Main Verb Properties

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1. Introduction

This paper[1] argues against too free a use of "equipollent framing" as proposed by Dan Slobin (2004). Instead, it proposes an expanded set of criteria for main verb status, and finds them applying to languages that Slobin had considered to be equipollently framed.

1.1 Background

In its earliest stage, the background is that Talmy (1972, 1985, 2000b chapter 1) observed that languages differ in how they represent an event of Motion within a sentence. The minimal Motion event consisted of four semantic components. These were the "Figure", the entity whose motion or location is at issue; "Motion" (with a capital "M"), the presence per se of motion or stationariness; the "Path" (with a capital "P"), the path of motion or the stationary location of the Figure; and the "Ground", the entity with respect to which the Figure's Path is characterized. Further, a separate "coevent" could be related to this minimal Motion event to form a full Motion event. The coevent mainly represented the Manner or the Cause of the Figure's Motion, but a number of additional relations were observed.

1.1.1 The original typology

A typology was introduced based on how languages differ in their characteristic representation of a full Motion event. This typology rested on holding constant a particular syntactic constituent, the main verb or verb root -- below, simply "verb" for short -- and observing which of the semantic components in the Motion event characteristically appeared in it. All languages were found to express the presence-of-Motion component in the verb. Beyond this, though, languages were found to fall into three main typological categories on the basis of whether they characteristically also used the verb to express the Path, the coevent, or the Figure. Also found were certain minor typological categories, including a split system, a parallel system, and a minimal system in which the verb expressed no further semantic components or only a few distinctions pertaining to one of the components.

1.1.2 The framing typology

Subsequently, Talmy (1991, 2000b chapter 3) introduced a complementary

typology for Motion events. It held constant a particular semantic component -- the Path -- and observed which of the syntactic constituents in a sentence it characteristically appeared in. Languages were found to fall into two main categories in this typology. The path was characteristically expressed either by the main verb (root) or by a satellite and/or preposition. The term "satellite" named a constituent in construction with the main verb (root) and syntactically subordinate to it as a dependent to a head. And the term "preposition" represented a constituent in construction with an NP that could consist of a preposition and/or a postposition and/or an affix on the noun of the NP. The whole of the latter typological category was referred to as a "satellite" for short. Languages that characteristically expressed Path in the main verb (root) were called "verb-framed", and languages that did so in the satellite were called "satellite-framed".

The earlier and the later typologies addressed the same set of typological relationships, simply adopting two different perspectives on them. But to help clarify the distinction, Talmy (2005) introduced different terms for them. The original was called the "Motion-actuating typology" since it was based on holding the verb constant, and I considered the verb to be the constituent that actuated the sentence's proposition. The later perspective was called the "Motion-framing typology".

The Motion-framing typology, further, generalized over the original concern with an event of Motion, to cover as well four further types of event. These were events of temporal contouring, state change, realization, and action correlating. The constituent in which a language characteristically expressed Path was found also to be where it characteristically represented the components corresponding to Path in the other four event types (see section 4.3). Within this generalization, the Path component was now called the "core schema", and the event as a whole was called the "macro-event".

A later version of the framing typology also reflected an elaboration introduced in Talmy (2000b, chapter 1). There, the Path component was subdivided into three parts. These were the Vector, comprising mainly the basic Path elements AT, TO, FROM, VIA, ALONG, and ALENGTH, proposed by Talmy (2000a, chapter 3) as occurring in a corresponding set of universal "Motion-aspect formulas"; the Conformation, comprising the main geometric schema of a Path; and Deixis, commonly consisting of motion either toward or not toward the speaker. In the framing typology, then, a language might not express the whole of Path in the verb or a satellite, but just one or two parts of Path there, with the remainder expressed in a separate constituent.

1.2 A challenge to the framing typology

Subsequently, several studies -- e.g., Delancey (1989), Slobin and Hoiting (1994),

Schultze-Berndt (2000), and Zlatev and Yangklang (2004) -- either suggested or were noted by others as suggesting that certain languages do not neatly fit either category of the framing typology. The main problem claimed was that the cited languages failed to be either clear or unique in assigning either main verb status orsatellite status to the constituent expressing Path.

In addition, in their reference to the framing typology, these studies treated as a special pair what they held to be the two relevant constituent types, those expressing the Path component and the coevent component of a Motion event. They judged that the languages did not privilege either of these constituent types as being uniquely the main verb or some other kind of head or dominant category, nor mark the other constituent type as being uniquely a satellite or other kind of dependent or subordinate category, but rather treated them both as grammatical peers.

Slobin (2004) then proposed classing such languages together in a third category of "equipollently framed" languages within a now expanded typology. Three patterns could exhibit such equipollence, exemplified by three of the languages under study.

In the first pattern, the Path and the coevent could be respectively expressed by constituents of indeterminate lexical category, neither of them either main verb or satellite. The two constituents together, though, would constitute all or most of a complex that did serve a main verb function. This pattern was thought to occur in certain polysynthetic formations, such as the bipartite verb stems as described for Klamath in Delancey (1989) -- addressed below in section 3.

In the second pattern, the Path and the coevent could be respectively expressed by two constituents, each of them functioning as a verb -- perhaps each even functioning as a main verb in succession. Again, the two constituents together would form all or part of a complex that, with respect to the sentence as a whole, functioned as the full verb. This pattern was thought to occur in certain serial verb constructions -- treated below in section 4.

In the third pattern, the Path and the coevent might be respectively expressed by two constituents, both of which were satellites, or at least equally grammatically subordinate. They would both be satellites or subordinates to a third constituent with genuine verb status. Again, the three constituents together might form most or all of a complex with full verb status in the sentence as a whole. This co-satellite pattern has been thought to hold in Jaminjung for the coverbs relative to the head verb -- as discussed in section 5 -- and does occur in the polysynthetic constructions of Atsugewi seen in section 3.

1.3 A rebuttal to the challenge

This, then, has been the argument for the occurrence of equipollent framing. But the rest of this article disputes the extensiveness claimed for such equipollence, finding only one restricted and insecure case of it. Oversights in the challengers' approach will emerge below. But two can be initially cited here.

The challengers, without independent justification, selected a particular pair of components out of the five that make up a full Motion event -- namely, Path and coevent -- as the relevant ones for demonstrating equipollence. This mis-selection bears in particular on the third pattern above. While the Path and coevent there may be equally subordinate, the important thing is that yet another component of the Motion event does appear as the main verb (root). This arrangement -- seen in section 3 for Atsugewi -- thus does privilege one of the Motion event components, counter to the main notion of equipollence.

Further problems are caused by the challengers' treatment of Path as a unitary concept, rather than as consisting of three subparts, as well as by their treatment of the coevent simply as Manner, rather than also as Cause (among other alternatives). This issue pertains, for example, to section 5's analysis of Jaminjung, whose main verb expresses two subparts of Path while a satellite expresses the third subpart.

