Linguistic representations of Visual motion:
A crosslinguistic experimental study

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Abstract

Linguistic expressions of Visual motion (e.g., look into the small building) in ten
languages are studied, on the basis of a crosslinguistic experiment. Five aspects of the
responses were analyzed to see whether the linguistic representations of Visual motion
in those languages are typologically similar to those of Self- and Caused motion: 1) the
reference to Path, 2) choice of constructions, 3) Path coding positions, 4) the use of
multiple path phrases, 5) the reference to Deixis. The results suggest that speakers
frequently refer to Path in describing Visual motion events, and predominantly choose
“No overt figure construction” to represent them, in which path verbs and deictic verbs
tended not to be used easily to represent Path and Deixis in most languages. Languages
that code Path in nonverbal head-external elements (e.g., adpositions) relatively freely
allow Path to be expressed in a way similar to the descriptions of Self- and Caused
motion, with multiple path phrases occurring with a verb of vision in some but not all of
such languages. Languages that typically code Path in the main verb in describing Self-
and Caused motion, on the other hand, use what are available in those languages to
mark Path in head-external positions, sometimes in an unusual way. The patterns of the
representation of Visual motion thus reveal a wider range of intralinguistic variations in
representing motion events than have been thought.
1. Introduction

One of the so-far relatively neglected aspects of motion event descriptions in recent studies is the expression of the fictive motion of vision. It has been argued since Gruber (1967) that expressions of vision often involve some sort of motion. In English, for example, path prepositional phrases can occur with verbs of vision, as shown in (1).

(1) Bill looked into a room.

Talmy (1996) argues that some sort of fictive motion is involved in examples like (1). There are several different types of fictive motion, and Talmy (1996, 2000) terms the type involved in (1) as emanation type.

Sentences like (1) appear to be motivated by our understanding of a gaze leading from our eyes to the target of visual attention. Linguistic expressions involving such fictive motion of vision have been studied in several languages by Takahashi (2000), Matsumoto (2001, 2004, 2017a), Slobin (2009), Cifuentes-Férez (2015), Ma (2016), Wnuk (2016), Cappelle (ms), and Kawachi (ms).

The purpose of this chapter is to examine the linguistic representations of Visual motion in terms of the typology of motion event descriptions (Talmy 1991, 2000, 2009, Slobin 2004, Matsumoto 2003, 2017b). More specifically I will examine whether their expressions show the same typological properties as exhibited by the descriptions of other, more typical motion events. The data for analysis come from a crosslinguistic experimental study (NINJAL-Kobe project of motion event descriptions), conducted in 10 languages in which the relevant data have so far been analyzed.

One thing that needs to be made clear in the discussion in this chapter is the distinction between event types and construction (representation) types. There are three major types of linguistic constructions which represent (actual and fictive) motion: Subject-figure construction, Object-figure construction, and No overt figure construction, exemplified in (2) through (4).

(2) Subject-figure construction: SUBJ moves
   a. The balloon went up.
   b. Susan ran into the house.
(3) Object-figure construction: OBJ moves
   Natalie kicked the ball into the house.

(4) No overt figure construction: No argument of V moves
   Bill looked into a room.

   These three linguistic constructions are typically used to represent A) Self-motion, which includes Spontaneous motion (cf. (2a)) and Self-agentive motion (cf. (2b)), B) Caused motion, and C) Visual motion, respectively, as exemplified in (2) through (4). However, these constructions do not always represent those events. Caused motion, for example, can be expressed in Subject-figure construction, as in (5).

(5) The napkin blew away.

   More importantly in this chapter, fictive motion of vision can be expressed by the three different constructions as exemplified in (6).

(6) a. My eyes fell on the floor.
    b. I gave a quick glance into the room.
    c. I looked into a room.

   Our interest in this chapter is the use of No overt figure construction in describing Visual motion events. However, as we will see in the next section, it is an issue how often speakers choose to use No overt figure construction to describe Visual motion events.

