THE EFFECTS OF THE FIRST LANGUAGE ON THE DESCRIPTION OF MOTION EVENTS: FOCUSING ON L2 JAPANESE LEARNERS OF ENGLISH AND HUNGARIAN

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Abstract

This is a cross-linguistic study on motion event descriptions, which examines the effects of the native language on second language acquisition. Talmy (1985, 1991, 2000) suggests the typology of motion event descriptions, in which languages can be classified into S-languages and V-languages based on the patterns by which languages code the path of motion. The study examines how the description types of first language (L1) influence their event descriptions in second language (L2) through a production experiment. After reviewing the data obtained from the descriptions of caused motions, we found that L1 English and L1 Hungarian show different patterns, though both languages have means to express complex events in one simple sentence. The analysis of Japanese learner's L2 data (English and Hungarian) in comparison with their L1 data (Japanese) shows that the coding patterns of L2 are considered to be influenced by the ones of L1, showing distinctive use of deictic expressions. It is also argued that the learners use some strategies to overcome difficulty in expressing complex caused motion events. These findings demonstrate the necessity of deeper understanding for the coding patterns of languages when teaching.

1 Introduction

This cross-linguistic experimental study on motion event descriptions examines the influence of the native language on second language acquisition and learner strategies when expressing complex events.

Motion event expressions are one of the most basic expressions in every language and include several semantic components: Figure, Path, Manner, Ground, and so on. Talmy (1985, 1991, 2000) suggests the typology of motion event descriptions based on the patterns by which the language codes the Path of motion, classifying languages into satellite-framed languages (S-languages, henceforth) that express Path outside the verb, and verb-framed languages (V-

languages) that express Path through the verb. This classification has influenced linguistic studies and also acquisition studies since then, as we will show them in section 2.

Based on Talmy's typology, the present study examines how the motion description type of L1 influences the event descriptions in L2, focusing on different types of languages as target language: Japanese (V-language, English (S-language), and Hungarian (S-language). Japanese is classified as a V-language because it tends to use path verbs as in (1a), while English and Hungarian are the S-languages that express Path outside a verb as in (1b-c) respectively.

(1) a.   Tomodati-ga   hasit-te   heya-kara   <u>de</u>-ta.   (Japanese)
              friend-NOM   run-CONJ   room-from   move.out-PST[1]
              "The friend ran out of the room."

    b.   My friend ran <u>out</u> of the room.   (English)

    c.   A   barát-om   <u>ki</u>-fut-ott   a   szobá-ból.   (Hungarian)
              The friend-POSS.1SG out-run-PST.3SG the room-ELA
              "My friend ran out of the room."

Several studies on the L2 acquisition of motion descriptions have been conducted (see section 2.2), but there are few studies that focus on more than one target language (L2). This is problematic, however, because it is not possible to make conclusions regarding L1 influence without comparing more than one target language with the same L1. In other words, there still remains a possibility that the observed properties are common in learners' languages regardless of their L1.

Moreover, most of the previous studies have been dedicated solely to subjective motion events, but we believe that more complex events will reveal learners' strategies in more detail. It is assumed that learners will use simplified structures to describe complicated events or express just a part of the events. This study, therefore, aims to explore L1 (Japanese) influence on L2 acquisition and the learners' strategies when they describe complex motion events, in particular "call-causing motion events," focusing on two target languages (L2), English and Hungarian, for Japanese learners (their L1 is Japanese). As a result of the research, we will suggest that L1 influence is observed in the frequent use of deictic expressions and that the learners have a tendency to divide complex events and notions into simpler ones and express by using more basic structures.

2 Previous studies and remaining issues

2.1 *The Typology of motion event descriptions*

There are at least four basic semantic components related to motion event: Figure, Ground, Manner, and Path, which are summarized in (2).

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[1] List of abbreviations used in this study is as follows: ACC = accusative; ADV = adverb; ALL = allative; CONJ = conjunctive; DAT = dative; DEF = definite; ELA = elative; F = female; GEN = genitive; ILL = illative; NOM = nominative; NP = noun phrase; PASS = passive; PL = plural; POSS = possessive; PP = pre-/post-positional phrase; PRT = participle; PST = past; PV: preverb; SG = singular; SUB = sublative; SUP = superessive; TOP = topic; V = verb

(2) a.   Figure: the entity that moves
    b.   Ground: the spatial reference entity of the motion
    c.   Path: the trajectory of motion of a Figure
    d.   Manner: the way that a Figure moves

As shown in Section 1, Talmy (1985, 1991, 2000) points out the typology of motion event description based on the fact that languages differ in the way that they express the Path component. In English Path is expressed by prepositional phrases or particles, i.e. "satellite" elements in Talmy's terminology, rather than through verb, as in (3a). Therefore, English is classified as a S-language. On the other hand, Spanish expresses Path in the main verb as in (3b), so it is a V-language, as is Japanese (see (1a)).

(3) a.   The bottle floated **out** (of the cave).   (Talmy 1985, p. 69)
    b.   La   bottella   **salió**   de   la   cueva   flotando.
       the   bottle   went.out from the cave   floating
       "(lit.) The bottle exited from the cave, floating."

Talmy's typological classification has been modified for several reasons, however. Some studies pay attention to the frequency of each semantic component, because most languages have more than one of his types to describe motion events. The differences between languages can be considered to exist in the frequency of each type. For example, Slobin (1996, 2000, 2004, 2006) focuses on the prominence of Manner component in each language. Though there are opposing viewpoints, we basically follow Talmy's typology and employ his terminology, "S-languages" and "V-languages," because our aim is not to elaborate the typology but to examine the acquisition of the motion event descriptions.[2] We focus on each semantic component, however, including Manner, Figure, and Ground as well as Path.

