

Motion Events in L2 Acquisition: A Lexicalist Account

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1. Introduction

Several researchers have suggested that Talmy's (1985, 1991) typology of motion events, according to which languages opt to systematically encode PATH (or 'direction') in verbs ('*cross* the river swimming') or adpositions ('swim *across* the river'), might be formalized as a parameter at the whole-language level (e.g. Levin and Rapoport, 1988; Jackendoff, 1990; Snyder, 1995). In the wake of such proposals, Inagaki (2001, 2002) provides his own influential analysis of the phenomenon and uses the results of a bidirectional study involving English learners of Japanese and Japanese learners of English to argue that non-targetlike L2 argument structures are the result of full transfer of L1 parameter settings in this domain (in support of the Full Transfer/Full Access model of Schwartz and Sprouse, 1994, 1996). I draw on an original L1 study in order to argue that Talmy's descriptive generalization resists formalization as a parameter in the generative framework, with clear implications for the issue of L2 transfer in this domain. Perhaps surprisingly, semantic features and principles of syntactic computation appear to be uniform across the two languages, such that both allow certain classes of MannerV (e.g. 'run', 'swim', 'jump', but not *'walk', *'dance', *'splash') to combine with locational P, henceforth LocP, (e.g. 'in') with a directional interpretation, among other commonalities. Differences are argued to be between individual lexical items rather than particular languages, and the relevant syntactic principles appear to be in place from the earliest tested stages of development. L2 transfer effects can be most fully explained on the assumption of lexical, rather than parametric, transfer. This approach is line with the Minimalist account of morphosyntactic variation as encoded in the lexicon (Chomsky, 1995, 2000), and the adoption of the relexification model of creole genesis (Lefebvre, 1998) as a model of L2 acquisition (Sprouse, in press). In Section 2, a brief overview is provided of the proposed binary distinction and Inagaki's (2001) parametric account of the L2 acquisition of the syntax of motion events. Section 3 presents evidence from L1

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experimentation which strongly suggests that such variation is determined not at a level of language-particular grammar, but in the lexicon. Against the grain of standard comparative analyses in this domain, I draw attention to crosslinguistic commonalities rather than differences in the syntax of directional predication. In Section 4, implications are drawn for the parametric approach to transfer effects in L2 acquisition, and an alternative lexicalist model is delineated, without recourse to rules at the whole-language level.

2. The Path Parameter Hypothesis in L2 research

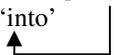
Inagaki's (2001, 2002) formalization of crosslinguistic differences in the syntactic expression of motion events in terms of principles and parameters (P&P) theory is based on an influential observation by Talmy (1985, 1991), who suggested that the world's languages fall into two types in respect of their encoding of PATH and MANNER of motion. *Satellite-framed* languages generally encode PATH in a 'satellite' to the verb, such as a pre / postposition, or particle (MANNER is often expressed in the primary predicate), whilst *verb-framed* languages generally encode PATH in the verb (MANNER is either omitted or expressed in an adjunct position). This distinction is exemplified below, with directional predicates in italics.

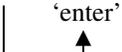
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|--------|---|---------------------------|
| (1) a. | Taro ran <i>into</i> the garden. | <i>English: S-framed</i> |
| b. | Taro ran <i>up</i> the hill. | |
| c. | Taro ran <i>across</i> the bridge. | |
| | | |
| (2) a. | Taro ga heya ni hashitte <i>haitta</i> .
Taro NOM room LocP running entered
'Taro ran into the room.' | <i>Japanese: V-framed</i> |
| b. | Taro ga oka o hashitte <i>nobotta</i> .
Taro NOM hill ACC running went.up
'Taro ran up the hill.' | |
| c. | Taro ga michi o hashitte <i>watatta</i> .
Taro NOM street ACC running crossed
'Taro ran across the street.' | |

Whilst Talmy (1985) clearly stated this observation in terms of characteristic expression rather than as a formal parametric distinction,¹ there have been several suggestions that this typology might be amenable to formalization in the generative framework, such as Levin and Rapoport's (1988) principle of 'lexical