   Note also that the use of a verb of vision does not necessarily entail the use of path phrases, or the description of fictive motion of vision. One can represent a vision event without motion. A language can have different verbs of vision, some allowing path phrases to coocur (e.g., look), others not allowing them to coocur (e.g., watch). It is up to the choice of the speakers which verb types to use, if the language allows both options.
2. Issues in the representations of Visual motion

Visual motion is interesting for the discussion of motion event descriptions in several ways. One issue that can be asked is whether the typology of motion event descriptions based on the description of Self and Caused motion (Talmy 1990, 2000, 2009. Slobin 2000, 2004; Matsumoto 2003, 2017b) applies to the description of Visual motion. Some differences have already been suggested. Very few languages are known to possess vision verb stems coding Path (i.e., ‘look up’ in one stem), which would allow the Path to be expressed in the main verb position (see Slobin 2009 and Wnuk 2016 for some exceptions). Many languages that typically code Path in the main verb (or the head of the sentence) in describing Self- and Caused motion instead shift to the pattern of coding Path in other positions when it comes to the description of Visual motion (see, for example, Matsumoto 2003, 2017a for Japanese, and Kawachi 2017 for Sidaama).

On the other hand, those languages that make such a shift are claimed to retain some of their typological properties. It is suggested (e.g., Cappelle ms) that speakers of languages that normally code Path in the main verb (verb-framed languages of Talmy (1991, 2000) and head path coding languages of Matsumoto (2017b)) often resort to the use of Caused motion construction with causative path verbs to describe Visual motion (e.g., lever le regard ‘raise one’s gaze’ in French), keeping their typologically typical coding position of Path.

Slobin (2009) has shown that verb-framed (or head path-coding) languages that he looks at do not exhibit multiple path phrases occurring with a verb of vision (cf. English look through the window into the darkness), and argues that this reflects their typological characteristic, given that verb-framed or head path coding languages are claimed to use less multiple path phrases per clause (Slobin 1996, 2000), although some of the languages of this type are known to use them often (e.g., Basque; see Ibarretxe-Antuñano 2009). Cappelle (ms) also points out that French speakers use much less multiple path phrases in describing Visual motion than Dutch speakers, and attributes this to the general difference between verb-framed (head path coding) and satellite-framed (head-external path coding) languages.

A related issue is whether speakers of different languages tend to indicate Path at all (i.e., not just a complex path but path in general) when they describe visual events. In his corpus study, Matsumoto (2017b) makes an observation that verbs of vision in Japanese occur much less often with path expressions than those in English.
It is yet to be determined whether these observations are general patterns of the verb-framed or head path coding languages.

Finally, one may discuss the expressions of Deixis in relation to the description of Visual motion. Deixis is conceptually a property of the trajectory along which a Figure travels. However, the way Deixis is expressed in describing motion can be different from more typical Path notions such as TO, UP, and INTO (which is the combination of TO and IN), often indicated in positions very different from more typical Path notions. In Newar, for example, Deixis is expressed in the main verb position in the description of Self- and Caused motion, while Path is expressed in adpositions and adverbs (Matsuse 2017). It has also been observed that languages vary considerably how often they indicate Deixis in the descriptions of Self- and Caused motion (Akita, Matsumoto & Ohara 2010; Matsumoto, Akita & Takahashi 2017, Koga 2017). Some languages such as Newar and Japanese are deixis-rich in the description of Self-motion, very often using the main verb position to describe the relative direction of motion with respect to the speaker (Matsuse 2017, Matsumoto 2017a).

Visual motion has a deictic element just as other motion events: Visual motion can be directed toward the speaker, away from the speaker, or neutral with respect to the speaker. It is worthwhile to examine whether languages code Deixis in the same position as in the description of Self- and Caused motion, and how often their speakers choose to describe it.

3. Experiment
This study is a part of NINJAL-Kobe project of motion event descriptions, and is based on the data from the Experiment A of the project. This experiment uses 52 video clips depicting various motion events shown on a computer screen. Speakers are asked to describe the events in the video.

