, linguistic (i.e., use of appropriate linguistic forms), social (i.e., needs of the addressee), and cognitive (i.e., structuring one's own discourse) factors have inter-related roles in the acquisition of how to introduce referents. Naturalistic and experimental studies in English and French show a late mastery in learning appropriate introduction of referents for the listener (Brown, 1973; Karmiloff-Smith, 1979; Maratsos, 1976; Warden, 1981). In these studies, researchers investigated the languages that employ formal article systems to identify the referents (i.e., definite and indefinite articles). Other studies with languages that do not employ such article systems (e.g., Japanese, Chinese, Finnish, Warlpiri, Turkish) also point toward relatively late emergence of the ability to appropriately mark the indefiniteness of new referents in discourse (Bavin, 1999, 1987; Clancy, 1992; Dasinger, 1995; Hickmann, 1995; Hickmann, Hendriks, Roland & Liang, 1996; Hickmann & Liang, 1990; Küntay, 2002; Nakamura, 1993).

The aim of the current study is to investigate scene-setting and referent introduction patterns in narrations produced by children (3;5–9;11 years) acquiring Turkish Sign Language (Türk İşaret Dili – TİD) and Turkish spoken language through direct comparisons to the narrations elicited from adults in each language. The main research question is whether there are modality (i.e., auditory-vocal versus visual-spatial) effects on the development of discourse skills in these specific areas. To the best of my knowledge, no study has been conducted with such research questions on TİD. Comparing the linguistic devices used to set a narrative scene and introduce referents in two different languages, which operate in different modalities, will present evidence concerning the extent to which modality and linguistic factors are at work during language acquisition, at least during the narrative discourse development.

The next section (2) provides a brief literature review of the studies that investigate the acquisition of narrative skills in scene-setting and in introducing referents in narrations by signing and speaking children. In section (3), I provide information about the current study, and present the results in (4). This chapter ends with section (5) where the results are summarized and discussed in relation to previous studies.

2.   Scene setting and referent introduction in narrative discourse

A narrative constitutes a particular kind of discourse activity, which can have a number of forms, occur in a number of situations, and serve various aims (Hickmann, 1982). It involves the descriptions of events which are removed from the listener's time, space, and participation (Hickmann, 1982) and requires the speakers to build up layers of information about characters, places, and events (Rathmann, Mann & Morgan, 2007).

One of the layers of a narration is 'setting' in which the narrator introduces the protagonist (i.e., main character) and other characters, and provides background information such as time and space of the event. This layer is mostly built at the beginning of the narration. During the story, the narrator refers back to the characters or other points (i.e., time or space) introduced at this layer. The opening of a story serves to specify information related to 'who', 'where', 'when' and 'why' questions. By introducing the characters, it serves a *presentative* function; by giving spatio-locative and temporal information, an *informational* function, and by explaining what triggers the events, it serves a *motivating* function (Berman, 2001).

Throughout the narration, different referents appear at different points of the narration. For successful communication, narrators have the responsibility of formulating their utterances in a way in which the referents that they introduce are

accessible to their addressees. In all languages, speakers can refer to objects by different ways such as using their names, pronouns, or deictic expressions such as *this* and *that*. These linguistic forms differ in how explicitly they refer to the entities. In order to create coherent and comprehensible narrations, the narrators' use of linguistic forms heavily depends on the shared information with their interlocutors. For example, if the narrator has a specific referent in mind, and assumes that it is known by the interlocutor, s/he will most probably use a certain linguistic device to indicate the definiteness. On the other hand, if there is no specific referent, the linguistic form chosen by the narrator will reflect indefiniteness. In other words, the narrators' uses of referring expressions with first and subsequent mentions of referents will depend on whether the narrators can assume that the interlocutors share background presuppositions about the referent in question (Chafe, 1976; Hickmann, 1982).

The analyses of 'how to start a story' and 'how to introduce referents' contribute to the understanding of the development of both narrative knowledge and storytelling performances of children (Berman, 1995; Reilly, 1992). Understanding how different functions of narrative setting (i.e., presentative, informational, motivating) and how linguistic forms for appropriate introduction of the referents are learnt, gives insights about the cognitive abilities of children to develop a representation of an addressee (Berman & Slobin, 1994). In the following sections, I present evidence showing how children develop abilities in setting the scene and introducing referents during narrating events in spoken (2.1) and sign languages (2.2).

2.1 Learning to set the scene and introduce referents in spoken languages

Previous studies show that children's narrative skills start to develop after the emergence of two-word utterances. At the age of 3 or 4 years, children are able to talk about their past experiences by constructing 'proto-narratives' in mostly single sentences with little or no coherence (Peterson, 1990; Umiker-Sebeok, 1979). Such a type of narrative includes the skills of narrating events which are not 'here and now' and putting the events in a chronological order (Morgan, 2000).

The narratives of young children include the setting of information that mostly includes 'where', but not 'who' information. By 5–7 years, children start to include 'who' and 'when' information into their narratives. At 8–10 years, children get better in telling a coherent narration by using most structural components correctly and showing an understanding of the emotions of the characters. Only after 9 years old, these children became adult-like and provided 'when' information in addition to 'who', 'where', 'why' information (Peterson, 1990; Peterson & McCabe, 1983; Rathmann et al., 2007). For example, Berman (2001) found a clear developmental pattern in providing answers to 'who', 'where', 'when', and 'why'

questions in the beginning of a narration. Analyzing the narrations from a picture book (*Frog, where are you?* by Mayer (1969)) and fight stories (e.g., Have you ever had a fight?), 3-year old Hebrew acquiring children (*N* = 24) provided little information about 'who' and 'where'. While narrating the picture book, only half of the children, aged 3 to 4, introduced the main character (i.e., the boy) either by an explicit noun phrase (i.e., the boy) or by a pronominal (i.e., he). Five-year olds in the study, on the other hand, also added 'why' information in addition to 'who', 'where', 'when' to their narrative settings.