This article's rebuttal thus rests on determining, for the languages at issue, whether a main verb (root) constituent exists and, if it does, whether it expresses the Path, a subpart of the Path, or another Motion event component. Accordingly, any inquiry into what constitutes main verb status can abet the rebuttal. This is what is undertaken next.

2. An Expanded Set of Criteria for Judging Main Verb Status

It can be stated at the outset that there is nothing in principle the matter with extending the original framing typology to include a third category of indeterminate framing, that is, Slobin's equipollently framed category. Insofar as such an indeterminate condition may occur, it would seem that the proposed form of equipollence is the right way to view it. The proposal here, though, is that the criteria used for judging main verb status have been too few, and that an expanded set of criteria might show a broader tendency among languages seen as candidates for equipollence in fact to privilege one of the constituent types in question with main verb status. If so, then true equipollent framing might be rarer than proposed, perhaps even nonoccurrent, and if occurrent, possibly an unstable stage that a language tends to transition out of with relative diachronic speed.

2.1 The factors for main-verb status

In (1) is an expanded set of proposed factors that tend to indicate that a language

treats a particular constituent type as its main verb or verb root. Quite possibly none of these factors alone is criterial for main verb status. Rather, different subsets of the factors can apply to a specific constituent type in different languages, with no individual factor emerging as crucial. The more factors that converge on a particular constituent type in a language, though, the more that that constituent type is being privileged with main verb status. Some languages exhibit what can be considered a split system of main verb status. In such a split, one subset of the factors applies to one constituent type, while another subset of factors applies to another constituent type.

These factors have here been developed mainly through crosslinguistic observation of sentences that express a Motion event. But it is assumed that most or all of them carry over as well to sentences expressing other types of propositions. In fact, factor (1c) largely rests on the consideration of such other sentence types.

(1) factors that tend to mark a particular constituent type as the main verb (root)

Of two constituent types within a sentence in a given language
that can be considered for having main verb status,
one of them ranks higher than the other for that status--

a. morphology

if it can take inflections or clitics for such semantic categories as
tense, aspect, mood, evidentiality, negation, causation, voice, transitivity,
or the person, number, and gender of the subject (and object),
while the other constituent type cannot.

b. syntax

if it functions as a head directly or nestedly in construction with
the other constituent type itself;
particles for place, time, aspect, quantity (e.g., floats), negation, etc.;
adverbs; or a subject or object nominal,
while the other constituent type does not.

c. cooccurrence patterns

if it must appear in the sentence or within a particular sentence component
across all the patterns these may take
while the other constituent type can or must be absent from some of those patterns.

d. class size

if it has more morpheme members or is open-class
while the other constituent type has fewer morpheme members or is closed-class.

e. phonology[2]

1. if its morpheme members have a greater average phonological length
than those of the other constituent type.

2. if its morpheme members vary over a greater range of phonological length or pattern
than do those of the other constituent type.

3. if its morpheme members include phonemes ranging over a greater portion
of the phonemic inventory of the language
than do those of the other constituent type.

f. semantics

1. if the meanings of its member morphemes tend to have more substantive
content, greater specificity, and a greater number of more varied
conceptual components associated together in more intricate relationships,
while those of the other constituent type tend to have less of these.

2. if the meanings of its member morphemes range over a greater variety
of concepts and types of concepts and trail off into more outlying conceptual areas,
while those of the other constituent type
tend to fit a more stereotyped semantic category.

3. if it seems to contribute the criterial component of "actuation" to the proposition
that the whole sentence represents,
while the other constituent type does not.

2.2 The main-verb factors in English

Before using them to help resolve less clear cases, the factors in (1) can be checked out for English. To illustrate, we can consider for main verb status the constituent type instantiated by the morpheme *roll* and the constituent type instantiated by the morpheme *down* as they appear in the sample sentence in (2).

(2) Sam sometimes rolls a log down to the beach for people to sit on.

The constituent type represented by *roll* ranks higher for main verb status than that represented by *down* for all the factors except the phonological ones of (1e).

First, the *roll* constituent type exhibits factor (1a). Here it takes the inflection *-s*

representing present tense, habitual aspect, and indicative mood, as well as third person and singular number for the subject. The constituent type here instantiated by *down* does not take inflections.

The *roll* constituent type also exhibits factor (1b). Here, for example, *roll* is the head of the construction it forms with *down*, not vice versa. And it further functions as the head of constructions -- involving various degrees of nesting -- that it forms with the temporal particle *sometimes*, with the object nominal *the log*, and with the subject nominal *Sam*. *Down* does not function as a head in any of these relationships.

The constituent type here instantiated by *roll* further exhibits factor (1c). Some representative of it must be present in almost all the patterns of sentences that express a Motion event, as well as of ones representing other proposition types. By contrast, the constituent type here instantiated by *down* can or must be excluded from many of those sentence patterns. As for the reverse situation, sentence patterns in which the *down* type of constituent must be present, while the *roll* type of constituent is optional or blocked, are minimal.

The constituent type here represented by *roll* additionally exhibits factor (1d) in that it is an open class with hundreds of morpheme members, whereas the constituent type here represented by *down* is a closed class with only a few dozen members.

Finally, the constituent type here represented by *roll* exhibits all three parts of factor (1f). Thus, as per (1f1), its member morphemes on average have greater and more specific semantic content, and combine more semantic elements of different types together. For example, *roll* includes the concepts of a roughly round solid object rotating about a central axis and, in doing this, progressing along a linear path while in contact with a surface beneath it, where the friction from this contact causes the rotation. By contrast, *down* simply indicates a path in the direction of gravity.

As per (1f2), the member morphemes of the first constituent type also range over a greater variety of meanings.This can be seen by contrasting various examples of the first constituent type, such as *roll*, *gush* and *stampede* with examples of the second constituent type, such as *down, out* and *across*. The latter tend to fill out a more stereotyped semantic category of path.

Lastly, as per (1f3), a member of the first constituent type provides the actuating or dynamizing feature for a proposition -- as *roll*, but not *down*, does in the example sentence.

3. Main Verb Criteria Applied to Polysynthetic Constructions

Let me now apply the factors in (1) to Atsugewi, a Hokan language of northern California and the language of my fieldwork. Atsugewi is a polysynthetic language. That is, the core of the sentence is a complex constituent in turn consisting of a number of morphologically distinguishable constituents that occupy distinct position slots in a specific sequence relative to each other, all of them morphologically bound. This complex constituent as a whole gains some ranking as main verb in that it takes many of the kinds of inflections listed under factor (1a), and it relates syntactically to other major sentence constituents much as described under factor (1b). On this basis, I call this polymorphemic constituent a "verb complex". But what about the distinct constituent types internal to this verb complex? Might one of them exhibit enough of the remaining factors to merit status as the main verb root of the complex?The evidence below converges on just such a conclusion.

