Neglected Aspects of Motion Representation

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1. Introduction

Research on the linguistic representation of Motion events, macro-events, and fictive motion
has tended to focus on only a few aspects of these systems' full functioning.
We here recall the broader extent of these systems with the aim of encouraging research on it.

Part I: The Motion event typology

A Motion situation is respectively conceptualized and represented at two tiers, each with its components:

semantic tier: (Agent) [Figure / fact-of-Motion / Path / Ground]$_{\text{Motion-event Relation}}$ [Event]$_{\text{co-event}}$

syntactic tier: e.g., subject NP / main V(s) / direct-object NP /

satellite(s) / preposition / prepositional NP / subordinate V

Note: the full Motion situation contains the Motion event proper

fact-of-Motion is realized as either MOVE or BE$_{\text{located}}$

cap-M Motion covers both motion and stationariness; cap-P Path covers both path and site

"preposition" = adposition[al complex] and/or noun affix the typology: which semantic

components appear in which syntactic components with what range of variations

1. The range of relations that a co-event can bear to a Motion event

These relations can be sequenced with the co-event
preceding the Motion event at the start and following it at the end.
Of the eleven relation types cited next, research has mainly focused only on one: Manner.

(1) Eight relations in English
where the co-event is represented by the verb and the Motion event by the satellite/preposition

a. Precursion: The Co-event immediately precedes the Motion event,
but does not cause its occurrence, which could have happened otherwise.

The window glass splintered onto the carpet. (nonagentive)
[window glass MOVED onto the carpet] WITH-THE-PRECURSION-OF [the glass splintered]
(The glass first shattered and the shards then immediately fell onto the carpet,
but it could have fallen onto the carpet without first shattering.)

I ground the pepper into the soup. (agentive)
(I first ground the pepper, which then fell directly into the soup,
but I could have instead shaken the pepper into the soup.)

b. Enablement: The Co-event directly precedes the Motion event and enables an event
    that causes the Motion, but does not itself cause this Motion.

    Could you reach that bottle down off the shelf?
        (First you reach to the bottle to grip it, which then enables you
        to move it down off the shelf.)

    I scooped jellybeans up into her sack.
        (First I scooped up jelly beans, which then enabled me to sluice them into her sack.)

c. onset causation: The co-event immediately precedes and causes the Motion event.

    The napkin blew off the table from a gust of wind. (nonagentive)
        (First a gust of wind blew on the napkin which, as a result, moved off the table.)

    I batted the puck off across the ice. (agentive)
        (First I swung the hockey stick against the puck which, as a result, moved off across the ice.)

d. extended causation: The co-event is concurrent throughout the Motion event and maintains it.

    The water boiled down to the midline of the pot. (nonagentive)
        (The water continued evaporating from boiling for an interval of time and, as a result,
        its surface continued moving down until reaching the midline.)

    I squeezed the toothpaste out of the tube. (agentive)
        (I continued pressing in on the tube for an interval of time and, as a result,
        the toothpaste continued coming out during that interval.)

e. Manner: The co-event is concurrent with the Motion event; it is an activity or state that
        the Figure of the Motion event manifests as a direct aspect of its motion or locatedness.

    The ball bounced along the pavement. (nonagentive)
        (The ball moved along the pavement, bouncing up and down on it as it moved.)

    I slid the mug along the counter. (agentive)
        (I moved the mug along the counter in such a way that it slid as it moved.)

f. concomitance: The co-event is concurrent with the Motion event; it is an activity or state that
        the Figure of the Motion event manifests independently of its motion or locatedness.

    The hawk screeched across the sky.
        (The hawk flew across the sky, producing a screeching sound as it went.)

g. concurrent result: The co-event results from (is caused by) the Motion event
    and occurs during some portion of it.

    The rocket splashed into the water. (nonagentive)
        (The rocket moved into the water, which caused the water to splash
        during the latter part of the entry.)

    I slammed the door shut. (agentive)

(I moved the door to its shut position, which caused it to slam against the jamb
at the end of its trajectory.)

    h. subsequence: The Co-event takes place directly after the main Motion event, and
is enabled by, is caused by, or is the purpose of that Motion event.

