

EXPRESSION OF ABOUTNESS SUBJECT TOPIC CONSTRUCTIONS IN TURKISH SIGN LANGUAGE (TİD) NARRATIVES

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Abstract: *In the visual-spatial modality, signers indicate old, new, or contrastive information using certain syntactic, prosodic, and morphological strategies. Even though information structure has been described extensively for many sign languages, the flow of information in the narrative discourse remains unexplored in Turkish Sign Language (TİD). This study aims to describe aboutness subject topic constructions in TİD narratives. We examined data from six adult native signers of TİD and found that TİD signers mainly used nominals for reintroduced aboutness subject topics. The optional and rare non-manual markers observed on reintroduced topics mainly included squint, brow raise, and backward head tilt. Maintained aboutness subject topics, which have higher referential accessibility, were often omitted and tracked with zero anaphora. Finally, we found that constructed action is more frequently present on the predicates of clauses with a maintained aboutness subject topic than with a reintroduced aboutness subject topic. Overall, these results indicate that the use of constructed action and nominals in aboutness subject topics correlates with referential accessibility in TİD. While the former has been observed more in maintained contexts, the latter has been observed mainly in reintroduced contexts. In addition to the syntactic and prosodic cues that may distinguish old information from new or contrastive information in narratives, we suggest that pragmatic cues such as referential accessibility may help account for the manual and non-manual articulation strategies for information structure in TİD narratives.*

Keywords: *information structure, aboutness subject topics, Turkish Sign Language, narrative, referential accessibility*

1. INTRODUCTION

In an utterance, signers/speakers can manipulate the flow of information to indicate new or old information, marking these through specific word order, prosodic structure, or morphology (Chafe, 1976; Vallduví, 1991; Vallduví et al. 1996; Grubic, 2015). Across different communication modalities, the manner in which constituents are ordered marks the information structure of a sentence. A conversation can include information that is shared among interlocutors. In the process of evaluating the message encoded by the speaker, the addressee can retrieve such information by means of general knowledge (i.e., referring to what the addressee knows about the world) and/or from either a previous conversation or from previous mentions in the same discourse (Wilbur, 2012). “Old” or “given” information (both terms referring to the shared information between inter-

locutors) typically establishes the topic or conveys what the sentence is about (i.e., “aboutness topics”). In contrast, information can be evaluated to be new in discourse. In such cases, interlocutors can either indicate information, all of which is new to the addressee or give an answer to a content question, which constitutes two of a few possibilities for focus. The interaction between topic and focus marking forms part of the information structure of a language.

Researchers have studied information structure for many spoken languages and a few sign languages, including American Sign Language (ASL, Aarons, 1994), British Sign Language (BSL, Sutton-Spence & Woll, 1999), Russian Sign Language (RSL), and Sign Language of the Netherlands (Nederlandse Gebarentaal, NGT, Kimmelman, 2014), Hong Kong Sign Language (HKSL, Sze, 2011), Israeli Sign Language (ISL,

Nespor & Sandler, 1999), Croatian Sign Language (Hrvatski Znakovni Jezik, HZJ, Milković et al., 2007), and, recently, Turkish Sign Language (Türk İşaret Dili, TİD, Gökgöz & Keleş, 2020). However, the scope of most of these studies is limited to the description of different types of topics and foci in the context of dialogues or elicited answers to questions. As a result, there is a need for further research investigating the information structure of sign narratives, which are extended discourses that form an essential part of human communication as systematic and coherent organisations of our experiences.

Therefore, in this paper, we examine manual and non-manual markers, as well as constructed action accompanying aboutness subject topic constructions in the context of sign narratives within a storytelling paradigm in TİD. In Section 1.1, we review the general syntactic and prosodic properties of topic constructions reported for sign languages. In Section 1.2, we describe the distribution of linguistic forms of information structure in sign narratives. Section 2 outlines the research objectives of this study. Section 3 and 4 present the methodology and the results, respectively. Finally, Section 5 provides a general discussion of aboutness subject topics in relation to referential accessibility.

1.1 Topic constructions in sign languages

Sign languages are the natural languages of the deaf communities. The cognitive and linguistic development of native signers parallels that of native speakers (Chamberlain et al., 2000; Petitto, 1987). Signers manipulate the order of the constituents and the prosodic structure to mark old or new information. The domain of prosody in sign languages encompasses the use of non-manual markers such as facial expressions, head and body movements or positions, and eye-gaze, which are commonly employed to mark different types of information. In addition to the articulation of manual signs, signers can capitalise on the visual-spatial modality for simultaneous use of the signing space when communicating information.