Delancey's (1989) analysis of Klamath -- a Penutian language geographically near Atsugewi -- stands as the main claim to equipolent framing within a polysenthetic verb. I am not familiar enough with Klamath to raise questions about its analysis directly. However, Delancey's paper cites Atsugewi as behaving in a way similar to Klamath, and proposes an areal basis for such similarity. But the conclusion below that Atsugewi does single out and privilege a particular bound constituent type as the verb root at least removes Atsugewi from Delancey's claim. In turn, it suggests another look at Klamath from the present perspective, with the possibility that some of the arguments advanced here for Atsugewi might apply to Klamath as well and diminish its claim as an exemplar of equipollence.

3.1 The Atsugewi polymorphemic verb complex

In one of its most characteristic patterns, an Atsugewi verb complex that expresses a Motion event has at its center a tripartite stem, that is, a stem consisting of three distinct constituent types, all of them bound morphemes. The tripartite stem is in turn surrounded by potentially numerous derivational and inflectional affixes.

The first of the three constituent types within the tripartite stem has morpheme members that prototypically refer to the type of immediately prior event that caused the Motion event. I designate these elements as "Cause" morphemes. In the literature, these are often referred to as "Instrumentals" because each type of causing event includes a certain entity that acts as an instrument. Note that this constituent type expresses the coevent, but only in the coevent's realization as a Cause, not in any realization as a Manner. Next, the central constituent type within the tripartite stem has morpheme members that prototypically refer to the kind of object or material that functions as the Figure of the Motion event. And the third constituent type has morpheme members that prototypically refer to the combination of a particular Path and type of Ground object within the Motion

event.

Of these three constituent types, the central one referring to the Figure ranks highest for status as main verb root under the remaining factors in (1). Thus, to start with factor (1d) concerning class size (with factor (1c) reserved for later), the Figure-specifying constituent type has hundreds of morpheme members. And there is some evidence that new morphemes can be more easily added to this type, so that it has some claim to open-class status. By contrast, the Cause-specifying constituent type has only some two dozen members. And the Path+Ground-specifying constituent type has only some fifty members. Both of the latter two constituent types are clearly closed-class.

The Figure-specifying constituent type also ranks higher on all three phonological properties in factor (1e). Thus, with respect to property (1e1), the morphemes of this constituent type on average have a greater phonological length.

With respect to (1e2), the morphemes of the Figure-specifying constituent type vary more in pattern than those of the other two constituent types. Thus, the Figure-specifying morphemes range from having no vowel and consisting of from one to three consonants; to having one vowel with various numbers of consonants on either end; to having two vowels with varying numbers of consonants at either end and in the middle. But the Cause-specifying morphemes are mostly CV in shape. The main divergences are that two of the forms add a continuant consonant after the first C, and two add one after the V. And the Path+Ground-specifying morphemes are mostly VCC or CVC in shape.

And with respect to (1e3), the Figure-specifying morphemes have virtually no constraints on the phonemes that can occur in them. But the Cause-specifying morphemes can include stops only from the plain series, not from the glottalized or aspirated series. Of the phonemically distinct dentals "r/l/n", they can morphophonemically include only r. And they lack the phoneme "q". As for the Path+Ground-specifying morphemes, the vowel that occurs in them is preponderantly "i", and none of the three "q" stop phonemes occurs in them.

Turning to the semantic factor (1f) -- and considering for now only its first two properties -- the Figure-specifying constituent type again ranks higher than the other two constituent types. Now, on the one hand, with regard to property (1f1), some of the Cause-specifying morphemes do refer to relatively contentful Instruments. For example, the morpheme *ca-* refers to the wind acting on the Figure, and *ti-* refers to someone's buttocks acting on the Figure. Likewise, some of the Path+Ground-specifying suffixes refer to relatively contentful Ground objects. For example, the morpheme *-waw* refers to a container, *-ic't* to liquid, and *-mik* to someone's face or head as the Ground object. But the Figure-specifying morphemes include many with a still greater quantity, specificity, and intricacy of

content. For example, the morpheme *-swal-* refers to a linear flexible object suspended from one end (e.g., a sock on a clothesline, a killed rabbit suspended from one's belt, a flaccid penis). And the morpheme *-p'-* refers to fabric that gets bunched up or unbunched in the process of moving (e.g., curtains getting opened or closed, a sock getting put on or taken off).

And, with respect to property (1f2), the Figure-specifying morphemes appear to cover a wider range of concepts. For instance, beyond the two examples just cited, the morpheme *-qwitir-* refers to charcoal lumps, *-m'ur-* to a fluid-containing body organ (e.g., a bladder, an udder), and *-lip-* to a water-borne canoe gliding lengthwise. True, the Cause-specifying morphemes have a certain range of their own. The instruments they refer to range from natural forces, to linear objects engaged in various actions, to body parts, to sensory stimuli. But they basically cover only these four semantic domains and make only a few distinctions within each of them. And what the Path+Ground morphemes specify for the Ground is for the most part a geometric type of schema.[3]

Let me return now to the factor of cooccurrence patterns in (1c). One class of Figure-specifying morphemes (the largest class) must occur in the tripartite stem described at the outset -- that is, they must be directly preceded by a Cause-specifying morpheme and followed by a Path+Ground-specifying morpheme. But there is also a class of Figure-specifying morphemes that, while still requiring a Cause morpheme on the left, can occur without a Path+Ground morpheme on the right. Further, there is another class of Figure-specifying morphemes that requires a Path+Ground morpheme on the right, but that refuses any Cause morpheme on the left. Thus, Figure-specifying morphemes must occur across a certain range of construction types, while the other two constituent types do not occur across this whole range.

To round out the picture a bit, there are several additional classes of morphemes that occupy the same position as the Figure-specifying morphemes, but these do not specify the Figure and occur in sentences that do not necessarily express a Motion event. Certain of these classes follow each of the three patterns of requirement or refusal just cited for different classes of Figure-specifying morphemes. In addition, one class can occur by itself -- with neither the Cause nor the Path+Ground constituent type accompanying it -- though it is otherwise surrounded by the usual derivational and inflectional affixes. Since all these classes of morphemes occupy the same morphological slot within the polysynthetic verb complex as the Figure-specifying constituent type, I will refer to them as "Figure-slot constituent types".

By contrast, neither the Cause constituent type nor the Path+Ground constituent type can occur by itself in a verb complex. And the two of them can not occur together without a Figure-specifying constituent or a Figure-slot constituent

occurring between them.

The upshot of this set of cooccurrence patterns is that the constituent type that specifies the Figure or its Figure-slot alternatives is criterial to the verb complex, whereas the other two constituent types are not.

There is one more pattern involving cooccurrence that privileges the Figure-specifying constituent type. In a special construction, a Figure-specifying morpheme of the class that otherwise requires both a Cause morpheme and a Path+Ground morpheme can be removed from the verb complex entirely, placed in front as a frozen form, and set in construction with a new generic (or light) verb that now takes all the inflections. For example, the morpheme *-qput-* that refers to `dirt' as a Figure, and that usually occurs at the center of a tripartite stem within a verb complex referring to dirt as moving or located, can also occur before a `be' verb in a construction that means `for dirt to be present'. Neither of the other two constituent types can take part in such a construction. Thus, both within the verb complex and outside it, the Figure-specifying constituent type is singled out as the survivor across a range of construction types and so, by factor (1c) is once more accorded higher ranking for main verb status.

