Bidirectional cross-linguistic influence in event conceptualization? Expressions of Path among Japanese learners of English

Brown, Amanda; Gullberg, Marianne

Published in:
Bilingualism: Language and Cognition

DOI:
10.1017/S1366728910000064

2011

Bilingualism: Language and Cognition 14 (1), 2011, 79–94 © Cambridge University Press 2010 doi:10.1017/S1366728910000064

Bidirectional cross-linguistic influence in event conceptualization? Expressions of Path among Japanese learners of English*

AMANDA BROWN
Syracuse University
MARIANNE GULLBERG
Radboud University Nijmegen and Centre for Language Studies & Max Planck Institute for Psycholinguistics

(Received: December 12, 2008; final revision received: November 13, 2009; accepted: November 20, 2009; First published online 12 October 2010)

Typological differences in expressions of motion are argued to have consequences for event conceptualization. In SLA, studies generally find transfer of L1 expressions and accompanying event construals, suggesting resistance to the restructuring of event conceptualization. The current study tackles such restructuring in SLA within the context of bidirectional cross-linguistic influence, focusing on expressions of Path in English and Japanese. We probe the effects of lexicalization patterns on event construal by focusing on different Path components: Source, Via and Goal. Crucially, we compare the same speakers performing both in the L1 and L2 to ascertain whether the languages influence each other. We argue for the potential for restructuring, even at modest levels of L2 proficiency, by showing that not only do L1 patterns shape construal in the L2, but that L2 patterns may subtly and simultaneously broaden construal in the L1 within an individual learner.

Keywords: bidirectional cross-linguistic influence, conceptualization, Path of motion, Japanese, English

1. Introduction

A growing body of work indicates that speakers of different languages describe events in the world differently (e.g., Hickmann & Robert, 2006; Kopecka & Narasimhan, to appear; papers in Strömqvist & Verhoeven, 2004). Furthermore, such differences are not limited to surface linguistic forms, but also extend to linguistic conceptualization (Carroll, von Stutterheim & Nüse, 2004; von Stutterheim, Nüse & Murcia-Serra, 2002), that is, differences in which information is considered relevant for expression, also referred to as "thinking for speaking" (Slobin, 1996a). One area of intense focus has been the expression of motion, particularly the expression of Path, which varies robustly across languages (Slobin, 1996b; Talmy, 1991, 2000). Here, typological differences in lexicalization patterns have been argued to have consequences for event construal, or differences in what information is verbalized (von Stutterheim & Nüse, 2003).

Cross-linguistic differences in linguistic conceptualization pose a challenge for second language acquisition (SLA). Traditionally, the field of SLA queries the acquisition of form but does not necessarily probe the extent to which linguistic conceptualizations are reorganized. Studies that have addressed the issue generally find that linguistic conceptualization is resistant to restructuring in the second language (L2), using evidence of preserved first language (L1) conceptualizations (e.g., Carroll & von Stutterheim, 2003). Such evidence, however, typically assumes that the L1 is a static entity and portrays the relationship between the L1 and the L2 as unilateral, without asking whether and to what extent the systems interact and whether the L1 itself may develop or change.

The current study tackles the problem of the restructuring of event conceptualization in SLA. It is part of a larger research enterprise examining bidirectional cross-linguistic influence in the expression of motion in both L1 and L2 production as compared to monolingual production. The current study looks specifically at the expression of Path. We explore patterns of lexicalization and probe their effects on event construal by focusing on different components of a trajectory: Source, Via and Goal Paths. Crucially, we compare the same speakers performing in both the L1 and the L2 to ascertain whether the languages influence each other. We argue for the potential for restructuring, even at modest levels

* This research received technical and financial support from the Max Planck Institute for Psycholinguistics and the Nederlandse Organisatie voor Wetenschappelijk Onderzoek (NWO; MPI 56–384, The Dynamics of Multilingual Processing, awarded to M. Gullberg and P. Indefrey). Riko Yasunaga and Erio Higashida provided assistance with transcriptions and coding. Three anonymous reviewers offered helpful comments and suggestions on a previous version of this article. All of these contributions are acknowledged with grateful thanks.

Address for correspondence:
Amanda Brown, Department of Languages, Literatures, and Linguistics, Syracuse University, Syracuse, NY 13244, USA
abrown08@syr.edu

of proficiency in an L2, by drawing on data which suggest that L1 patterns guide construal in the L2 but also that L2 patterns may subtly and simultaneously shape construal in the L1 within an individual learner. Therefore, even if target-like patterns are not achieved in the L2, restructuring may occur as a consequence of an underlying gradual convergence between the L1 and L2 systems. These findings have implications for the traditional view of the L1 as an invariably stable benchmark and for our understanding of the nature of the relationship between established and emerging languages within the multilingual[1] mind.

2. Background

2.1 Typological expression of Path

Path of motion is defined as the trajectory taken by a "Figure", the object undergoing translocational motion, which moves with respect to a "Ground", the reference object for the Figure (Talmy 1985). Talmy (1991) divided languages into two groups, satellite- versus verb-framed, based on their framing of Path. "Satellite-framed" languages, for example English, lexicalize the core trajectory in satellites or verb particles, as exemplified in (1) with the Path elements underlined. Since the inception of the original framework, such elements have been expanded to include adpositional phrases (Talmy, 2000). In contrast, "verb-framed" languages, for example Japanese, lexicalize Path in the verb root, as illustrated in (2).

(1) *The ball rolls down.*

(2) *Tama-ga* *mawari-nagara* *oriru*
Ball-NOM rotate-while descend[2]
"While rotating, the ball descends."

Although the typology reflects characteristic preferences in a language, there are alternative options for Path lexicalization in both satellite-framed and verb-framed languages. In addition to the preponderance of satellites and prepositions, English, for example, possesses a number of Latinate Path verbs such as *descend*, *ascend*, etc. Japanese, in parallel, possesses a number of frequent alternative options for Path expression besides simple main verbs – postpositions, compound verbs and complex motion predicates. Yet while the dichotomy may be a simplification (see Slobin (2004b), for example, for a discussion of equipollently framed languages), numerous studies have provided empirical support for this basic typological division (e.g., papers in Strömqvist & Verhoeven, 2004).

2.2 Event conceptualization of Path

It has been suggested that the fundamental cross-linguistic differences in lexicalization patterns have consequences for how events are construed or linguistically conceptualized, that is, for what information speakers of a particular language consider as relevant and therefore select for expression. Berman and Slobin (1994) suggested that:

> frequent use of [linguistic] forms directs attention to their functions, perhaps even making those functions (semantic and discursive) especially salient on the conceptual level. That is, by accessing a form frequently, one is also directed to the conceptual content expressed by that form. (Berman & Slobin, 1994, p. 640)

In later articulation of this line of thought, Slobin claimed that "typology predisposes speakers towards certain types of *construal* or *conceptualization* of events" (Slobin, 2004a, p. 197). Unlike claims regarding linguistic relativity or the relationship between the language one speaks and general cognition (Lucy, 1992), Slobin's claim is restricted to the domain of linguistic cognition in a process he describes as "thinking for speaking" (Slobin, 1996a). In other words, speakers are expected typically to attend to the aspects of an event that their language has the readily available and commonly used linguistic means to express.

Over time, this habitual attention is predicted to lead to certain rhetorical styles. In research on motion events, one line of investigation has focused on the extent to which the Manner in which a protagonist moves is explicitly encoded (Slobin, 1996b; Talmy, 1985, 1991; inter alia). However, another fruitful avenue has examined the degree of granularity and tightness of packaging in the expression of Path. For instance, Slobin (2004a) describes how speakers of satellite-framed languages decompose motion events and mention more Path segments overall than speakers of verb-framed languages do. He found that English texts often include more Path segments per individual clause than Spanish texts (Slobin, 1996b). He argues that because satellite-framing generally locates Path outside the verb root, Path elements (i.e., adverbials such as verb particles and adpositional phrases introducing Ground information) can be stacked within a clause, often generating more extensive Path descriptions. In contrast, with Path located in the verb, verb-framing typically requires separate verb clauses for each Path component, which may lead to less information about Path overall.