Despite the lack of consensus regarding a clear definition of topicality, it is settled that most top-

ics indicate old or given information. Functionally, topics can be classified into aboutness topics that indicate old information and scene-setting topics that often contribute new information in the form of locative or temporal adjuncts (Sze, 2009). Following Reinhart (1981), many scholars have distinguished between aboutness topics and scene-setting topics. While aboutness topics tell us what the sentence is about, scene-setting topics are fronted adverbial or prepositional constituents that “set a spatial, temporal, or individual framework within which the main predication holds” (Chafe, 1976, p. 50).

Syntactically, aboutness topics occur most frequently before the focus of the sentence and often as the grammatical subject of the sentence as in (1). In this example, the referent *cat* must be previously established and shared between the interlocutors.

(1) [IX CAT IX]_{TOPIC} THINKS

‘The cat thinks.’

(RSL, Kimmelman, 2014; p. 48, ex. 2a)

However, this may not always be the case (Vallduví, 1991). In addition to being clause-internal subjects, topics can be base-generated (hanging) and left-dislocated, as illustrated in (2a) and (2b), respectively. These constructions are external to the sentence.

(2) a. [FRUIT]_{TOPIC} [APPLE]_{FOCUS} ALI VERY.MUCH LIKE

‘As for fruits, Ali likes apples the most.’

(TİD, Makaroğlu, 2012; p. 69, ex. 48)

b. [JOHN]_i_{TOPIC} MARY LOVE IX-3rd_i

‘John, Mary loves him.’

(ASL, Aarons, 1994; p. 52, ex. 5)

Salient markers of topicality include the sentence-initial position and certain prosodic breaks that isolate the topic from the rest of the sentence. In some sign languages, signers can signal topics using additional distinct non-manual markers in order to distinguish them from other constituents in the sentence. For instance, specific non-manual markers such as raised eyebrows and backward head-tilt are reported to be salient topic markers for ISL (Nespor & Sandler, 1999). However, these markers are claimed to be optional for some sign

languages including RSL and NGT (Kimmelman, 2014), LIS (Calderone, 2020), and HKSL (Sze, 2009). Nonetheless, for LIS, Calderone (2020) found that three prominent non-manual markers tend to accompany aboutness topics: brow raising, squinted eyebrows, and, less frequently, head-tilt back for pronominal aboutness subject topics. Calderone (2020) also reported that specific prosodic markers (i.e., eye-blink and/or head nod) distinguish aboutness topics from the rest of the sentence. We made similar observations in our previous preliminary corpus-based descriptions (Gökgöz & Keleş, 2020).

The scope of this paper is restricted to the description of mainly clause-internal subject aboutness topics, as seen in (1). Clause-external subject topics such as base-generated or hanging topics did not occur in our narrative data. We suspect that this is because of the nature of the stimuli, most of which did not allow signers to establish a clear subset relationship, for example “fruit” and “apple” in (2a).

Furthermore, we failed to observe fronted clause-internal object topics or left-dislocated topics as in (2b), and, therefore, were unable to report any. In our data, when the object topic was signed first in the sentence, the subject topic was omitted due to increasing referential accessibility. On a similar note, we will not be discussing scene-setting topics, which can indicate both old or new information, because these constructions do not necessarily refer to entities in discourse and, thus, are beyond the scope of this paper. Instead, we will consider the interaction of the flow of information in narratives with aboutness subject topics.

1.2 Flow of information in narratives

Examining the representation of information flow in the narrative discourse is essential for understanding the effect of different pragmatic contexts and metalinguistic tools on spontaneous language production. In other words, the signed or spoken articulation of the narrative discourse is contingent on certain cognitive and pragmatic abilities (Bamberg, 1997; Morgan, 2005). Nar-

rators must be aware of the cognitive status of the referring expressions and the communicative needs of the addressee. This is accomplished by changing the linguistic form in congruence with the informational saliency of the referents. Simply stated, narrators choose different linguistic forms for those referents that are “unfamiliar” to the addressee, as well as those referents that are already “in-focus.” Consider the following example from English:

(3) So **Eddie** turned around.

He said, “youse got a problem?”

“Yeah, we want you,” they say.