Most of the clips in this experiment concerns Self- and Caused motion events, the results of which are discussed elsewhere (e.g., Matsumoto 2014). In this chapter, we will focus on the results of three video clips, which are used to test the descriptions of Visual motion. In those clips a female person looks through an open door into a small building in three deictic situations: a) the person looks toward the speaker (i.e., the camera is in the room); b) the person looks away from the speaker (i.e. the camera is
near the person outside the room); and c) the person looks sideways seen from the speaker, or deictically neutral way (i.e., the camera is outside the room and also at some distance from the person looking into the room). The screenshots are given in Figure 1.

![Screenshots](image.png)

Figure 1: Screenshots from the three video clips used in the experiment

We report the results from the following languages, with the language group it belongs to, the researcher(s) in charge, and the number of informants indicated: English (Germanic; Akita, Mano, Matsumoto, N=23); German (Germanic; R. Takahashi; N=20); French (Romance; Morita; N=26); Italian (Romance; Yoshinari; N=20); Russian (Slavic; Bordilovskaya; N=20); Hungarian (Finno-Ugric: Eguchi; N=15); Japanese (Altaic??; Koga & Yoshinari; N=22); Kathmandu Newar (Tibeto-Burman; Matsuse; N=20); Thai (Tai-Kadai; K. Takahashi; N=10); and Tagalog (Malayo-Polynesian; Nagaya; N=10).

Of these, English, German, Russian, Hungarian, and Kathmandu Newar have been claimed to be satellite-framed languages (in Talm\’s (2000) terms) or head-external Path coding languages (in Matsumoto’s (2017b) terms) (see Talm\ 2000 and Slobin 2004 for English, German and Russian; Hasko 2010 for Russian; Eguchi 2017 for Hungarian; Hargreaves 2004 and Matsuse 2017 for Newar). On the other hand, French, Italian, and Japanese have been regarded as verb-framed (or head Path coding) languages (see, for example, Kopecka 2004, 2006 and Morita & Ishibashi 2017 for French, Yoshinari 2017 for Italian; Matsumoto 1997, 2003 for Japanese; see also Iacobini & Fagard 2011 for Romance languages in general). Finally, Thai has been claimed to be neither of these two types, often called an equipollently framed language (or co-head Path coding language) (Slobin 2004; see also Zlatev and Yangklang 2004, Takahashi 2017). Languages belonging to the second type also allow Path to be coded
in head-external elements (e.g., verb affixes, adverbs, adpositions, and case markers) under certain circumstances (e.g., Aske 1989, Talmy 2000, Kopecka 2004). The status of Tagalog has not been suggested but it appears to belong to the first group, predominantly using a preposition-like *pa*-marked participial verb and other head-external elements to represent Path when Manner is also expressed, as in (7), though it frequently omits Manner and use path verbs in the main verb as well.

(7) Tagalog

\[
\text{Nag-lakad siya pa-pasok sa pavilion.} \\
\text{AV.RL-walk 3SG.NOM PTCP-enter LOC pavilion}
\]

‘He/she walked into the pavilion.’

4. Results and Discussions

We now present our data and discuss them in five major respects.

4.1. Reference to Path

The first question is whether our informants represented the path of vision. As pointed out above, languages might exhibit differences how often they exploit the fictive motion of gaze to describe visual events. In our data, the percentages of the responses with path of vision are given in Figure 2. It gives the percentages of 1) responses with forms representing Path, 2) those with forms representing the location of the visual target only. The rest are those without any path or location information. It shows that in all languages, visual events are described in terms of motion at least 70% of the time, except for Japanese and Tagalog.
Figure 2: Reference to Path (percentages of responses with a Path specification)

Relatively higher percentages of path descriptions are found for most head-external path coding languages, all of which use (almost) the same set of path indicating elements in describing Visual motion as used in describing Self- and Caused motion. A Russian example is given in (8).

(8) Russian

Devushka za-glyanula ko mne v dver’ zdaniya
go into-look.3SG.F.Pst to me into door building

‘The girl looked into the building at me.’