2.3 Expression of Path and event conceptualization in Japanese and English

As part of a larger research project exploring bidirectional cross-linguistic influence, a preliminary benchmark study

[1] We use the term "multilingual" to refer to speakers with knowledge of more than one language regardless of the level of formal proficiency.

[2] Abbreviations used in examples are ACC = accusative case, GEN = genitive case, NOM = nominative case; CON = connector, TOP = topic marker.

on Path expression in native Japanese and English both confirmed and challenged established typological differences (Brown & Gullberg, 2010). In line with previous research, Japanese speakers were found to lexicalize Path primarily in a wide range of verbs, whereas English speakers lexicalized Path primarily in a wide range of adverbials. However, the range of morphosyntactic devices uniquely available in Japanese for expression of Path, that is postpositions, compound verbs and complex motion predicates, licensed greater stacking of Path expressions in the verb clause than typically predicted for other verb-framed languages, as shown in (3) (although see Ibarretxe-Antunano (2004) for a similar phenomenon in Basque). Indeed, Japanese speakers stacked significantly more Path expressions per clause than speakers of English.

(3) soto kara ue ni agatte itte
outside from up to rise.CON go.CON
"(It) goes up from the outside"

This example illustrates several kinds of Path expression: the complex motion predicate, consisting of a participial verb form with a deictic verb (cf. Mastumoto, 1996), *agatte itte* "go rising", a combination of *agaru* "rise" and the deictic verb *iku* "go", and two postpositions, *kara* "from", *ni* "to".

Such accumulation of Path expressions warranted further investigation in the current study because, in addition to cross-linguistic variations in lexicalization, there are also variations in the semantic–conceptual elements that these resources cover. Both verbs and adverbials in English can express Source of Path, e.g., *leave*/*from*, and Goal of Path, e.g., *arrive/to*, as well as Via Paths, where a Figure moves past a reference object (Lakusta & Landau, 2005), e.g., *descend/down*. In Japanese, on the other hand, while verbs can encode all Path elements, e.g., *shuppatsu-suru* "depart", *tadoritsuku* "arrive" and *tsutau* "go.along", adverbials encode only Source, e.g., *kara* "from", or Goal, e.g., *made* "until/to" (see Inagaki (2002b) for a discussion of Goal expressions in Japanese).[3] Thus, one question this study addresses is whether, depending on the morphosyntactic resource employed, monolingual speakers of Japanese and English display differing event construals with respect to selective encoding of different aspects of Paths. Assuming a difference in this monolingual baseline, a second question is how second language learners reconcile such a difference in their L2 but also in their L1.

[3] We exclude constructions with spatial nouns such as *yama-o noboru* "climb/ascend the mountain", where *o*, typically an accusative case marker, potentially functions as an adverbial signaling translocation, for reasons laid out in section 4.4.

2.4 Expression of Path and event conceptualization in a second language

Cross-linguistic differences in surface forms and accompanying linguistic conceptualizations raise potential problems for L2 learners. To be target-like, they need to acquire not only novel linguistic forms to be mapped onto L1 meanings but also to learn to select different types of information for expression and to package them in appropriate ways. There is evidence that learners continue to rely on event construals typical of the L1 when speaking the L2, even at advanced levels of L2 proficiency (e.g., Carroll & Lambert, 2003; Carroll & von Stutterheim, 2003; for overviews, see Jarvis & Pavlenko, 2008; Odlin 2005). These phenomena can be observed in the expression of Path.

Inagaki (2001), for example, found that even advanced-level English-speaking learners of Japanese incorrectly accepted ungrammatical combinations of Manner verbs with directional prepositional phrases in their L2, constructions that are grammatical in the L1. Likewise, Cadierno and Ruiz (2006), comparing Danish (satellite-framed) and Italian (verb-framed) learners of Spanish (verb-framed), showed that Danish learners of Spanish displayed more structural inaccuracies and a greater number of Ground phrases per verb, all traceable to the L1, than Italian learners of Spanish. (See also Cadierno, 2004; Choi & Lantolf, 2008; Inagaki, 2002a; Navarro & Nicoladis, 2005; Negueruela, Lantolf, Jordan, and Gelabert, 2004; and Stam, 2006, for similar findings.)

The expression of Path in an L2, then, seems to be characterized by L1 transfer. Studies suggest a limited capacity for the reorganization of linguistic conceptualization, with habitual patterns for event construal in the L1 constraining and guiding event construal in an L2. Yet L1 transfer is not the only phenomenon at work. There may also be general learner effects. In a longitudinal case study of an adult Spanish-speaking learner of French, Giacobbe (1992) found significant L2 use of adverbials to express Path. However, since both Spanish and French are verb-framed languages, adverbial use was a prominent feature of neither the source nor target language. Similarly, in Cadierno and Ruiz (2006), both Danish and Italian learners elaborated Path in a redundant way in their L2, Spanish, by adding directional Path adverbs to verbs already encoding Path semantics. This can be likened to an L1 developmental pattern, also characterized by redundant encoding of Path (Berman & Slobin, 1994), suggesting that increased use of satellites in learner production may be a general feature of language development.

On the one hand, evidence from L2 data indicates that linguistic conceptualization is resistant to restructuring even at high levels of proficiency, as shown by the

L1 transfer effects. On the other hand, there is data implying that construal of Path may also be subject to general learner effects, that construal may be restructured, but not necessarily in a target-like way. Furthermore, there is tentative evidence that the L2 affects the L1 in this domain. In the preliminary study, Brown and Gullberg (2010) found that the aforementioned stacking of Path expressions in Japanese discourse appeared more prominent among Japanese speakers with knowledge of English than among monolingual Japanese speakers. These data suggest that the restructuring of linguistic conceptualization may be possible even in the L1.

3. The current study

This study aims to investigate bidirectional cross-linguistic influence in the domain of Path expression within the same group of speakers in order to assess the learner potential for the restructuring of linguistic conceptualizations. As Japanese and English differ typologically in this arena, we observe the expression of Path in production by monolingual speakers of Japanese, a verb-framed language, and English, a satellite-framed language, as well as production by native Japanese speakers with knowledge of English in their L1 and L2.

In previous analyses, we have shown that native Japanese speakers lexicalize Path in the verb, whereas native English speakers use adverbials (Brown & Gullberg, 2010). Furthermore, we have shown that native Japanese speakers also use adverbials, which can be stacked within the clause, but that this pattern appears to be more prevalent in Japanese speakers with knowledge of English as opposed to monolingual speakers of Japanese. In new analyses, we add data from L2 production to allow within-subject comparisons of Japanese speakers with knowledge of English performing both in their L1 and their L2, and, as a window on linguistic conceptualization, we also examine how monolingual and bilingual speakers of Japanese and English encode different aspects of Path.

On the basis of previous research on L2 discourse, we expect to find evidence of an influence of the L1 on the L2 reflected in the use of a combination of verbs and adverbials to lexicalize Path in the L2, English. Based on preliminary indications of subtle shifts in the L1 in this domain, we predict similarities in L1 and L2 lexicalization of Path within individuals, i.e., use of verbs and adverbials. Given the differences in the mapping of Path semantics onto adverbials in particular in English and Japanese, we explore the possibility of potentially altered linguistic conceptualizations arising from cross-linguistic influence in lexicalization patterns by comparing mentions of Source, Via and Goal Paths.

4. Method

4.1 Participants

Fifty-seven adults aged 18 to 48 participated in this study: 16 monolingual speakers of Japanese resident in Japan (Japanese-only), 13 monolingual speakers of English resident in the USA (English-only), 15 native Japanese speakers with knowledge of English resident in Japan (Japanese–English [Japan]) and 13 native Japanese speakers with knowledge of English resident in the USA (Japanese–English [USA]).

Biographical information and information on general language usage was obtained using a detailed questionnaire (Gullberg & Indefrey, 2003). The "monolingual" speakers of each language were of course not truly monolingual, but had had less exposure to an L2, were not engaged in active study of an L2 and did not use an L2 in their everyday lives; "minimally bilingual" in Cook's terms (2003, p. 14). In contrast, all Japanese–English speakers actively used their L2. However, the Japanese–English [Japan] speakers had never lived in an English-speaking country, whereas their counterparts in the US had been residents for between one and two years. This contrast in residence controlled for effects of L1 loss. Bidirectional cross-linguistic influence seen only in the production of participants in the USA might be explained by attrition of the L1 due to residence in the L2 community. However, similar patterns in both groups would render such an explanation less likely.