So— \emptyset walked right up to them and they just pulled him down

(Williams, 1988; p. 343, ex. 7)

In (3), the linguistic forms “Eddie”, “he”, and “ \emptyset ” (zero/null anaphora) refer to the same entity. According to the models of reference tracking within the topicality and saliency paradigm, the choice of the surface form is dependent on the accessibility of the referent. One such model is the Accessibility Hierarchy model proposed by Ariel (1990) who argued that narrators use varying referring expressions based on whether referents are active or inactive in the addressee’s mind. As a result, speakers choose proper names (e.g., *Eddie*) or definite noun phrases (e.g., *the man*) for referents with low accessibility. On the other hand, speakers tend to choose pronominals (e.g., *he*) and/or zero anaphors (e.g., *dropped arguments*) for highly accessible referents. In other words, these referents are expressed with more attenuated (less phonetic) forms. In example (3), the first mention of the referent is expressed with a proper name. However, the latter mentions of the same referent is achieved with pronominals and zero anaphora since the referent has already been introduced into the discourse and continues to be active in the addressee’s mind. Ariel (1990; pp. 28-29) suggested four factors that affect referent accessibility: distance, competition, salience, and unity. As the distance to the last mention of an antecedent increases, the referent’s accessibility decreases. Similarly, the more competitors (other matching referents) following the antecedent, the

less accessible the antecedent becomes. The topicality of the referent also matters: if the referent is a non-topic, its accessibility will decrease considerably. Finally, a referent will be more accessible if it is within the same frame or contextual episode as its antecedent.

Based on these principles, a tripartite categorisation of discourse status can be proposed: a referent can be introduced, maintained (i.e., continued across two or more clauses), or reintroduced back into the discourse following a topic shift (Gullberg, 2006). The introduction and reintroduction of a referent are often accomplished by lower accessibility markers, whereas maintained referents are usually marked with higher accessibility markers for both spoken and sign languages (Frederiksen and Mayberry, 2016, 2019). The topicality paradigm described in Section 1.2 is compatible with the principles of referent accessibility (Toole, 1996). Topics can be expressed with more attenuated forms since they are highly accessible.

As for sign languages, it is also possible to classify topics in relation to the status of their discourse. When the topic in the immediately previ-

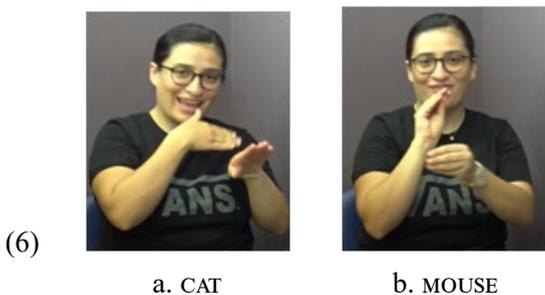
ous clause is maintained in the next clause, this topic is referred to as continued or maintained. In most sign languages, continued topics can be omitted (Milković et al., 2007), as illustrated in (4a). On the other hand, some topics can be reintroduced into the discourse: in (4b), the immediately previous topic is discontinued and another referent, the *cat*, is reintroduced.

- (4) a. $[\emptyset]_{\text{TOPIC}} \text{ FALL}$
 ‘(The boy from the previous sentence) fell.’
 (HZJ, Milković et al., 2007; p. 1012, ex. 7)
- b. $[\text{CAT}]_{\text{TOPIC}} \text{ SIT}$
 ‘The cat (from the previous context) is sitting.’
 (TİD, Gökgöz & Keleş, 2020)

Studies report that continued topics are typically marked with pronominals (5a), and their referents are tracked using classifiers (5b), plain verbs (5c), agreement verbs (5d), and constructed action/role shifts (5e) (Swabey, 2002) that occur in the context of zero anaphora. However, reintroduced or shifted topics are usually expressed with noun phrases (6) (e.g., Calderone, 2020).



(TİD, Keleş, Atmaca, & Gökgöz, in progress)



(TİD, Keleş, Atmaca, & Gökgöz, in progress)

The pronominal *ix* sign (with the selection of an extended index finger) has many functions in sign languages, one of which is to refer to entities with higher referential accessibility (e.g., usually in maintained and/or reintroduced contexts) by pointing to a previously established abstract or physical locus (Emmorey, 1996). It is known that definiteness in TİD can be expressed with a pronominal or postnominal index (e.g., CAT IX), which can function as a determiner (e.g., *the cat*)

or a demonstrative (e.g., *that cat*), although the discussion regarding the theoretical status of this pointing sign continues (Nuhbalaoğlu, 2018). Nonetheless, the extent to which TİD signers employ pronominals to maintain topics in the narrative discourse has not been studied in detail. Classifiers are another grammatical tool that can maintain or reintroduce referents. These grammatical morphemes encode several properties related to a nominal referent, including its size, shape, and location in the signing space (Supalla, 1983).