However, Path is often unmentioned in one head-external path coding language: Tagalog (the difference between Tagalog and Russian is significant, with $\chi^2(1)=9.45$, $p<.002$ (using Yates’ correction)). Tagalog descriptions of looking into the door toward the speaker quite often involve the first-person pronoun as an argument of a verb of vision, as in (9), without any indication of Path, reducing the percentages of indicating Path in this language as in Figure 2. (The same verb can indicate path in other cases; see below).
(9) Tagalog

\[ S_{\text{<in>ilip}} \text{ ako ng babae}. \]

The woman looks at me.

In head path coding languages, the reference to Path was made somewhat less often. In French, for example, Path was often not explicitly expressed for vision (the difference between French and Russian is significant, with \( \chi^2(1)=6.63, p<.001 \) (using Yates’ correction)). In this language visual targets were often described by accusative-marked nominal without path marking, as in (10a), as well as by the prepositional object with Path expressed, as in (10b).

(10) French

a. \( \text{Elle regarde la porte.} \)
   She look the door
   ‘She looks at the door.’

b. \( \text{Elle regarde à l'intérieur de le bâtiment} \)
   she look inside the building
   ‘She looks into the building.’

Japanese, which also scored less, presents a different pattern. This language does not have any vision verb that can take a visual target as a Goal argument; it has to be marked in the accusative-marked object. However, the location of the visual target (i.e., Talmy’s (2000) conformation) can be expressed as a part of the object nominal. In the Japanese example (11), the Goal-path is not explicitly described, but the location of the visual target is expressed by the local noun \text{naka}. The percentages of such uses are indicated in “Location only” in Figure 2.

(11) Japanese (Location only)

\[ \text{Heya-no naka-o mi-ta} \]

room-GEN inside-ACC look-PST

‘(She) looked at the inside of the room’
Thus, the extent to which Path is referred to in the description of vision events depends on the availability (and adoption) of the option in which a visual target is described with a goal marking device. It is not entirely clear whether this is correlated with the typological differences of path coding positions, given that the non-Goal nominal option is also utilized in Tagalog, which is predominantly a head-external path coding language.

4.2 Constructional choice
The next question concerns the constructions used to represent Visual motion. How often do speakers use No overt figure construction, or do they often use Object-figure construction (as Cappelle argues)? In our results, the use of Object-figure construction to represent Visual motion was quite rare: 2.6% of all responses in French, 6.7% in Italian, and 1.7% in German, and none in the other languages. French and Italian examples are given in (12). Note that in all of these cases causative verbs do not encode Path.

(12) a. French

\[ Elle \textit{jette} \quad \textit{un} \quad \textit{œil} \quad \textit{à travers} \quad \textit{la} \quad \textit{porte}. \]

she throw a glance through the door

‘She throws a glance through the door.’

b. Italian

\[ \textit{Ha dato} \quad \textit{un’occhiata} \quad \textit{dentro} \quad \textit{lo sgabuzzino} \]

PRF give.RRF.PTCP quick.look into the storage.room

‘She gave a quick look into the storage room.’

All the other responses with Path involve the verb of vision as the head of the sentence.

This suggests that Cappelle’s (ms) claim based on parallel translation corpus study is exaggerated. He observes that French speakers often resort to Object-figure construction to represent Visual motion. His examples include the following: \textit{détacher le regard} ‘detach the gaze (=take an eye off)’, \textit{fixer les yeux} ‘fixate the eyes’ \textit{jeter un coup d’œil}, ‘throw a stroke of (the) eye’, \textit{jeter un regard} ‘throw a glance’, and \textit{lever les yeux} ‘raise the eyes’. Interestingly, many of his examples in fact involve causative verbs which
do not encode Path, and so the use of Object-figure construction in describing Visual motion is not necessarily a means to keep Path in the main verb position.