Three separate measurements of learners' knowledge of English were taken to ensure uniform proficiency in the L2. Participants rated their own proficiency in speaking, listening, writing, reading, grammar and pronunciation. They also completed the first grammar section of the Oxford Placement Test (Allan, 1992). Finally, oral proficiency was evaluated using the University of Cambridge Local Examinations Syndicate (UCLES) oral testing criteria for the first certificate in English (FCE).[4] The criteria were applied to the narrative data elicited as part of the study, i.e., descriptions of the Canary Row cartoon stimulus (Freleng, 1950). Two Cambridge-certified examiners scored grammar and vocabulary, discourse management, pronunciation and global achievement.

According to all measures, the Japanese–English speakers were within intermediate range. The Japanese–English [Japan] speakers did not significantly differ in proficiency from the Japanese–English [USA] speakers as measured by self-ratings ($t(26) = -1.222$, $p = .233$) or the Oxford Placement Test ($t(25) = .795$, $p = .434$), and only marginally differed in proficiency as measured by the Cambridge FCE criteria ($t(26) = 1.982$, $p = .058$),

[4] More information can be found at http://www.cambridgeesol.org.

Table 1. *Summary of language usage/proficiency data.*

Language background	Japanese-only ($N = 16$)	Japanese–English (Japan) ($N = 15$)	Japanese–English (USA) ($N = 13$)	English-only ($N = 13$)
Mean age	38 (range 34–44)	36 (range 19–47)	30 (range 21–45)	27 (range 18–48)
Mean AoE[a]: English	12.3 (range 7–14)	11.9 (range 9–13)	12.8 (range 12–14)	Birth
Mean usage[b]: English	NA	3 hrs (range 0.5–8.5)	6 hrs (range 1–12)	NA
Mean self-rating[c]: English	1.35 (range 1–2.5)	2.97 (range 2–4.17)	3.27 (range 1.8–4.33)	NA
Mean Oxford Score	NA	78% (range 60–88%)	75% (range 58–85%)	NA
Mean FCE[d] Score	NA	4.27/5 (range 2–5)	3.69/5 (range 2.3–5)	NA

NOTES: [a] age of exposure
[b] hours of current usage per day
[c] a composite score of individual skill scores
[d] Cambridge First Certificate in English

with the Japanese–English [Japan] speakers unexpectedly scoring slightly higher than the Japanese–English [USA] speakers.

Table 1 summarizes participants' language usage and English proficiency data.

4.2 Stimuli

Motion descriptions were elicited by narrative retellings of the Canary Row cartoon (Freleng, 1950), which depicts Sylvester the cat's repeated but failed attempts to catch Tweety the bird. Following McNeill (1992), the cartoon was broken down and shown in scenes, separated by a blank screen, in order to increase the likelihood of mention of individual motion events. Two different sequences were constructed, which maintained the first and last scenes in first and last position. Participants were shown one of the two sequences to control for the effects of participant fatigue on the description of any one scene. The stimuli contained numerous motion events. Four of these, which contained different Path trajectories and were consistently described by participants, were selected for analysis, yielding the following Paths: climb THROUGH, roll DOWN, clamber UP, swing ACROSS.

4.3 Procedure

Monolingual participants narrated in their L1. Japanese–English speakers produced narratives in their L1 and L2. The language order was counterbalanced across participants with a minimum of three days between appointments. This minimized the likelihood of both the L1 and L2 being fully active at the same time, controlling for the effects of "language mode" (Grosjean, 1998, p. 132).

Depending on the language of the retelling, participants interacted with either a native English- or native Japanese-speaking confederate. The participant and experimenter engaged in a brief warm-up in the target language, consisting of small talk, in order to establish and sustain a "monolingual mode". Then the experimenter instructed participants to watch the series of animated scenes from Canary Row on a computer screen and describe each one immediately after viewing to the interlocutor in as much detail as they could remember. The confederate was trained to appear fully engaged in participant narratives, but to avoid asking questions and crucially to avoid supplying the target Path.

Prior to elicitation of narratives in the L2, participants were given a word list containing key nouns from each scene. This word list remained within view throughout the experiment, and participants were free to consult it at any time. The list provided low-frequency nouns previously identified as difficult in the L2 (e.g., *birdcage*, *trolley*) in order to minimize participant requests for lexical assistance. The list also served as a memory trigger in case participants forgot the events in a given scene.

4.4 Segmentation and coding

Narratives were transcribed from digital video by a native speaker of the relevant language. The framework developed by Berman and Slobin (1994) for the linear

segmentation of spontaneous speech was adopted; therefore, descriptions were divided into "clauses", defined as "any unit that contains a unified predicate . . . (expressing) a single situation (activity, event, state)" (p. 660). Next, clauses describing the four target motion events were identified and coded for the expression of Path.

Following previous studies (e.g., Kita & Özyürek, 2003; Slobin, 1996b, 1997, 2004b; Weingold, 1995), all lexical elements encoding information about the trajectory followed by the protagonist were coded as Path, including adpositional phrases indicating the specific direction with respect to a reference object and deictic verbs indicating the direction with respect to the speaker. Spatial nouns indicating locations were not included in the coding of trajectory, e.g., *rolled on the street, saka-o korogatte* "rolled on the hill". An additional level of coding distinguished Source, Goal and Via Paths.

Furthermore, several language-specific guidelines were employed (cf. Brown & Gullberg, 2010). Compound verbs in Japanese containing more than one motion component, e.g., *toori-nukeru* "go.through∼go.through", were divided, and each Path component was coded separately. Complex motion predicates, e.g., *agatte iku* "go rising", were treated similarly. Following Kita's (1999) claim that the Japanese verbs *hairu* "enter'" and *deru* "exit" in their bare forms express discrete changes of state without motion semantics, these verbs were not coded as motion verbs unless they were combined with *kuru* "come" or *iku* "go" as auxiliaries or adpositional phrases such as *ni* "to" (see Tsujimura (2002) for an alternative analysis of Japanese enter and exit verbs). In English, *in*, *into* or *inside* were coded as Path if used adverbially to express motion, e.g., *went in/inside/into*, and not location, e.g., *be in/inside*.

Examples of clause segmentation and coding in descriptions of the "swing ACROSS" event in Japanese and English appear in (4) and (5), with clause boundaries marked by brackets and Path expressions underlined.

(4) [*jibun-no ie kara tori-no tokoro ni tonde ikouto*]
own-GEN house from bird-GEN place to fly.CON try.to.go
"tried to go flying from his own house to the bird's place"

(5) [*he's just going to swing across into the window from one building to the next*]

Example (4) from Japanese contains three Path expressions: a verb embedded in a complex motion predicate, *iku* "go", and two adverbials, *jibun-no ie kara* "from his own house" and *tori-no tokoro ni* "to the bird's place". Here, all components of Path are expressed within the clause: Source, Via and Goal. Example (5) from English contains four adverbial Path expressions: *across*, *into*, *from* and *to*. Again, all components of Path are expressed within the clause.

Segmentation and coding of L2 data presented some challenges. L2 data, especially at this level of proficiency, is characterized by numerous false starts, repetitions and unclear semantics; therefore it is difficult to segment into clauses, identify as relevant for a given motion event and code for semantic representation. An example clause from a learner of English describing the 'roll DOWN' event is given in (6):

(6) [*there was sucked into the ah the cat sucked into the bowling center*]

In example (6), the first five words were treated as a false start and were not included in the clause proper, which was determined to begin at *the cat* as the subject of the clause that followed. An alternative possibility would have been to treat the noun phrase *the cat* as part of an initial passive construction *was sucked,* and then a new clause, without an overt subject, initiated at the second instance of the verb. This would have resulted in two clauses. This example is complicated by the fact that the verb *suck* is not an appropriate description for the cat rolling into the bowling alley. In general, in cases where at least parts of a preceding phrase were repeated, the first phrase was treated as a false start and maintained as part of the main clause.