I'll look in at the stew cooking on the stove.
(First I'll go into the kitchen and, enabled by that, then look at the stew on the stove.)

They locked the prisoner into his cell.
(First they moved the prisoner into his cell and then locked the door on leaving.)

I laid the arrow down onto the floor.
(First I moved the arrow down onto the floor, in such a way that it then lay there.)

(2) Three relations in other languages but not in English

    a. antecedence: The Co-event non-immediately precedes the Motion event,
and does not cause its occurrence, which could have happened otherwise.

An Atsugewi counterpart of *I ground the pepper into the soup* would permit the interpretation:

"I first ground the pepper into a cup,
and then after a whilepoured the pepper from the cup into the soup."

    b. reverse enablement: The co-event is a prior action that is now undone,
which enables the Motion event.

English cannot say: *I tied the sack open. / *I chained the dog free.

to mean: "I untied the sack that had been tied, which enabled me to open it." /
"I unchained the dog that had been chained, which enabled me to free it."

But German, by one interpretation, can do so:

Ich habe den Sack aufgebunden. / Ich habe den Hund losgekettet.

    c. precursion for positioning: A co-event of supported positioning precedes the Motion event,
which ends the positioning.

English cannot say: * I laid the arrow up off the floor.

to mean: "The arrow was first lying on the floor, and then I picked it up from there."
But Atsugewi can do so: *sw'ituc'*

2.   The range of matrix verbs with which a co-event can conflate

In a satellite-framed language like English, the co-event can be conflated not only with MOVE,
the deep verb representing basic translational motion,

But also with cumulatively more matrix verbs,

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yielding increasingly more complex midlevel verbs built on MOVE.

Of the five such verb types cited next, research has mainly focused only on the first three,
with the first and third often not distinguished.

(3) combinations of matrix verbs onto which the co-event can conflate

    a.   to MOVE: the tdeep verb representing basic translational motion

        The log rolled down the slope.
      (The log moved down the slope with the Manner of rolling.)

    b.   to AGENT to MOVE = to $_A$MOVE:
        a midlevel verb representing agentively caused translational motion

        I rolled the log across the lawn.
        (I acted on the log causing it to move across the lawn with the Manner of rolling.)

    c.   to AGENT to MOVE one's body = to $_A$MOVE one's body = to GO:
        a midlevel verb representing self-agentive translational motion

        The girl rolled across the lawn for fun. / The girl hopped into the room.
         (The girl acted internally on her own body, causing it to move across the lawn,
         with the Manner of rolling.)

    d.   to INDUCE to AGENT to MOVE one's body = to INDUCE to GO = to GET: a
        midlevel verb representing one individual inducing another
        to execute self-agentive motion

        I prodded the cow into the pen. / I smoked the bear out of its den.

        I lured him out of his hiding place. / I talked her down off the ledge.
         (I got the cow to go into the pen by [with the Cause of] prodding it.)

    e.   to AIM to INDUCE to AGENT to MOVE one's body = to AIM to GET = to URGE: a midlevel
        verb representing one individual's attempt to induce another
        to execute self-agentive motion

        I beckoned him into the store. / I waved her away from the burning building.
         (I tried to get him to come into the store by [with the Cause of] beckoning to him;
         it is moot whether he entered.)

3.   The extent of multiple nesting

In a satellite-framed language like English, a single clause with one verb
can represent the nesting of up to three chained Motion situations,
each consisting of a Motion event and a co-event.
Research has mainly focused on only a single unnested Motion situation.

(4)   Nested Motion situations

a. Could you reach me that box down off the shelf with your free hand?

 [could you GIVE that box to me] WITH-THE-ENABLEMENT-OF [you $_A$MOVE the box
   down off the shelf] [the preceding event] WITH-THE-ENABLEMENT-OF [you reach to the
   box with your free hand]

 (Could you reach toward the box, which will enable you to grip it and move it
   down off the shelf, which will enable you to give it to me?)

b. I hacked out a path through the jungle with my machete.