However, certain linguistic forms can occur in the context of zero anaphora. According to Padden's (1986) triadic categorisation of verbal constructions in ASL, verbs can be plain (i.e., not inflected for number or person), spatial (i.e., employ space for source and goal), or indicate agreement. In the latter case, the start and/or the end point of the verb agrees with the subject or the object and can also indicate number. Alternatively, signers can employ constructed action to continue topics by taking on the role of a referent in the context. Constructed action can be accomplished by imitating the actions of a character and it is prosodically marked with certain non-manuals (e.g., the breaking of eye contact with the addressee) (Metzger, 1995).

2. RESEARCH OBJECTIVES

In this paper, we aimed to describe the distribution of manual and non-manual markers, as well as constructed action in aboutness subject topic constructions with respect to the discourse status of the aboutness subject topics (i.e., maintained vs. reintroduced) in Turkish Sign Language (TİD).

3. METHODOLOGY

3.1 Data collection

In the present study, we report data from six native signers of TİD (three females, three males, $M_{age} = 28$ years, $SD_{age} = 6$ years). All participants were born into deaf families and started acquiring TİD from birth onwards. All participants indicat-

ed that their preferred language of communication was TİD, which they used for most contexts.

A story-telling paradigm was used for this study: Participants were shown 10 video clips, one after another. These stimulus video clips were extracted from the cartoon *Tom and Jerry*. Participants were asked to narrate each story after they watched each video clip. In the present study, we focused on the results of the productions for three video clips. The mean duration of these stimulus clips was 23 seconds (Clip 1: 19 seconds, Clip 2: 23 seconds, Clip 3: 28 seconds). Each stimulus clip included six to ten events that consisted of one or multiple (up to three) recurring animate characters for which the present context required the introduction, maintenance, and reintroduction of referents. The average narrative production time among the signers was 22.5 seconds for eliciting Clip 1, 29.7 seconds for eliciting Clip 2, and 32.2 seconds for eliciting Clip 3: these values correlate with the duration of the stimulus. In total, the production data examined in this paper was 8 minutes and 44 seconds. The data included 244 clauses and 687 signs.

All instructions were given by a deaf research assistant. Participants were recorded using a digital camera. They narrated the content of each clip to a fluent hearing signer experimenter who was present in all sessions and ensured that the task requirements were clear.

3.2 Data annotation

We used the ELAN Linguistic Annotation Software (Crasborn & Sloetjes, 2008) for data annotation. First, we identified clause boundaries indicated by the presence of a predicate and informative non-manual markers (e.g., head nod and blinks). For each clause, we annotated the presence of an aboutness subject topic and accompanying non-manual markers. In addition, for each overt or covert aboutness subject topic, we annotated the discourse status as maintained or reintroduced. Following the classification of Frederiksen and Mayberry (2016, 2019), we annotated an aboutness subject topic as maintained only if it was explicitly or implicitly (in the form of zero

anaphora) referred to in the immediately previous clause. We annotated a referent as reintroduced when it was discontinued across one or more sentences. Lastly, we annotated the grammatical tool by which the referent was tracked, i.e., a nominal, zero anaphora, classifier, or pronominal.

3.3 Identification criteria for aboutness subject topics

In the present study, we focused only on aboutness subject topics and adapted the criteria suggested in Quer et al. (2017) and Reinhart (1982). The latter was adapted for sign languages by Sze (2009) and Calderone (2020). If a discourse referent is the definite grammatical subject in a clause, and it refers to a previously mentioned referent in the narrative and represents what the sentence is about, it is considered to be an aboutness subject topic. Aboutness subject topics can be omitted depending on the context.

4. RESULTS

4.1 Manual articulations in aboutness subject topic constructions

In total, we coded 181 tokens of aboutness subject topic constructions. Signers expressed aboutness subject topic constructions using different types of grammatical tools: nominals, zero anaphora, and classifiers (Table 1). We also observed the absence of pronominals.