1. By 'characteristic lexicalization type' Talmy means that: '(i) it is *colloquial* in style, rather than literary, stilted, etc.; (ii) it is *frequent* in occurrence in speech, rather than only occasional; (iii) it is *pervasive*, rather than limited, that is, a wide range of semantic notions are associated with this type' (Talmy, 1985: 62; italics in the original).

subordination', Jackendoff's (1990) 'GO-Adjunct rule', and Snyder's (1995) treatment of this as part of a more general 'compounding parameter'. On Inagaki's (2001) account, the primitive semantic notions PATH and PLACE are realized as distinct nodes in the syntax, and the relevant difference between English and Japanese may be stated in terms of patterns of incorporation (Baker, 1988). More specifically, English incorporates PlaceP into PathP, as in (3), whilst Japanese incorporates PathP into V, as in (4), thus preventing a MannerV from being generated in the main predicate slot.

- (3) a. John ran into the house. *English:*
 b. [V [PathP [PlaceP[DP]]]] *Conflation Pattern 1*
- 

- (4) a. John ga ie no naka ni haitta. *Japanese:*
 John NOM house GEN inside LocP entered *Conflation Pattern 2*
 'John entered the house.'
 b. [[[DP] PlaceP] PathP] V]
- 

(adapted from Inagaki, 2001: 155)

Inagaki (2001) argues that whilst both conflation patterns are possible in English, only the second is possible in Japanese, accounting for the ungrammaticality of sentences such as (5) and (6).

- (5) *John ga gakkō ni aruita.
 John NOM school LocP walked
 'John walked to school.'
- (6) *John ga ie no naka ni hashitta.
 John NOM house GEN inside LocP ran
 'John ran inside the house.'

On this approach, a superset-subset relation holds between English and Japanese, with interesting predictions for L2 acquisition. Assuming Schwartz and Sprouse's (1994, 1996) model of Full Transfer/Full Access (FT/FA), Japanese learners of English should transfer their L1 parameter setting; subsequently, exposure to Conflation Pattern 1 in the input should allow them to restructure their grammar so as to allow both possibilities, in a way consistent with the target grammar. However, when English learners of Japanese transfer their L1 parameter setting, they should wrongly allow both patterns. On the assumption that reliable negative evidence is absent from the input, a native-like understanding of this aspect of grammar should be unattainable for these learners.

A bidirectional study was conducted by Inagaki (2001), involving 42 intermediate Japanese learners of English and 21 advanced English learners of Japanese, each group also serving as native controls in the corresponding direction. The experiment was in the form of a written grammaticality judgement test with pictures. In each picture a FIGURE (moving object) was shown moving in relation to a GROUND (reference object), and participants were asked to rate the descriptive sentences below the picture in terms of a five-point Likert scale, ranging from -2 through 0 to +2, according to 'how natural each sentence sounded' (Inagaki, 2001: 162). To take one example, underneath a picture of a boy walking into a house were 8 variations such as *Sam entered the house by walking*, *Sam walked and went into the house*, *Sam went into the house walking*, *Sam walked into the house*, etc. In summary, leaving certain complications aside, predictions were generally confirmed such that (i) Japanese learners of English 'correctly' accepted [MannerV + PP] (mean rating: 1.24); (ii) English learners of Japanese 'wrongly' accepted [MannerV + PP] (mean rating: 0.78); and (iii) English learners did so despite being otherwise 'advanced', thus providing evidence for the predicted learnability impasse.

A critique of this pioneering study is reserved for Section 4, after discussion of relevant evidence from comparative L1 research, which suggests an alternative approach to such variation in interlanguage argument structure.

3. Evidence from first language acquisition

3.1. The monkey book: An elicited production experiment

The comparative study of first language acquisition provides an elucidating perspective on the question of PATH lexicalization as a possible parameter. Prior to the study reported here, anecdotal evidence had suggested that child speakers of V-framed languages allow S-framed constructions, apparently in contradiction with adult norms (e.g. Clark, 1985). Given standard grammaticality judgements in the literature, it was expected that there would be a shift in syntactic preferences between younger and older children, although it remained an open question whether this shift would be akin to the 'switching-on' of a parameter or the piecemeal acquisition of individual predicates.

