Thinking-for-speaking to describe motion events: English-Japanese bilinguals' L1 English and L2 Japanese speech and gesture

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Thinking-for-Speaking to Describe Motion Events

English-Japanese bilinguals' L1 English and L2 Japanese Speech and Gesture

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Abstract Speaking a second language (L2) involves another way of "thinking for speaking" (Slobin 1996). Adopting Talmy's typological framework of motion event description, this study examined how learning Japanese as L2 restructures English-Japanese bilingual speakers' thinking-for-speaking. Thirteen English-speaking intermediate learners of L2 Japanese described motion events in English and Japanese. The analysis focused on speech and gesture describing 'rolling down' and 'swinging' events, for which English and Japanese native speakers' descriptions differ (Kita, Özyürek 2003). The results suggest some restructuring in their thinking-for-speaking.

Keywords English-Japanese bilinguals. Thinking-for-Speaking. Motion event description. Gesture. Talmy's typology.

Summary 1 Introduction. – 1.1 Thinking-for-Speaking. – 1.2 Describing Motion Events in English vs. Japanese. – 1.3 Japanese-English Bilinguals. – 2 Current Study. – 2.1 Research Objectives and Research Questions. – 2.2 Methods. – 3 Results. – 3.1 Rolling Event (Syntactic Influence). – 3.2 Swinging Event (Lexical Influence). – 4 Discussion. – 4.1 Rolling Event (Syntactic Influence). – 4.2 Swinging Event (Lexical Influence). – 4.3 General Discussion. – 5 Conclusion.

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1 Introduction

1.1 Thinking-for-Speaking

Speakers of different languages verbalize different aspects of a given concept or entity. For example, English speakers must always be aware of whether the entity is countable (e.g. 'apple') or not ('fruit'), and if countable, whether there is more than one of them ('an apple' or 'apples'). In contrast, Japanese speakers can be oblivious about countability or plurality of the concept when naming the entity (*ringo* 'apple/apples'). For this reason, Slobin (1991) proposed a hypothesis that a special kind of thinking is "carried out on-line, in the process of speaking" which involves "picking those characteristics of objects or events" (Slobin 1991, 11-12) that can or must be encoded in the language being spoken. Hence, languages train their speakers to attend to particular aspects of concepts/events that should be encoded and how they should be encoded.

Talmy's (1985, 2000) typological classification of how speakers of different languages lexicalize different components of motion events has been particularly significant in its contribution to research on the thinking-for-speaking hypothesis. In second language (L2) research, the question is how typological differences between their L2 speakers' first language (L1) and L2 affect their conceptual representations and processing patterns in their L1 and L2 production (Benazzo, Flecken, Soroli 2012).

It is not only speech that is used to express meaning. Speech and gesture coordinate to express meaning (e.g. Kendon 2004; McNeill 1992). Gesture is defined here as hand and arm movements which cooccur with speech, although the speakers are mostly not conscious about them (McNeill 1992). According to previous research, in describing motion events, gesture shows the speaker's construal of the events in a way that speech alone does not always reveal, both in L1 and in L2 (e.g. Brown, Gullberg 2008; Choi, Lantolf 2008; Negueruela et al. 2004; Stam 2006, 2015; Yoshioka, Kellerman 2006). In other words, thinking-for-speaking is reflected in gesture (McNeill 1997; McNeill, Duncan 2000). Speakers' description of motion events in L2 speech and gesture is therefore a fruitful area of investigation (Cadierno 2008, 2017).

In the current study, we examine L1 English and L2 Japanese bilingual (henceforth English-Japanese bilingual) speakers' motion event descriptions in speech and gesture – in both their L1 English and L2 Japanese – in order to shed light on the way they talk about motion events in a typologically different L2, and how this learning (i.e. new training) may affect the way they describe the same motion events in their L1. We will build on influential research by Brown and Gullberg (2008), who studied L1 Japanese and L2 English bilingual

speakers' motion event descriptions in L1 Japanese and L2 English. We will use the same language pair but in the reverse direction: L1 English and L2 Japanese. We will explain our motivation for reversing the direction later.

Before we proceed, some terminological clarification is in order. In recent literature regarding L2 and multilingualism, those who learned L2 and use it in addition to their L1 are regarded as "bilingual" regardless of their proficiency levels, and we also call L2 users "bilingual". When bilingual speakers are compared with "monolingual" speakers in the relevant literature such as the studies we review below, the "monolingual" speakers are actually "minimally bilingual" (Cook 2003, 14) in that they have minimal exposure to L2 and do not engage in using any L2 actively. Following the terminological use in the literature, in this chapter we refer to those who use L2 as "bilingual"; and to those who are "minimally bilingual" native speakers of a given language as "monolingual". Bilinguals' L1 and L2 are indicated by the order in which the languages are given (e.g. bilinguals whose L1 is Japanese and L2 is English are referred to as Japanese-English bilinguals).

1.2 Describing Motion Events in English vs. Japanese

1.2.1 Speech

In Talmy's (1985, 2000) typological framework of motion event description, a motion event is an event where an object (Figure) moves through a path (Path) with respect to another reference object (Ground). Languages are classified by how they lexicalize Path, primarily into two types: Satellite-framed language (henceforth S-language) and Verb-framed language (V-language). In S-languages such as English and Russian, Path is indicated by particles (e.g. 'jump *out*'). In these languages, Manner of motion is usually expressed by manner verbs. English is known to have a large inventory of manner verbs (Slobin 2004). Manner refers to motor pattern of the movement of the Figure, the rate of movement, or the degree of effort involved in the movement (Allen et al. 2007, 20). In V-languages such as Japanese, Spanish, and Turkish, Path is typically encoded by verbs (e.g. *agaru* 'ascend'), and in these languages, Manner is characteristically expressed in adjunct clauses. In Japanese, Manner is said to be typically expressed by a subordinate clause, linked by the connector *-te*. However, it is now understood that some V-languages, including Japanese, have rich inventories of mimetics (also called 'ideophones')

that can readily encode Manner (Ohara 2002)[1] as well as compound verbs (Croft et al. 2010).

Below are English (1) and Japanese (2a-c) examples describing a scene in a Sylvester and Tweety Bird cartoon called *Canary Row*, where Sylvester has swallowed a bowling ball and is rolling down a hill. The elements expressing Path are shown in bold.[2,3]

1. *He rolls **down** the hill.*

2. (a) *Korogatte* *saka-o* ***kudaru***.
roll-CON slope-ACC descend.NPAST
"(He) descends the slope as he rolls".