One more important point concerning to the Path component is Deixis. Among the three components comprised in the Path component (the Vector, the Conformation, and the Deixis[3]), the Deixis is suggested to have a special place in motion event descriptions according to Matsumoto (to appear) and Koga et al. (2008). Korean, for example, has a special slot for Deixis, and there is a slot particularly for deictic prefixes in German (Matsumoto, to appear). In addition, based on data of Japanese novels and their translations into Russian, English, and German, Koga et al. (2008) pointed out that Japanese mentions Deixis more often than Russian, English, and German, and tends to use deictic verbs. Furthermore, Yoshinari et al. (2013) and Matsumoto (to appear) obtained the same results for Japanese through production experiments. Therefore, we divide Path into "deictic Path" (simply called "Deixis") and "non-deictic Path" ("Path," henceforth) in this study.

In addition to subjective motion events with simple forms, more complex motion events, such as caused motions, are also common. Caused motion events have a simple motion event as their subevent and usually allow more varieties of expressions than subjective motions cross-linguistically (cf. Goldberg, 1995; Talmy, 2000; Kopecka & Narasimhan, 2012). The extent one simple sentence can describe complex events also differs among languages. English is well known for expressing complex motion events in one simple sentence with one verb, as in (4), but this is not always true for Japanese, as in (5).

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[2] See Matsumoto (to appear) for the detailed discussion on issues in the typology of motion event descriptions.
[3] See Talmy (2000).

(4) a.   She wiped the crumbs off the table onto the floor.   (Matsumoto 1997:156)

   b.   Sam carefully broke the eggs into the bowl.   (Goldberg 1995:21)

(5) a.   Kanozyo-wa pankuzu-o   teeburu-kara yuka-ni *hui-ta/   ??huki-otosi-ta.
          3SG.F-TOP   crumb-ACC   table-from   floor-to wipe-PST wipe-drop-PST
          "(lit.)She wipded/wiped off the crumbs from the table to the floor."

   b.   Samu-wa tyuuibukaku booru-ni tamago-o *wat-ta/   wari-ire-ta.
          Sam-TOP carefully   bowl-to egg-ACC break-PST break-put.in-PST
          "Sam carefully broke/ broke in the eggs into the bowl."

We focus on the caused motion events in which humans are caused to move by the causal events. Several verbs that do not originally express motion events can be used in English to express caused motion events, such as *allow, ask, call, let, invite*, etc. (Matsumoto, 1997, p. 157), as shown in (6).

(6) a.   Sam asked John into the room.
   b.   The policeman waved the people away.
   c.   He called Mary into the room.

Among them, our target event is a "call-causing motion event" that includes two sub-events: one is a calling event (we call it "causal event" henceforth) wherein somebody calls someone to come, and the other is a "motion event" that is caused by the calling event as in (6c). This "call-causing motion event" is a complex event in that it can include several semantic components: Means, Manner, Path, (Deixis), Causer, Causee (Figure of motion), and Ground, and therefore its verbalization by the learners will show us the learners' characteristics and strategies.

2.2 Motion event descriptions in L2

Several second language acquisition studies have been conducted on motion event descriptions based on Talmy's typology and Slobin's 'thinking for speaking' theory. Many of them examine L2 output from learners whose L1s are of different types in Talmy's typology, and show the influence of their L1 coding pattern on L2 (Montrul, 2001; Cadierno, 2004; Cadierno & Lund, 2004, etc). It should be noted that more advanced learners tend to use the framing pattern of the target language more often than less advanced learners, as Hendricks and Hickman (2011) and Inagaki (2001, 2003, 2004) argued.

Though a majority of studies are on European languages such as English (S-language), Danish (S-language), Spanish (V-language), or French (V-language), there are a few studies on Japanese. Inagaki (2001, 2003, 2004, 2010) shows that L1 influence is observed when an argument structure in the L2 constitutes a subset of its counterpart in the L1 using a grammaticality judgment task (to Japanese learners of English, English learners of Japanese in Inagaki (2001). Spring and Horie (2013) conducted a production experiment to Japanese and

Chinese (Equipollently-framed language[4] in Slobin (2004) learners of English (L2), and showed that Chinese learners use more S-type expressions.

As we have seen above, there are few previous studies on Japanese learners, and more problematically their target language is limited to English. Moreover, we could not find any studies that focus on deictic expressions nor the ones on complex caused motion events like "calling" in L2.

2.3 Features of three languages

Now, we explain the basic information and features of motion expressions in the three languages: English, Hungarian, and Japanese.

2.3.1 English

English basically conflates motion and its Manner in the main verb, and Path is expressed by particles that accompany the verb like "*He ran out,*" or prepositional phrases like "*She walked into the room.*" Therefore, English is typologically categorized as an S-language.

English has several forms to express the semantic components of motion events, such as verbs, adverbs, prepositions, and particles. As path verbs (e.g. *enter, climb*) and deictic verbs (e.g. *go, come*) can also achieve the main verb slot, there is competition as to which component fulfills that slot. English speakers favor more verbs of motion, encoding Manner in the main verb as S-language-specific patterns (Akita et al., 2010; Berman & Slobin, 1994; Hendriks & Hickmann, 2011), as in (7a). Deixis tends to be expressed by prepositional phrases as in (7b).

(7) a. My friend   ran   into the pavilion.
                   Manner (Head)   Path

    b. My friend   ran   into the room   towards me.
                   Manner (Head)   Path   Deixis

Typically motion events are described in a simple sentence like (8), regardless of subjective motions (8a) and caused motions (8b).