An elicited production experiment was conducted with 33 English and 31 Japanese monolingual test subjects (there was also a French group, to be referred to below). In each language, the children were divided into 5 age groups from 3 to 7 years, and there was a sixth group with adult test subjects. Utterances with directional predicates were elicited using a purpose-designed picture-story, illustrating events with both MANNER and PATH. In the course of the narrative, a parrot steals a banana from a monkey, so the monkey chases the parrot in order to retrieve the banana. The chase takes the monkey through several different spatial environments. On each page relevant to the analysis, he follows a particular trajectory (e.g. 'down', 'under', 'over', etc.), varying with the obstacles he encounters, and he exhibits a particular manner of motion (e.g. he 'slides' down a tree-trunk, 'runs' under a bridge, 'jumps' over a rock etc.). The

experimenter introduced each page of the picture-book by describing the location, in order to encourage subjects to focus on trajectory rather than locational setting.² Subjects were then asked to describe the monkey's actions. If subjects did not describe the path followed by the monkey, a prompting strategy was adopted to elicit appropriate responses.

All responses related to the materials were recorded and transcribed, and 1038 English and Japanese examples of PATH predication were selected for analysis. Calculations specifically relevant to Talmy's typology were based on instances of PathPP (e.g. '(run) *in the cave*', '(swim) *across the river*', etc.) in the absence of 'geometric' PathV (e.g. *enter*, *cross*, etc.), as this most unambiguously reveals examples of the S-framed type. Simply looking at PATH in V would conflate V + direct object (e.g. *cross the river*), V + PP (e.g. *cross to the other side of the river*), V lexicalizing both PATH and MANNER (e.g. Japanese *noboru* 'climb-up'), and other variations. Test subject groupings were coded by language (J, F, E) and age (3-7, Adults), and individuals were identified by means of an additional lower case letter. Thus J3a is Japanese, 3 years old, and the youngest in the group.

3.2 Japanese Results

The Japanese speakers exhibited an overwhelming tendency to encode PATH in V, as we shall see in more detail below in Figure 1. However, a very important caveat to this observation of V-framed preference is that the Japanese examples reveal a great deal of lexical and syntactic variation. Such variation was attested in all age groups, to varying degrees. PATH conflation in utterances was subject to division into three general structural types: TYPE 1: only in PathV (subsuming intransitive V, transitive V, geometric V + deictic V, conflation of both PATH and MANNER in V, and V-V compounds); TYPE 2: in both PathV and PathPP (subsuming PPs both with a simple P, e.g. *dōkutsu ni* – cave LocP –'into the cave', and those with locative NPs, e.g. *dōkutsu no naka ni* – cave GEN inside LocP –'into the cave'); and finally TYPE 3: only in PathPP. Due to restrictions of space, I restrict exemplification to the latter configuration, which, although prescriptively dispreferred, is colloquially acceptable with certain classes of MannerV.

- (7) <J3d: *soto e hashitta*>
outside to ran
'He ran outside.'
- (8) <J6d: *yama no ue kara korogatta*>
mountain GEN top from rolled
'He rolled from the top of the mountain.'

2. Slobin's (1996) comparative study of English and Spanish motion events indicates that speakers of V-framed languages may have a locational bias in event descriptions, leaving aspects of the trajectory to be inferred.

- (9) <J5d: *ishi no ue ni jampu shi-yō to shiteru no*>
 stone GEN top LocP jump do-INT COMP do.TE.PROG PART
 ‘‘He’s trying to jump onto the rock.’
- (10) <J7b: *o-saru-san wa oyoide mukō-gishi made itta*>
 HON-monkey-TITLE TOP swimming other-side until went
 ‘The monkey went swimming to the other side.’

There was no significant development in preferences for the expression of PATH in PP from the Japanese 3-year-olds to the 7-year-olds. In fact the youngest and the oldest group of children had exactly the same proportion of instances of PathPP in the absence of geometric PathV: both 12.5% (10/80 examples in Group J3, and 9/72 examples in Group J7). The adults had a markedly lower number of such utterances: only 3.7% (3/82). However, it is important to note that there were 68 such utterances in the child data, *all* of which were deemed grammatical in the relevant respect by the 5 adult participants, who gave informal grammaticality judgments following transcription of the data. (Other types of error did obtain, such as lack of topic marking, vocabulary errors, and substitution of postpositions.) It is likely that the low instance of this lexicalization pattern in the adult responses was at least in part due to a task effect: their speech was much less colloquial than that of the children under the same experimental conditions. The use of a geometric PathV to express trajectory is considered stylistically superior to spelling out the spatial geometry only in PP.