(b) *Korokoro* *saka-o* ***kudaru***.
MIM(manner of rolling) slope-ACC descend.NPAST
"(He) descends in korokoro manner".

(c) *saka-o* *korogari-**otita***.
slope-ACC roll-fall.PAST
"(He) rolled down the slope".

In the English example (1), Path (satellite, 'down') and Manner (main verb, 'roll') are expressed in the same verb phrase in the matrix clause. Kita and Özyürek (2003, 22) regard this type of description as "tighter packaging". In the Japanese examples (2a-b), Path can be expressed in the main verb, but Manner is expressed in another 'clause', *korogatte*, linked by *-te* as in (2a), or through the mimetic adverb *korokoro* as in (2b). In Example (2c), the compound verb expresses both Path and Manner. Allen et al. (2007, 30) regarded (2a) as "semi-tight packaging" and (2b-c) as "tight packaging". Kita and Özyürek (2003) regarded (2a) as typical in Japanese and considered packaging in English tighter than in Japanese. Indeed, Allen et al. (2007) found that Japanese native speakers (university students residing in Tokyo) preferred semi-tight packaging and used it most of the time while English speakers (university students residing in Boston) preferred tight packaging.[4]

1 It has also been pointed out by Slobin (2004) that some languages can be classified as another type, "equipollently-framed", because in some languages such as Mandarin Chinese and Thai, Manner and Path are expressed by equivalent grammatical forms such as serial verb construction in which the Manner verb is often expressed together with a Path verb.

2 The romanization system adopted here is basically *Kunrei-shiki*, which reflects phonemic representations of the linguistic elements.

3 In glossing for examples, ACC refers to accusative case, CON connective, MIM mimetics, LOC locative particle, QUO quotative particle, NPAST unfinished.

4 The authors described the participants as native speakers of Japanese or English. They did not report whether they were monolingual speakers or not, but the participants

Brown and Gullberg (2012), however, reported that Japanese monolinguals preferred tight packaging with the use of various alternative constructions, including compound verbs such as *korogari-ochiru* 'roll-fall' in (2c) and what they call complex motion predicates such as *korogatte iku* 'goes rolling'. We believe that one of the reasons for the discrepancy is due to differing ways of coding the sequences/sentences connected by *-te*, which "exhibit characteristics of both coordination and subordination" and "an extreme degree of semantic unspecificity" (Hasegawa 1996, 9, 17). For example, *korogatte iku* 'goes rolling', which Brown and Gullberg (2012) coded as a compound verb (hence "tight packaging"), may have been coded as "semi-tight" by Allen et al. (2007). In fact, Brown and Gullberg themselves state that their category of complex motion predicates "could have been coded as multi-clausal constructions" (Brown, Gullberg 2012, 43 fn. 6) by Allen et al. (2007) and Kita and Özyürek (2003).

Despite this discrepancy between previous studies, it remains the case that Japanese motion event descriptions involve interchangeable alternatives with varying degrees of tightness of packaging, while English motion event descriptions have the dominant lexicalization pattern of the usage of manner verbs expressing Manner, followed by a particle expressing Path. Hence, Japanese motion event descriptions can have looser packaging than English.

As the focus of our gesture analysis is to examine the specific types of gesture that Kita and Özyürek (2003) found to correspond to syntactic packaging in speech, we adhere to their method of coding packaging in this chapter. The differences between English and Japanese motion event descriptions in speech reported by previous studies are summarised in Table 1, where the characterisation of packaging is based on Kita and Özyürek (2003) and Allen et al. (2007).

Table 1 Motion event descriptions in English and Japanese in speech

	English (S-language)	**Japanese (V-language)**
Path encoding	Particles	Path verbs as main verbs
Manner encoding	Manner verbs as main verbs	Subordinate clauses, mimetic adverbs, other constructions
Manner and Path packaging	Tighter	Looser
Manner verb repertoire	Rich	Limited

were living in the environment where they were actively using their native language.

It is likely that the English language trains speakers to pay attention to Manner of motion and select manner verbs, and to use satellites to express Path in the same clause (tight packaging), which then allows them to have an image of Manner and Path occurring simultaneously. The Japanese language does not necessarily train speakers to simultaneously pay attention to Path and Manner, possibly leading to a more decomposed image of Manner and Path.

1.2.2 Gesture

Kita and Özyürek (2003) found gesture preferences corresponding to tightness of syntactic packaging when they analysed motion event descriptions by native English speakers and native Japanese speakers[5] (and Turkish [V-language] speakers, whose patterns were similar to those of Japanese speakers). Kita and Özyürek focused on two scenes in the Tweety Bird cartoon: one where Sylvester rolls down a hill (henceforth Rolling) and one where Sylvester swings across one building to another using a rope (Swinging).

When describing Rolling, most English speakers used gesture conflating Manner and Path (i.e. gesture describing a downward trajectory while simultaneously representing circular, rolling motion), while Japanese speakers tended to use gesture representing only trajectory or only Manner, though they also used some gesture conflating Manner and Path. Describing a Manner-salient motion event, such as the cartoon scenes, presents a "classic linearization problem in Levelt's (1989) sense" (Allen et al. 2007, 22). Because the speaker can only express one semantic component at a time, they need to linearly order Manner and Path, despite the fact they occur simultaneously.

When describing Swinging, English speakers paid attention to Manner of swinging to select the lexical concept for 'swing' in speech, and they consistently used gesture representing arc-shaped trajectory. In contrast, Japanese speakers often ignored the arc trajectory to select lexical concepts for readily available Japanese verbs (path verb *iku* 'go', manner verb *tobu* 'jump/fly'), and some Japanese speakers only used straight-shaped gesture. Kita and Özyürek attributed this Japanese pattern to the absence of a readily available verb describing arc-shaped movement. We summarise what Kita and Özyürek reported in Table 2 regarding the English and Japanese patterns in describing the two scenes.

5 Kita and Özyürek report that their Japanese-speaking and English-speaking participants are adult native speakers of Japanese and those of American English, and no further information is given.

Table 2 Motion event descriptions in English and Japanese in speech and gesture

Speech	**Gesture**	
	English (S-language)	**Japanese (V-language)**
Syntactic: Manner and Path packaging (tighter in English)	Manner and Path conflation	Manner-only and Path-only
Lexical: Presence of the manner verb *swing* in English	Arc	Straight

Kita and Özyürek (2003) account for these differences by on-line planning of speech production and thinking-for-speaking for spatial representation. The gesture preference corresponding to syntactic and lexical features of each language emerges by feedback from the stage in which grammar is encoded during sentence production. "If language-specific spatial representation is repeatedly generated for speaking, then it can become part of habitual non-linguistic thought about space" (Kita, Özyürek 2003, 27). Gesture and speech performance reflects a language-specific way of thinking on-line about space.