 [I "$_A$MOVED" a path through the jungle] WITH-THE-CAUSE-OF [I
   $_A$FORMED a path] (i.e., brought a path into existence—represented by
   out)
 [the preceding event] WITH-THE-CAUSE-OF [I $_A$MOVED plants away]
 [the preceding event] WITH-THE-CAUSE-OF [I hacked at the plants with
   my machete]

   (I hacked at plants with my machete, which moved them away,
   which formed a path, which moved it through the jungle)

c. The prisoner tapped out a message along the water pipes to his confederate.

 [the prisoner SENT a message to his confederate] WITH-THE-
   ENABLEMENT-OF [the prisoner $_A$MOVED the message along the
   water pipes]
 [the preceding event] WITH-THE-ENABLEMENT-OF [the prisoner $_A$FORMED
 the message] [the preceding event] WITH-THE-CAUSE-OF [the prisoner tapped on
 the water pipes]

   (The prisoner tapped on the pipes, which formed a message,
   which enabled it to move along the pipes, which enabled it to reach his confederate)

4. Type of typology

 Two typologies have been proposed:

  the actuating typology (Talmy 1985; 2000, ch. 1):
    keep one syntactic element constant, the main V root, and see which semantic components
      appear in it

  the framing typology (Talmy 1991; 2000, ch. 3):
    keep one semantic component constant, Path,
    and see which syntactic components it appears in

 For each typology, every language has one pattern that is characteristic
   (colloquial, frequent, pervasive):

   for the actuating typology: see (5)

for the framing typology: satellite-framed, verb-framed, and perhaps equipollently framed
(proposed e.g., by Slobin, 2004, and challenged by Talmy, 2016)

Research has mainly focused only on the framing typology,
but the actuating typology reveals patterns worth examining crosslinguistically.

(5)   Actuating typology
the main verb root expresses fact-of-Motion plus the other indicated semantic components

(5A) Patterns characteristic of a language, occurring as a uniform system

   a. co-event (e.g., English, Mandarin)

   b. Path (e.g., Spanish, Japanese—other than for locative)

   c. Figure (e.g., Atsugewi, Navajo, some Mayan languages)

(5B) Patterns characteristic of a language, occurring as a mixed system

   a. split system: different patterns are characteristic of different Motion types
         e.g., Spanish (more accurately)—

      locative: fact-of-Motion alone without another semantic component

      boundary-crossing motion: fact-of-Motion plus Path

      non-boundary-crossing motion: fact-of-Motion plus Path or plus co-event (Manner) (Aske,
      1989)

   b. parallel system: two patterns are equally characteristic

      Modern Greek apparently has equally colloquial sets of verbs expressing fact-of-Motion plus
         Path and fact-of-Motion plus co-event (Manner)

(5C) Patterns characteristic of no language, but occurring as a minor system

   a. zero: the main V root expresses fact-of-Motion alone without any other semantic component
         e.g., Atsugewi: the verb -i- just means 'MOVE'—used as a minor system

   b. Ground: the main V root expresses fact-of-Motion plus the Ground
         e.g., English: -bark 'MOVE [Path] a boat'

      The prefixal morphemes in embark/debark express the Path.

   c. two components: the main V root expresses fact-of-Motion plus two other semantic components
         e.g., English: $_A$MOVE+Path+Ground

      to box '$_A$MOVE into a box'
         (I boxed the apples.)

      to quarry '$_A$MOVE out of a quarry'

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(I quarried the quartz.) e.g., English: Figure+$_A$MOVE +Path

to tag '$_A$MOVE a tag onto' (I tagged the suitcase.) to dust '$_A$MOVE dust off of'
(I dusted the lamp.)

Part II: The macro-event typology

The Motion situation, containing a Motion event and a co-event, can be generalized to:
the macro-event, containing a framing event and a co-event. (Talmy 2000, ch. 3)

5. The range of macro-event types

Analogous to (or metaphoric of) the Motion event are four other event types: temporal contouring /
state change / action correlating (coaction) / realization

Analogous to (or metaphoric of) the Path (plus Ground) is the core schema, with four corresponding
types: aspect / changed property / correlation / fulfillment or confirmation

The same alternative of the framing typology—verb- or satellite-framed—that holds in a language for
a Motion situation tends to hold there as well for the other macro-event types.