4.3 Coding Position of Path

No language in our data has verbs of vision encoding a specific Path (e.g., INTO). There is a question as to whether verbs like *peep* can be regarded as encoding Path (i.e., INTO or THROUGH). However, examples like *peeped from behind the door* suggests that the verb does not encode the Path component like INTO or THROUGH, but the sense of secretiveness. We regard Tagalog *silip* ‘peep’ as not encoding Path for the same reason.

Figure 3 gives the Path coding positions in the responses from the ten languages examined, with positions divided into 1) head-external elements, 2) coheads, and 3) no indication. (There was no case of head coding of Path.) In principle it is possible for Path to be described in more than two of the three positions, but there were no cases in our data. Only responses with a verb of vision are considered here (i.e., excluding examples of Object-figure construction and sporadic responses without any description of a vision event; e.g., A lady is standing at the door.)

Figure 3: Coding positions of Path (percentages of responses with each coding position)
A more detailed look at the data suggests that speakers of most head-external path coding languages used the same Path coding devices, such as particles, verb suffixes and adpositions to represent Path, as used in describing Self- and Caused motion, as in a Russian example in (8). In some cases, however, forms used to code Path are somewhat different in the description of Visual motion from those for Self- and Caused motion. In Tagalog, the notion INTO is expressed in a preposition-like participial verb *pa-pasok*, based on *pasok* ‘enter’, as in (7) above, or a locativized nominal *sa loob* (Loc inside) in the description of Self-motion and Caused motion, but only the latter was used in the description of Visual motion, as in (13a). Sentences like (13b) were not elicited, and are judged unacceptable by speakers.

(13) Tagalog
   a.  *T<um>*ingin siya sa *loob* ng pintuan.
       <AV>look 3SG.NOM LOC inside GEN door
       ‘He/she looked inside the door.’
   b.  *T<um>*ingin siya *pa-pasok* ng pavilion.
       <AV>look 3SG.NOM PTCP-enter GEN pavilion

This may be due to the fact that *pa-pasok* is not fully grammaticalized, and, as a verb, requires its subject to appear in the sentence. However, some *pa*-forms (e.g., *pa-layo* (PTCP-go.away) ‘away’) can occur with a verb of vision, and so this may not be generally true of *pa*-marked path expressions.

The speakers of Thai used the same verbs in the No overt figure construction as used in the descriptions of Self- and Caused motion. An example is given in (14a), which can be compared with the Subject-figure construction in (14b).

(14) Thai
   a. *phUan3 mOON1 khaw3 pay1 nay1 tUk2 lek4
      friend look enter go in building small
      ‘My friend looks into the small building.’
Given the analysis that Thai serial verbs are all on an equal status and are all “co-heads” of a sentence (e.g., Muanswan 2000), sentences like (14a) are treated as a case of co-head coding of Path in Figure 3. It is striking that the verb khaw ‘enter’ (and pay ‘go’) can be used without an overt manifestation of its subject in the sentence. Such a use of serial verb is not always possible with other serializing languages (see Matsumoto ms for Akan).

Speakers of verb-framed languages or head Path coding languages predominantly used satellites, adpositions, and other “head-external” elements for the expressions of Path, as in (10) above in French. An Italian example is given in (15).

(15)  La mia amica sbircia dentro il magazzino  
the my friend peek.3SG.PRE into the warehouse  
‘My friend peeks into the warehouse.’

In this sentence a preposition dentro ‘in, into’ is used, which is also used in representing Path in describing Self- and Caused motion under certain circumstances.

In Japanese, a somewhat unusual construction was used to represent the INTO path. As pointed out above, Goal cannot be expressed in an adposition with a verb of vision, given that such a verb takes a visual target as an accusative-marked object argument, rather than an adpositional object. In the description of Self- and Caused motion, the path INTO can be marked both by 1) the combination of a local noun naka and a Goal marker ni, and 2) a path verb, as shown in (16). In this case a compound verb keri-kom (kick-make.enter) ‘kick in’ is used, with a causative path verb as the second verb (V2) of the compound verb. Japanese compound verbs are usually right-headed, and this V2 determines the argument structure of the sentence (Matsumoto 1996).
(16)  *Tomodachi-wa booru-o hako-no naka-ni keri-kon-da*
    friend-TOP ball-ACC box-GEN inside-GO kick-make.enter-PST
    ‘The friend kicked a ball into the box.’