3.2 Atsugewi's Figure-specifying constituent type is the main verb root

Because of its high ranking on factors (1c) through (1f), the Figure-specifying constituent type (and its Figure-slot counterparts) functions most as the main verb. Since it is a bound morpheme within a polymorphemic word -- the polysynthetic verb complex -- my practice has been to term it the "main verb root".

Accordingly, the Cause-specifying constituent type can now be definitively treated as a prefix and the Path+Ground-specifying constituent type as a suffix.

With respect to the semantic property in (1f3), the Figure-specifying constituent type can now, as main verb root, be considered to actuate the multi-affixal verb complex it is in. As seen earlier, this verb complex is the core sentence constituent that, on the basis of factors (1a) and (1b), functions as the main verb of the sentence as a whole, and so in turn can be considered the actuator of the entire sentence.

It is because the Figure-specifying morphemes in Atsugewi behave like the main verb root that -- in my Motion-actuation typology -- I cited Atsugewi as an example of the third major typological category. In particular, this is the type where, of the various semantic components within a Motion event, it is the Figure that characteristically appears in the main verb root along with `presence-of-Motion'. (Presumably similar arguments could be made for Navajo as another example of this type.)

For these reasons, the Figure-specifying morphemes have been consistently glossed in my work as verbs, not, say, simply as nominals that refer to the Figure. For example, *-qput-* is glossed as `for dirt to move / be located' -- not, say, simply as `dirt'. That is, the dynamizing semantic component of "presence-of-Motion" is incorporated directly within the meanings of these morphemes.[4]

By the same token, it has been my consistent practice *not* to gloss the other two constituent types as verbs. For example, the Cause-specifying prefix *ca-* has been glossed either as an adverbial clause, `as the result of the wind blowing on the Figure' -- or simply as a prepositional phrase, `from the wind' -- but not as a verb form like `for the wind to blow'. Likewise, the Cause prefix *ma-* has been glossed basically as the adverbial clause `as the result of one's feet acting on the Figure' -- or, in an agentive sentence, as `by acting on the Figure with one's feet' -- or simply as the instrumental phrase `with one's feet'. But it has not been glossed as a verb form such as `to do with the feet' or `to act with the feet'. This latter type of gloss is unfortunately often seen in other works apparently describing something comparable to a Cause morpheme.

Comparably, the Path+Ground-specifying suffixes have been glossed as prepositional phrases in my work. For example, *-ic't* has been glossed as `into liquid'. It is not glossed as a verb form like `move into liquid'.

Now, Atsugewi expresses possession and change of possession with suffixes that occupy the exact same position slot as the usual Path+Ground-specifying suffixes, and that can occur with the same Cause-specifying prefixes and Figure-specifying verb roots as they can. It is clear that Atsugewi treats possession and change of possession as a Path plus a Ground. Accordingly, I gloss the relevant Atsugewi suffixes *-ahn* and *-ay* respectively as `in one's possession' and `into someone's possession' -- that is, in the same prepositional phrase mold as the other members of the same constituent type.(See Talmy 2000b, chapter 4 for a more elaborate discussion of this issue). In some other treatments, though, seemingly comparable morphemes are glossed like verbs as `have' or `give' -- inconsistently with the glossing of other morphemes in the same constituent type.

The point here is that once a particular constituent type has been identified as a verb root and other constituent types complementarily fall into place for their respective semantic-syntactic roles, then it is best to give a consistent form of glossing to the morphemes of each constituent type -- a form that corresponds to the semantics of that type.

I can at this point, then, present an example of a full Atsugewi polymorphemic verb complex -- which can also constitute the whole of a sentence -- that accords with these glossing principles, as shown in (3).

(3) /w- ’- ca- st’aq’ -ic’t -a/ --> [c’wast’aq’ic’ta]
the Figure-specifying main verb root: -st’aq’- `for icky material to move / be located’
the Cause-specifying prefix: ca- `as the result of wind blowing on the Figure’
the Path+Ground-specifying suffix: -icv’t `into liquid’
the inflectional affixes: w- ’- -a `3rd person subject / factual evidential’
literally: `icky material moved into liquid as the result of wind blowing on it"
possible instantiation: "The guts blew into the creek."

3.3 Atsugewi lacks equipollent framing

The conclusion from all the preceding, then, is that Atsugewi does not have equipollent framing. First, it has a definite main verb root -- there is nothing indeterminate here. This main verb root expresses the Figure component of a Motion event in a sentence that expresses the whole Motion event.

Next, Path is expressed in a satellite subordinate to the main verb root, specifically, in the suffix immediately following the main verb root. Thus, by the principle that determines the framing type in the two-category Motion-framing typology, Atsugewi is a satellite-framed language.

Lastly, both the Path and the coevent -- the latter specifically realized in Atsugewi as the Cause -- are equally expressed in satellites subordinate to the main verb root. But, as noted in section 1.3, the fact that the Path and the coevent are in effect "equipollent" in their co-subordinate status should not detract from the fact that another Motion event component -- namely, the Figure -- does have main verb status. By selecting the relevant Motion event components -- Path and Figure -- it is again clear that Atsugewi is not equipollently framed, but rather satellite-framed.

Finally, then, Atsugewi can be considered to have a split system in how it confers main verb status. The multi-affixal verb complex as a higher-level constituent type, exhibiting the first two factors of (1), acts as the main verb relative to the other major constituent types in the sentence. At the same time, the simplex constituent type within the verb complex that specifies the Figure (or its Figure-slot counterparts) exhibits the remaining four factors of (1), and so can be considered to function as the verb root within the main verb complex -- what I have dubbed the "main verb root".

It is because of polysynthetic languages like Atsugewi that my work on the Motion-actuating typology from the outset stressed the need -- insofar as verbal constituents were being considered -- to use the verb *root* for crosslinguistic comparisons. It is the Figure-expressing main verb root within the polysynthetic verb complex of Atsugewi, then, that is to be compared with the Path-expressing verb root within the inflected verb form of Spanish, and with the coevent-expressing

monomorphemic verb at the start of a serial construction in an isolating language like Mandarin (see below).

4. Main Verb Criteria Applied to Serial Verb Constructions

Another case to which Slobin applied his concept of equipollent framing was serial verb constructions.[5] But arguments are presented here against equipollence in the constructions looked at.