1.2.3 Previous L2 Studies. Cross-Linguistic and Bidirectional Influence

Recent L2 studies in the domain of motion have examined both inter- and intra-typological L1-L2 combinations, e.g. L1-L2 pairs differing in typology and L1-L2 pairs in the same typology (Cadierno 2017). Researchers have investigated whether differences between L1 and L2 affect speakers' motion event descriptions in L2, but the results are mixed. Here we focus specifically on studies which examined the inter-typological L1-L2 pairs. For instance, Cadierno and Ruiz (2006) found that L1 played a limited role in motion event descriptions in L2, in that L2 learners of Spanish (V-language) whose L1 was Danish (S-language) and whose L1 was Italian (V-language) did not differ in the ways they expressed Manner; differences were found only in expressing Path.

Hohenstein, Eisenberg, and Naigles (2006) examined grammatical and lexical influence among early and late Spanish-English bilinguals and found bidirectional (L1-to-L2 and L2-to-L1) influence in lexical aspects and L1-to-L2 influence in grammatical construction. Lexically, late bilinguals used more path verbs in L2 English than English monolinguals and fewer path verbs in L1 Spanish than Spanish monolinguals. In terms of grammatical construction, only L1-to-L2 influence was found in the use of manner modifiers (e.g. *on all fours*) and bare verbs (lacking locative/ground information). Both early and late bi-

linguals used more manner modifiers and more bare verbs than English monolinguals, retaining Spanish speakers' pattern.

Negueruela et al. (2004) showed that English-Spanish bilingual speakers used gestures to encode Manner information when they had problems encoding Manner in speech. Similar findings have been reported by Choi and Lantolf (2008), who examined English-Korean and Korean-English bilinguals. These gestures can be interpreted as L1 influence in encoding Manner or communication strategies.

Some studies show that the proficiency levels affect L1 influence on L2, which is reflected in gesture. Stam's (2006, 2015) longitudinal studies show that the Spanish-English bilinguals who retained their L1 gesture when speaking English as their L2 changed their gesture to be more like gestures in the target language at the advanced level of proficiency. Similarly, in a cross-sectional study examining L1 speakers of Turkish (V-language) who speak English (S-language) as L2, Özyürek (2002) showed that at the advanced proficiency level, the speech and gesture when speaking L2 English were similar to those of L1 English speakers.[6] While beginner-level L2 English learners often used Manner-only or Path-only speech and gesture, advanced-level learners used more speech expressing both Path and Manner and gesture conflating Path and Manner.

Furthermore, in addition to L1-to-L2 influence, the L2-to-L1 influence (i.e. bidirectional influence) was found in speech and gesture, often resulting in bilinguals' 'in-between performance', distinct from the monolingual patterns of their L1 or L2 (Hernandez, Bates, Avila 1994; Pavlenko 2014, 2016). This was found in bilinguals of typologically different languages: Spanish-English (Hohenstein, Eisenberg, Naigles 2006), Turkish-German (Daller, Treffers-Daller, Furman 2011), Russian-English (Wolff, Ventura 2009), and Japanese-English (Brown 2015; Brown, Gullberg 2008).

The bidirectional influence was not observed consistently, however. Hohenstein, Eisenberg and Naigles (2006) found bidirectional influence in proportions of manner and path verbs while they found only L1-to-L2 influence in grammatical construction. Furthermore, their within-speaker analysis showed that the bilinguals' L1 and L2 performances were distinct from each other. In contrast, as we review in the next section, Brown and Gullberg (2008, 2012, 2013) found the bidirectional influence was observed as convergence, where their bilinguals' L1 and L2 performances were similar.

6 The elementary-level and intermediate-level Turkish speakers of L2 English were university students in Istanbul, and advanced-level speakers were lecturers at the same university.

1.3 Japanese-English Bilinguals

Brown and Gullberg (2008, 2012, 2013) conducted extensive research on motion event description by two groups of Japanese-English bilinguals (13 learning English as a Second Language while living in the U.S. and 15 learning English as a Foreign Language and living in Japan) and compared their performances with those of 13 English and 16 Japanese monolinguals. The authors did not find any differences between the ESL and EFL groups and collapsed their data. The participants described motion events in the Tweety Bird cartoons used also by Kita and Özyürek (2003).[7]

Brown and Gullberg (2008) focused on expression of Manner and showed that Japanese learners of English at the 'intermediate level' performed differently from both English and Japanese monolinguals, showing 'in-between performance' in speech and gesture. In speech, the bilinguals expressed Manner more frequently than Japanese monolinguals but less frequently than English monolinguals, when speaking L2 English. In gesture, they used more Manner modulation (gesture expressing Path when Manner is expressed in speech) than Japanese monolinguals when speaking Japanese, similarly to English monolinguals. Importantly, Brown and Gullberg (2008) reported that the bilinguals' L1 Japanese performance and L2 English performance did not differ from each other, providing evidence of bidirectional cross-linguistic influence, resulting in convergence.

Furthermore, Brown and Gullberg (2012, 2013) showed convergence in syntactic packaging. They found that both English and Japanese monolinguals preferred tight packaging, where Path and Manner are expressed in the same clause such as in Examples (3) and (4) below,[8] though as mentioned earlier the coding of the manner verb followed by *-te* in (3) may be rather arguable.

3. *korogatte iku*
rolling.CON go
"(He) goes rolling".

7 This cartoon was used in many other previous studies that examined co-speech gesture (e.g. McNeill, Duncan 2000), and using the same video as the stimulus has made it possible to compare their findings. Hence, we do so too.

8 Glosses and translations are modified to make them compatible with other examples in the current paper.

4. *guruguru gorogoro-to haitte itte*[9]
MIM(manner of rotating) MIM(manner of rolling)-QUO enter.CON go.CON
"(He) enters going in a manner of *guruguru*, *gorogoro*".

Brown and Gullberg (2012, 2013), however, found that Japanese-English bilinguals used multiple clauses to express Path and Manner in their L1 Japanese, using the Manner-only clause *subette* and Path-only clauses, similarly to the L2 English in (6). The square brackets indicate clauses. Note that though we agree that Example (5) has multiple clauses, *subette* seems to be a subordinate clause, making packaging 'semi-tight', contra Brown and Gullberg's (2012, 2013) analysis.

5. [*subette*] [*booringuzyo ni haitte itte*]
slide.GER bowling.alley LOC enter.CON go.CON
"(He) slides and goes in the bowling alley".