Studying the introduction of referents in children's narratives, researchers observed that children's narrative skills do not become adultlike before the age of 7 years (Hickmann, 1982; Hickmann & Liang, 1990; Karmiloff-Smith, 1985; 1983; 1981; Wigglesworth, 1990). Most of these authors derived their conclusions from speakers of Indo-European languages, whose main strategy to mark (in) definiteness status of the referents is to use articles as distinct grammatical elements. The results of the naturalistic and experimental studies in such languages demonstrated a relatively protracted development for the mastery of appropriate (in)definite linguistic forms for the introduction of the referents (Brown, 1973; Kail & Hickmann, 1992; Karmiloff-Smith, 1979; Maratsos, 1976; Warden, 1981). Similar results were also shown by the studies that focused on languages without a formal article system to mark the referent status of a nominal, and found a late mastery in learning to introduce referents during narrations (Bavin, 1999; 1987; Clancy, 1992; Dasigner, 1995; Hickmann et al., 1996; Hickmann, 1995; Hickmann & Liang, 1990; Miu, 1994; Nakamura, 1993). For example, studying Turkish acquiring children between the ages of 3 and 9 years and comparing them to Turkish speaking adults in a 6-picture story elicitation task, Küntay (2002) reported inappropriate uses of deictic forms until the age of 7 years and a gradual movement away from the use of bare noun phrases toward explicit indefinite marking with increasing age.

All of these studies are restricted to the data elicited in spoken languages. Thus, we do not know if similar acquisition patterns are observed in sign languages that operate in the visual-spatial modality. As suggested by Berman and Slobin (1994), children who acquire a spoken language (auditory-vocal modality) need to translate events presented usually in spatial-visual mode into sequential segments of verbal output, thus causing a particular kind of cognitive demand. Therefore, it might be interesting to examine the narrative discourse development in children who acquire a sign language which affords transparent form-meaning mappings. In the following section, I explain how events are usually narrated in the visual-spatial modality, which allows for holistic representation of events, and where there is visual-resemblance between the real event and its linguistic representation – unlike spoken languages.

2.2 Learning to set the scene and introduce referents in sign languages

I first describe how events are narrated in sign languages in general. I will begin with classifier predicates since signers mostly use them while narrating events, and continue to explain how space is used to introduce the referents.

Classifier predicates are complex morphological structures in which the position and the movement of the hand(s) in signing space communicate information about the location and motion of the referent(s) in real events (Emmorey, 2002; Perniss, 2007; Supalla, 1982; Zwitserlood, 2003). Classifiers are expressed by handshapes that *classify* entities by representing their salient characteristics (Emmorey, 2002; Supalla, 1982; Zwitserlood, Perniss, & Özyürek, 2012). As reported by Kubuş (2008), vehicles such as cars are classified by a flat handshape, as shown in (1a; 2nd still, both hands) in TİD. In this example, the signer describes the location of the two cars as shown in the picture through flat handshapes (i.e., classifiers).

(1a)

| LH: | CAR | CL(car)$_{loc}$ |
| RH: | CAR | CL(car)$_{loc}$ |

'One car is parked/located behind/in front of another car.'

Previous studies on sign language classifiers suggested different categorization of classifiers, and the types of classifiers suggested so far ranges from two to nine (see Schembri, 2003; Zwitserlood, 2003). Below, I present two of them:

i. *Entity Classifiers*: They represent referents by encoding certain salient characteristics through handshape. Although entity classifiers can represent both animate and inanimate objects, predicates formed with entity classifiers are

non-agentive and intransitive (Schick, 1990). In the example (1a) above, the TİD signer describes the location of two cars with respect to each other. As can be seen in the 1st still, he first introduces 'car' by its lexical sign in TİD. Then, as shown in the 2nd still, he localizes two cars by representing them through an entity classifier predicate.

ii.   *Handling Classifiers*: These represent the handling or the manipulation of the objects, usually by an animate referent. Classifier predicates with handling handshapes are agentive and transitive constructions with an object argument. This kind of classifiers is also seen in TİD (Kubuş, 2008). In the example (1b), a TİD signer is describing a picture which depicts a man carrying a box. After introducing the agent (i.e., man) and the patient (i.e., box) with their lexical signs in the 1st and 2nd stills respectively, she uses a handling classifier to indicate that the box is being carried.

(1b)
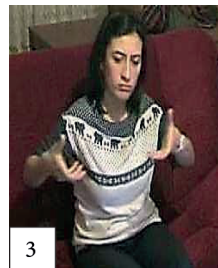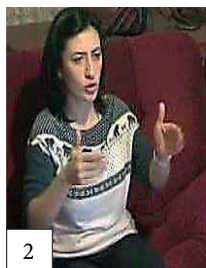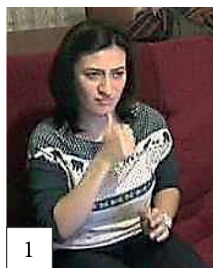
| LH: | | BOX | CL(box)$_{carry}$ |
| RH: | MAN | BOX | CL(box)$_{carry}$ |

'There is a man. There is a box. The man is carrying the box'

In sign languages, signers can locate an index for a specific referent by directing different signs towards locations in front of them and they can move their signs among these already determined locations to create a cohesive discourse. After establishing these locations in the signing space for their first mentions of the referents, subsequent use of these locations will serve as indexes for the referents (Morgan, 2000). In (1c) below, a TİD signer is narrating a video in which a boy walks towards a girl. After introducing the girl by its lexical sign (1st still), she localizes it in the signing space in a classifier predicate in which her extended upright index finger refers to the girl (2nd still). While holding this classifier for the girl, she introduces the boy by its lexical sign (3rd still), and she moves her right

extended upright index finger, representing the movement of the boy, towards the location of the classifier for the girl (last still). In this way, she uses the signing space in front of her to narrate the video that she has watched.