4.1 Lack of equipollence in Lahu

First, Matisoff, in his (1973, 1991) treatment of the Tibeto-Burman language Lahu, describes a characteristic construction -- one that includes the representation of Motion events -- in which up to five verbs can be concatenated within distinct position slots. He is clear, though, that the verbs occurring in one of those position slots are the main verb, the "head", while the others -- what he terms "versatile verbs" -- are semantically subordinate to the head verb and occupy pre-head and post-head position slots. (All these versatile verbs can also occur as main verbs.). Most of the factors in (1) appear to correlate with Matisoff's analysis and might have been the implicit basis for it. Without going through them all here, we can take as a sample factor (1d) pertaining to class size and show that it applies. Thus, the head position can be occupied by any of the hundreds of verbs in the language, including those referring to Manner or Cause in an expression of Motion. But the pre-head class of versatile verbs has only some dozen members; the "juxtacapital" class of versatile verbs that immediately follows the head, and that represents the Path in a Motion expression, again has only some dozen members; the "medial" class of versatile verbs that comes next has some fifteen to twenty members; the "caudal" class of versatile verbs that comes last has some eight members; and the "variable" class of versatile verbs, which can occur in several positions relative to the preceding classes, has eight members.

Or, further, we can note how factor (1c) pertaining to cooccurrence patterns comes into play. First, we need to observe that some of the versatile verbs have very similar meanings when used as a head and as a subordinate to the head. An example is the form with the meanings `begin' and `begin to', respectively. But other versatile verbs have quite divergent meanings in the two roles. An example is the form that means `send on an errand' as a head verb and `cause to' as a subordinate. Now, a sentence can have just a single verb. But if this verb is one of the versatile verbs, the meaning that emerges is always that of its head role, never that of its subordinate role. Thus, the "head" constituent type within a serial verb construction is the one that survives across a range of construction types, and, by factor (1c), thus gains additional main verb status. Hence, Matisoff's description stands as one counterexample to equipollent framing in a (so-called) serial verb language.

4.2 Partial overlap of two constituent types

Further analysis of serial verb constructions will be helped by examining a certain lexico-syntactic pattern that can occur. In this pattern, the two sets of morphemes that can be respectively used for two syntactically distinguishable constituent types show a partial overlap. Principles governing this pattern are proposed in (4).

(4) principles for the partial overlap of two otherwise distinguishable constituent types

If a language has two syntactically distinguishable constituent types
that share some but not all of their morpheme members, then--

a. they diverge as distinct constituent types to the degree that:

1. each has morphemic forms not occurring in the other.
2. the morphemic forms that they do share in common have different meanings.
3. such meaning differences are substantial.

b. a morphemic form shared in common and with the same basic meaning in both constituent types can seem to belong to:

1. a meta-category that spans both constituent types, or
2. the dominant constituent type, even when functioning syntactically in the other type.

These principles can be initially checked out in English. As a backdrop, first note that there is virtually complete overlap in English between some pairs of syntactically distinguishable constituent types. An example is the overlap between the nouns that can occur in subject NPs and the nouns that can occur in object NPs. At the opposite end of the scale, there is a complete disjunction between other pairs. An example is the disjunction between determiners and auxiliaries.

But now consider two other syntactically distinguishable constituent types: prepositions, which are in construction with a nominal, and satellites, which are in construction with the verb. These two constituent types meet the conditions for the principles of (4) to be applicable. Specifically, the two types have some overlap in their morphemic memberships, but at the same time each type has morphemes not occurring in the other. For example, the forms in (5a) function only as prepositions, while those in (5b) function only as satellites. But the forms in (5c) can function either as satellites or as prepositions.

(5) Partial overlap between English prepositions and satellites

a. Some forms serving only as prepositions
   of, from, at, towards, beside, among, with (in standard English)
b. Some forms serving only as satellites
   away, back, ahead, forth, apart, together
c. Some forms serving as both constituent types
   in, on, off, up, down, across, along, through, around

The issue of how divergent these two constituent types are from each other is addressed in (4a). To assess this, factor (4a1) checks for the proportion of the morphemes in each constituent type that is limited to just that constituent type, as against the proportion that also appears in the other type and is thus common to them both. The single-function morphemes in (5a) and (5b) seem somewhat fewer than the dual-function morphemes in (5c), though perhaps close to being roughly equal in number -- and these proportions may hold for the full inventory. This is evidence for a moderate split between the two constituent types.

Factor (4a2) next rates divergence by checking dual-function morphemes like those in (5c) for differences of meaning in their separate functions.Some of these morphemes do show such differences. For example, when functioning as a satellite, *over* can have the sense `rotationally about a horizontal axis', as in *The pole fell over*. But this sense is absent in the prepositional usages of *over*, for example, as in *The plane flew over the skyscraper*, where it has the sense `along a linear path located above the Ground object'. On the other hand, some dual-function morphemes have very similar senses in both of their functions. For example, *in* has the sense `at/to a point of the space formed by a curved plane' both when functioning as a preposition, as in *She is in the room*, and when functioning as a satellite, as in *She hurried in*. This factor again suggests a moderate split here.

Finally, factor (4a3) rates the degree of divergence between the two constituent types by checking each dual-function morpheme with a difference in its two meanings to see how great their semantic distance is. The satellite sense and prepositional sense of *over* cited above can be related to each other through just a few intervening semantic steps (see Brugmann, 1981), and so might be judged to be different from each other by a modest to a moderate amount. The other dual-function morphemes here with two meanings seem to show a comparable amount of difference between those meanings.

Taken together, the three factors of (4a) thus suggest that the prepositions and satellites of English are moderately diverging and moderately overlapping sets.

The principle in (4b) may hold mainly for speakers with some syntactic sensitivity. To them, a dual-function form like *in*, with its comparable meaning in both

usages, might seem to belong to some meta-preposition/satellite category, as indicated in (4b1). Or, as indicated in (4b2), it might seem to be a preposition, even when functioning as a satellite as in *She hurried in*. On the other hand, a dual-function form like *over* with its diverging senses might be starting to seem like it has a foot in two different categories. And single-function forms like *of* and *apart* would unambiguously be taken to be either a preposition or a satellite, respectively.

Other types of partial overlap can be found across languages. For example, a partial overlap is present in Caddo, among other noun-incorporating languages, between its independent nouns, as one constituent type, and its incorporated nouns, as a second constituent type. Speakers might, in accord with principle (4b1), judge the joint morphemic membership of these two constituent types to represent a new lexical meta-category superordinate to both independent and incorporated noun status. Or they might, in accord with principle (4b2), judge the incorporated forms to be in the same lexical category as the independent nouns, the seemingly dominant constituent type.

4.3 Scarcity of equipollence in Mandarin

I now turn to Mandarin to examine the type of clause that can express an expanded event of Motion. Let me here exclude from consideration any Agent, Figure, and Ground NPs, as well as any markers for aspect, modality, negation and the like. The remainder of the clause then exhibits two main patterns that will here be treated as constructions. The perhaps commoner pattern consists of two or three morphemes that together, in Slobin's terminology, constitute a serial verb construction. This construction type will still be called the "serial construction" here. But in order not to pre-judge the lexical category of these morphemes, I will use the letter "C" for "constituent type", and represent the construction as in (6) when it consists of three successive morphemes.