6. [and *he kept running*] [*and he went into the bowling place*]

In a nutshell, Brown and Gullberg (2008, 2012, 2013) provided some evidence of bidirectional cross-linguistic influence among Japanese-English bilinguals who learned English as their L2 in different aspects of motion event descriptions, specifically in the ways they express Manner in speech and gesture and in syntactic packaging. Japanese-English bilinguals expressing Manner more often than monolingual Japanese speakers and less often than monolingual English speakers suggests convergence in their thinking (construal) of motion events.

Though Brown and Gullberg (2012, 2013) examined syntactic packaging in speech, they did not examine the bilinguals' gesture, that is, Manner-Path conflation, which is expected to correspond to syntactic packaging. Bilinguals' thinking-for-speaking is expected to be observed more easily in gesture than in speech because generating gesture would not be prevented by insufficient knowledge of L2. Hence, we examine two specific types of gesture claimed by Kita and Özyürek (2003) to show thinking-for-speaking, representing the spatial conceptualisation specific to Japanese and English (shown in Table 2).

9 Mimetic adverbs are often used with the quotative particle *-to*, which is usually optional, and regardless of whether the mimetics are accompanied by *-to*, they are treated as structurally equivalent adverbs, and hence the presence of *–to* may not affect packaging here.

2 Current Study

2.1 Research Objectives and Research Questions

A question arises as to whether bilinguals in the reverse direction, English-Japanese bilinguals, also show bidirectional cross-linguistic influence. The acquisition of English and the acquisition of Japanese involve different challenges. In speech, while Japanese-English bilinguals learn to encode Manner by (nearly obligatory) use of manner verbs in tighter packaging of Manner and Path in speech, English-Japanese bilinguals learn to use path verbs and express Manner (which is optional) in looser Manner and Path packaging. This difference may have different impacts on bidirectional influence. New patterns in speech may require changes in thinking-for-speaking, which may be observed in gesture.

Hence, the current study examines whether motion event descriptions by L1 English speakers of L2 Japanese show bidirectional influence in their L1 English and L2 Japanese when compared with English monolinguals' performance and Japanese monolinguals' performance reported in previous studies (Allen et al. 2007; Brown, Gullberg 2008, 2012, 2013; Kita, Özyürek 2003).

We focus on the two specific event descriptions examined by Kita and Özyürek (2003), namely Rolling, whose Manner and Path can be expressed in tighter or looser packaging; and Swinging, whose trajectory can typically be expressed differently in English and Japanese. We summarise alternative patterns for describing the events in speech and gesture in Table 3. Alternative (a) is compatible with preferred patterns reported for English monolinguals, and alternative (b) is compatible with preferred patterns reported for Japanese monolinguals by Kita and Özyürek (2003) though, as we mentioned above, findings in previous studies are somewhat contradictory with regard to syntactic packaging preferred by native Japanese speakers.

Table 3 Motion event descriptions in English and Japanese in speech and gesture

Motion events	Alternative	Speech	Gesture
Rolling down	(a)	- Tight packaging using a manner verb - Manner+Path	Manner-Path conflation
	(b)	- Looser packaging using adjuncts or adverbs - Manner-only, Path-only	Manner-only, Path-only
Swinging across	(a)	*swing* (English), *suwingu* (Japanese)	Arc-shaped
	(b)	*go*, *fly* (English) *iku*, *tobu* (Japanese)	Straight-shaped

Specifically, we examine which alternatives English-Japanese bilinguals adopt in L1 English and L2 Japanese in order to determine whether they show bidirectional cross-linguistic influence. Because we endeavour to compare English-Japanese bilingual speakers' performances with Japanese-English bilingual speakers' performances reported by Brown and Gullberg (2008, 2012, 2013), and with (monolingual) native speakers reported by them and by Allen et al. (2007) and Kita and Özyürek (2003), we use the same Rolling and Swinging events from the Sylvester and Tweety Bird cartoon, and ask adult bilinguals (mostly university students) to describe them. In so doing, we aim to answer two questions:

(1) *Grammatical: lexicalization pattern and co-speech gesture*
Do English-Japanese bilinguals tend to use English patterns (manner verbs, Path+Manner descriptions, tighter packaging, conflation gesture) or Japanese patterns (path verbs, Path-only/Manner-only descriptions, looser packaging, Path-only and/or Manner-only gesture) when speaking L1 English and when speaking L2 Japanese?

(2) *Lexical: the availability/absence of the verb for swinging*
Do English-Japanese bilinguals (attempt to) express the arc trajectory of swinging in L1 English and L2 Japanese in speech and gesture?

Research Question (1) is related to syntactic packaging, and the key to this question is the bilinguals' description of Rolling, for which Kita and Özyürek (2003) showed tight packaging and conflated gesture among English speakers but not among Japanese speakers. If bidirectional cross-linguistic influence is at work, the bilinguals will show L1 English packaging looser than that of English monolinguals and L2 Japanese packaging tighter than that of Japanese monolinguals, as 'in-between performance' in speech, and also show some tendency to use gesture separating Path and Manner even when speaking English and some tendency to use Manner-Path conflation gesture when speaking Japanese.

Research Question (2) is concerned with lexical availability of the manner verb 'swing' in English in contrast to Japanese, which does not have a commonly used manner verb for swinging. Kita and Özyürek (2003) reported that Japanese speakers tended to use verbs such as *iku* 'go' and *tobu* 'fly' in speech and use straight-trajectory gesture. The questions are: when English-Japanese bilinguals speak L2 Japanese, do they attempt to describe swinging by using a word borrowed from English (e.g. *suwingu-suru* 'swing') or by other creative means in L2 Japanese and retain the tendency to use arc trajectory in gesture (L1-to-L2 influence)? And when they speak L1 English, do they not describe swinging even in speech and use straight-trajectory gesture (L2-to-L1 influence)?