4.5 Reliability of coding

To establish reliability of data coding, 15% of the entire dataset was segmented and coded by a second coder. For L1 data, 95% agreement was reached on the selection of relevant clauses for coding and, of these, 100% agreement was reached on semantic coding. For L2 data, 90% agreement was reached on the selection of relevant verb clauses for coding and, of these, 100% agreement was reached on semantic coding. Disagreements were settled by accepting the judgment of the initial coder.

4.6 Analysis

The earlier study reports on a portion of the L1 data (monolingual English, monolingual Japanese and non-monolingual Japanese) targeting the lexical repertoire of Path expressions and the extent to which Path expressions in general were stacked within the clause (Brown & Gullberg, 2010). This follow-up study adds a new dataset of L2 production as well as new analyses of L1 production (a) to enable between-subject analyses of learner L2 as compared to source and target language production, (b) to enable within-subject comparisons of learner production in the L2 and L1 and (c) to investigate the expression of particular aspects of Path in all language groups. Three

main analyses are presented. First, we describe the lexical types used to encode Path among monolingual speakers as compared to the learner groups in their L1 and L2. Two possible morphosyntactic categories are distinguished in this analysis: verbal and adverbial expressions of Path. Second, we determine the quantitative distribution of Path verbs and adverbials within the verb clause across and within monolingual and learner groups. Third, we compute the number of Source, Via and Goal Path expressions per clause across and within monolingual and learner groups.

Repetitions, particularly in the L2 data, caused difficulty for quantitative analyses. An example of a clause from a learner of English describing the "climb THROUGH" event is given in (7).

(7) [*This time he she tried climbing up to the room ah through the drainpipe ah along the wa mmm ah mmm through the drainpipe*]

This is a crucial example that could impact analyses because the locus of disfluency is exactly in the part of the clause that describes the relevant motion, i.e., *climbing through the drainpipe*. Here, all instances of Path expression could have been analyzed: *up, to, through, along* and *through.* In reality, though, use of the word *along* appears to have been abandoned as it is followed by substantial hesitation and a restatement of the original *through*. In order to be maximally conservative in cases such as these, only a non-abandoned expression and only one instance of an exact repetition was counted, in this case use of *up, to* and *through.*

In the quantitative analyses, the Japanese–English [Japan] speakers were compared to their counterparts resident in the USA. If no differences were found between them, the data were collapsed to form a single group of Japanese–English speakers. Non-parametric equivalents of ANOVA, Independent-Sample and Paired-Sample T-Tests, were used, namely Kruskal–Wallis for multiple group analyses, Mann–Whitney for between group analyses and Wilcoxon for repeated-measures analyses.

5. Results

5.1 Lexical types for Path expression

Table 2 shows the number of verbal and adverbial Path types used by monolingual Japanese speakers, Japanese–English [Japan] [USA] speakers in their L1 and L2 and monolingual English speakers (the lexical items themselves are listed in the Appendix). Here, descriptions of all four motion events are combined.

Descriptively, all groups employed both verbs and adverbials to lexicalize Path. As previously shown (Brown & Gullberg, 2010), a cross-linguistic difference is clearly visible in the monolingual baseline. Japanese-only speakers employed a greater number of verb than adverbial types, whereas English-only speakers displayed the reverse pattern. In their L1, Japanese–English speakers resembled their monolingual counterparts with comparable numbers of verb and adverbial types. However, in the current analyses of L2 production, these same learners showed roughly equal lexical diversity in verbs and adverbials. In this sense, they occupied a middle position between the monolingual Japanese source and the monolingual English target. There were also some cases of learner-specific production, for instance, use of adverbials as verbs, as example (8) shows.

Table 2. *Number of lexical types used for Path expression.*

Group	# Path verb types	# Path adverbial types
Japanese-only ($N = 16$)	17	4
Japanese–English (Japan) in L1 ($N = 15$)	19	4
Japanese–English (USA) in L1 ($N = 13$)	16	5
Japanese–English (Japan) in L2 ($N = 15$)	11	12
Japanese–English (USA) in L2 ($N = 13$)	8	10
English-only ($N = 13$)	3	16

(8) [*and he throughed inside the drainpipe*]

Such examples, i.e., use of the adverbial *through* as a verb to indicate trajectory, were coded as Path and are extremely interesting as they suggest learner attempts to fit target language lexical items into source language discourse frames, which may indicate cross-linguistic influence of the L1 on the L2.

5.2 Distribution of Path verbs and adverbials within the clause

As examples (9) and (10) show, Path verbs and adverbials were combined within a single clause in Japanese and English. Multiple adverbials were also stacked within a clause in each language as illustrated in (11) and (12). Finally, example (13) demonstrates that Japanese allows the stacking of verbs in compound or complex predicate constructions, but English typically does not, although learners occasionally tried to do this in L2 production, as shown in (14).

Table 3. *Mean number (SD) of Path verbs per clause in all clauses containing Path.*

Group	# Path verbs
Japanese-only ($N = 16$)	1.23 (.20)
Japanese–English in L1 ($N = 28$)	1.23 (.16)
Japanese–English in L2 ($N = 28$)	.63 (.24)
English-only ($N = 13$)	.28 (.19)

Table 4. *Mean number (SD) of Path adverbials per clause in all clauses containing Path.*

Group	# Path adverbials
Japanese-only ($N = 16$)	.59 (.20)
Japanese–English in L1 ($N = 28$)	.77 (.28)
Japanese–English in L2 ($N = 28$)	1.05 (.40)
English-only ($N = 13$)	1.28 (.22)

(9) [*ue made agatte*]
up to rise.CON
"(it) went up"

(10) [*he's going up there*]

(11) [*tatemono-no mado kara mado*
building-GEN window from window
made taazan-no youni tonde]
to Tarzan-GEN resemble fly.CON
"(it) flew from the building of one window to a window like Tarzan"

(12) [*he starts rolling down the street into a bowling alley*]

(13) [*neko-ga agatte kuru*]
cat-NOM rise.CON come
"the cat came up"

(14) [*the cat goes enter the bowling center*]

In the analysis of the use and distribution of lexical resources, we calculated the number of Path verbs versus adverbials per clause. Table 3 shows the mean number of verbs expressing Path per clause in all clauses containing Path information in Japanese-only, English-only and Japanese–English discourse in the L1 and in the L2. There was no significant difference between the Japanese–English speakers in Japan versus the USA in the L1 ($z = -1.322$, $p = .186$) or in the L2 ($z = -.324$, $p = .746$). The groups were therefore collapsed across residence.

In the preliminary study of the L1 (Brown & Gullberg, 2010), English-only speakers produced fewer Path verbs per clause than both Japanese-only and Japanese–English speakers in their L1, with no difference between Japanese-only and Japanese–English speakers in their L1. The new analysis shows that Japanese-only, English-only and Japanese–English speakers performing in their L2, English, differed significantly in the mean number of Path verbs per clause (χ^2 (2, $N = 57$) = 40.930, $p < .001$). Specifically, Japanese–English speakers in their L2, English, produced significantly fewer Path verbs per clause than Japanese-only speakers ($z = -5.337$, $p < .001$), but significantly more than English-only speakers ($z = -3.886$, $p < .001$). A further within-subject analysis revealed that Japanese–English speakers produced significantly more Path verbs per clause in their L1 than in their L2 ($z = -4.623$, $p < .001$).

Table 4 shows the mean number of adverbials expressing Path per clause in all clauses containing Path information in all groups. There was no significant difference between the Japanese–English speakers resident in Japan versus the USA in the L1 ($z = -.278$, $p = .781$) or in the L2 ($z = -.947$, $p = .344$). Thus, the groups were collapsed across residence.

Again, previous analyses of the L1 have indicated that English-only speakers produced more Path adverbials per clause than Japanese–English speakers in their L1, Japanese, who in turn produced more Path adverbials per clause than Japanese-only speakers (Brown & Gullberg, 2010). In the current analysis, Japanese-only, English-only and Japanese–English speakers performing in their L2, English, also differed significantly in mean number of Path adverbials per clause (χ^2 (2, $N = 57$) = 25.543, $p < .001$). Here, Japanese–English speakers in their L2, English, produced significantly more Path adverbials per clause than Japanese-only speakers ($z = -3.921$, $p < .001$), but significantly fewer than English-only speakers ($z = -1.996$, $p = .046$). The within-subject analysis revealed that Japanese–English speakers produced significantly more adverbials per clause in their L2 than in their L1 ($z = -2.934$, $p = .003$).