(8) a. John walked into the living room from the kitchen.
    b. John kicked the ball into the goal.

2.3.2 Hungarian

Hungarian is a member of the Finno-Uralic language family and classified as an agglutinative language, i.e. grammatical functions are expressed by case affixes. The word order is said to be flexible in general, but there are strict rules based on information structure: the focused element must be placed in front of the verb, allowing the order of the other elements to be relatively free, as in (9).

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[4] Slobin (2004) added one more type, "Equipollently-framed languages," in order to account for the languages (such as Thai) that have serial verb constructions.

(9) a. Erika   a bank-ba ment.
      Erica.NOM   the bank-ILL go.PST.3SG
      "Erica went to the bank." (=The place where Erica went to is the bank.)

    b. A bank-ba Erika   ment.
      the bank-ILL Erica.NOM   go.PST.3SG
      "Erica went to the bank."(=The person who went to the bank is Erica.)

The position of the preverb in neutral sentences (i.e. without focused elements) differs from that of sentences with focused elements. In the former case, the preverb usually precedes the verb as shown in (10a) and the arguments of the verb follow the verb. In the latter case, however, the focused element occupies the preverbal position, and the preverb follows the verb, as in (10b).

(10) a. Erika   be-ment   a   szobá-ba.
       Erica.NOM   in-go.PST.3SG   the   room-ILL
       "Erica went into the room."

    b. A   szobá-ba   Erika   ment   be.
       the room-ILL   Erica.NOM   go.PST.3SG   in
       "Erica went into the room." (=The person who went into the room is Erica.)

As for the typology of motion expressions, Hungarian can be considered as an S-language, wherein Path related notions are encoded in "satellite" elements: preverbs, adverbs, case suffixes, and postpositions. Hungarian can also describe any motion events like subjective motions (11a) and caused motions (11b), in a simple sentence, as well as English. It is notable that all of these sentences share the same form of the "satellite" element which encodes the Path.

(11) a. Erika   fel-fut-ott   a   lépcső-n.
       Erica.NOM   up-run-PST.3SG   the   stairs-SUP
                         Path-Manner(Head)   Path
       "Erica ran up the stairs."

    b. Erika   fel-dob-ta   a   labdá-t.
       Erica.NOM   up-throw-PST.3SG.DEF the ball-ACC
                         Path-Means(Head)
       "Erica threw up the ball."

An important difference compared with English is that Hungarian has various means to express Path related notions, which are often expressed in more than two slots as described in (11a) and (12a).

(12) a. A   barát-om   be-fut-ott   a   szobá-ba.
       the friend-POSS.1SG.NOM in-run-PST.3SG   the   room-ILL
                                Path-Manner   Path
       "My friend ran into the room."

b. A   barát-om   a   szobá-ba   fut-ott.
   the friend-POSS.1SG.NOM the room-ILL   run-PST.3SG
                                      Path   Manner
   "My friend ran (in)to the room"

The difference between (12a) and (12b) is that the sentence with a preverb (12a) means the Figure moved inside the room, but this is not necessarily the case in (12b). The case marker *-bA* takes a closed space as its Ground, and in many cases it implies motion inside of the space. It is important that in Hungarian each case marker which indicates Path (i.e. source FROM, goal TO) should also express positional relations with a particular shape of Ground, e.g. *-bA*[5] (IN.TO), *-rA* (ON.TO), *-hVz* (AT.TO). The Ground in (12) is a room which is a closed space, therefore *-bA* (IN.TO) is appropriate, but not *-hVz* (AT.TO).

Hungarian has deictic verbs, such as *megy* 'go,' *jön* 'come,' *visz* 'take,' *hoz* 'bring' that can be used as a head verb in a sentence. However, as shown in (12), manner verbs are usually used in the head position as a main verb, so we can see competition between Manner and Deixis in this position. Contrary to English, deictic verbs are a lot more often used as main verbs for the description of walking events (Matsumoto, 2014), as shown in (13-14). In this case, Manner is not expressed. This is a remarkable difference between English and Hungarian even though both English and Hungarian are considered S-languages.

(13) A   barát-om   fel-jött   a   lépcső-n.
    the   friend-POSS.1SG.NOM   up-come.PST.3SG the stairs-SUP
                           Path-Deixis(Head)   Path
    "My friend came up the stairs."

(14) A   barát-om   be-vitte   a   szék-et   a   szobá-ba.
    the   friend-POSS.1SG.NOM in-take-PST.3SG.DEF   the chair-ACC the room-ILL
                           Path-Deixis(Head)   Path
    "My friend took the chair into the room."

Furthermore Hungarian has various ways to express Deixis other than verbs; it can be expressed doubly and trebly using preverbs (*ide-* 'hither,' *oda-* 'thither'), adverbs (*ide* 'hither,' *oda* 'thither'), case affixes for the first person, and postpositions (*hozzám* 'to me,' *felém* 'toward me'), as in (15).

(15) A barát-om   fel-jött   ide   hozzám   a lépcső-n.
    the friend-POSS.1SG.NOM up-come.PST.3SG to.here   ALL.1SG   the stairs-SUP
                          Path-Deixis   Deixis   Deixis   Path
    "(lit.) My friend came up the stairs hither to me."

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[5] Hungarian words can be divided into three types according to the vowels they contain: front, back and mixed vowel words. They often receive endings as an agglutinative language. Most of these endings have two or more forms so that the vowel of the suffix must harmonize with the vowels of the word it is added to. In this article, A indicates that it has two allomorphs: e/a, and V indicates that it has three allomorphs: o/ö/e.