(6) C1 C2 C3

These three constituent types are respectively represented by three different morpheme sets, each set expressing a particular component of a Motion event. The morphemes that can function as a C1 express the coevent component -- either the Manner or Cause -- and will here be called the "coevent-specifying morphemes". The morphemes that can function as a C2 express the Vector+Conformation components of Path (see section 1.1.2), but for short will simply be called the "Path-specifying morphemes". And the morphemes that can function as a C3 express the Deixis component of Path, and will here be called the "deixis-specifying morphemes". There are only two such morphemes, *lai2* for motion toward the speaker, and *qu4* for motion not toward the speaker.

When the serial construction consists of only two morphemes, it can be represented as C1 followed by C2. The C1 is still a coevent-specifying morpheme. But now, either a Path-specifying morpheme or a deixis-specifying morpheme can function as the C2.

The other main pattern within a Motion-event clause prototypically consists of a single morpheme. Since this construction can comprise a single constituent -- one not relating to other constituents within the same construction -- the constituent can be characterized as independent, and represented as Ci. The construction itself can be called the "independent construction" to contrast with the serial construction. The independent constituent Ci is regularly treated as the main verb of its clause, so it can as readily be designated as an "independent verb", or Vi. Its treatment as a main verb in fact correlates with its ranking higher than any other major clause constituent at least on factors (1b) and (1c), while perhaps not ranking lower on the remaining factors in (1).

As discussed below, certain path-specifying morphemes can function as a Ci. As one alternative, they can then be followed by a deixis-specifying morpheme. Here, though, one can still regard the path-specifying morpheme as an independent verb, and the sequence it forms with the deixis-specifying morpheme as a variant of the independent construction, rather than as a C1+C2 serial construction.

The issue of main verb status, then, arises not for the independent construction but for the serial construction. In the latter, does one of its constituents function as the main verb with the other one(s) subordinate to it? Or are more than one of its constituents equipollent, perhaps equally verb-like? To address this, I asked a number of Mandarin speakers for their judgments about verb status for various serial-construction examples, and then sought a formal basis for their reports -- both described below.

For one subtype of the serial construction, the respondents definitively and uniformly judged that the C1 is the main verb, and that the C2 is not a verb and is subordinate to the C1. The sentence in (7) illustrates this type of construction. Specifically here, the C1, *pao3*, expressing the Manner of running is judged to be the main verb, while the C2, *kai1*, expressing a path directed away from a reference point, is judged not to be a verb and to be subordinate to the C1. To express these judgments in my terminology, the *kai1* here is a satellite, and the whole can be dubbed the "verb+satellite" subtype of the serial construction.

(7) ta1 pao3-kai1 le. s/he run away PERF "She/He ran away."

By contrast, when presented with another subtype of the serial construction, the respondents were generally more hesitant and differed in their final

judgments. Most ended up judging both the C1 and C2 to be verbs of equal standing (although one speaker ascribed main verb status to the C1, and one to the C2). Sentences like those in (8) elicited such responses. In the majority judgment here, the C1, *pao3*, is a verb expressing the Manner of running, and the C2, *jin4*, is also a verb expressing a path into an enclosure. On the basis of these judgments, the whole can be dubbed the "verb+verb" subtype of the serial construction.

(8) a. Ta1 pao3 jin4 qu4 le. s/he run into thither PERF
"She/He ran in."
b. Ta1 pao3 jin4 le gong1-yuan2. s/he run into PERF park
"She/He ran into the park."

What formal properties might then underlie the difference in judgment that a particular serial construction is of the verb+satellite or the verb+verb subtype? A major possibility suggests itself. In the verb+verb constructions, the morpheme serving as the C2 can also serve as a Ci -- hence as a Vi -- with essentially the same path meaning.

But in a verb+satellite construction, the morphemic form serving as the C2 lacks correspondence with a Ci. This non-correspondence occurs in three ways. The C2 morphemic form can have no C1 function at all (an example is *yuan3* `away'). Or, if it does have a Ci counterpart, the meaning of the Ci can differ from the C2 path meaning: the Ci might have a different path meaning or a non-path meaning. Or its Ci counterpart can exhibit the same C2 path meaning, but only in certain restricted usages. The usage might be minor, within a majority occurrence of other meanings; frozen within fixed expressions; or literary or or obsolescent.

Thus, the *jin4* that appears as a C2 in the sentences of (8), where it refers to the path schema of motion from the outside to the inside of an enclosure, can also function as the Vi in the corresponding sentences of (9) expressing the same path schema.**

(9) a. Ta1 jin4 qu4 le. s/he enter thither PERF
"She/He entered."
b. Ta1 jin4 le gong1-yuan2. s/he enter PERF park
"She/He entered the park."

By contrast, the *kai1* seen in (7) has the path meaning `away' as a C2, but lacks this sense as a Vi. As a Vi, *kai1* can, for example, be followed by the nouns for car and door to mean `drive a car' and `open a door', respectively. But each of these senses differs from the C2 path sense of `away'. In some cases, it may even be difficult to relate a form's C2 and Vi senses metaphorically or in a radial

category.

At least eleven morphemes seem to behave like *jin4*. The path sense that they express as a C2 is basically the same when serving as a Ci -- that is, as a Vi. I will dub these the "C2-plus" path morphemes because they have this additional function as a Ci. They are listed in (10).[6]

(10)
shang4 `up / ascend'
xia4 `down / descend'
jin4 `into / enter'
chu1 `out / exit'
hui2 `back / return'
guo4 `across, past / cross, pass'
dao4 `all the way (to) / reach'
dao3 `over (rotationally about a horizontal axis) / topple'
kai1 `open (as in: kick the door open) / open (as in: open the door)
zou3 `away / leave'
lai2 `toward the speaker / come'

A rather larger number of morphemes behave like *kai1* `away'. The path sense that these morphemic forms have as a C2 is restricted, different, or absent when they function as a Ci, if they in fact have a Ci counterpart. The subset of these morphemic forms whose C2 path sense is the same but restricted in their Ci usage might best be labeled as "C2-mainly path morphemes". But for consistency, the entire set will be labeled as "C2-only path morphemes". A number of them are listed in (11).[7]

(11)
kai1 `away'
yuan3 `away'
pao3 `away'
fei1 `abruptly off/away from a point'
qu4 `not toward the speaker' (as a Vi, qu4 non-deictically means `go/come to')
Jin4 `toward'
zhao2 `to a point of contact'
zhu4 `stuck/fast: to a point on a surface, with resistance to motion away from that point'
qi3 `up'
diao4 `falling down/off'
fan1 `over (rotationally about a horizontal axis)'
san4 `"ascatter": (multiple Figures) radially outward'
cheng2 `radially inward'
zhong4 `on target: constrained radially inward so as to arrive at,
not away from, a desired center point'
man3 `full: to all points of an interior'

From the behavior of the C2-plus and C2-only morphemes together with further phenomena, we can see that the C2 and Ci constituent types satisfy the conditions for the factors in (4). Specifically, the C2 and Ci are syntactically distinguishable constituent types. They have in common some morphemic forms with constant meanings -- namely, the C2-plus morphemes, including those listed in (10). As per (4a1), each constituent type also has morphemic forms not occurring in the other. For example, *yuan3* `away' is a C2 with no Ci counterpart, and *tiao2* `jump' is a Ci with no C2 counterpart. As per (4a2), some of the common morphemic forms -- in particular, many of the C2-only morphemic forms -- have different meanings in the two functions. To regard this from the C2 perspective, the C2-only path morphemes have phonological Ci counterparts with different meanings. And as per (4a3), some of those meaning differences are great.