(1c)
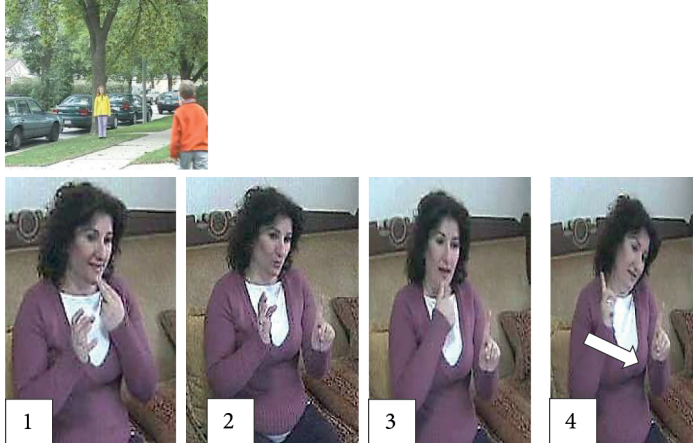
LH:	GIRL	CL(girl)$_{loc}$	--------HOLD---------	
RH:			BOY	CL(boy)$_{mov}$

'There is a girl here. The girl is here. There is a boy. The boy is moving to the girl.'

Sign language researchers propose that certain pointing signs (i.e., pointing towards a referent established in the signing space) constitute a determiner system (Kegl, 2003; Wilbur, 1979). Wilbur (1979), summarizing Kegl (2003), hypothesized that the definite/indefinite distinction in American Sign Language (ASL) may be made by the contrast between the existence of a surface determiner (i.e., definiteness), or the lack of a surface determiner (i.e., indefiniteness). However, what Zimmer and Patschke (1990) found was inconsistent with this hypothesis. They found many instances in which a noun being mentioned for the first time did occur with a determiner (i.e., pointing determiner). Moreover, they suggest that pointing signs are not used with generic nouns, but only with specific entities. Thus, they do not mark the definite/indefinite status of the nouns. On the other hand, MacLaughlin (1997) argues that ASL pointing signs differentiate between the definite and indefinite status of the nouns depending on where they were used in an utterance. Thus, there is not much consensus about the role of pointing signs as a determiner in ASL, and it is not clear if and how these pointing signs function as scene-setting elements in sign language narrations.

When compared to the number of studies conducted with spoken-language-acquiring children in the domain of narrative discourse development, there are fewer studies conducted with sign-language-acquiring children, and these studies

proposed some general milestones for the narrative discourse development for these children (Morgan, 2002; Morgan & Woll, 2003 for British Sign Language – BSL). These studies report that deaf children at the age of 3 years use linguistic devices for reference in quite unclear ways, and cannot use signing space to maintain the characters introduced at the beginning. The characters are also usually introduced without a clear indication of who they are. When deaf children are 4–6 years old, they begin to use classifiers. However, children at this age are not yet able to use signing space referentially and use the same location for many different characters. Between 7 and 10 years of age, deaf children's ability to mark reference in narratives improves, but they still have difficulties in reference maintaining. These studies suggest that the full mastery of narrative devices takes place between the ages of 11 and 13. Similar results have also been found for children acquiring sign languages other than BSL (Niederberger, 2004 for French Sign Language – LSF; Anthony, 2002 for ASL; Vercaingne-Menard, Godard & Labelle, 2001 for Canadian Sign Language – LSQ). Moreover, studying two children with deaf parents, Morgan (2000) found similar developmental patterns in their narrative structures in both English and BSL. It is important to note that these studies focused on the general acquisition of narrative skills by signing children, thus, they do not provide specific information about how these children learn to start narrations (i.e., scene-setting). Children may not be able to use the signing space in an adultlike way to refer to the location of the entities, but they might still introduce scene-setting elements in qualitatively and quantitatively similar ways to adults.

3.   Present study

The goal of the current study is to explore learning patterns using different scene-setting elements (e.g., who, where, what) and introducing referents during narrating events in a sign (i.e., TİD) and a spoken (i.e., Turkish) language.

In order to establish target and developmental patterns for the use of these elements in TİD and Turkish, narrations of a picture story (i.e., Balloon Story) were elicited from children and adults in both languages. In this way, patterns observed in the children data were directly compared to the adult data – rather than assumed adult preferences. Since previous studies in the domain of narrative discourse development lack direct comparisons between signing and speaking children using the same elicitation tasks, the data in this study were collected by using the same task from both languages. Developmental patterns observed in TİD and Turkish were compared to see whether, and to what extent, modality plays a role in learning to use scene-setting elements and introducing referents in linguistically appropriate ways.

To a naïve eye, the affordance of using space might help deaf children visualize their narration more easily, thus decreasing their cognitive demands for a cohesive narration. As suggested by Berman and Slobin (1994), children who acquire a spoken language need to translate events presented usually in spatial visual ways into sequential segments of verbal output, which then causes a particular kind of cognitive demand. This may lead to the later emergence of narrative skills to set the scene and introduce the referents in a spoken language than in a sign language. However, as shown by previous studies on sign languages (e.g., Morgan, 2002; Morgan & Woll, 2003), a cohesive narration also requires the use of space in an unambiguous way, thus adding one more layer of complexity. In this case, TİD-acquiring children would be expected to lag behind Turkish-acquiring children. One more possibility is that modality does not play a determining role in this domain, and there will be similar developmental patterns for Turkish and TİD.

3.1   Participants

The development of scene-setting and referent introduction skills was studied by comparing the narrations elicited from 20 adults (13 females) to the ones elicited from children in two age groups for Turkish and TİD: One group of 20 younger children whose ages range between 3;5–6;10 (mean age: 5;2, 8 girls) and one group of 20 older children between the ages of 7;2–9;11 (mean age: 8;3, 8 girls). There were 10 participants in each age group for each language (see Table 1 below). While forming these age groups, the age which children start primary school in Turkey was taken as the decision criteria.[1]

Table 1. Age ranges and (*M* = age means) for deaf and hearing children who participated in the study

	TİD	Turkish
Adults	18;5–45;10 (*M* = 31;4)	28;2–51;3 (*M* = 37;9)
Older Children	7;2–9;10 (*M* = 8;3)	7;2–9;11 (*M* = 8;2)
Younger Children	3;5–6;10 (*M* = 5;2)	3;8–6;8 (*M* = 5;3)

All deaf children who participated in the study were born deaf and acquired TİD natively from their deaf parents. Among these 20 deaf children, six also had deaf grandparents and five had deaf uncles and/or aunts in their families. Three of the deaf children (two in older and one in the younger age group) had cochlear

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1. When we established age groups for this study, the starting age for primary school was 7 years in Turkey. However, after a change in the educational policy in September, 2012, children now start school at the age of 5–6 years.

implants (CI).[2] One of the older deaf children received his CI when he was 4 and the other at the age of 6. The younger deaf child got her CI when she was 3 years old.