2.3.3 Japanese

Japanese is an agglutinative language and the word order is normally subject-object-verb with particles marking the grammatical function. Regarding the typological group of motion expressions, Japanese is classified as a V-language, wherein Path related notions are formally encoded in the main verb. In the case of subjective motion events, Path is typically coded in the main verb and the Manner in the subordinate form like (16a), as it is for most caused motion events, as seen in (16b).

(16) a.　John-ga　　　hasit-te　　　heya-ni　　　hait-ta.　　　　　　　(=(1a))
　　　　　John-NOM　　run-CONJ　　room-to　　　enter-PST
　　　　　　　　　　　Manner　　　　　　　Path　　　Path(Head)
　　　　　"John entered the room running."

　　　b.　John-ga　　　heya-ni　　　booru-o　　　nage-ire-ta.
　　　　　John-NOM　　room-to　　　ball-ACC　　　throw-put.in-PST
　　　　　　　　　　　　　　　　　Path　　　　Means-Path(Head)
　　　　　"John threw the ball into the room."

Japanese expresses semantic components of motion events using verbs, adverbs, locative nouns and postpositional particles. Japanese has many ways of expressing motion through verbs. In the head position, not only simple verbs (e.g. *hasiru* 'run,' *hairu* 'enter,' *kuru* 'come'), but also combined forms such as compound verbs (e.g. *kake-agaru* [run-ascend] 'run up'), and complex predicates including the *-te* participial form like *hasit-te hairu* [running-CONJ enter] 'run into.' In the head-external position, the verb is used as a subordinate form (-*nagara* participial form like *aruki-nagara* and *-te* participial form as in *arui-te* 'walking').

Sentences describing motion events are generally composed of one main clause and one or more subordinate clauses like (16a). One of the specific features of motion expressions in Japanese is to encode Deixis. Japanese has the main verb slot reserved for deictic information and tends to encode it frequently (Koga et al., 2008), although it is not an obligatory element. Yoshinari (2014) argued that Japanese speakers preferred to encode Deixis in the final head verb of complex predicates in describing motion events, as in (17).

(17) Tomodati-ga　　　hasit-te　　　heya-ni　　　hait-te　　　ki-ta.
　　　friend-NOM　　　run-CONJ　　room-to　　　enter-CONJ　　come-PST
　　　　　　　　　　Manner　　　　　　　Path　　　Path　　　　Deixis(Head)
　　　"The friend came into the room running."

2.3.4 Research questions

The present study has two challenges: one concerns the target language and another the target event. First, we deal with two L2 languages (English and Hungarian) in this study, because it is necessary to compare more than one target language to confirm the influence of L1. Secondly, this study deals with "call-causing motion events" that includes two sub-events: "causal event" and "motion event." As we have seen above, the previous studies on motions event descriptions have mainly focused on simple subjective motion events in which the

Figure moves autonomously. It is also important to examine caused motion events that are more complex.

All of the three languages including L1 Japanese have two types of construction to express "call-causing motion events": one is a complex sentence in (18-20a), and the other is a simple sentence as in (18-20b).

(18) a.   My friend called Maria, and she walked into the room.

     b.   A friend called Maria into the pavilion.

(19) a.   A   barát-om   hív-ta   Máriá-t   és   Mária
        the friend-POSS.1SG call-PST.3SG.DEF   Maria-ACC   and   Maria
        be-ment   a   szobá-ba.   (Hungarian)
        in-go.PST.3SG   the room-ILL
        "My friend called Maria, and Maria went into the room."

     b.   A   barát-om   be-hív-ta   Máriá-t   a   szobá-ba.
        the fiend-POSS.1SG   in-call-PST.3SG.DEF   Maria-ACC   the   room-ILL
        "My friend called Maria into the room."

(20) a.   Tomodati-ga Maria-o   yon-de,   Maria-wa   heya-ni   hait-ta. (Japanese)
        friend-NOM   Maria-ACC   call-CONJ Maria-TOP room-to   enter-PST
        "The friend called Maria, and Maria entered the room."

     b.   Tomodati-ga Maria-o   heya-ni   yobi-ire-ta.
        friend-NOM   Maria-ACC   room-to   call-move.in-PST
        "The friend called Maria into the room."

The call-causing motion event is a usual event in our daily lives, so not only native speakers but also learners must be familiar with it. There are few acquisition studies on it, however. By analyzing the call-causing motion event descriptions in learner's data, this study aims to examine the presence or absence of L1 influence on complex event descriptions of L2 learners and explore the learners' strategies or characteristics.

3 Research design and methodology

The present study adapts a production experiment using video-taped movies as the stimuli. The following sections explain the design and methodology of the experiment.

3.1 Method

The data for this research are gathered using the video stimuli from a collaborative research project of the National Institute for Japanese Language and Linguistics under the title

"Japanese and Typology of Linguistic Expressions for Motion Events: A Cross-linguistic Experimental Study with a Focus on Deixis (Yo Matsumoto, project leader)."[6]

The participants watched 52 clips of various motion events including not only call-causing motions but also subjective motions, and other caused and visual motions. They were asked to imagine that they were located in the scene and verbally describe what they had seen. After each clip, the participants told the experimenter what they had seen, and we tape-recorded their utterances and subsequently transcribed them for analysis. The process of data coding was based on the specific criterion for comparison of various languages as described in section 3.3.

3.2 Participants

Five groups of participants took part in the present study: native speakers of Japanese (J-L1), English (E-L1), and Hungarian (H-L1), and Japanese learners of English as L2 (E-L2) and Hungarian as L2 (H-L2). This means there are three groups of native speakers and two L2 groups. Each group consists of 15 participants, whose attributions are summarized in Table 1.