Research has mainly focused only on the Motion situation.

(6) The five types of core schema and framing event

Note: The upper sentences are satellite-framed, illustrated with normal English expressions,
with the core schema in the satellite.

The lower sentences are verb-framed, represented by sometimes devised English expressions,
with the core schema in the main verb.

a. the Path in an event of Motion

The ball rolled out (of the box).
The ball exited (from the box) rolling.

b. the aspect in an event of temporal contouring

They talked on.
They continued talking.

c. the changed property in an event of state change

The candle flickered out.
The candle extinguished, flickering

d. the correlation in an event of action correlating (coaction)

She sang along (with the recording). She accompanied the recording, singing.

e. the fulfillment or confirmation in an event of realization

The police hunted the fugitive down.
The police caught the fugitive, having hunted for him.

Part III: The fictive motion taxonomy

Fictive motion is the linguistic representation of motion where there is no physical occurrence of it.
    Three cognitive subsystems are posited here:

    A first produces a sense of the motion represented linguistically.
    A second produces a sense of the stationariness of the phenomena depicted linguistically.
    A third assesses the veridicality of the first as fictive and of the second as factive.

6. The range of fictive motion types

Of the six main types of fictive motion originally proposed (now with two more added),
the correlation in the fulfillment or research has mainly focused only on one type: coextension paths.

(7) Types of fictive motion

A. emanation paths: A fictive entity emerges from a factive source object,
    moves in a straight path through space, (and impinges on a distal factive object).

    1.   orientation paths: The fictive entity is a continuous line emerging steadily
          from the front of the source object.

          a.   demonstrative paths: The source object is linear with a pointed
                front from which the fictive line emerges axially.

                The arrow on the signpost points toward / past / away from the village.

          b.   prospect paths: The source object has a planar front
                from which the fictive line emerges perpendicularly.

                The cliff wall faces toward / past / away from the island.

    2.   radiation paths: The fictive entity is an intangible line of radiation
          emerging continuously from an energy source.

            Light shone from the sun into the cave.

    3.   shadow paths: The fictive entity is a shadow that moves from a factive object
          straight through space onto a distal factive object.

            The pole cast a shadow against the wall. / The pole's shadow fell onto the wall.

    4.   sensory paths: The fictive entity is a continuous sensory probe that moves
          from an experiencer along a straight path through space (to an experienced object).

            I looked down into the valley. / past the steeple.

B.   pattern paths: A factive pattern exhibits fictive motion because components of the pattern
         have moved factively.

    As I painted a stripe along the ceiling,
      (a line of) paint spots slowly progressed across the floor.

C.   frame-relative motion: A first object moving factively relative to a second object
         is represented as fictively stationary with the second object as fictively moving.

    I sat in the car and watched the scenery rush past me.

D.   advent paths: The location of a factively stationary object is REPresented in terms of its fictive
         arrival at that location.

    The palm trees clustered together around the oasis.
    Termite mounds are scattered / spread / distributed all over the plain.

E.   access paths: The location of a factively stationary object is represented in terms of a path that
         another entity might fictively follow to the point of encounter with the object.

    The bakery is across the street from the bank.

F.   coextension paths: The form, orientation, or location of a factively stationary extended object is
         represented in terms of a fictive path over the object's extent.

    The fence goes from the plateau down into the valley.

7.   Conclusion

Research on the Motion-event typology, the macro-event typology, and fictive motion
   has produced many advances,
   but has tended to limit itself to just one setting of the parameters that govern those domains.
It would be most welcome if future crosslinguistic research could explore
   the remainder in the range of parameter settings
   so as to advance our detailed understanding of the full system.

References

Note: All works by me are freely available on my website:

    http://linguistics.buffalo.edu/people/faculty/talmy/talmy.html

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