3.3 English results

The English results also confirm Talmy’s (1985; 1991; 2000b) typological predictions, showing near-identical levels of preference for PathPP in the absence of geometric PathV in all age groups. The range of averages across age groups was very tight indeed, from 89.1% (90/101) in Group EA to 94% (79/84) in Group E7, echoing the lack of developmental change in the Japanese study with respect to lexicalization preferences. The range of individual variation was also relatively narrow, so much so that each individual speaker’s rhetorical style could plausibly be assigned the label ‘S-framed’. The same three general structural types were used for analysis of the English data: TYPE 1 (only one token); TYPE 2 (especially conflation of MANNER and PATH, e.g. *fall*, *topple*, *tumble*); and TYPE 3 (in this case subsuming MannerV + intransitive P, MannerV + transitive P, deictic PathV + PP, complex predicates with deictics + PP, e.g. *come running out*, and onomatopoeia + PP, e.g. *splash into*). Although verbs such as *cross*, *enter* and *pass* exist in English, the pattern of transitive geometric PathV, relatively common in Japanese, was virtually unattested in the English data. Only one verb, *cross*, was used in this way, and in only 1/54 of the child responses to the river scene. (<E5b: *he crosses the river*>).

3.4 Comparative results

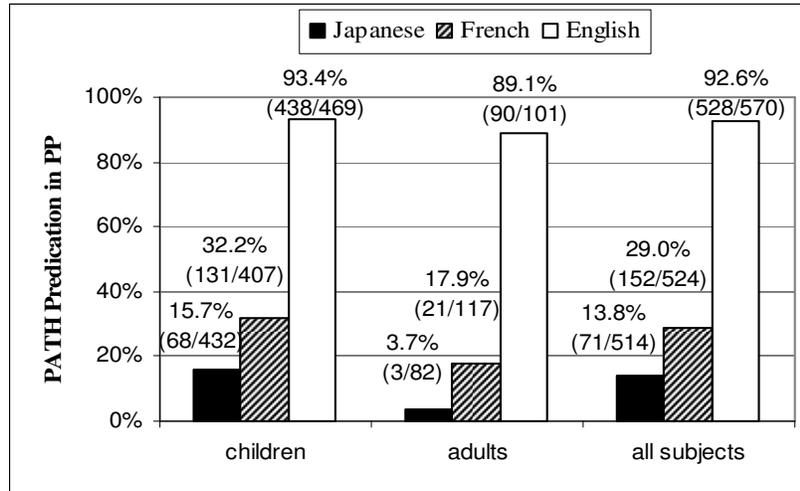
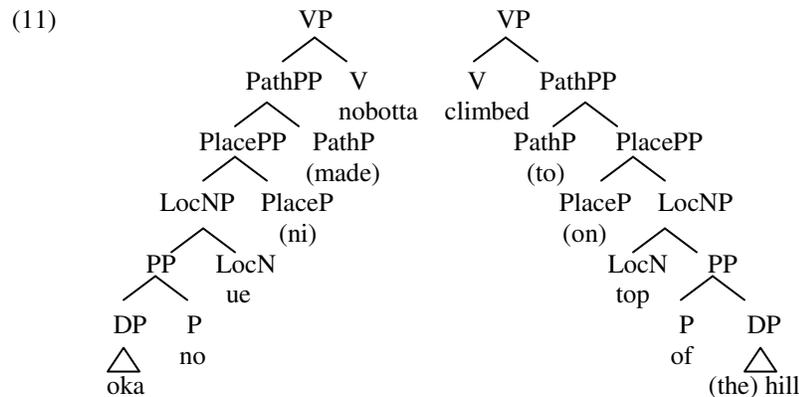


Figure 1. Responses by language group. Mean for each language group of utterances with PathPP in the absence of geometric PathV over the total number of PATH utterances.