In the older age group, seven deaf children attended a primary school for the deaf and three were in the mainstream schools for the hearing. As for the younger age group of deaf children, three of them were full-time (five days a week) and four were part-time (two days a week) attenders in a preschool education program for the deaf. The rest did not attend any preschool education programs and stayed at home. All of the deaf children in this study also attended weekly four-hour rehabilitation sessions, which mostly included speech therapy. It is also important to note that the education in the schools for the deaf in Turkey is conveyed through oral methods, and TİD is not part of the curriculum.[3] However, in one preschool education program, which four of the deaf children in this study attended, TİD lessons are provided by a deaf teacher for one hour in a week, although its teaching has not been very systematic yet. For the hearing children, all in the older age group receive formal education. Five of the younger hearing children attended a preschool education program five days in a week while the rest did not. Thus, overall, 30 deaf native TİD signers and 30 Turkish speakers, all residing in İstanbul, Turkey participated in the current study.

3.2 Stimulus material and procedure

The data were collected through the narrations of 'Balloon Story', which was developed and originally used by Karmiloff-Smith (1981) to study extended discourse. The story consists of six pictures, which are arranged as two groups of three pictures, each placed above the other (See Appendix). The pictures depict the story of a little boy, who is walking on the street, sees a balloon-man and buys a balloon. Later, the balloon flies off and the boy starts crying and continues to walk. In order to elicit data systematically, the participants in both languages were asked to narrate the same picture story to a deaf or hearing addressee depending on the language condition. In data collection sessions, signers/speakers were asked to sit opposite the addressee. There was a laptop located on a table between them, and the table was below the waist of the participants so that their hands could easily be seen. The addressees did not see the computer screen and participants were told that the addressee did not know the balloon story.

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2. A cochlear implant (CI) is a surgically implanted electronic device that provides sound to a person who is profoundly deaf or severely hard of hearing.

3. TİD has been included as a subject (two hours per week) in the curriculum of the school of the deaf for the 1st, 2nd, and 3rd graders as of 2015–2016 academic year in Turkey.

The participants were recorded by two cameras from different angles, as illustrated in Figure 1 below, so that an approximation of a 3-dimensional view was achieved, which facilitated the coding. The recordings were done in various schools or home environments and consent was given by the adult participants or the parents of participating children.

Figure 1. Combined camera view on the signer

3.3 Data coding and analysis

For the analysis of the data, the narrations of 'Balloon Story' elicited from the signers and speakers were coded using ELAN, a free annotation tool (http://tla.mpi.nl/tools/tla-tools/elan/) for multimedia resources, developed by the Language Archive Group at the Max Planck Institute for Psycholinguistics in Nijmegen, The
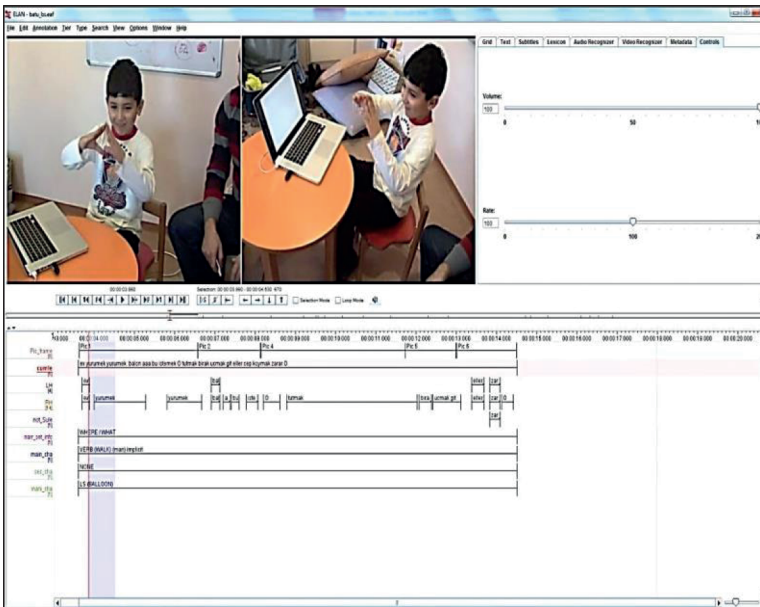

Figure 2. A screen snapshot that shows TİD annotations in ELAN.

Netherlands (Wittenburg, Brugman, Russel, Klassmann & Sloetjes, 2006) (see Figure 2). For each picture story narration, all signs were transcribed with Turkish and English glosses on separate tiers for the left and right hand by a hearing researcher who has knowledge of TİD. These annotations were checked by a deaf TİD signer. A native speaker of Turkish annotated the Turkish narrations using the same program.

In the present study, data were analyzed for the presence/absence of each scene-setting element in Turkish and TİD (3.3.1) and how different referents were introduced through event narrations in both languages (3.3.2).

3.3.1   *Coding decisions for the analysis of scene-setting*

In order to analyze scene-setting elements, I focused on the narrations of the first picture in the story (see Figure 3). Berman and Slobin (1994) defines 'setting' as a part of the story that specifies the characters, the time and the space in which the story occurs. The first picture of the story shows a house with a tree near it and a street where the boy is walking. Thus, scene-setting elements in this story include 'who' (i.e., the boy), 'where' (i.e., the house, the tree, and the road), and 'what' (i.e., walking) type of information.[4] In the following paragraphs, I define how these three scene-setting elements are mentioned in Turkish and TİD.

Figure 3. The first picture of the 'Balloon Story' that includes 'who', 'where', and 'what' type of scene-setting elements

The first picture of the 'Balloon Story' shows a boy and referring to him is considered to provide 'who' type of information in this analysis. For example, both a 9;5-year-old Turkish speaking girl and a 8;8-year-old TİD signing boy refer to the boy in the first picture of the story (see (2a) and (2b) for Turkish and TİD, respectively).