2.2 Methods

2.2.1 Participants

A total of 14 English speakers residing in the UK originally participated. They were mostly university students in London, where the data were collected. They grew up in an English-speaking environment and spent most of their life in the UK, except for 1 participant who was born in Japan and spent a total of six years of her childhood in Japan. Her data were excluded, and the remaining 13 participants' data were analysed. Japanese oral proficiency was assessed by Oral Proficiency Interview (OPI), following the standard protocol of the American Council on the Teaching of Foreign Languages (ACTFL). The first author, a certified OPI tester at the time of the data collection, conducted OPIs and sent the audio files to the ACTFL for verification (agreed ratings) of the proficiency levels. The 13 English-speaking participants (7 women and 6 men, aged 19 to 33, mean age 21.5) consisted of 10 Intermediate-level (1 High, 5 Mid, 4 Low) and 3 Advanced-level (2 Mid and 1 Low) speakers. Table 4 shows their proficiency levels assessed via OPI and approximate CEFR levels, based on 'Assigning CEFR Ratings to ACTFL Assessments'.[10]

Table 4 Participants' proficiency levels in L2 Japanese

Official OPI rating	CEFR level	Number of participants
Intermediate-Low (IL)	A2	4
Intermediate-Mid (IM)	B1.1	5
Intermediate-High (IH)	B1.2	1
Advanced-Low (AL)	B2.1	1
Advanced-Mid (AM)	B2.2	2

Most of the participants in the current study are less proficient than the participants that Brown and Gullberg (2008, 2012, 2013) studied, who were regarded as "intermediate" and as B2. Brown and Gullberg highlight their finding of L2-to-L1 influence at the moderate level of proficiency. Hence, if L2-to-L1 influence is found among the current participants, the finding would be more striking. The participants

10 CEFR stands for Common European Framework of Reference, and ACTFL provides information regarding the approximate CEFR level for each of their oral proficiency levels. URL http://www.actfl.org/news/reports/assigning-cefr-ratings-actfl-assessments.

had studied Japanese for one to ten years (average of 4.3 years). Four of them spent one year in Japan to study the language, and one spent two years working in Japan.

2.2.2 Stimuli and Procedure

The participants described motion events that they watched on two 41-second video clips from *Canary Row* (Warner Bros.), parts of a Tweety Bird cartoon containing Rolling and Swinging, as well as two other unrelated short video clips,[11] both in English and in Japanese. They described these to an interlocutor who speaks English as her L1 and another interlocutor who speaks Japanese as her L1, respectively. They were both women in their 20s who had not viewed the video clips. They asked the participants for elaboration when the participants' description was brief, but in the current study only the participants' initially attempted descriptions, without any further elaboration, were examined. The order of the two languages was counterbalanced: half the participants, randomly assigned, described Rolling in English first and Swinging in Japanese first; the other half in the reverse order. They then described one of the unrelated video clips before the change of interlocutor. All participants' descriptions were video-recorded and transcribed. The video clips were uploaded to the ELAN programme, designed to analyse digital audiovisual data (Wittenburg et al. 2006).

2.2.3 Method of Analysis. Rolling Event

Because the foci were different for the two motion events, two different methods of analysis were adopted.

For the analysis of speech in Rolling, we first identified speech segments that described the rolling event and then examined how the events were described. Each description was classified as Path+Manner, Path-only or Manner-only. For the analysis of syntactic packaging, Path+Manner descriptions as well as Path-only and Manner-only descriptions immediately adjacent were coded by the first and second authors as tight (Manner and Path in the same clause), semi-tight (Manner in adjunct) or loose (separate clauses). It turned out that the participants did not use any semi-tight packaging. Inter-rater reliability was 92% for Japanese and 96% for English

11 One of the aims of the project was to examine whether and how English-Japanese bilingual speakers use Japanese mimetics. Besides the motion events, they were asked to describe short noise-emitting disaster scenes (i.e. hurricane, earthquake).

speech. Example (7) shows an L2 Japanese example for tight packaging (Path+Manner description), and (8a-b) show examples of loose packaging (combinations of Manner-only and Path-only). Example (8a) consists of two adjacent sentences, and Example (8b) consists of two coordinated clauses in one sentence. Below, Manner and Path are in bold.

7. P09 IM [Participant 09: Intermediate-Mid]
Ano booru-wa ***gorogoro gorogoro*** *booringujo-ni* ***ikimasu***.
ball-TOP MIM MIM bowling.alley-LOC go.NPAST
"The ball goes to the bowling alley in *gorogoro* manner".

8. (a) P01 IL [Participant 01: Intermediate-Low]
Ano, neko-wa ***rooringu****-o simasu. Booringuzyo-ni* ***hairimasita***.
well cat-TOP rolling-ACC do Bowling.alley-LOC entered.PAST
"well, the cat does *rolling*. (He) *entered* the bowling alley".

(b) P04 IM [Participant 04: Intermediate-Mid]
Miti-o it-te ***koro, korogaru***.
road-ACC go-CON roll.NPAST
"(He) goes on the road, (he) ro, rolls".

For the analysis of gesture, we first identified the use of iconic gesture, i.e. gesture representing Manner and/or Path in iconic ways (namely, gesture that represented either Manner or Path of motion). The type of gesture was then coded for Manner-only, Path-only, and Manner-Path conflation by the first and second authors, following Kita and Özyürek (2003). The inter-rater reliability was 88%. The video segments of the cases where the two coders did not initially agree (e.g. gesture indicating tiny curvy repetition can be either Manner of rolling or beating that typically occurs when planning what to say) were viewed by the two and discussed to reach agreement.

Once both speech and gesture were coded, the correspondence between the speech (tight vs. loose packaging) and gesture (Manner-only, Path-only, and Path+Manner) were examined.

2.2.4 Method of Analysis. Swinging Event

For the Swinging event, speech was transcribed and we examined the specific verbs used to describe swinging. The focus was on whether the participants used the verb 'swing' in English and if they tried to describe an arc-shaped event in Japanese in speech (e.g. using a word borrowed from English, *suwingu-suru*) or in gesture.

For the analysis of gesture, we identified the use of iconic gesture for each description and the gesture was then coded for Arc trajectory and Straight gesture independently by the two authors. When a given participant used more than one gesture during a single mo-

tion event description, each gesture was coded. The inter-rater reliability was 86%. The video segments of those cases where the two coders did not initially agree (typically a short or gentle curve) were viewed by the two and discussed to reach agreement. Following Kita and Özyürek (2003), the participants were then classified as those who used Arc trajectory gesture only, those who used both Arc trajectory and Straight gesture, and those who only used Straight gesture.

Once speech and gesture were coded, whether the Arc trajectory vs. Straight gesture co-occurred with the verb 'swing', or what other verbs co-occurred, was examined.

3 Results

3.1 Rolling Event (Syntactic Influence)

The Rolling event was examined to answer Research Question (1), to determine whether English-Japanese bilinguals express Path and Manner in speech or gesture in ways that suggest restructuring such as convergence in their thinking-for-speaking.