This examination of the relationship between the C2 and Ci constituent types can be expanded. As noted in section 1.1.2, the constituent type in which a language characteristically expresses Path also tends to be used to express four further semantic categories. These are temporal contour or aspect, resulting state, realization, and action correlation. At least the first three of these are in fact regularly expressed by C2 morphemes in Mandarin. Further research is needed to check such C2 morphemes for any Ci counterparts. But a glance suggests that at least the C2 aspect morphemes differ semantically from Ci morphemes with the same phonological shape.

For example, in their C2 usage, both *hao3* and *wan2* mainly express the aspectual concept `to completion'. But in a Ci usage, the forms with the same phonological shape generally express quite distinct meanings. As a Ci, *hao3* usually means `be

good', while *wan2* is usually used to refer to something like `be all for nothing / be done for'. Moreover, the same *guo4* form listed earlier for expressing a path can also appear as a C2 to express the so-called "experiential" aspect `to have already / ever Ved'. This meaning is also quite divergent from the same morphemic form's meaning as a Ci verb.

Overall, then, the C2 constituent type in Mandarin seems substantially distinct from the Ci constituent type -- perhaps more so than, say, the English satellite type of constituent is from the preposition type. Although C2 morphemes may generally have originated historically as independent Ci verbs -- with some C2 morphemes still showing this connection -- the two constituent types seem to be well along in a process of divergence.

I have taken a long look at how two constituent types can partially overlap and diverge -- with the degree of divergence shown by the principles of (4a). But how does this pattern relate to the six factors of (1) regarding main verb properties? It in fact suggests a seventh factor, shown here as (1g).

(1g) (regarding one of the two constituents under consideration):
if its morpheme members resemble what are unmistakably main verbs in some other construction with respect to:
1) their form and meaning,
2) any additional properties,
while the morpheme members of the other constituent type do not.

In this light, consider The C2-only path morphemes within the C2 constituent type.In respect to form combined with meaning, they do not resemble the main verbs of the Ci constituent type in the independent construction. Accordingly, they get no gain in main verb status in the ranking based on (1g).

For a contrast, consider the C2-plus path morphemes within the C2 constituent type. They do resemble the Ci main verbs in form and meaning. They thus do gain some measure of main verb status on the basis of the (1g1) ranking.

We can further note that most, though not all, of the C2-plus morphemes in (10) resemble their Ci main verb counterparts with respect to a particular syntactic property. They must be followed either by a deictic or by a direct object Ground NP. This syntactic complementation is seen for the C2 use of *jin4* in (8) and for its Ci main verb use in (9). The C2 use of the C2-plus morphemes thus gain additional main verb status on the basis of the (1g2) ranking.[8]

We have just seen that the C2-plus path morphemes that occupy the C2 slot have some status as main verbs under the factor in (1g). In addition, since they have the same form and meaning as their Ci counterparts, they come under the

principle in (4b). In particular, sub-principle (4b2) seems to apply to them. They tend to be regarded as verbs because that is the lexical category of the dominant Ci constituent. This factor and principle then are some of the formal underpinnings for the judgment by most speakers that the C2-plus path morphemes are verbs.

It is time to bring the C1 constituent type into the picture. In the serial construction, seemingly all the morphemic forms for coevent that can serve as a C1 can also serve as a Ci -- that is as a Vi -- with basically the same meaning. For example, *pao3* refers to running not only as a Manner of motion in its C1 role, but also as an activity in its Vi role -- for example, in sentences expressing propositions like "I ran a while this morning". And *ti1* refers to kicking not only as a Cause in its C1 role in sentences with meanings like "I kicked the ball away", but also as an action in its Vi role in sentences with meanings like "I kicked the ball for a while".

Since C1 and Ci can be regarded as syntactically distinguishable constituent types, the principles of (4) apply to them. If the C1 coevent morphemes are a subset of all Ci morphemes, future research based on the (4a) principles can assess the degree to which the two constituent types diverge due to the fact that some Ci morphemes cannot also serve in the C1 role. Of relevance here, though, is that the (4b2) principle applies. Since the C1 morphemes can function with the same form and meaning as a Vi, which can be considered the more dominant constituent type, it can be taken to have that constituent type's status as a verb. And this is what virtually all the consulted Mandarin speakers judged it to be.

Let us now compare C1 and C2. First, they can be plugged in as the two constituent types to be assessed by the factors in (1). In terms of factor (1d) for class size, C1 apparently has a greater morphemic membership than C2. From this, C1 gains further main verb status -- in addition to what it acquired in the analysis just preceding.

If C1 morphemes are compared with C2-only morphemes, factor (1c) can be construed as according still further main verb status to C1. The ability of the C1 morphemes to function with the same forms and meanings as Ci morphemes can be regarded as a case of their survival across a range of construction types. By contrast, the C2-only morphemes are limited to occurring in the C1-C2-(C3) construction type.

Altogether, then, it has been seen that several factors and principles accord main verb status to the C1 in the C1-C2-only subtype of a serial construction, and that they have not accorded such status to the C2-only component. This subtype of serial construction can finally be judged to consist of a verb+satellite sequence. Since the verb expresses the coevent while the satellite expresses the Path, this construction is a case of satellite framing. It does not involve equipollence.

In turn, the C1 constituent can be compared with the C2 constituent in its C2-plus subtype. We see here that each of these constituents has been accorded some main verb status by one or another of the factors and principles proposed above. If we now also apply factor (1c) to them, each constituent type can be construed as a survivor across a range of construction types, since each can also function as a Ci. This again assigns main verb status to each of the two constituents. Altogether, then, the C1-C2-plus subtype of serial construction can be judged to consist of a verb+verb sequence -- as most of the respondents had thought. This then is the first and only case of equipollence found in this study so far. Equipollent framing is thus starting to seem a much more limited alternative than first claimed.

5. Main Verb Criteria Applied to Coverb Constructions

Slobin has also applied the notion of equipollent framing to Jaminjung, a language in which both the constituent expressing Path and the constituent expressing the coevent are outside the constituent that is generally regarded as the main verb (see Schultze-Berndt 2000). As argued in section 1.3, this fact alone should exempt the first two of these constituents from demonstrating equipollent framing and, at best, accord them co-satellite or co-subordinate status. But I take a closer look at Jaminjung first, and return to these conclusions about framing later.