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4. At the beginning of the 'Balloon Story', the events take place at daytime, but since there is no specific reference to it (e.g., the sun), this type of information is not included in the current analysis.

(2a) Bir çocuk yol-da   yürü-yor.   (Girl, 9;5)
      One child road-LOC walk-PROG.
      'A child is walking on the road.'

(2b)

(8;8)

LH: BOY   CL(boy)_walk
RH:
'There is a boy, he is walking.'

The first picture also depicts a house and a tree near the house in addition to the road where the boy is walking. Referring to any of these three elements (i.e., house, tree, road) is accepted as providing 'where' type of information. For example, in (2a) above, the Turkish speaking girl encodes 'where' information in her sentence by referring to the road (i.e., yol-da – *road-LOC*). In (2c) below, a 7;10-year-old TİD signing child refers to the house (1st still) while setting the scene for his narration. However, in (2b) above, the deaf child skips this information for scene-setting in his narration, and does not mention the house, the tree, or the road.

(2c)

(7;10)

LH: HOUSE
RH: HOUSE   CHILD   GO
'There is a house. There is a child. The child goes.'

Finally, the boy is depicted as walking, thus in an action, in the first picture. Referring to the action of the boy is accepted as providing 'what' type of information in the current analysis. Signing and speaking children in the examples

above (2a, b, c) all refer to the action of the boy as depicted in the first picture. The Turkish speaking girl narrates this action by saying 'yürü + yor – *walk* + PROG.'. In TİD, one of the signing children (2b) uses a classifier predicate where he shows the walking of the boy by his upside down, extended index and middle fingers that wiggle (his left hand in the 2nd still). The other deaf boy (2c) uses a lexical sign meaning GO to indicate the action of the boy (his right hand in the 3rd still).

In the analysis of the presence/absence of the scene-setting elements, I counted each reference to any of these elements (i.e., the boy for 'who', the house, the tree, the road for 'where', and the action of the boy for 'what'). Thus, story beginnings such as in (2a) and (2c) received credit for all three since they include all three types of information. However, beginnings such as in (2b) are analyzed as having only 'who' and 'what' type of information, thus lacking information about 'where'.

3.3.2   *Coding decisions for the analysis of referent introduction*

In the current study, I also examined how referents are introduced by children and adults in both languages. This analysis is different from the previous one in the sense that it focuses on the three different referents that appear through the story. Thus, this analysis is not restricted to the narrations from the first picture only. Following Küntay (2002), the referents of the 'Balloon Story' include the boy, the balloon-man, and the balloon for the current analysis. These referents appear at different points in the story: The boy appears in the first picture and the balloon-man in the second picture. It is not possible to say conclusively whether 'the balloon', the inanimate referent, appears in the second or the third picture for the first time since the balloons in the second picture actually refer to the role of the man as 'the balloon-man', thus the balloons may not be salient as a third referent for the participants. However, the balloon given to the boy in the third picture obviously adds more than the role of the secondary character (i.e., the balloon-man). Therefore, I focused on referring to 'the balloon' for the first time no matter whether it is expressed with the second or the third picture (see Figure 4).
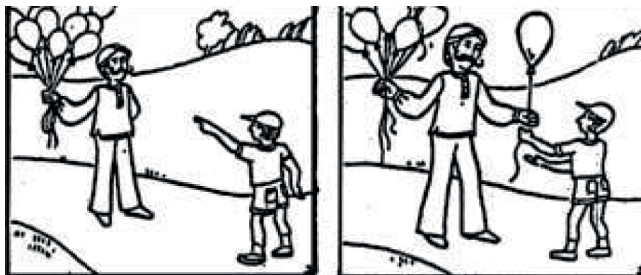

Figure 4. The second and the third pictures of the Balloon Story.

The focus of this analysis is on whether the referents in the Balloon Story (i.e., the boy, the balloon-man, the balloon) are introduced through linguistic devices that make *explicit* reference to them. Therefore, in this study, I take a general perspective and analyze the explicitness in the mention of the referents during the narrations. I follow the principle of quantity for topic continuity (Givon, 1984) which proposes the use of full noun phrases while introducing a referent into discourse for the first time ('a woman' in (2d)); use of pronominal forms for the referents which are accessible for the addressee (because they are previously mentioned as 'she' in (2d)); and use of zero forms when the speakers think the referent will be understood by the addressee immediately because enough information about it has been given, as in 'taken to the hospital' in (2d) below. The important point here is that more linguistic marking (e.g., full noun phrases – NPs) is required when the referent is new or less accessible. In this study, other forms (i.e., pronouns and zero forms) are considered to be implicit (i.e., less informative) ways of referring to the referents.

(2d) Yesterday, a woman came to the hospital. She had a terrible pain in her stomach, and was taken to the surgery immediately.

In this current analysis, explicitness refers to the use of full noun phrases in Turkish and using lexical signs in TİD. In the following lines, I will introduce examples from both languages for the explicit reference to each of these three referents. In Turkish, the explicit reference to the boy is realized by using a full noun phrase (e.g., 'bir çocuk – *one child*' as in (2a)). The cases where the speakers used a noun without a determiner are also accepted as an explicit reference (e.g., 'çocuk – child'). In (2b and 2c), both deaf children introduce the boy by lexical signs, thus making an explicit reference to him in their narrations. If, for example, a Turkish speaker introduces the boy with a pronoun (e.g., 'O – *he*' in (2e)), then I would consider this linguistic marking to be implicit since it can refer to the boy or the balloon-man. Similarly, in (2f), an adult TİD signer refers to the boy in the classifier predicate that also refers to the action of the boy (his right hand in the 2nd still). In sign languages, it is possible to encode different types of information (e.g., agent and action) in these constructions, thus signers sometimes directly refer to the characters or entities in their classifiers without mentioning them previously by lexical signs.[5]

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5. Sign languages may also employ non-manual means of referring to discourse participants. The most common means is to express role shift from one participant to another in discourse (e.g., Cormier, Smith & Sevcikova, 2015; Metzger, 1995). However, the current study focuses on the use of manual linguistic forms to introduce referents in TİD.