All 13 bilinguals described Rolling events, though they did not always describe both Path and Manner. In their L1 English description in speech, 11 of the 13 participants described both Manner and Path. They all used manner verbs: 'roll' (11 of 13 participants) or 'pedal/shoot' (both by 1 participant: P05, L2 Japanese AM level). In the English descriptions expressing both Path and Manner, the bilinguals consistently used tight packaging (12 of 12 descriptions), mostly using the expression 'roll down', retaining L1 English pattern. There were 2 Path-only (e.g. "goes down the hill" by P07, IL; "he falls into a bowling alley" by P12, IL) and 8 Manner-only (e.g. "just rolling around and can't stop" by P07) descriptions, 4 of which were produced by P07.

With regard to gesture in L1 English, however, while Kita and Özyürek (2003) reported that 70% of the English speakers used Manner+Path conflating gesture, in the current study only 5 of 13 participants (38%) did so. **[Fig. 1]** indicates the gesture types that each participant used (note that no or multiple gestures occurred for each speech description; hence the number of gestures does not correspond to the number of speech descriptions); the participants were ordered by their oral proficiency in Japanese from lower to higher proficiency (from left to right). Albeit with a small number of participants, it is interesting to note that those whose L2 Japanese proficiency was higher (Intermediate-High or above) did not use any gesture conflating Manner and Path; instead, they used Manner-only or Path-only gesture.

Of the 5 cases of gesture conflating Path and Manner, 4 co-occurred with tight packaging of Path and Manner, with the manner verb 'roll' in speech: 3 occurred with the particle 'down'; 1 with

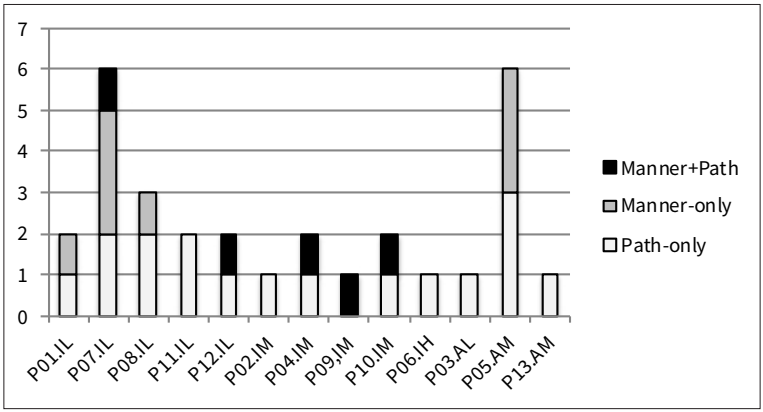

Figure 1 Co-speech gesture in L1 English

'across'. The remaining case was a Manner-only description by P07 ("it's um lurking at the bottom of him"), referring to the ball in Sylvester's stomach. The Path-only gesture used by P06 (Intermediate-High) and P03 (Advanced-Low) co-occurred with the use of 'roll down' in speech, while a Path-only gesture by P05 (Advanced-Mid) co-occurred with "shoot along the street into a bowling alley", which did not specifically express manner of rolling.

In the bilinguals' L2 Japanese speech, 8 participants described both Manner and Path (but not necessarily within the same descriptions), using manner verbs such as *korogaru* 'roll' (3 participants), *rooringu-o suru* 'do rolling' (1), *isogu* 'hurry' (1); path verbs *iku* 'go' (4), *otiru* 'descend' (1), *sagaru* 'descend' (1); or the generic movement verb *ugoku* 'move' (2). Of the 8 descriptions expressing both Path and Manner, 6 (75%) were tight packaging, 2 (25%) loose packaging, and there was no semi-tight packaging. There were 13 Path-only and 5 Manner-only descriptions. The 6 tight packaging cases utilised manner verb *korogaru* 'roll' (P04, P10, both IM), mimetic adverbs (e.g. *korokoro*, *gorogoro*, both without the quotative *-to*) (P03, AL; P09, IM) and other adverbs (e.g. *hayaku* 'quickly', P08, IL; *zutto* 'all the way', P06, IH). Two Intermediate-Low participants (P07, P08) mentioned the English word 'roll' and tried to come up with the Japanese equivalent. Having failed to find the Japanese equivalent, they described Manner in alternative ways using the verb *ugoku* 'move' (P07), and *iku* with the adverb *hayaku* 'quickly' (P08). Another Intermediate-Low participant (P01) borrowed the English word 'roll' as *rooringu-o simasita* 'did rolling'.

With regard to gesture in describing Rolling in L2 Japanese, 3 participants used 6 gestures conflating Path and Manner. **[Fig. 2]** in-

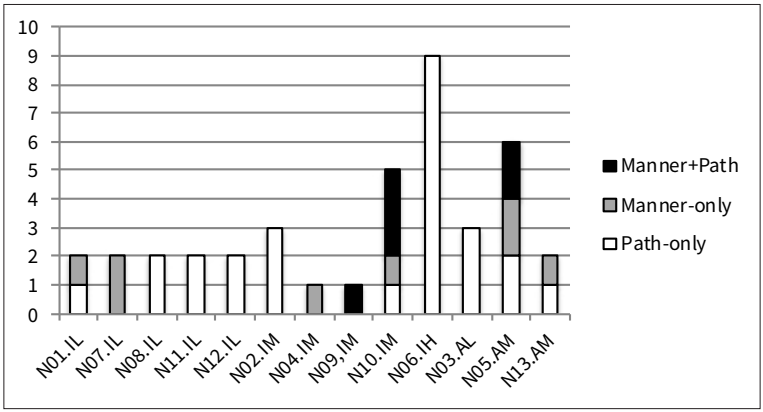

Figure 2 Co-speech gesture in L2 Japanese

dicates the gesture types that each participant used when speaking L2 Japanese. Six of the participants used Path-only gesture exclusively, including higher-level participants P06 (Intermediate-High) and P03 (Advanced-Low).

Of the 6 cases of gestures conflating Path and Manner, 2 by P05 (Advanced-Mid) and 1 by P09 (Intermediate-Mid) co-occurred with tight packaging of Path and Manner in speech. Three by P10 (Intermediate-Mid) included 1 immediately following a description with tight packaging, and 2 occurred with Manner-only descriptions such as *korogatte* 'rolling'.

3.2 Swinging Event (Lexical Influence)

The Swinging event was examined to answer Research Question (2), to determine whether English-Japanese bilinguals' L1 and L2 descriptions in speech and gesture are influenced by the presence of the readily available verb 'swing' in English and absence of equivalent lexical items in Japanese. Two of the 13 participants did not describe the Swinging event in their L1 English or L2 Japanese descriptions; they seemed to have forgotten about the Swinging event depicted in the video. The following analyses are based on the 11 other participants' performance.