Since the Japanese verb of vision cannot take a goal adpositional phrase, the combination of *naka* and *ni* cannot be used. However, the V2 of the compound can be used to mark the meaning of INTO, as in (17), with the compound verb form superficially identical with the one in (16).

(17)  *Tomodachi-wa chiisai tatemono-no naka-o nozoki-kon-da*
    friend-TOP small building-GEN inside-ACC peep-make.enter-PST
    ‘The friend looked into the small building.’

The V2 of the compound in (17) is, however, crucially different from that of usual compound verbs as found in (16) in that it does not determine the argument structure of the clause: the accusative-marked nominal in (17) is the theme argument of V1 *nozok* ‘peep’, rather than that of V2 *kom* ‘make enter’. In this sense, V2 in (17) is not the head of the compound verb, but is a modifier of V1 (which is an exceptional case in Japanese compounding), and thus is treated here as a head-external element. Thus, Japanese tries to use the same pattern of expressing Path in Visual motion and Caused motion by using superficially the same V2 in compounds, the attempt is of a superficial success, given the difference in the status of the V2.

Thus, the present study confirms the claim that languages coding Path in the main verb position for Self- and Caused motion do not do so in describing Visual motion. They use what are available in the languages to mark Path outside the head position, sometimes utilizing them in an unusual way.

### 4.4 The complexity of Path

Our data suggest that speakers of different languages use path expressions of different complexity. Here we will compare our ten languages in terms of the number of path phrases with a Ground per clause headed by a verb of vision.
Figure 4 shows the average number of path phrases with a Ground per a verb of vision obtained in our data. It shows that speakers of head-external path coding languages tend to stack multiple path phrases more often, although the actual instances obtained were not numerous. One example from German is given in (18), which has three path phrases.

(18) *Die Freundin schaut durch die geöffnete Tür zu mir in das Gebäude hinein.*

‘The female friend looks at me through the open door into the building.’

Not all head-external path coding languages use multiple path phrases equally often, however, with Tagalog speakers using less, as shown in Figure 4. Although one cannot conclusively argue for a difference because of the small number of data, our results are in keeping with Ibarretxe-Antuñano’s (2009) claim that path saliency is not directly correlated with the typology of path coding positions.
4.5 Indication of Deixis

Finally, we will examine the indication of Deixis. The way Deixis is expressed in Visual motion is somewhat different from that in Self- and Caused motion in many languages. All languages except Russian and Tagalog in the present study have deictic verbs, but they were not used in the description of Visual motion except Thai and Japanese (see below).

Our data show that reference to Deixis differs widely among languages. Figure 5 shows the percentages of responses with deictic reference in the ten languages studied. All references to Deixis in relation to the verb of vision were considered (e.g., verbs, verb affixes, adpostional phrases, case-marked pronominals).

Figure 5: Reference to Deixis: the percentages of responses with some deictic reference

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1 Speakers of languages which have infrequent deixis reference are not necessarily inattentive to deictic information of described events, since many have used other means to convey deictic information. One case involves the indication of where the speaker is, as in an elicited English example in (i).

(i) She (leans forward and) looks in the room in which I am.

More than one-third of French responses convey deictic information by such means. Such information about the location of the speaker is often given before the description of a motion event, in the description of the situation in which the motion takes place.
As the Figure indicates, there is much variation as to how often speakers of different languages indicate Deixis. Speakers of Thai describe it conspicuously more often (79.3% in Thai) than those of any other languages (e.g., the difference between Thai and the second Deixis-rich Newar is significant, with \( \chi^2(1) = 16.63, p<0.001 \), using Yates’ correction). Thai examples are given in (19).