(2e) O   ev-den   çık-ıyor.
      S/he house-ABL leave-PROG.
      'S/he is leaving the house.'

(2f)

LH: HOUSE
RH: HOUSE   CL(boy)_{walk}
      'There is a house. [Someone] is walking.'

Explicit reference to the balloon-man and the balloon that appear in the second and the third pictures of the story (see Figure 4) includes the use of noun phrases. In (3a) below, a 8;7-year-old Turkish speaking girl uses full noun phrases to introduce the balloon-man and the balloon by referring to them using nouns.

(3a) […] bir baloncu   gör-üyor. Baloncu-dan   balon
         one balloonman see-PROG. Balloonman-ABL balloon
      ist + iyor.   (Girl, 8;7)
      want + PROG.
      'Then, [s/he] sees a balloon-man. [S/he] wants a balloon from the balloon-man.'

In (3b), 7;10-year-old TİD signing girl introduces the balloon-man (1st still) and the balloon (2nd still) by using their lexical signs.

(3b) [….]

	1	2	(7;10)

LH: BALLOON-MAN   BALLOON
RH: BALLOON-MAN   BALLOON
          'There is a balloon-man. There is a balloon.'

In some cases, speakers and signers used implicit ways of referring to the balloon-man and the balloon. In (3c), a 5;4-year-old Turkish speaking boy refers to the action of the balloon-man by using a verb that does not include a person marking. In Turkish, when verbs do not include any person marking, then the interpretation is third person singular. In this case, use of such a verb actually refers to the balloon-man in an implicit way.

(3c) […] bi(r) tane balon   dağıt-ıyor.   (Boy, 5;4)
        one   item balloon deliver-PROG.
        '[Someone] is delivering a balloon.'

Such implicit way of marking the balloon-man and/or the balloon is also possible in TİD. For example, in (3d) below, a 8;8-year-old TİD signing boy is using a classifier predicate in which someone is holding something. Since he does not explicitly mention the balloon-man and the balloon, the information about 'who is holding what' is not clearly presented in his narration. Although it is implicit, he still provides information about the balloon-man and the balloon, and does not skip this information. His description of balloon-man is different from the one by the deaf girl in (3b), where she refers to him by using a lexical sign for MAN and holding something (1st still). She also refers to the balloon by its lexical sign in TİD (2nd still). However, in (3d), although the deaf boy depicts someone holding something, since he is not using any lexical signs, his description is analyzed to be an implicit way of referring to the balloon-man and the balloon, as well.

(3d)   […]

(8;8)

LH: CL(balloon)$_{hold}$
RH:
'[Someone] is holding [something].'

Following the decisions for coding how scene-setting elements are used and how referents are introduced in TİD and Turkish, I checked the narrations for the frequency of use of scene-setting elements and explicit mention of the referents. Below I present the results of these analyses.

4. Results

In order to see when different age groups of children learn to produce different types of scene-setting information (e.g., 'who', 'where', 'what') and introduce referents during narrating events in a sign (i.e., TİD) and a spoken (i.e., Turkish) language, narrations elicited from children and adults were analyzed for the presence/absence of the scene-setting elements and how explicitly the referents are introduced in each language. Before the statistical analyses were performed, arcsine transformations were applied to all the data since mean proportions of different types of descriptions from all relevant descriptions were used as the dependent measures. However, the mean proportions and standard errors reported in the graphs reflect the untransformed data. Corrections in the degrees of freedom were also made whenever the sphericity assumption was violated for repeated-measures ANOVA analyses.

4.1 The presence/absence of the scene-setting elements in Turkish and TİD

This analysis is restricted to the narrations elicited from the first picture of the story that shows a house with a tree near it, and a street where the boy is walking. First, I analyzed all the narrations of the first picture of the Balloon Story by each age group in Turkish and TİD, and calculated how many of them included any of these three scene-setting elements.

Subject-based mean proportions of expressing different scene-setting elements in the first picture were calculated out of subject-based mean proportions of the narrations of the first picture in TİD and Turkish as the dependent measure. A 3 (Between subjects; age; adult, older children, younger children) by 2 (Between subject; language; Turkish, TİD) by 3 (Within subjects; scene-setting type; who, where, what) mixed ANOVA yielded a main effect of age, $F(2, 180) = 6.39$, $p = .002$, $\eta^2_p = .07$. Overall, there were more scene setting elements expressed in spoken language than sign language, especially for who and when, but this difference was not significant, $F(1, 180) = 3.85$, $p = .05$, $\eta^2_p = .02$, or scene-setting type, $F(2, 180) = 2.58$, $p = .08$, $\eta^2_p = .03$. There were no two-way interactions between age and language, $F(2,180) = .22$, $p = .80$, $\eta^2_p = .003$; age and scene-setting type, $F(4, 180) = .53$, $p = .72$, $\eta^2_p = .01$; and language and scene-setting type, $F(2, 180) = .99$, $p = .38$, $\eta^2_p = .01$. Finally, there was no three-way
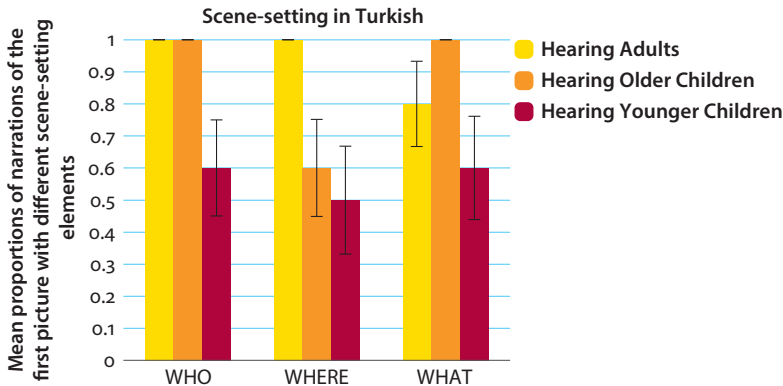