Table 5 presents the verbs each participant used in speech and each participant's gesture usage pattern. Following Kita and Özyürek (2003), participants were classified based on the patterns of usage of Arc and Straight gestures, namely those who used Arc gesture only, those who used Straight gesture only and those who used both Arc and Straight gestures. The order of languages in which each partic-

ipant described the Swinging event is also indicated. Note that the number of total participants who used gesture in L2 Japanese description is 10, since 1 participant (P07) did not use any gesture when describing the event in Japanese.

Table 5 English-Japanese bilinguals' Swinging event descriptions

			L1 English		**L2 Japanese**	
	ID	Order	Verbs used	Gesture	Verbs used	Gesture
IL	P01	E-J	swing	Arc only		Straight only
	P08	E-J	swing	Arc only	*tobu*	Straight only
	P12	E-J	swing	Straight & Arc	*tobu*, *iku*	Straight & Arc
IM	P04	J-E	swing	Straight only	*iku*	Straight only
	P09	E-J	swing	Arc only	*iku*	Straight only
	P10	J-E	fly	Arc only	*tobu*	[no gesture]
	P11	J-E	swing	Straight only	*suwingu suru*	Straight only
IH	P06	E-J	swing	Straight & Arc	*iku*	Arc only
AL	P03	J-E	swing	Straight & Arc	*tobu*	Straight only
AM	P05	E-J	sail	Arc only	*tobu*	Straight only
	P13	J-E	fly	Straight only	*tobu*	Straight only

In terms of verbs, most of the participants used 'swing' in L1 English, but 2 used the verb 'fly' and 1 used the verb 'sail'. It is plausible that the 2 (P10, IM; P13, AM) used the verb 'fly' because they had described the same event in Japanese first and had used the verb *tobu* 'fly'. In L2 Japanese description, most of the bilinguals used the verbs *tobu* 'fly' and *iku* 'go', similarly to native speakers studied by Kita and Özyürek (2003). One, P11 (IM), used a word borrowed from English, *suwingu-suru*, suggesting that she felt the need to describe the arc-shaped movement in speech. One participant, P01 (IL), abandoned describing the event in L2 Japanese. She said: "Swinging?" She then laughed and continued this part in English: "He swung there. He swung himself up to the window", using Arc-trajectory gesture. Prior to this, she attempted to describe the event in Japanese, saying: "*mado, mado no mae ni…*" ("The window, in front of the window…"). She did this while using Straight gesture.

[Fig. 3] shows the proportions of participants based on the patterns of usage of Arc and Straight gestures, following Kita and Özyürek's (2003) method of presentation of the gesture results.

In contrast to Kita and Özyürek's (2003) report that almost all participants only used Arc gesture, more than half of the English-Japanese bilinguals used Straight gesture either alone or together with Arc gesture in L1 English description. Moreover, 80% used only Straight gesture in L2 Japanese. Among Japanese monolinguals

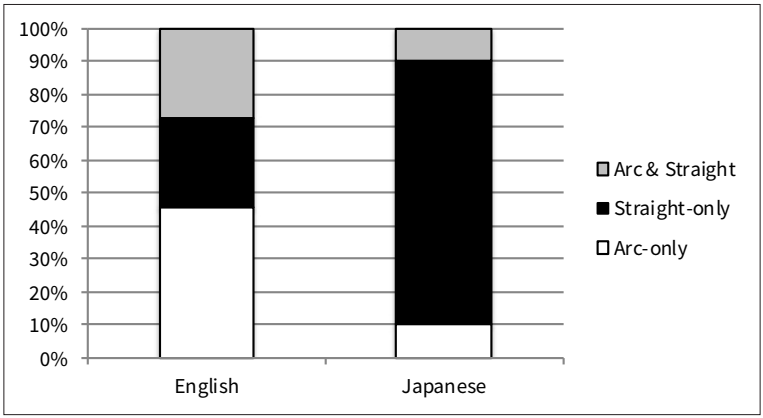

Figure 3 Percentage of participants with patterns of gesture usage

studied by Kita and Özyürek, about 30% used only Straight gesture, and about 45% used both.

4 Discussion

4.1 Rolling Event (Syntactic Influence)

The present study addressed the question of whether bidirectional cross-linguistic influence is observed in the thinking-for-speaking patterns in English-Japanese bilinguals' motion event descriptions. Specifically, we focused on the grammatical aspects (lexicalization pattern, syntactic packaging) in describing Rolling. The results showed that in their L1 English speech, the bilinguals mostly used descriptions encoding both Path and Manner in tight packaging, using the manner verb 'roll' (11 of 13 instances), retaining their L1 English pattern. The L1 English syntactic packaging is resilient to change, but this may be largely due to the availability of the expression 'roll down', suggesting the difficulty of teasing apart syntactic packaging from availability of commonly used phrases. However, it is notable that there were 2 Path-only and 8 Manner-only descriptions. Five of them (1 Path-only, 4 Manner-only) were produced by P07 (Intermediate-Low). Though he described Rolling first in English, having struggled to describe the cartoon in Japanese, he might have carried on his tendency to decompose his intended messages for the ease of description.

The bilinguals' gesture pattern in their L1 English diverged from English monolinguals' pattern of mostly using Path+Manner conflation

(Kita, Özyürek 2003). Unlike monolinguals, less than half of the participants used Manner+Path conflation gestures. Instead, they mainly used Path-only and/or Manner-only gestures. Interestingly, it was mostly the participants whose proficiency levels were the lowest and highest who almost exclusively used Path-only and Manner-only gestures. The lower-proficiency participants (P01, P08, both IL) might have been decomposing their concepts for producing simpler constructions even when speaking in English, but the pattern observed among higher-proficiency participants (all participants whose Japanese proficiency was IH or higher) suggests L2-to-L1 influence on gesture.

Moving on to L2 Japanese description, only 3 of 13 participants used the Japanese manner verb *korogaru* 'roll'. Some lower-proficiency participants' attempts to search for the manner verb or to describe Manner suggested heightened attention to Manner, indicating English thinking-for-speaking pattern. One participant (P01) borrowed the English word. There were only 8 descriptions encoding both Path and Manner, 6 of which showed tight packaging, similarly to Japanese monolinguals studied by Brown and Gullberg (2012). Of the 6 descriptions, 2 utilised the manner verb *korogaru* and 1 utilised an innovative mimetic verb *koron-site* 'do *koron* (manner of rolling)', using a mimetic *koron*. There were 5 Manner-only and 13 Path-only descriptions, produced both by lower- and higher-proficiency participants. This suggests that both lack of knowledge with regard to Japanese ways of Manner encoding (at lower level) and the acquisition of thinking-for-speaking for Japanese (at higher level) can result in these Manner-only or Path-only descriptions.