In sum, analyses of the distribution of morphosyntactic resources within the verb clause revealed both between- and within-language differences. As previously reported, there was a clear monolingual baseline difference in this domain with more verbs per clause in monolingual Japanese discourse and more adverbials per clause in monolingual English discourse. Differences in verb use between learner and monolingual production were restricted to L2 production; that is, learners in their L2 produced more verbs than monolingual English speakers but fewer than monolingual Japanese speakers. This suggests influence of the L1 on the L2 for verb use. However, as both the current and previous analyses demonstrate, differences in adverbial use between learner and monolingual production affected both the L2, English, and the L1, Japanese. Here, Japanese–English speakers, both in their L1 and L2, employed more adverbials

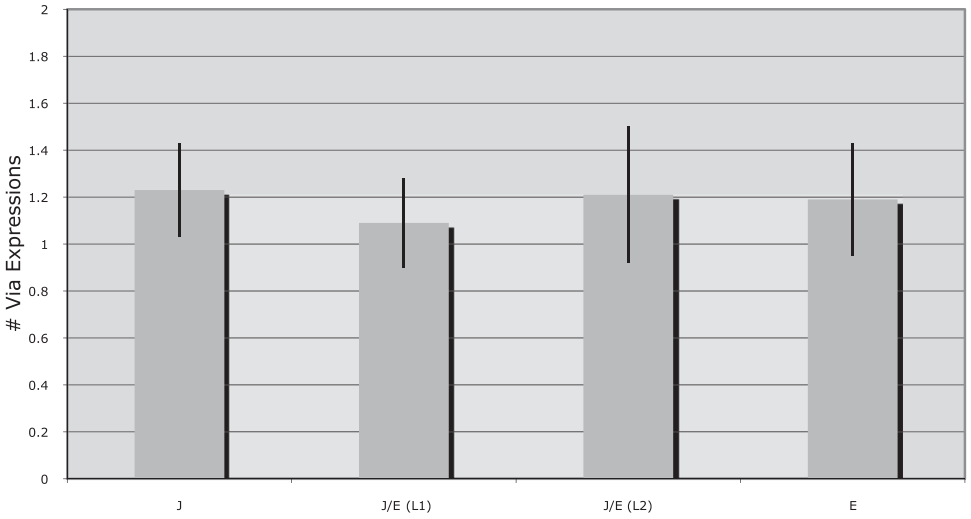

Figure 1. Mean number of Via Path expressions per clause in all clauses containing Path: J (Japanese-only speakers), J/E (L1) (Japanese–English speakers: L1 production), J/E (L2) (Japanese–English speakers: L2 production) E (English-only speakers).

than monolingual Japanese speakers, but fewer than monolingual English speakers. This suggests influence of the L1 on the L2 but also influence of the L2 on the L1 for adverbial use, implying a possible gradual convergence between the L1 and L2 systems. Although effects of the L1 on the L2 in general appear much stronger than effects in the reverse direction in these analyses, any effect at all of the L2 on the L1 is rather striking given the participants' level of proficiency in the L2.

5.3 Encoding of different Path components

In the final analysis, we examined the encoding of different Path components by calculating the number of Via, Source and Goal Path expressions in the verb clause. Examples (15) to (19) illustrate with data from Japanese and English.

(15) [*mukougawa-no tatemono ni mado kara* opposite.side.GEN building to window from *jyanpu-shite*]
jump-do.CON
"(it) jumped from the window to the opposite building"

(16) [*he tried to fly with a rope from his room to the bird's room*]

(17) [*mado-no tokoro made itte*]
window-GEN place to go-CON
"(it) went to the window"

(18) [*tried to get over to Tweety's window*]

(19) [*he reached to the building*]

This particular dataset contained expressions of Goal Paths in verbs and adverbials and expressions of Source Paths in adverbials but not verbs. Examples (15) and (16) illustrate adverbial use for Source and Goal in Japanese (*kara* "from" and *ni* "to") and English (*from* and *to*). Examples (17) and (18) demonstrate combinations of verbs and adverbials to encode Goal and Via Path in Japanese (*made* "until/to" and *iku* "go") and English (*get*, *to* and *over*). Finally, there were instances of non-target-like production in the L2 data, exemplified in (19), (*reach to the building*), where both *reach* and *to* were included as they appeared to indicate a double marking of Goal.

Figure 1 shows the mean number of Via Path expressions per clause in all clauses containing Path information in Japanese-only, English-only and Japanese–English discourse in the L1 and in the L2. There was no significant difference between the Japanese–English speakers resident in Japan versus the USA in the L1 ($z = -.808$, $p = .419$) or in the L2 ($z = -1.572$, $p = .116$). Hence the groups were collapsed across residence.

For ease of presentation, Figure 1 collapses three main analyses. The first analysis found no significant difference between groups (Japanese-only speakers, English-only speakers and Japanese–English speakers performing in their L1, Japanese), in the mean number of Via Path expressions per clause (χ^2 (2, $N = 57$) = 4.126, $p = .127$). The second analysis also found no significant difference between groups (Japanese-only speakers, English-only speakers and Japanese–English speakers performing in their L2, English) in the mean number of Via Path expressions per clause (χ^2 (2, $N = 57$) = .224, $p = .894$). The third within-subject analysis again revealed no significant difference in production of Via Path expressions by Japanese–English speakers in their L1 and their L2 ($z = -1.575$, $p = .115$).

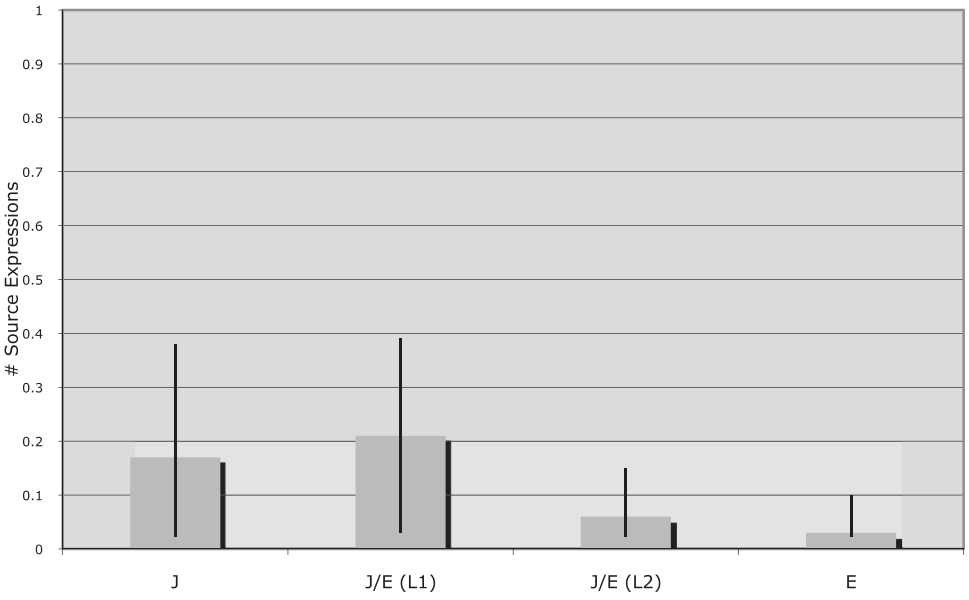

Figure 2. Mean number of Source Path expressions per clause in all clauses containing Path: J (Japanese-only speakers), J/E (L1) (Japanese–English speakers: L1 production), J/E (L2) (Japanese–English speakers: L2 production) E (English-only speakers).

Figure 2 shows the mean number of Source Path expressions per clause in all clauses containing Path information in all groups. As before, there was no significant difference between the Japanese–English speakers resident in Japan versus the USA in the L1 ($z = –.810$, $p = .418$) or in the L2 ($z = –.501$, $p = .616$), so the groups were collapsed.