As the emphasis of this study is not on the preferences of speakers, as reflected in the above chart, but on the combinatorial possibilities in each grammar, as reflected in the range of utterance types, it is essential to note that minority response types in Japanese and English provide as much information about grammatical possibilities as majority response types. That said, the difference between Japanese and English in terms of Talmy's typological predictions is truly striking. The Japanese children encoded trajectories in PP_{PATH} in the absence of geometric V_{PATH} in only 15.7% (68/432) of all instances of PATH predication, whilst the English children did so in 93.4% (438/469) of cases. At this juncture, it is worth briefly commenting on the syntactic preferences of the French speakers. The Japanese and French child groups have discrete response ranges, so it is difficult to characterize French as having the same rhetorical characteristics as Japanese in this regard: the average group responses of the Japanese children range from 12.5% to 20%, whilst the average group responses of the French children range from 25.8% to 39.4%, and the confidence intervals (CIs) on the means are non-overlapping: Japanese $CI = 0.157 \pm 0.034$; French $CI = 0.322 \pm 0.045$; English $CI = 0.934 \pm 0.022$ (calculated using the method of Agresti and Coull, 1998). This finding is in accordance with more recent work in the cognitive linguistic tradition. The papers in Strömquist and Verhoeven (2004) collectively toll the bell for a simplistic binary typology in the realm of motion events, and Slobin (2004: 248)

comments that ‘rather than put languages into typological categories, it might be more profitable to lay out the collection of factors that, together, interact to contribute to particular rhetorical styles.’

A closer examination of what is possible in each language reveals a surprising number of commonalities, which point toward a shared syntax of motion events. As shown in the previous subsections, English and Japanese lexicalization patterns could be characterized according to the same three general types, cutting across the typology. Stringer (2005) discusses various shared aspects of the syntax of motion events, a detailed analysis of which is outside of the scope of this paper. Such shared aspects include (i) the possibility of directional interpretation in combinations of MannerV and LocPP in conditions of strict locality between V and P; (ii) a universal layered PP structure (van Riemsdijk, 1990; Koopman, 2000; Ayano, 2001; and den Dikken, 2006, among others); and (iii) bare locative nouns inside the layered PP structure (as argued for in Ayano, 2001), all of which may be cursorily exemplified in the English and Japanese structures below.



Turning from uniformity to variation, evidence against the parametric approach to the syntax of motion events includes the following: (i) English and Japanese admit both S- and V-framed argument structures; (ii) there is no evidence for a language-wide switch to a PATH parameter setting; rather, acquisition of V and P proceeds item by item, perhaps in some cases by classes of items; and (iii) in general, the syntax of motion events does not vary by language-type: rather, there remains a common syntax in all three languages, in terms of shared categories, shared features, and layered PP structure.

4. Implications of the Lexicalist Path Hypothesis for L2 research

4.1 No transfer of a path parameter setting

The most transparent implication for L2 investigations of non-targetlike argument structures in the expression of motion events is that if there is no path

parameter, there can be no transfer of a path parameter setting. However, Inagaki's (2001) seminal L2 project remains a springboard for potential studies in this domain. Various aspects of the experimentation could be reconceptualized so as to move the research forward in a lexicalist direction. First, a more fine-grained analysis of particular verbs and prepositions is required, rather than contrasting the general configuration [MannerV + PP] with [PathV + PP + gerund]. For example, certain classes of MannerV (e.g. 'run', 'swim', 'jump', but not *'walk', *'dance', *'splash') may colloquially combine with locational P with a directional interpretation in both Japanese and French. The standard examples found in previous literature on the binary distinction tend to use verbs that are far from being paradigm examples of MannerV in this regard, such as analogues of 'walk' and 'float', the latter perhaps due to Talmy's (1985) examples in one of the most influential papers on the topic. In the case of adpositions, a distinction must be made between inherently directional predicates such as English *into* and locational predicates that require a particular syntactic environment to take on directional meaning, such as Japanese *ni*, 'in/on/at/to', French *à* 'at/to' and English *in*. In addition, it must never be assumed that any two lexical items are fully equivalent: verbs such as English *run*, *jump* and *fly* invariably have distinct syntax and semantics from their analogues in other languages (see Stringer, 2005: Ch.3).

A second consideration is the presentation of colloquial forms as written test sentences. If asked to choose between the written forms *John ran into the room* and *John ran in the room* in a test-environment, most English speakers would choose the former given a directional stimulus, even though the latter is also perfectly acceptable in colloquial speech. Similarly, whilst a Japanese sentence such as (12a) is stylistically preferable to (12b), the latter is still attested in colloquial language, and is in marked contrast to (12c) which is completely ungrammatical.