The bilinguals' gesture patterns in L2 Japanese descriptions seemed rather mixed, but overall most participants (10 of 13) used Path-only or Manner-only gestures with no Manner+Path conflation, including those who were higher in proficiency (3 of the 4 who were Intermediate-High or above). The gesture patterns correspond to the speech patterns, i.e. frequent use of Path-only or Manner-only descriptions.

In summary, apparent L2-to-L1 influence was observed in lower- and higher-proficiency participants' use of Path-only and Manner-only gestures, but not in speech. L1-to-L2 influence was observed in the lower-proficiency participants' attempts to describe Manner and/or to use a manner verb in L2 Japanese.

4.2 Swinging Event (Lexical Influence)

In the descriptions of the Swinging event in L1 English, there is no clear indication of L2-to-L1 influence on speech. Though P10 and P13 used the verb 'fly', this may be because they described the same event in Japanese first. Yet the fact that an Advanced-Mid participant (P13)

used the verb 'fly' (without any hesitation) suggests his familiarity with the lexical gaps between English and Japanese. In gesture, however, more than half of the bilinguals used Straight gesture, showing some L2-to-L1 influence. Curiously, there were two cases where the participant used the verb 'swing' and yet produced a Straight gesture; such cases of 'speech and gesture mismatch' have not been reported in previous research.

In the descriptions of the event in L2 Japanese, L1-to-L2 influence was seen primarily because there is no Japanese equivalent for the English verb 'swing'. One participant overcame the difficulty by using a borrowed English word, *suwingu-suru*, which is an uncommon, innovative word. However, most of the speakers used *tobu* 'fly' or *iku* 'go', the verbs that L1 Japanese speakers commonly use. Similarly, their gesture pattern does not show clear indication of L1-to-L2 influence since only 2 participants used Arc gesture.

4.3 General Discussion

We did not observe any clear indication of L2-to-L1 influence on speech in the descriptions of the Rolling and Swinging events. English-Japanese bilinguals mostly retained their English patterns (using the manner verb 'roll' in tight packaging in Path+Manner descriptions in describing Rolling, and using the verb 'swing' in describing Swinging).

However, L2-to-L1 influence was observed in gesture in both Rolling and Swinging descriptions. Some cases of 'speech-gesture mismatch' (Church, Goldin-Meadow 1986) were also observed. This mismatch suggests L2-to-L1 influence in that the bilinguals are ready for change in their thinking-for-speaking in their L1. Such mismatches are understood to indicate a readiness to learn among children that is not observed in speech (Church, Goldin-Meadow 1986), and gesture-speech mismatch can cause a change in cognitive mechanism (Goldin-Meadow et al. 2001). The current results suggest the importance of multimodal approaches in examining subtle changes such as conceptual change in thinking-for-speaking.

L1-to-L2 influence is primarily observed among lower-proficiency participants. Because using English as L1 must have 'trained' them to pay attention to Manner (thinking-for-speaking hypothesis) and select manner verbs, they tried and struggled to describe Manner or find the manner verbs in Japanese that are equivalent to what is available in their L1 English. Part of the reason that L1-to-L2 influence was not observed among higher-level participants may be that for L1 English patterns (manner verbs, tight packaging, Path+Manner descriptions) to be observed in L2 Japanese, English-Japanese bilinguals need to use Japanese manner verbs and/or manner adverbs,

which are found to be difficult to acquire even among advanced-level bilinguals (e.g. Choi, Lantolf 2008). Perhaps at the level higher than that of the current participants, L1-to-L2 influence (e.g. more use of manner verbs) may be observed.

Among lower-proficiency speakers (P01, P07, P08, P12), then, there is an apparent bidirectional influence, though it is not clear whether the L2-to-L1 influence shown in their Path-only or Manner-only gesture pattern was the influence of the Japanese pattern of thinking-for-speaking or the influence of their tendency to decompose concepts in L2 for the ease of verbalization, because they tended to decompose concepts when they could not find Japanese words that were equivalent to English manner verbs.

Though higher-proficiency participants (P03, P05, P13) did not show bidirectional influence, their L2 Japanese seems to have influenced their gesture (they used Path-only and Manner-only gesture when describing Rolling, and P13 used Straight-only gesture when describing Swinging in English). The examination of gesture turned out to be particularly important to reveal this. When considering all participants, including lower-proficiency participants and higher-proficiency participants, both L1-to-L2 and L2-to-L1 influence was observed.

We did not find clear bidirectional influence among the participants at approximately the same (or somewhat lower) level as Brown and Gullberg's participants, contrary to their findings. The difference may be attributed to two factors: the participants in the current study are less proficient in their L2 (mostly A2-B1); and the direction of the language pair is different, with English (S-language) speakers learning Japanese (V-language).

It is also important to note that monolingual speakers' performances in motion event descriptions in speech and gesture are rather variable, and what was reported (e.g. Kita, Özyürek 2003; Allen et al. 2007) was tendency. Speakers' performances may also depend on the types of motion events, particularly on how salient Manner is in the motion events. In the cartoon scenes examined here and in previous studies, Manner is salient and unusual. More research is desired to understand how speakers of different L1s restructure their thinking-for-speaking to describe various different events.

5 Conclusion

We examined English-Japanese bilinguals' motion event descriptions in speech and gesture. We found L1-to-L2 influence in speech and (apparent) L2-to-L1 influence in gesture only among lower-proficiency participants. Higher-proficiency participants showed L2-to-L1 influence in gesture but did not show any L1-to-L2 influence. If the phenomenon of bidirectional influence needs to be verified within the

same individuals then we have not provided clear evidence, but we have shown that among English-Japanese bilinguals, there is both L1-to-L2 and L2-to-L1 influence.

The current study involved only a small number of participants (N=13) and we based our comparison on monolingual patterns reported in previous studies. Future research involving more participants, especially including bilinguals who are higher in proficiency in their L2 Japanese and including monolinguals, is desired to confirm the effect of the proficiency levels and direction on bidirectional cross-linguistic influence.

Most studies so far have examined speakers whose L1 and L2 are English and/or other major European languages. Research examining a non-European language like Japanese as an L2 has important potential to contribute to our understanding, especially because knowledge gained by previous studies on L1 Japanese serves as a basis or reference point. Given that many L1 speakers of various European languages are learning Japanese as L2, research on various contrasting L1s (e.g. V-languages such as Italian and Spanish vs. S-languages such as Dutch and German) would enable research into the impact of typological differences on restructuring thinking-for-speaking in L2 Japanese in future research.

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