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[6] We owe all L1 data to the project members, and their findings will be published in Matsumoto (to appear). The investigators of each L1 data are as follows: E-L1 (Kimi Akita, Yo Matsumoto, Miho Mano), J-L1 (Hiroaki Koga, Yuko Yoshinari), H-L1 (Kiyoko Eguchi).

Table 1. Attributions of the participants

Language group attribution		Japanese	English		Hungarian	
		J-L1	E-L1	E-L2	H-L1	H-L2
sex	male	6	6	8	7	4
	female	9	9	7	8	11
age		20's-50's	20's	18-20's	20's-60's	20's
language proficiency		(native)	(native)	intermediate[7]	(native)	intermediate

3.3 Materials and data analysis

We analyzed the data of call-causing events in which a woman called her friend (Maria) by her name into a pavilion. There are three video clips that are different in the deictic directions: venitive (toward the speaker), andative (away from the speaker), and neutral (the viewpoint was from a neutral position) shown in Figure 1.

(A) /CALL×WALK×INTO×VEN/

(B) /CALL×WALK×INTO×AND/

(C) /CALL×WALK×INTO×NEU/

Fig. 1. Sample scenes of the movies for the "call-causing motion events"

Clip (A) is the venitive scene (/VEN/). It shows a woman in the pavilion where the camera (speaker) is. The woman calls Maria into the pavilion, and Maria then enters, coming towards

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[7] The language proficiency of the learners is evaluated as B1 according to CEFR, i.e. intermediate level.

the camera. In Clip (B) the andative scene (/AND/), the camera (speaker) is outside the pavilion, and it films the acting from where Maria started, outside the pavilion. She walks away when called by a woman inside the pavilion. In Clip (C), the neutral scene (/NEU/) the camera is in front of the pavilion and films Maria walking by.

3.4 Coding

We analyzed and coded the data on three levels: the event level, the sentence structure level, and the word and phrase level. First, in event level, we examined what subevent(s) was (were) described, i.e. causing event or/and motion event. Next, the sentence structure was also considered and the output was divided into three types (simple sentence, coordinate sentence, and complex sentence), since each language allows description of call-causing events either in simple or complex sentence as shown in (21-23). Simple sentences were labeled as "Main only" because they have one main clause. Coordinate sentences are "CO+CO," and complex sentences including subordinate clause(s) are "Main+Sub." Lastly, we provided detailed analysis of each constituent, looking at which elements express the semantic components of events (e.g. Means, Manner, Path, Deixis, Ground, etc.). The following examples are samples of the coded data.

(21) English

    a.   My friend called Maria into the pavilion.   (E-L1: Main only, Cause+Motion)
                  Means   Path

    b.   Maria   walked   into the pavilion [when called].   (E-L1: Main+Sub, Motion)
               Manner   Path   Means

    c.   My friend calls Maria   from inside the pavilion, and she goes   inside.
                Means   Path   Deixis   Path
                                            (E-L1: CO+CO, Cause+Motion)

(22) Hungarian

    a.   A barártnő-m   be-hív-ja   Máriá-t   a pihenőhely-re.
        the girl.friend-POSS.1SG in-call-3SG.DEF Maria-ACC   the pavilion-SUB
                              Path-Means   Path
        "My girl friend called Maria into the pavilion." (H-L1: Main only, Cause+Motion)

    b.   A barátnő-m   be-hív-ta   Máriá-t   a pihenőhely-re,
        the girl.friend-POSS.1SG in-call-3SG.DEF Maria-ACC   the pavilion-SUB
                              Path-Means   Path
        aki be-sétál-t.
        who in-walk-PST.3SG
            Path-Manner
        "(lit.) My girl friend called Maria into the pavilion, who (Maria) walked in."
                                            (H-L1: Main+Sub, Cause+Motion)

c. Egyik   barátnő-m   hív-ta   a   másik-at   és
    One.of   girl.friend-POSS.1SG.NOM call-PST.3SG.DEF the another-ACC and
                                                Means
    be-jött   hozz-ánk.
    in-come.PST.3SG   ALL-1PL
    Path-Deixis   Deixis
    "(lit.) One of my girl friend called the other one and came in to us."

                          (H-L1: CO+CO, Cause+Motion)

(23) Japanese

a. Maria-ga   yuzin-ni   yob-are-te   kyukeisyo-ni hait-te   it-ta.
    Maria-NOM   friend-DAT call-PASS-CONJ pavilion-to   enter-CONJ   go-PST
                        Means   Path Path   Deixis
    "Maria was called by her friend and went into the pavilion."

                          (J-L1: Main+Sub, Cause+Motion)

b. Yob-are-ta   tomodati-wa   kyukeisyo-ni hait-te   ki-ta.
    call-PASS-PST   friend-TOP   pavilion-to   enter-CONJ   come-PST
    Means   Path Path   Deixis
    "The friend who was called came into the pavilion."

                          (J-L1: Main+Sub, Cause+Motion)

c. Yuzin-ga   Maria-o   yobu-to, Maria-wa yukkuri   yuzin-no-moto-ni
    friend-NOM   Maria-ACC call-then Maria-TOP slowly   friend-GEN-place-to
                          Means   Path
    arui-te   it-ta.
    walk-CONJ   go-PST.
    Manner   Deixis
    "A friend called Maria, and Maria walked to the friend slowly."

                          (J-L1:CO+CO, Cause+Motion)

It should be noted that the L2 data included ungrammatical sentences as in (24), but they were also analyzed and coded in consultation with the three co-authors.