- (12)a. Eki ni hashitte itta.
station LocP running went
'He ran to the station.'
- b. Eki ni hashitta.
station LocP ran
'He ran to the station.'
- c. *Eki ni odotta.
station LocP danced
'He danced to the station.'

Presentation of such forms orally in appropriate contexts would facilitate more reliable judgement data.

A third issue is the classification criteria for learners. It is not clear that advanced English learners of Japanese cannot acquire the syntax in question, as this group was so classified in Inagaki (2001) by dint of their having lived in Japan for at least three years, rather than by any formal assessment criteria.

Given that, on the current analysis, the superset-subset relation does not obtain, and that what must be acquired is the argument structure associated with particular lexical items, the syntax of motion events should be learnable.

4.2 Lexical transfer and interlanguage syntax

The question remains: how can one account for apparent transfer effects in the absence of a language-wide parameter setting? That most English learners of Japanese in Inagaki's (2001) study accepted ungrammatical sentences such as (5), where *aruku* 'walk' is merged with a locational PP in a directional context, may be explained from a lexicalist perspective in at least two different ways. First, recall that this general conflation pattern *is* attested in Japanese (though not with the verb *aruku* 'walk'). The above-mentioned L1 experiment contained 68 Japanese utterances of the opposite conflation type, all confirmed as colloquially acceptable by native informants. Therefore, the acceptance of this pattern is not necessarily a transfer effect. Learners are just as likely to be generalizing across narrow conflation classes on the basis of L2 input, from verbs such as *hashiru* 'run', *oyogu* 'swim', *korogaru* 'roll', *suberu* 'slide', etc.

An alternative (complementary) explanation follows from the assumption of Full Lexical Transfer, as argued for by Sprouse (in press), who suggests that Lefebvre's (1998) Relexification Hypothesis is an accurate model of transfer in L2 acquisition. On this account, the L2 initial state is the entire L1 grammar: not only L1 parameter settings, but the L1 lexicon, with all its idiosyncratic combinations of sound (phonemes, phonological features) and meaning (lexemes, semantic features). Lexical items (both open- and closed-class) are all available for transfer if an L2 analogue is identified. In the initial stage of transfer, the interlanguage lexical item retains its L1 syntax and semantics, and is simply subject to phonological relabelling. The prediction in this case is that the argument structure of a verb such as English *walk* will initially remain intact under the label *aruku* in the interlanguage. Such representations may be restructured: the principal difference between L2 acquisition and creole genesis on this account is the input available for failure-driven re-analysis (Sprouse, in press). Either account appears plausible; choosing between them requires a more targeted investigation.

5. Conclusions and remaining questions

These related studies of the acquisition of directional verbs and adpositions by children and adults call into question the idea of a 'path parameter' at the level of the whole language, and point toward a lexicalist account of variation in the linguistic expression of motion events. On this approach, both children and adults are able to acquire the grammar of directional predication in any language through the combination of two factors: (i) knowledge of a universal syntax, with combinatorial and interpretive principles common to all languages; (ii) the development of a lexicon, which is able to package grammatically-relevant

concepts into individual words, creating a language-particular vocabulary that shapes syntactic structures. Despite certain forays into the acquisition of argument structure, in the areas of datives (Bley-Vroman and Yoshinaga, 1992), locatives (Joo, 2000; Schwartz et al., 2003) and psych verbs (White et al., 1999), lexical transfer remains a relatively underexplored aspect of second language research, given the amount of information now generally assumed to be carried on lexical items, and the enormity of the task of vocabulary acquisition. Several fundamental questions have yet to be systematically addressed. What happens when a grammatically relevant semantic feature is not instantiated in the L1? If a lexical or functional morpheme in the L2 has no equivalent in the L1, will L2 acquisition mirror L1 acquisition? How are learners able to overcome logical problems in the acquisition of feature specification in the absence of negative evidence? The solutions to such problems are likely to lie within a more fine-grained theory of lexical transfer, the development of which is essential to a more comprehensive understanding of the process of second language acquisition.

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