In the first analysis presented in Figure 2, Japanese-only speakers, English-only speakers and Japanese–English speakers performing in their L1, Japanese, differed significantly in the mean number of Source expressions per clause (χ^2 (2, $N = 57$) = 11.463, $p = .003$). English-only speakers produced marginally fewer Source expressions per clause than Japanese-only speakers ($z = –1.845$, $p = .065$) but significantly fewer than Japanese–English speakers in their L1, Japanese, ($z = –3.570$, $p < .001$). Within Japanese, there was no significant difference between Japanese-only and Japanese–English speakers ($z = –1.018$, $p = .309$). The second analysis found no significant difference between groups (Japanese-only speakers, English-only speakers and Japanese–English speakers performing in their L2, English) in the mean number of Source expressions per clause (χ^2 (2, $N = 57$) = 4.155, $p = .125$). The third within-subject analysis revealed that Japanese–English speakers produced significantly more Source expressions per clause in their L1 than in their L2 ($z = –3.743$, $p < .001$).

Figure 3 shows the mean number of Goal Path expressions per clause in all clauses containing Path information in all groups. Once more, there was no significant difference between the Japanese–English speakers resident in Japan versus the USA in the L1 ($z = –.692$, $p = .489$) or in the L2 ($z = –.439$, $p = .660$); therefore, one group was formed.

In the first analysis presented in Figure 3, Japanese-only speakers, English-only speakers and Japanese–English speakers performing in their L1, Japanese, differed significantly in the mean number of Goal expressions per clause (χ^2 (2, $N = 57$) = 8.660, $p = .013$). Japanese–English speakers in their L1, Japanese, produced significantly more Goal expressions per clause than both Japanese-only ($z = –2.410$, $p = .016$) and English-only speakers ($z = –2.328$, $p = .020$), who did not significantly differ from each other ($z = –.862$, $p = .389$). In the second analysis, Japanese-only speakers, English-only speakers and Japanese–English speakers performing in their L2, English, differed significantly in the mean number of Goal expressions per clause (χ^2 (2, $N = 57$) = 6.717, $p = .035$). Japanese–English speakers in their L2, English, produced significantly more Goal expressions per clause than both Japanese-only ($z = –1.989$, $p = .047$) and English-only speakers ($z = –2.152$, $p = .031$). Finally, the third analysis showed that Japanese–English speakers did not differ in the number of Goal expressions used per clause whether performing in the L1 or the L2 ($z = –.584$, $p = .559$).

The analyses of expressions of different components of Path revealed fewer between-language and more within-language differences. Looking first at the monolinguals, despite the difference in possibilities for lexicalization of Via Path, i.e., encoding in verbs in Japanese and both verbs

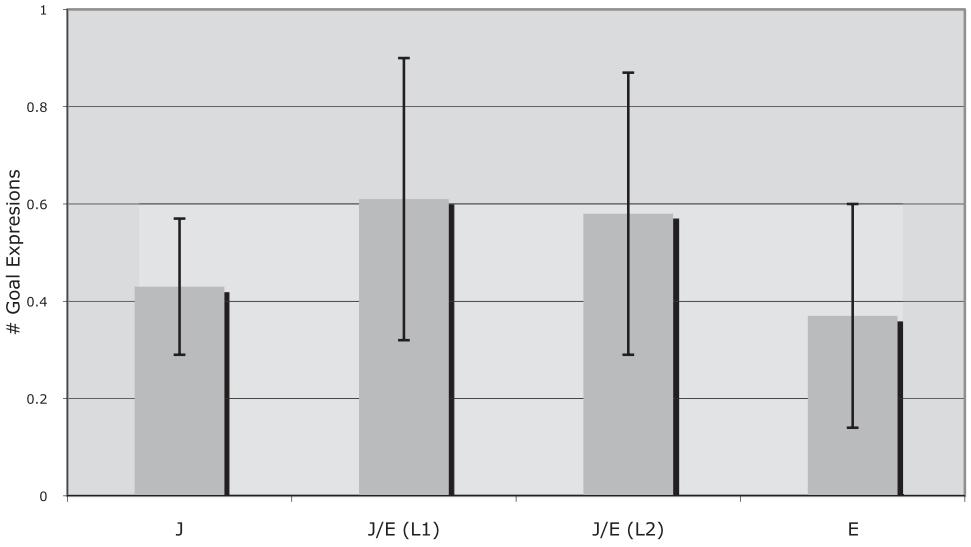

Figure 3. Mean number of Goal Path expressions per clause in all clauses containing Path: J (Japanese-only speakers), J/E (L1) (Japanese–English speakers: L1 production), J/E (L2) (Japanese–English speakers: L2 production) E (English-only speakers).

and adverbials in English, there was no cross-linguistic difference in the number of Via Path expressions within the clause. Further, there was only a marginal difference between monolingual Japanese and monolingual English speakers in the number of Source expressions and no difference at all in the number of Goal expressions. Thus, regardless of the different morphosyntactic resources used, monolingual speakers of each language gave Via, Goal and to some extent Source Paths comparable weight within the clause.

In contrast, native Japanese speakers with knowledge of English patterned somewhat differently. This difference was less visible with respect to the expression of Source, where distributions were somewhat lower in general and where the only between-subject difference lay between non-monolingual Japanese speakers in their L1 and monolingual English speakers. However, the difference was more prominent in the expression of Goal. Here, despite the fact that they were speaking very different languages, native Japanese speakers with knowledge of English were indistinguishable in their L1, Japanese, and their L2, English, producing significantly more Goal expressions per clause than either group of monolingual speakers. Moreover, this difference in expressions of Goal did not arise at the expense of expressions of Via Path, where no differences between the groups existed. Since there was little apparent difference in the monolingual baseline, at face value these results reflect a unique bilingual pattern that is hard to explain from the perspective of bidirectional cross-linguistic influence. However, we will argue below that unique learner patterns for the expression of Goal may have arisen as an indirect consequence of cross-linguistic influence in a related domain.

6. General discussion

This study examined monolingual versus learner expressions of Path in L1 and L2 in three main areas: lexicalization patterns, the use and distribution of morphosyntactic resources, and the expression of different components of Path. Starting with the monolingual baseline, previous preliminary findings suggested that monolingual Japanese speakers use a wider range of verb types and more verbs per clause than monolingual English speakers, who instead use a wider range of adverbial types and more adverbials per clause. The new analyses showed that, despite these differences, monolingual speakers of Japanese and English did not differ in their tendency to express different components of Path within the clause.

Turning to Japanese speakers with knowledge of English, this group differed from monolingual speakers in their L2 but also in their L1 in a number of respects. In their L2, English, learners employed a rather wide range of both verb and adverbial types. Furthermore, the distribution of verbs and adverbials within the L2 clause was midway between source and target languages. Surprisingly, the expression of Goal of motion was more prominent in L2 than in monolingual discourse. In their L1, the same group of learners also showed a unique distribution of verbs and adverbials within the clause, specifically, more verbs than monolingual English speakers but also more adverbials than their monolingual Japanese counterparts. While they

did encode more Source of motion than monolingual speakers of English, most striking was the increased number of mentions of Goal of motion, which was higher in learner L1 discourse than in monolingual discourse and was not offset by any difference in the encoding of Via Paths. Indeed, in this domain, learners patterned similarly in their L1 and their L2. Crucially, in neither the L1 nor the L2 did learners in Japan behave differently from those in the USA. The preference for encoding Goal as opposed to Source Paths is compatible with findings suggesting a general bias for perception and encoding of Goal over Source of motion (e.g., Lakusta & Landau, 2005; Regier & Zheng, 2003).

The important comparison between learners in Japan versus those in the USA implies that similarities between the L1 and L2 linguistic systems within the individual do not necessarily arise from attrition of the L1. If that were the case, we would have expected stronger results among learners resident in the L2 speech community, the USA, and there were none. Furthermore, although L2 production was to some extent non-target-like, as predicted for this level of proficiency, L1 production was wholly grammatical in both groups.[5] Indeed, with continued depiction of Via and Source Paths, but elevated depiction of Goal Paths, the presence of the L2 appeared to have an enhancing effect on event construal in the L1.