(24) a.   *My friend, Maria, is said by another friend of mine. (E-L2: Main only, Cause)
                            Means
     "(intended meaning) My friend, Maria, is called by my other friend."

b.   *Egy nő   fel-hív-ott[8]   a   másik   lány-t   és   ő
    a   woman.NOM up-call-PST.3SG   the   another   girl-ACC   and s/he
                         Path-Mean
    jött   hozz-á.
    come.PST.3SG   ALL-3SG
    Deixis   Deixis
    "(lit.) A woman called up another girl, and she came to her."

                          (H-L2: CO+CO, Cause+Motion)

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[8] Though the preverb, *fel*, is inappropriate to express this calling event, some of the learners use it. It is assumed that they remember *fel-hiv* as a set of the expression, because the phrase is frequently used to express "to phone-call."

4 Results

4.1 Subevents

First, we will examine to what extent each group referred to each subevent of the complex event. As shown in section 2.1, the call-causing motion event consists of two subevents: one is the "causal events," to be more precise, the calling event where Maria's friend calls her, and another is the "motion event" that is caused by the calling event. Speakers may describe both of the subevents or only a part of the event without mentioning all of the subevents. Figure 2 shows the results by each L1 group.

Fig. 2. Indication of the subevents in L1 groups

Since the result of the chi-square test showed a significant difference ($\chi2 = 17.325$, $p < 0.005$), residual analysis was conducted. It reveals that the J-L1 group described both subevents more often than E-L1 and H-L1 ($p < 0.001$), and that H-L2 tended to express only the motion event ($p < 0.01$). Then, we compared them to the results of the L2 groups, but no significant difference was observed (E-L1 and E-L2: $\chi2 = 3.246$, $p > 0.1$/ H-L1 and H-L2: $\chi2 = 4.002$, $p > 0.1$) between them.

4.2 Sentence structures

Next, we will examine the structures of the sentences that include both subevents (Cause+Motion). Three types of structures were distinguished, as seen in (21-23) (See also 3.4). It should be noted that the sentences describing either of the subevents were excluded here because our aim is to see how each group describes the complex event with two subevents. Figure 3 shows that each L1 group uses different sentence structures to express the event.
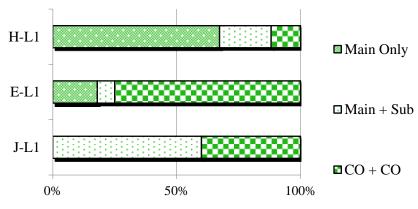
Fig. 3. Sentence structures of L1 groups (Cause + Motion)

We conducted the chi-square test, and it showed a significant difference ($\chi2 = 54.441$, $p < 0.001$). Residual analysis indicated that J-L1 significantly ($p < 0.001$) used "Main+Sub" constructions, Hungarian "Main only" ($p < 0.001$), and English "CO+CO" ($p < 0.001$). The typical examples are in (21c), (22a) and (23a).

We compared them to L2 groups, but there was no significant difference between E-L1 and E-L2 ($\chi2 = 5.716$, $p = 0.057$). It should be noted that no learner described both subevents in simple sentence as in (1a), however. On the other hand, a significant difference was observed between H-L1 and H-L2 ($\chi2 = 24.806$, $p < 0.001$), as you can easily see in Figure 4. According to the result of residual analysis, H-L2 used coordinate structures more frequently than H-L1 ($p < 0.001$) and less simple sentences ($p < 0.001$). (25) are typical examples observed in L2 groups.
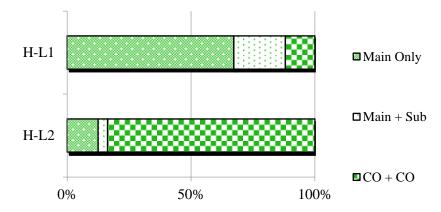

Fig. 4. Sentence structures of H-L1 and H-L2 (Cause + Motion)

(25) a.   My friend calls Maria, and she comes to her.   (E-L2: CO+CO)

    b.   Egy nő   Máriá-t   hív-ott   és   Mária   nő-hez
        a woman.NOM Maria-ACC call-PST.3SG and Maria.NOM   woman-ALL
        megy.
        go.3SG
        "(lit.) A woman called Maria and Maria goes to woman."   (H-L2: CO+CO)

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These results show that though both target languages (English and Hungarian) have a simple sentence structure to express complex events as shown in (21a) and (22a), the learners rarely used it. They used coordinate sentences (CO+CO) instead more frequently (E-L1: 75% < E-L2: 90%, H-L1: 14% < H-L2 77%).

4.3 Semantic components of the event

This section focuses on the ratio of indicating each semantic component in the event. Figure 2 in 4.1 showed to what extent each subevent is mentioned, but each subevent includes several semantic components, especially concerning the motion event. The causal event includes the Causer, Causee, and Means of motion causation, i.e. someone's calling, and the motion event involves the semantic components: Figure, Manner, Path, Deixis, and Ground. Some sentences mentioned all of the components, but the others did not. It is essential to see how these semantic components were indicated in the data and whether there are different tendencies between the groups.