Table 1. Tools in aboutness subject topic constructions categorised by discourse status

Discourse status	Topic (n = 181)			
	Nominal	∅ Anaphora	Classifier	Pronoun
Maintained (n = 89; 49% of all topics)	5 (6%)	62 (70%)	22 (24%)	0 (0%)
Reintroduced (n = 92; 51% of all topics)	65 (70%)	21 (23%)	6 (7%)	0 (0%)

With respect to discourse status, 49% of aboutness subject topics in our data maintained a discourse referent, while the remaining 51% reintroduced a discourse referent. A large propor-

tion of the maintained aboutness subject topics were tracked by zero anaphora (70%), followed by classifiers (24%), and rarely nominals (6%). On the other hand, a large proportion of the reintroduced aboutness subject topics were overtly expressed by a nominal (70%), followed by zero anaphora (23%), and rarely classifiers (7%).

4.2 Non-manual articulations on overt aboutness subject topics

As reported in Table 1, of the 89 maintained aboutness topic constructions, only five subject topics were overtly expressed by a nominal. In contrast, of the 92 reintroduced subject aboutness topic constructions, 65 were overtly expressed by a nominal. When we looked at the distribution of non-manual markers on these overt aboutness subject topics, we observed that non-manual markers seem to be present only optionally in overt aboutness topics (Table 2).

Table 2. Types of non-manual markers on overt aboutness subject topics

	sq	br	bl	bht	ce	No detectable NMM
Maintained (5 out of 89)	1	2	1	1	1	2
Reintroduced (65 out of 92)	4	4	7	11	7	42

Legend: bht, backward head tilt; bl, blink; br, brow raise; ce, closed-eye; NMM, non-manual marker; sq, squint

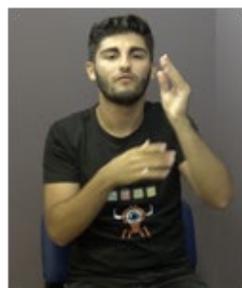
4.3. Constructed action in aboutness subject topic constructions

The most prominent tool used in the maintained aboutness subject topic constructions was constructed action. It was present in 64% of all the predicates of maintained subject aboutness topic constructions (Table 3). To maintain the referent of the subject topic from the immediately previous clause, signers typically omitted the subject of the sentence by taking on the role of that particular referent and performing its actions. The non-manuals associated with constructed action

(8) Gloss: a.



bl



sq
bht

MOUSE



re
eo
{3a}SEE{3b}

‘The mouse sees (a hat).’

Gloss b.



IX



br
sq
CAT



ca
POSE

‘The cat poses (like this).’

5. DISCUSSION

Taken together, the findings in the present study shed light on the relationship between referent accessibility and aboutness subject topics. Re-introduced aboutness subject topics were mainly expressed using noun phrases with (8 instances) or without (84 instances) an index sign.

One crucial finding is that signers often omitted continued aboutness subject topics and marked the constructions with constructed action, which included referential cues for the omitted aboutness subject topic. For ASL and Libras (Brazilian Sign Language), Lillo-Martin and Quadros (2011) showed that the subject should be outside a sentence with constructed action. It would be interesting to understand if dropping the subject in a sentence with constructed action and/or keeping the subject outside or inside the constructed action could encode similar or different finer functions in TĪD.

Interestingly, the signers in the present study did not use any pronominals to maintain or re-introduce aboutness subject topics: these results differ from those of previous studies reporting the extensive use of pronouns for maintained referents in Catalan Sign Language (LSC, Bel et al., 2015) and British Sign Language (BSL, Morgan et al., 2005). In our data, the signers preferred to use zero anaphora and classifier markers to track maintained topics.

Some of the reintroduced subject aboutness topics were marked with several non-manual markers, including squint, brow raise, and backward head tilt. These markers have also been attested in association with topics in other sign languages (Aarons, 1994; Nespors & Sandler, 1999; Calderone, 2020). Kubus and Nuhbaloglu (2018) observed these non-manual markers on relative clauses in TĪD under different information sta-

tuses. However, based on our data, these markers for reintroduced aboutness subject topics, under either maintained or reintroduced information status, seem to be optional. We also observed that only a few overt aboutness subject topics in TİD are separated from the rest of the sentence prosodically via an eye-blink. This finding is consistent with previous observations for HKSL (Sze, 2011). Overall, in TİD, there is no obligatory prosodic marking on overt aboutness subject topics similar to what has been reported for RSL and NGT (Kimmelman, 2015), as well as LIS (Calderone, 2020).