We tentatively suggest that these results may indicate the existence of bidirectional cross-linguistic influence: a strong influence of the L1 on the L2 and a more subtle influence of the L2 on the L1. Whereas monolinguals had clear morphosyntactic preferences for expression of Path (verbs in Japanese and adverbials in English), learners employed both verbs and adverbials to encode Path in their L1 and L2 in a pattern that resembled a gradual convergence between the two systems. A speculative explanation for this could be that cross-linguistic transfer of the use of adverbials from the L2 has consequences above the level of surface form in the L1. Since adverbials only encode Source and Goal as opposed to Via Paths in Japanese, and the encoding of Goal appears to be universally privileged over the encoding of Source in language (Lakusta & Landau, 2005), an increase in adverbial use would have naturally increased linguistic attention towards the endpoint of a trajectory. At the same time, expression of the trajectory itself was preserved through continuous use of verbs. Such a shift in the learner's L1 may have engendered a consequent effect back in the L2 in a process of iterative, back-and-forth transformation. This combination of factors may have led to what appears to be a unique bilingual pattern.

The fact that bilingual speakers construe motion events differently from monolingual speakers of their L2 but also differently from monolingual speakers of their L1 implies that it is possible to restructure linguistic conceptualization, that is, to direct attention to different information considered relevant for expression. A one-sided view of learners' performance in the L2 might have suggested no evidence of any restructuring. Insofar as L2 speakers differ significantly from native speakers of the target language and show evidence of construal patterns typical of their L1, this is often interpreted as a lack of restructuring. However, when the same speakers are examined in their L1 and show subtle traces of construal patterns typical of the L2, this does suggest that attention has been expanded to include other elements. The striking finding here is that such restructuring may be detected in the L1 even at very moderate levels of proficiency in the L2 and even in a core domain such as the expression of Path. Moreover, if changes are detectable in the L1, then it is conceivable that changes are also taking place in L2 event construal. Although it may be difficult to shift attention away from the elements that the L1 habitually guides attention to, exposure to an L2 may broaden attention to new categories. Thus, the very degree to which patterns remain "habitual" in the L1 of a multilingual speaker becomes an area requiring further investigation.

These results support a body of evidence showing L1–L2 interactions in functional bilinguals (e.g., papers in Cook, 2003; Dussias & Sagarra, 2007; Flecken & Schmiedtová, in press; Hohenstein, Eisenberg & Naigles, 2006; Pavlenko & Jarvis, 2002). The contribution of the data presented here is to extend these findings to learners with considerably lower proficiency in the L2. Note that it will be crucial to study additional language pairings to reliably distinguish cross-linguistic influence from possible general effects of bilingualism (see Jarvis (2000) for a discussion of the methodological rigor needed to identify true cross-linguistic influence). This is particularly important in the current context, where some of the learner phenomena described, at least on the surface, do not reflect a simple process of one-to-one loan translation or transfer and where general learner effects have been suggested in previous work (cf. Cadierno & Ruiz, 2006; Giacobbe, 1992).

In conclusion, our findings speak to the relationship between the established and emerging language within the multilingual mind. Our data suggest that the acquisition of an L2 may prompt a shift away from a monolingual and towards a multilingual construal of motion within individuals. We argue that this can happen with relatively little exposure to an L2 and does not result in language attrition but is rather a normal, additive effect of knowing more than one language.

[5] In particular, Japanese–English speakers did not produce utterances combining a Manner verb with a Path adverbial other than *made* "until/to", constructions that are deemed questionable by native speakers (for an analysis of such constructions, see Inagaki, 2002b).

Appendix: Lexical repertoires used for Path expression in all language groups[6]

	Path verb types	Path adverbial types
Japanese-only ($N = 16$)	*agaru* "rise"	*he* "to"
	hairu "enter"	*kara* "from"
	iku "go"	*made* "until/to"
	-komu "into"	*ni* "to"
	kudaru "descend"	
	kuru "come"	
	noboru "climb"[7]	
	-noru "onto"	
	ochiru "fall"	
	shinnyuu-suru "invade"	
	tai-suru "go toward"	
	tooru "go through"	
	tsutau "go along"	
	tsutawaru "go through"	
	utsuru "move"	
	wataru "cross"	
	yatte-kuru "come"	
Japanese–English (Japan) in L1 ($N = 15$)	*agaru* "rise"	*he* "to"
	hairu "enter"	*kara* "from"
	idou-suru "move"	*made* "until/to"
	iku "go"	*ni* "to"
	-komu "into"	
	kuru "come"	
	mezasu "go toward"	
	mukau "go toward"	
	noboru "climb"	
	nukeru "go through"	
	ochiru "fall"	
	oriru "descend"	
	shinnyuu-suru "invade"	
	tadoritsuku "arrive"	
	tooru "go through"	
	tsutau "go along"	
	tsutawaru "be passed along"	
	ugoku/ugokasu "move/be moved"	
	utsuru "move"	
Japanese–English (USA) in L1 ($N = 13$)	*agaru* "rise"	*he* "to"
	chikazuku "approach"	*kara* "from"
	hairu "enter"	*made* "until/to"
	iku "go"	*massigura* "toward"

[6] We gratefully acknowledge helpful suggestions on coding by an anonymous reviewer.

[7] In Japanese, *noboru* "climb" is considered a Path verb because it can only encode upwards trajectory (*ue-ni noboru* "climb up"/**shita-ni noboru* "climb down"), in contrast to its closest translation equivalent in English, *climb*, which is considered a Manner verb as it can be paired with both upwards and downward trajectories (*climb up*/*climb down*). Furthermore, *noboru* can only occupy the position of a Path verb (second position) in a Manner–Path verb compound (Matsumoto, 1996). Given this lack of translation equivalence, an anonymous reviewer points out that we cannot be sure whether a learner intended a Manner or Path reading when using the English verb *climb*. In order to control for this issue, additional analyses were run on only the ROLL UP and SWING ACROSS events (minus the two events involving climbing). The results remained the same.

	Path verb types	Path adverbial types
	-komu "into"	*ni* "to"
	kuru "come"	
	noboru "climb"	
	ochiru "fall"	
	shinnyuu-suru "invade"	
	tadoritsuku "arrive"	
	tooru "go through"	
	toutatsu-suru "arrive"	
	tsutau "go along"	
	tsutawaru "be passed along"	
	utsuru "move"	
	yatte-kuru "come"	
Japanese–English (Japan) in L2 ($N = 15$)	*approach*	*along*
	arrive	*around*
	come	*down*
	enter	*from*
	get	*in(side)*
	go	*into*
	move	*over*
	push	*through*
	reach	*to*
	through (v)	*toward*
	up (v)	*up*
Japanese–English (USA) in L2 ($N = 13$)	*approach*	*across*
	come	*down*
	drop	*from*
	enter	*in(side)*
	fall	*into*
	get	*out(side)*
	go	*through*
	reach	*to*
		up
English-only ($N = 13$)	*come*	*across*
	get	*along*
	go	*back*
		behind
		beyond
		down
		from
		in(side)
		into
		on
		out of
		over
		through
		to
		up

NOTES: -: only in compound form
v: verb use

References

Allan, D. (1992). *Oxford placement test*. Oxford: Oxford University Press.

Berman, R., & Slobin, D. I. (1994). *Relating events in narrative: A cross-linguistic developmental study*. Mahwah, NJ: Lawrence Erlbaum.

Brown, A., & Gullberg, M. (2010). Changes in encoding of Path of motion after acquisition of a second language. *Cognitive Linguistics*, 21 (2), 263–286.

Cadierno, T. (2004). Expressing motion events in a second language: A cognitive typological perspective. In M. Achard & S. Niemeier (eds.), *Cognitive linguistics, second language acquisition, and foreign language teaching*, pp. 13–49. Berlin: Mouton de Gruyter.

Cadierno, T., & Ruiz, L. (2006). Motion events in Spanish L2 acquisition. *Annual Review of Cognitive Linguistics*, 4, 183–216.

Carroll, M., & Lambert, M. (2003). Information structure in narratives and the role of grammaticised knowledge. A study of adult French and German learners of English. In C. Dimroth & M. Starren (eds.), *Information structure and the dynamics of language acquisition*, pp. 267–287. Amsterdam: John Benjamins.

Carroll, M., & Von Stutterheim, C. (2003). Typology and information organisation: Perspective taking and language-specific effects in the construal of events. In A. G. Ramat (ed.), *Typology and second language acquisition*, pp. 365–402. Berlin: Mouton.

Carroll, M., von Stutterheim, C., & Nuese, R. (2004). The language and thought debate: A psycholinguistic approach. In C. Habel & T. Pechmann, (eds). *Approaches to language production*, pp. 183–218. Berlin: de Gruyter.