Figure 5. Mean proportions and error bars (representing SE) of narrations of the first picture with different scene-setting elements in Turkish.
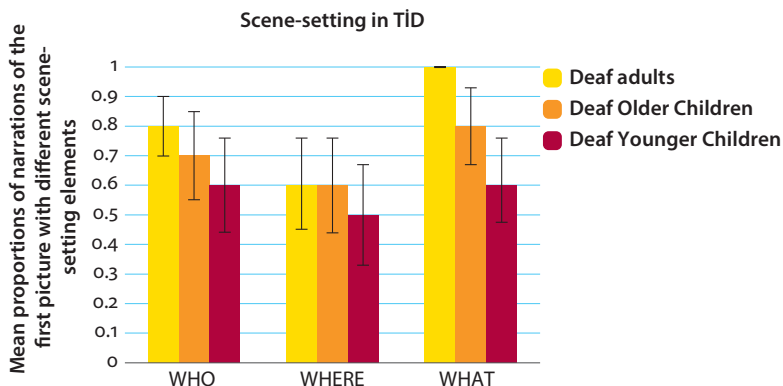

Figure 6. Mean proportions and error bars (representing SE) of narrations of the first picture with different scene-setting elements in TİD.

interaction, $F(4, 180) = 1.22$, $p = .30$, $\eta^2_p = .03$. Follow-up analyses for the effect of age (Bonferroni) revealed that younger children expressed scene-setting elements less frequently than adults ($p = .002$), but as frequently as older children ($p = .05$). Older children, on the other hand, mentioned them as frequently as adults ($p = .83$). Since there was no main effect of language and scene-setting type, it can be concluded that younger children in both languages have not become adult-like in how likely they express three types of scene-setting elements at the beginning of their narrations (see Figure 5 for Turkish and Figure 6 for TİD results).

4.2 How explicitly the referents are introduced in Turkish and TİD narrations

For this analysis, I analyzed all the linguistic forms through which three referents (i.e., boy, balloon-man, balloon) were introduced for the first time, and calculated how many of them were explicit references. As explained earlier, explicitness means the use of full noun phrases in Turkish and using lexical signs in TİD.

Subject-based mean proportions of the explicit first mentions of three different referents (i.e., boy, balloon-man, balloon) were calculated out of subject-based mean proportions of all first mentions of these three different referents as the dependent measure. A 3 (Between subjects; age; adult, older children, younger children) by 2 (Between subjects; language; Turkish, TİD) by 3 (Within subjects; referent type; the boy, the balloon-man, the balloon) mixed ANOVA showed a main effect of language, $F(1, 180) = 22.87$, $p < .001$, $\eta^2_p = .12$, and referent type, $F(2, 180) = .22$, $p = .04$, $\eta^2_p = .11$, but not for age, $F(2, 180) = 1.46$, $p = .24$, $\eta^2_p = .02$. There were no two-way interactions between age and language, $F(2, 180) = .44$, $p = .65$, $\eta^2_p = .005$; age and referent type, $F(4, 180) = 1.66$, $p = .16$, $\eta^2_p = .04$; language and referent type, $F(2, 180) = .14$, $p = .87$, $\eta^2_p = .002$. Finally, there was no three-way interaction, $F(4, 180) = 1.15$, $p = .36$, $\eta^2_p = .03$. As a result of the follow-up analyses (Bonferroni) for the main effect of referent type, I observed that the expression of the balloon-man elicited significantly fewer explicit forms than the expression of the boy ($p = .001$) and the balloon ($p < .001$). However, there was no such difference between the balloon and the boy ($p = 1.00$). The main effect of language shows that referent introductions in Turkish narrations elicited more explicit reference to these referents than the narrations produced in TİD. Although there were clear numerical differences between children and adults, these were not significant, suggesting that the children are well on the way to acquiring adult-patterns in this respect (see Figure 7 for Turkish and Figure 8 for TİD results).
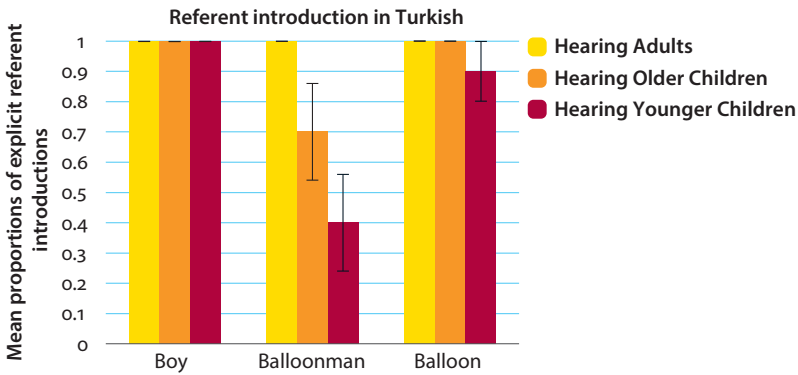
Referent introduction in Turkish

Figure 7. Mean proportions and error bars (representing SE) of explicit referent introductions in Turkish.
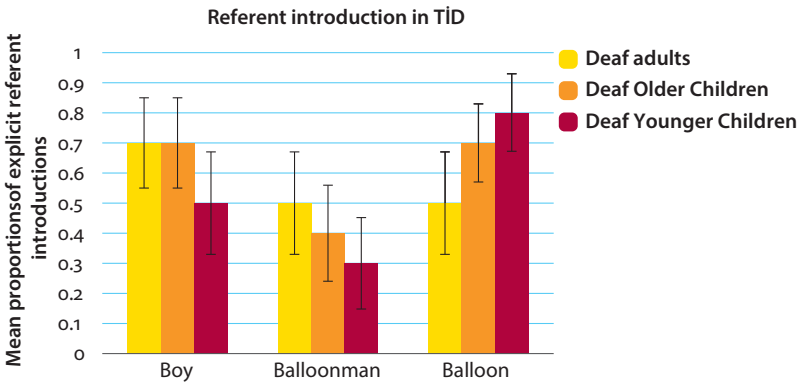
Referent introduction in TİD

Figure 8. Mean proportions and error bars (representing SE) of explicit referent introductions in TİD.