In terms of referent accessibility, low accessibility explicit markers (e.g., nominals) were mainly used to reintroduce subject aboutness topics (70% of the time), whereas high accessibility implicit markers such as zero anaphora markers were selected to maintain highly active, maintained aboutness subject topics (70% of the time). These findings support previous accounts of reference tracking and accessibility suggested for both spoken (Ariel, 1990; Givón, 1983) and sign languages (Swabey, 2002; Calderone, 2020). According to this understanding, aboutness subject topics presenting old information track already mentioned referents that are either maintained across two or more sentences or brought back into the discourse. As a result, highly accessible maintained aboutness subject topics are typically omitted and their referents are expressed with zero anaphora. Reintroduced subject aboutness topics, however, have considerably lower accessibility. Therefore, they are more frequently expressed with the phonetically fuller forms (i.e., nominals). When the referent of a reintroduced aboutness topic is still accessible (e.g., the sentential distance is low, there are fewer competitors, or the referent is salient) (see Toole, 1996 for a more in-depth discussion), it seems that signers mostly opt for zero anaphora markers.

Lastly, we observed that a few reintroduced aboutness subject topics were associated with squint and brow raise. In the context of the narrative discourse, we suggest that these markers might signal low accessibility, instead of topicality. The correlation between these non-manuals and low accessibility has been reported for ISL (Dachkovsky and Sandler, 2009), DGS (Herrmann, 2015) and LIS (Calderone, 2020).

6. CONCLUSIONS

In the present study, our objective was to describe the manual and non-manual articulations in aboutness topic constructions, as well as the contribution of constructed action in TİD narratives. We observed more overt nominals under reintroduction of a topic, i.e., when referents had low accessibility. In contrast, maintained referents, which were highly accessible, were often omitted and expressed with zero anaphora or classifier constructions. Therefore, in addition to syntactic and prosodic cues, we suggest that referential accessibility is an important pragmatic cue for the marking of information structure in sign narratives. It is important to note that a more comprehensive and quantified inquiry into the accessibility of referents is needed to better understand the marking of topic constructions in TİD: we plan to study this aspect further in the future. Following Toole (1996), we plan to adopt a granular protocol of accessibility rating to examine the effect of different factors in determining the overall accessibility of a referent. Further research must be conducted to examine the pragmatic and cognitive implications of referent accessibility for expressing information structure in understudied sign languages such as TİD.

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1. Supplementary table

Table S1: Co-occurrence of non-manual markers on overt aboutness subject topics

	sq-bl	sq-bht	br-bl	br-bht	br-ce	bht-ce	bl-bht-ce	br-bht-ce	No detectable NMM
Maintained (5 out of 89)	0	1	1	0	1	0	0	0	2
Reintroduced (65 out of 92)	1	1	0	1	1	0	1	1	40

bht, backward head-tilt; bl, blink; br, brow-raising; ce, closed-eye; NMM, non-manual marker; sq, squint

2. Supplementary example

If the NP CAT were to be a hanging topic (“Among the cats, the white and female one is sitting”), the discourse function of the referent would not be “introduced.” As a result, we considered this sentence to be ‘all-new focus’, and therefore, beyond the scope of this paper.



Gloss:

CAT
FEMALE
WHITE
SIT

Discourse status: Introduction

Translation:

‘A white female cat is sitting.’ (all-new focus)

Clip 1

1. Tom chases Jerry wearing a wooden plank
2. Tom and Jerry enter a tube
3. Tom falls down and Jerry runs away
4. Tube gets thinner and Tom chases Jerry
5. Jerry gets out and escapes
6. Tom follows Jerry in shape of a stick

Clip 2

1. Tom walks past a female cat sitting on a couch
2. Tom turns to and approaches female cat
3. Female cat blushes
4. Tom offers a fish in aquarium to female cat

5. Female cat rejects offer

6. Tom offers a bird in cage to female cat
7. Episode 5 is repeated
8. Tom leaves by walking in a flirtatious manner

Clip 3

1. Tom sits on Jerry who tries to get loose
2. Jerry looks around and sees a hat ribbon
3. Jerry finds a needle attached to hat
4. Jerry takes needle and sticks Tom with it
5. Tom turns red and jumps
6. Jerry places needle between two cushions
7. Tom dodges needle