Choi, S., & Lantolf, J. P. (2008). The representation and embodiment of meaning in L2 communication: Motion events in the speech and gesture of advanced L2 Korean and L2 English speakers. *Studies in Second Language Acquisition*, 30 (2), 191–224.

Cook, V. (2003). *Effects of the second language on the first*. Clevedon: Multilingual Matters.

Dussias, P., & Sagarra, N. (2007). The effect of exposure on syntactic parsing in Spanish–English bilinguals. *Bilingualism: Language and Cognition*, 10 (1), 101–116.

Flecken, M., & Schmiedtová, B. (in press). Patterns of conceptualization in Dutch–German bilinguals.

Freleng, F. (1950). *Canary Row* [Film, animated cartoon]. New York: Time Warner.

Giacobbe, J. (1992). A cognitive view of the role of L1 in the L2 acquisition process. *Second Language Research*, 8 (3), 232–250.

Grosjean, F. (1998). Studying bilinguals: Methodological and conceptual issues. *Bilingualism: Language and Cognition*, 1, 131–149.

Gullberg, M., & Indefrey, P. (2003). *Language background questionnaire. The Dynamics of Multilingual Processing*. Nijmegen: Max Planck Institute for Psycholinguistics. http://www.mpi.nl/research/projects/Multilingualism/Questionnaire.pdf.

Hickmann, M., & Robert, S. (eds.) (2006). *Space across languages: Linguistic systems and cognitive categories*. Amsterdam: John Benjamins.

Hohenstein, J. M., Eisenberg, A. R., & Naigles, L. R. (2006). Is he floating across or crossing afloat? Cross-influence of L1 and L2 in Spanish–English bilingual adults. *Bilingualism: Language & Cognition*, 9 (3), 249–261.

Ibarretxe–Antunano, I. (2004). Motion events in Basque narratives. In S. Stromqvist & L. Verhoven (eds.), *Relating events in narrative, volume 2: Typological and contextual perspectives*, pp. 89–111, Mahwah, NJ: Lawrence Erlbaum.

Inagaki, S. (2001). Motion verbs with goal PPs in the L2 acquisition of English and Japanese. *Studies in Second Language Acquisition*, 23, 153–170.

Inagaki, S. (2002a). Japanese learners' acquisition of English manner-of-motion verbs with locational/directional PPs. *Second Language Research*, 18, 3–27.

Inagaki, S. (2002b). Motion verbs with locational/directional PPs in English and Japanese. *Canadian Journal of Linguistics*, 47, 187–234.

Jarvis, S. (2000). Methodological rigor in the study of transfer: Identifying L1 influence in the interlanguage lexicon. *Language Learning*, 50, 245–309.

Jarvis, S., & Pavlenko, A. (2008). *Crosslinguistic influence in language and cognition*. New York and London: Routledge.

Kita, S. (1999). Japanese enter/exit verbs without motion semantics. *Studies in Language*, 23 (2), 307–330.

Kita, S., & Özyürek, A. (2003). What does cross-linguistic variation in semantic coordination of speech and gesture reveal? Evidence for an interface representation of spatial thinking and speaking. *Journal of Memory and Language*, 48, 16–32.

Kopecka, A., & Narasimhan, B. (eds.) (to appear). *Events of "putting" and "taking": A crosslinguistic perspective*. Amsterdam: Benjamins.

Lakusta, L., & Landau, B. (2005). Starting at the end: The importance of goals in spatial language. *Cognition*, 96, 1–33

Lucy, J. (1992). *Language diversity and thought: A reformulation of the linguistic relativity hypothesis*. Cambridge: Cambridge University Press.

Matsumoto, Y. (1996). Subjective motion and English and Japanese verbs. *Cognitive Linguistics*, 7 (2), 183–226.

McNeill, D. (1992). *Hand and mind. What the hands reveal about thought*. Chicago: Chicago University Press.

Navarro, S., & Nicoladis, E. (2005). Describing motion events in adult L2 Spanish narratives. In D. Eddington (ed.), *Selected Proceedings of the 6th Conference on the Acquisition of Spanish and Portuguese as First and Second Languages*, pp. 102–107. Somerville, MA: Cascadilla Proceedings Project.

Negueruela, E., Lantolf, J. P., Jordan, S. R., & Gelabert, J. (2004). The "private function" of gesture in second language speaking activity: A study of motion verbs and gesturing in English and Spanish. *International Journal of Applied Linguistics*, 14 (1), 113–147.

Odlin, T. (2005). Crosslinguistic influence and conceptual transfer: What are the concepts? *Annual Review of Applied Linguistics*, 25, 3–25.

Pavlenko, A., & Jarvis, S. (2002). Bidirectional transfer. *Applied Linguistics*, 23 (2), 190–214.

Regier, T., & Zheng, M. (2003). An attentional constraint on spatial meaning. In *Proceedings of the 25th Annual Meeting*

of the Cognitive Science Society, Vol. 36, pp. 171–217. San Diego, CA: Academic Press.

Slobin, D. I. (1996a). From "thought and language" to "thinking for speaking". In J. J. Gumperz & S. C. Levinson (eds.), *Rethinking linguistic relativity*, pp. 70–96. Cambridge: Cambridge University Press.

Slobin, D. I. (1996b). Two ways to travel: Verbs of motion in English and Spanish. In M. Shibatani & S. A. Thompson (eds.), *Grammatical constructions: Their form and meaning*, pp. 195–219. Oxford: Oxford University Press.

Slobin, D. I. (1997). Mind, code and text. In J. Bybee, J. Haiman & S. A. Thompson (eds.), *Essays on language function and language type: Dedicated to T. Givón*, pp. 437–476. Philadelphia: John Benjamins.

Slobin, D. I. (2004a). How people move: Discourse effects of linguistic typology. In C. L. Moder & A. Martinovic–Zic (eds.), *Discourse across languages and cultures*, pp. 195–211. Amsterdam: John Benjamins.

Slobin, D. I. (2004b). The many ways to search for frog: Linguistic typology and the expression of motion events. In S. Stromqvist & L. Verhoeven (eds.), *Relating events in narrative: Typological and contextual perspectives*, pp. 219–257. Mawah, NJ: Lawrence Erlbaum.

Stam, G. (2006). Thinking for speaking about motion: L1 and L2 speech and gesture. *International Review of Applied Linguistics*, 44 (2), 143–169.

Strömqvist, S., & Verhoeven, L. (eds.). (2004). *Relating events in narrative: Typological and contextual perspectives*. Hillsdale, NJ: Erlbaum.

Talmy, L. (1985). Lexicalization patterns: Semantic structure in lexical forms. In T. Shopen (ed.), *Language typology and syntactic description*, vol. 3, pp. 57–149. Cambridge: Cambridge University Press.

Talmy, L. (1991). Path to realization: A typology of event conflation. *Proceedings of the Seventeenth Annual Meeting of the Berkeley Linguistics Society*, pp. 480–519. Berkeley, CA: Berkeley Linguistics Society.

Talmy, L. (2000). *Toward a cognitive semantics, vol. 1 & 2*. Cambridge, MA: MIT Press.

Tsujimura, N. (2002). Japanese enter/exit verbs revisited: A reply to Kita (1999). *Studies in Language*, 26, 165–180.

von Stutterheim, C., & Nüse, R. (2003). Processes of conceptualization in language production: Language-specific perspectives and event construal. *Linguistics*, 41 (5), 851–881.

von Stutterheim, C., Nüse, R., & Murcia-Serra, J. (2002). Cross-linguistic differences in the conceptualisation of events. In H. Hasselgård, S. Johansson, B. Behrens & C. Fabricius–Hansen (eds.), *Information structure in a cross-linguistic perspective*, pp. 179–198. Amsterdam: Rodopi.

Weingold, G. (1995). Lexical and conceptual structures in expressions for movement and space: With reference to Japanese, Korean, Thai and Indonesian as compared to English and German. In U. Egli, P. E. Pause, C. Schwarze, A. von Stechow & G. Weingold (eds.), *Lexical knowledge in the organization of language*, pp. 301–340. Amsterdam/Philadelphia: John Benjamins.