5.   Summary and discussion

In this study, I investigated learning patterns in setting the scene and introducing referents while narrating events by children (3;5–9;11 years) who acquire TİD and Turkish through direct comparisons with narrations elicited from adults in each language. The main research question was whether there are modality effects on the development of discourse skills in these specific areas. The results of the analyses for the presence/absence of scene-setting elements (i.e., who, where, what) indicated that deaf children who acquire TİD and hearing children who acquire Turkish show similar developmental patterns. Younger children in both languages used the scene-setting elements less frequently than adults at the beginning of their narrations. On the other hand, both deaf and hearing older children

were becoming adult-like in how likely they were to express these elements. Furthermore, these elements were mentioned for the first picture of the story in similar amounts in Turkish and TİD, and the elements also received similar amount of mentioning (i.e., one of them was not mentioned more frequently than the others). As to how explicitly these referents were introduced in both languages, both age groups of children in each language behaved in similar ways to adults in how frequently they used linguistic forms that make explicit reference to them (i.e., the boy, the balloon-man, the balloon). However, narrations in TİD included fewer linguistic forms with explicit reference than the narrations in Turkish. Finally, 'the balloon-man', in general, was introduced with fewer linguistic forms that make explicit reference to it than 'the boy' and 'the balloon'.

The analyses about the presence/absence of scene-setting elements in Turkish and TİD confirm the results of the previous studies that show that the younger the children are, the less information they provide to set the scene in their narratives (Berman, 2001; Peterson, 1990; Peterson & McCabe, 1983; Umiker-Sebeok, 1979). Obviously, the visual-spatial modality of a sign language does not have a facilitating or hindering role in learning to set the scene at the beginning of narrations. Thus, in contrast to what Berman and Slobin (1994) suggested on the cognitive demand that might be caused by translating events presented in spatial-visual mode into sequential segments of verbal output and lead to slow development of narrative skills in spoken languages, the results of the current study indicate that acquiring a visual-spatial language does not ease this process. So, there seems to be no effect of modality in learning to use scene-setting elements. This conclusion is also reinforced by the results showing no difference between TİD and Turkish in how frequently these elements are used at the beginning of the narrations. Thus, regardless of the modality, language users mentioned 'who', 'where', and 'what' type of information in similar amounts.

Among three different types of information, 'where' was mentioned less often by both signing and speaking children. Although previous studies reported that the narratives of young children mostly include 'where' information, and 'who' and 'when' are added later, the results of the current study seem to provide contradictory evidence. In the current study, participants were presented with all six pictures at the same time before they started their narrations. Among these six pictures, scene-setting elements for 'where' (e.g., house) appear again in the very last picture, thus might have made the narrators think that the presence of a house, for example, was not crucial for the setting story. If the participants had been presented with the pictures one by one, and instructed to describe each picture separately, they could have mentioned 'where' type of information more frequently.

The results about how explicitly different referents are introduced show that even younger children (3;5–6;10 years) are able to use linguistic forms that make

explicit reference to the different referents in the story (i.e., the boy, the balloon-man, the balloon). At first glance, this seems to contradict the results of previous studies that show a protracted developmental trajectory in learning appropriate introduction of referents for the listener (Bamberg, 1986; Bavin, 1987; Clancy, 1992; Dasinger, 1995; Hickmann et al., 1996; Hickmann, 1995; 1982; 1980; Kail & Hickmann, 1992; Karmiloff-Smith, 1981; 1979; Küntay, 2002; Nakamura, 1993; Wigglesworth, 1990). However, these studies focus on the acquisition of linguistic devices that mark (in)definiteness for the referents in spoken languages. There is little research about how sign languages mark (in)definiteness, and the existing ones offer different views on this issue, and are confined to ASL (see Barberà, 2016, on Catalan Sign Language – LSC; Sandler & Lillo-Martin, 2006). Thus, we do not know how TİD behaves in this domain. As a result, following Givon (1984), a general approach was taken, and the linguistic forms available in Turkish and TİD were analyzed in terms of how explicit they are in making reference to their referents.

The fact that TİD narrations elicited fewer linguistic forms with explicit reference to the boy, the balloon-man, and the balloon might be related to the use of classifier predicates that enable the encoding of the referents in them without prior mention. Although it is possible to indicate third person singular information with zero marking on the verb, such forms were not frequent in the Turkish data, which mostly included the explicit mentioning of the referents by their nouns. This might be result of a typological or modality difference between Turkish and TİD.

The introduction of 'the balloon-man' received fewer linguistic forms with explicit reference to it. The reason might be related to the picture where it first appears (i.e., 2nd picture). In this picture, in addition to the balloon-man, the balloon(s) also come up for the first time, and it might have affected the results. It is possible that participants paid more attention to the balloon rather than the balloon-man, and referred to him by a pronoun or a zero marking on the verb. In a future study, narrative data should be elicited in a picture story where the appearance of different discourse participants is more balanced than in the balloon story.

Finally, I would like to mention the importance of using other types of narrations. The results of the current study should be evaluated in the context of picture-story narration. However, elicitation task and the context may lead to different findings (Berman, 2001). For example, after analyzing the referent introductions of 46 preschool age children between the ages of 3 and 6 in their conversationally extended discourses, Küntay (1999) found that these children seem to display more adult-like linguistic structures. Her study highlights the fact that narrative skills for different types of narrations may show different developmental patterns, and the current study sets the first step in tracking these developmental patterns in two modalities for the picture-story narrations. Further research should look into other narration types for these languages.

To conclude, this is the first study that investigates the development of narrative skills in the domain of scene-setting and referent introduction in picture-story narrations through direct comparisons of narrations in a sign (i.e., TİD) and a spoken language (i.e., Turkish). The results of this study contribute to our knowledge about how children start narrating events by also considering a possible effect of modality (i.e., visual-spatial). Further research is needed for other types of narrations such as personal experience to have a full picture of the development of these skills in spoken and sign languages.

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Appendix

The picture story, 'Balloon story' (Karmiloff-Smith, 1981), used as the elicitation tasks in the current study