We examined the following components: Means (calling), Manner (walking), Path (into), and Deixis (toward speaker/ away from speaker). Figure 5 shows the rate of indications of each component in L1 groups ($\chi2 = 17.894$, $p < 0.01$).
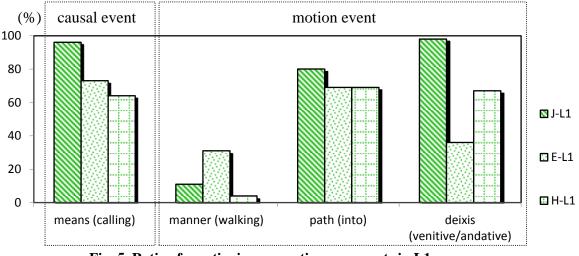

Fig. 5. Ratio of mentioning semantic components in L1 groups

Residual analysis showed that E-L1 mentioned Manner significantly more often than H-L1 and J-L1 ($p < 0.001$) whereas Deixis was mentioned less ($p < 0.05$). There was no significant difference, but J-L1 strikingly mentioned deictic elements, which corresponds to the results of the previous studies on subjective motions (Koga et al., 2008; Yoshinari et al., 2013).

The comparison between L1 and L2 groups tells us significant differences (E-L1 and E-L2: $\chi2 = 11.34$, $p < 0.01$/ H-L1 and H-L2: $\chi2 = 9.541$, $p < 0.05$). As shown in Table 2 (significant differences observed in residual analysis are also shown there), the L2 leaners of English and Hungarian tended to express less Path (into) and more Deixis than their corresponding L1 groups. It is interesting that these tendencies of L2 learners were also observed in the subjective motion events as pointed out in Yoshinari et al. (2013), and we will discuss it in section 5.

Table 2. Ratio of mentioning semantic components in L2 groups

component ╲ group	Means (calling)	Manner (walking)	Path (into)	Deixis (toward S/ away from S)
E-L1	73%	31%	69%	36%
E-L2	80%	7%	27%**	73%*
H-L1	64%	4%	69%	67%
H-L2	67%	0%	27%**	78%*

Note: ** = $p < 0.01$, * = $p < 0.1$

The salient differences in the learner's languages were observed concerning Path and Deixis, and they will be more closely examined in the following section to reveal the properties of the learners' languages.

4.4 Features of the learners' language

First, the coding positions of the deictic notions will be examined. It is pointed out that the L2 groups tend to indicate more Deixis compared to the corresponding L1 groups (E-L1 and H-L1) (see Table 2), even though there are structural variations to express them in all three languages as shown in section 2.3, e.g. deictic verbs, prepositional phrases, and preverbs. Are there any structural characteristics in the learner's languages different from native speakers?

Figure 6 shows the structural variations in each L1 group. It is noteworthy that J-L1 always expressed deictic meaning in the verbal head (100%). E-L1 expressed it through the verb (75%) or PP (20.8%), and H-L1 through the verb (60.5%) or the preverb (32.6%).
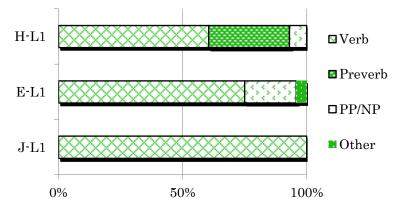

Fig. 6. Position of encoding Deixis in L1 groups

There was no significant difference observed between L1 and L2 groups (E-L1 and E-L2: $\chi2 = 5.897$, $p = 0.17$/ H-L1 and H-L2: $\chi2 = 3.819$, $p = 0.282$), but Tables 3 and 4 show that the L2 groups tended to mention the deictic meaning in the verb more often than the L1 groups.

Table 3. Position of encoding deixis in E-L1 and E-L2 (the number of elements)

position \ group	V	ADV	PP/NP	other
E-L1	18	0	5	1
E-L2	**21**	2	1	0

Table 4. Position of encoding deixis in H-L1 and H-L2 (the number of elements)

position \ group	V	PV	ADV	PP/NP
H-L1	26	14	0	3
H-L2	**35**	10	2	2

That fact that using deictic verbs leads to a decrease in the number of PPs as in (26) might be important for the learners.

(26) a. My friend walked into the pavilion towards me.
     b. My friend came into the pavilion.

While there were some examples in L1 groups that mention more than one Path PP in one clause (E-L1: 10 sentences, H-L1: 9 sentences) as in (27), only one example was found in E-L2 (28) and none in H-L2.

(27)   a. Maria's friend calls to her from inside the pavilion and Maria [comes into the pavilion up to [where we are]].   (E-L1)

     b. A barátnő-m   be-hív-ta   a   másik
        the girl.friend-POSS.1SG.NOM   in-call-PST.3SG   the   another
        barátnő-m-et   a pihenőhely-re   a   doboz   mellé.   (H-L1)
        girl.friend-POSS.1SG-ACC   the pavilion-SUB   the box   to.beside
        "My girl friend called another girl friend into the pavilion beside the box."

(28) Maria came to inside of pavilion from outside, because she was called.   (E-L2)

Both L2 groups are significantly different with regard to the plural Path PPs in one sentence from the corresponding L1 groups. We should mention that J-L1 does not have any clause with more than one PP in our data.

One more remarkable feature observed in L2 languages is less indication of the semantic component, Path "into," as shown in Figure 5. In E-L1, among the sentences that include "the pavilion" as the Ground of the Path, 25 of them use the preposition, *into,* as in (21), while only one uses *to*. On the other hand, in E-L2, *into* is used in only 6 cases. Instead the learners use *to inside* in 5 sentences, most of which lead to inappropriate usages, as shown in (29) (rest of them are marked by *to* and *in*).

(29) *Maria came to inside of pavilion from outside, because she was called.   (E-L2)

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With regard to Hungarian, H-L1 seems to express the meaning, "into," in two syntactic positions; in 20 sentences out of 21 sentences that include "the pavilion" as the Ground of the Path, the Path is expressed by both the preverb (*be-* in (27a) and the case marking (*-re*[9] in (27a)) on the noun phrase (See also (22).). On the other hand, in H-L2, the number of sentences with the Ground, "pavilion," is far less than H-L1, which is only 9. What is more remarkable is that the double marking (by the preverb and the case affix) is observed only in 5 sentences. (30) is an example of single marking observed in H-L2. This leads to the low occurrence of the Path "into" in H-L2.