We can start by applying the factors of (1) for main verb status to the language. Though my knowledge of it is still quite limited, Jaminjung seems to exhibit another kind of split system. There is a particular constituent type in the language that takes the kinds of inflections outlined in factor (1a). This same constituent type may also exhibit some of the syntactic privileges of factor (1b), though this needs clarification. And, in accord with the cooccurrence properties of factor (1c), this same constituent type is apparently the criterial one in a sentence, having to be present while other constituent types need not be. In the literature, this particular constituent type is generally seen as the main verb -- presumably for the reasons just outlined -- and it will here be referred to as such.

However, with respect to factor (1d) pertaining to class size, this constituent type is closed-class, with rather few morphemes as members. And with respect to the first two semantic properties of factor (1f), the meanings of the morphemes in this constituent type seem to be rather generic and to remain within rather stereotyped semantic limits.

On the other hand, there is another constituent type -- or perhaps a family of related constituent types -- often occurring in construction with the first type, that is open-class with many member morphemes, morphemes that have a wide range of rather specific meanings. This other constituent type thus exhibits at least two of the factors for main verb status, (1d) and (1f). (Whether it also exhibits the

greater phonological freedom of factor (1e) still needs assessment). Perhaps for these reasons, this constituent type has been termed the "coverb" in the literature.

When a sentence consisting of a main verb and one or more coverbs expresses an event of Motion, which component of the Motion event does each constituent type express? The main verb constituent type here includes morphemes with such meanings as: `go', `come', `take', `bring', `proceed away from', `proceed toward', and `follow along after'. Some of these morphemes express deixis, and thus represent the Deixis subpart of the Path component. And some of the morphemes express the Vector subpart of the Path component -- specifically, the Vector's "ALONG" value for unbounded extended paths (see section 1.1.2). The main verb in a Jaminjung Motion event construction can thus be characterized as having Deixis-and/or-Vector-specifying morphemes. In terms of my Motion-framing typology, Jaminjung would on the face of it, then, appear to belong to the verb-framed type. True, not many Path distinctions are marked within the main verb. But such a pattern was already proposed and exemplified under my Motion-actuating typology as "Motion plus a minimally differentiated semantic component", and can as readily be applied here.

For their part, the coverbs in a Motion-event sentence can express at least two different types of Motion event components. One of these is Manner. The other is the Conformation subpart of the Path component -- that is, the geometrically most intricate portion of Path. The meanings of this second coverb type seemingly exclude the Deixis and Vector specifications of the main verb, but in combination the full Path is represented. It is not clear to me whether the coverbs expressing the two different Motion components also constitute syntactically distinct constituent types. In any case, a sentence can include both types of coverb at once -- one expressing Manner and the other a Path conformation -- alongside the main verb.

The whole Jaminjung pattern seems rather comparable to that seen in Japanese or Korean. In those languages, Motion event sentences often have a deictic `come'/`go' verb root as main verb, accompanied by verb roots in a gerundive or bound form that express Manner and/or the Conformation part of Path. The main differences are that, in Japanese and Korean, the main verb expresses fewer distinctions than in Jaminjung, and that the Conformation-specifying roots (and, for that matter, the Manner-specifying roots) can also occur as main verbs, whereas in Jaminjung they cannot.

If this interpretation holds, then the possibility of equipollent framing for Jaminjung simply disappears: this is a verb-framed language. Specifically, there is a main verb and it expresses two of the three subparts of the Path component. True, another subpart of the Path component occurs in a constituent subordinate to the main verb as head, equally so with another subordinate constituent expressing the

coevent, specifically the Manner. But the main verb's dedication to Path trumps the issue and, in any case, as argued in section 1.3, a peer relation between Path and coevent as co-subordinates cannot count as equipollence when there is a main verb around.

6. Conclusion

To sum up, this paper has argued that the concept of equipollent framing should only be applied to cases where a constituent expressing Path and a constituent expressing the coevent together serve most or all of a main verb-like function in a sentence, not where they are both outside a third constituent that does function as a main verb. In the latter case, the two constituents show co-satellite status or co-subordinate status, but not equipollent framing. Second, even in the applicable cases, actual equipollence in framing emerges as a seemingly much rarer phenomenon than previously claimed. The arguments against the claimed cases of equipollence are based on an expanded set of criteria for main verb status, and on principles for the assignment of lexical category.

Endnotes

1. This paper is a greatly revised version of Talmy (2008).

2. Stress is not included as a phonological indicator of main verb status since it in fact does not correlate well with it. In German, for example, inseparable Path prefixes are less stressed than the coevent verb root, while separable path prefixes are more heavily stressed than it.

3. To be sure, the greater semantic range of the Figure-specifying constituent type accords with its greater class size. But in principle, these two factors need not be correlated.

4. Atsugewi offers further internal evidence that its Figure-specifying morphemes function as verb roots rather than as nouns. Even where the independent simplex nouns in Atsugewi refer to objects or materials comparable to ones that the Figure-specifying morphemes refer to, the corresponding morphemes are for the most part morphologically unrelated.The Figure-specifying morphemes in Atsugewi thus do not behave like the incorporated nouns in a polysynthetic noun-incorporating language like Caddo. Within the Caddo polysynthetic verb, in fact, it is another constituent type -- one that does not refer to the Figure -- that behaves like the main verb root (see Talmy 2000b, chapter 1).

5. The type of construction treated here generally consists of a succession of two or more free monomorphemic forms commonly regarded as verb roots: VV, VVV, etc. this kind of construction is known in the Chinese linguistic tradition as

compund verbs, and Matisoff calls it concatenation. Both sources reserve the term "serial verbs" for a construction of successive verb phrases, each verb taking a direct object nominal or the like. For Slobin, however, the term "serial" covers the present type of construction as well, and this usage is followed here.

6. To gloss jin4 in English, one might tend to use the satellite/preposition forms `in/into' for its C2 usage and the verb `enter' for its Vi usage. But such glosses should not bias the examination of the Mandarin-internal patterns.

7. I am indebted to Ji Yinglin (personal communication and Ji, 2011) for her help in identifying and exemplifying the Mandarin path morphemes in this study, as well as for her many other observations.

8. The *Jin4* here, with a capital "J", is a distinct morpheme from the *jin4* in (10). They are distinguished orthographically both in Chinese and here. The single-function *kai1* listed here with the meaning `away' is semantically distinct enough to be treated separately from the dual-function *kai1* listed in (10) with the meaning `open', although they may be relatable within a radial category.

9.. It should be noted that most -- though again not all -- of the C2-only verbs in (11) have the opposite syntactic property: they cannot be followed by a deictic or a direct object Ground NP. Since the C2-only morphemes lack Ci counterparts with the same form and meaning, this syntactic property is not relevant when it comes to weighing main verb status on the basis of (1g). But the fact that the positive and negative versions of the syntactic property correlate at least partly with the two subtypes of the C2 constituent calls for further research into its potential significance.

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