(30) A   egyik barátnő-m   hív-ta   masik   barátnő-m-et
     the one.of girl.friend-POSS.3SG call-PST.3SG.DEF another girl.friend-3SG-ACC
     a   pihenohely-re.
     the pavilion-SUB
     "(lit.) One of my girl friend called my another friend into the pavilion."   (H-L2)

4.5 Summary of the results

In this section, the following results were presented. First, J-L1 tends to mention all of the subevents more often than E-L1 and H-L1. Second, when mentioning both subevents (Cause +Motion), the three L1 groups use different sentence structures: J-L1 typically uses subordinate structures, E-L1 coordinate sentences, and H-L1 simple sentences. On the other hand, the learners (E-L2 and H-L2) strikingly use more coordinate sentences than corresponding L1 groups and no simple sentence. Third, with regard to the semantic components of the call-causing motion event, E-L1 mentions Manner more often than J-L1 and H-L1. The L2 groups significantly express more deictic components and less Path elements than corresponding L1 groups. Finally, it is pointed out that the learners rarely mention more than one Path in one clause (only one example is observed), and tend to express "into" by using combination of words in E-L2 and single marking in H-L2.

5 Discussion

In section 4, three salient characteristics of the learners' languages were observed. The first one is more occurrences of deictic components, especially in main verbs. The second is the increase of coordinate clauses, and the last one is less mentioning of the Path "into." Our claim to be discussed in this section is that the first one is caused by L1 influence and the second and third ones by learners' strategies.

It is plausible to attribute the coding frequency of the deictic component in L2 groups to the L1 influence, because Japanese (J-L1) significantly expresses Deixis more often than English (E-L1) and Hungarian (H-L1), as shown in Figure 5. It is also striking that all of the deictic components are coded by the verb in Japanese. Since both of the Japanese learners' groups (E-L2 and H-L2) show more indication of deictic components, especially through deictic verbs, than corresponding L1 data (E-L1 and H-L1), it is reasonable to claim that the L1, Japanese, influences the coding patterns of the L2 groups. This is shown in Tables 3 and 4. It

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[9] It is usual to use the illative case affix *-bA* to express three dimensional grounds, while the sublative case affix *-rA* basically indicates ON.TO, as we have mentioned in section 2.3.2. There are some exceptional, conventionally-defined rules, however, where *-rA* is used even though the ground is three dimensional object, e.g. *pihenőhely-re*.

is also important, however, that the learners not always express deictic component in the verb, but also by using other elements such as prepositional phrases in English and preverbs in Hungarian. This indicates that the learners are applying their L1 patterns inconsistently while learning the means to express Deixis in the target language. It should be noted that we also observed the L1 influence on deictic expressions in the subjective motions (Yoshinari et al., 2013). While E-L1 and H-L1 tend to express the Deixis outside of verbs, Japanese learners of English and Hungarian (E-L2 and H-L2) use deictic verbs more often than the other groups. Further research is required to reveal the contributing factors and the scope of the influence, however, focusing on deictic expressions and other types of motion events.

Next, examining the increase of coordinate sentences along with their Path expressions in the learners' languages, we suggest that they indicate learner's strategies to overcome difficulty to express complex events and notions. First, it is important to note that the increase of coordinate sentences is not caused by the L1 influence because Japanese (J-L1) rarely uses coordinate structures for the call-causing motion event but subordinate clauses, as shown in Figure 2. Though E-L1 also uses coordinate structures frequently, looking at E-L2 and H-L2 together shows both groups tend to use this structure. The coordinate structure allows them to avoid the complex structures with more than one Path elements and to express all of the subevents in more basic structures with two coordinated simple sentences. As pointed out in section 4.4, only one simple sentence with plural Path elements is observed in E-L2, which supports the idea that it is the learner's strategy. They divide the complex event into two simple subevents, describe them in simple sentences, and then coordinate them.

The Path "into" also shows the similar strategy of the learners. As shown in section 4.4, Japanese learners of English (E-L2) often use two prepositions, *to* and *inside*, instead of *into*. We argue that this is one of the learners' strategies. *Into* expresses complex meanings, including two meanings in one form: "to" and "in." This complexity leads to learner difficulty. As in the case of the sentence structure discussed above, they divide the complex concept into simple ones. They seem to use a different way to express the Path notion in simpler structure when they express subjective motions, however. According to Yoshinari et al. (2013)'s study on subjective motion events, Japanese learners of English use *to* instead of *into*, leaving the meaning "in" unmentioned.

The learners of Hungarian show a different strategy, however. They did not divide the path notion into two, as shown in section 4.4. Instead, they expressed it only by using the case affix. This contrasts sharply with H-L1, which expresses the Path components in more than one element, i.e. double marking. In other words, the learners use simpler structure than the native speakers. It should be noted that the case affixes for the Path "into" in Hungarian, e.g. -*rA*, consist of one morpheme while *into* in English contains two morphemes: *in* and *to*. We suggest that these morphological properties of the two target languages lead to the different learner strategies, but the underlying strategy is the same. The learners try to express complex notions by using simple and basic structures which they are familiar with.

These results were achieved by comparing more than on target L2 language with their L1 data, focusing on complex call-causing events. There remain many issues in the future to clarify the process of L2 acquisition of motion event descriptions, however. More experimental studies are necessary on caused motion events focusing on L2 with more than one L1.

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