(19) Thai (Takahashi)
   a. \textit{phUan3 mOON1 khaw3 maa1 thaaN1 chan4}  
      friend look enter come toward me  
      ‘My friend looks in toward me’
   b. \textit{phUan3 mOON1 khaw3 pay1 nay1 tUk2 lek4}  
      friend look enter go in building small  
      ‘My friend looks into the small building.’

The high percentage of responses with deictic indication in Thai is contributed to by the use of a deictic verb as one of the serial verbs, as shown in (19). There is a special slot in the serial verb sequence for a deictic verb (Thepkanjana 1986), and this slot is filled by maa ‘come’ or pay ‘go’, one of which was quite often used to describe Path for the scenes of all three deictic directions, including Neutral (the case c in Figure 1).

The deictic verbs are versatile in the sense that they can be used irrespective of the type of constructions used: it can be used in the Subject-figure construction and Object-figure construction (with switch subject serialization), but also in the No overt figure construction such as (19) (Note that Thai allows the serial verbs to be used without overt appearance of their semantic subject in the clause). In this sense they are representation-type neutral items (Matsumoto ms), like prepositions, particles, and verbal affixes.

What is striking is that Newar and Japanese, which are languages which almost always mark deixis in describing Self-motion events, do so only under restricted circumstances in describing Visual motion. In describing Self-motion, both languages use a deictic verb in the main verb position to indicate Deixis in all the three directions. (20) is a Newar example.
However, speakers of both languages tended to indicate Deixis only in the Toward-the-speaker scene in Visual motion. In Newar this is done through the use of dative-marked first-person pronoun, exemplified in (21), which can be employed only in describing Toward-the-speaker scene.

(21) *Jita:* swae-ta lukhā-e dune swayā cwana
1.SG.DAT look-INF house-LOC into look be
‘(She) is looking into the house to see me.’

Deictic verb cannot be used to represent Deixis in Visual motion. Unlike deictic verbs in Thai, deictic verbs in Newar requires the Figure argument to as the subject, and it cannot be used in (21), in which no Figure appears.

(22) is a typical Japanese response, in which the Toward-the-speaker direction is indicated by the accusative-marked nominal indicating the speaker’s location as the Goal, as well as the “inverse” use of the verb *ku* ‘come’ (Shibatani 2003, Koga & Ohori 2008)

(22) *Tomodachi-ga kochira-o nozoite ki-ta.*
friend-NOM this.way-ACC peep-PRT INV-PST
‘My friend peeped this way, affecting me.’

This inverse use of the deictic verb indicates that the *effect* (rather than a physical entity) of the action is directed toward the first person, and does not necessarily indicate the physical motion of the subject (unlike the use of this verb in its motion sense).
(Thus, (22) means that the effect of the friend’s peeping came to the speaker.) Since there is no corresponding use of *ik* ‘go’ as the marker of effects directed away from the first person, this way of indicating Deixis in Visual motion is restricted to the Toward-the-speaker scenes.
The low percentages of Deixis reference in Hungarian and German may seem surprising, since both languages have verb prefixes coding Deixis (which are both often treated as adverbs since they can stand alone). Hungarian has one verb prefix slot, in which deictic preverbs such as ide- ‘hither’ and oda- ‘thither’ and path preverbs such as be- ‘into’ can occur, and in this sense it is not a slot exclusively devoted to Deixis. Almost all speaker chose the be- preverb in describing the stimulus event instead of ide- or oda-, resulting in the low frequency of deictic indication in this language.

German verbs have two prefix slots, and one is arguably for deictic prefixes hin- ‘thither’ and her- ‘thither’. In our data, however, the status of these prefixes as deictic markers is dubious, without a clear contrast and their uses varying according to the speakers. In the case of visual motion descriptions, the prefix hinein-, which is supposed to be hin- ‘thither’ + ein- ‘into’, was used with schauen ‘look’ and glücken ‘look’ by 60% of the speakers to indicate the visual path toward the speaker (as in (18), where hinein as a “separable” prefix is separated from the verb and appears at the sentence-final position). (More logical herein- or rein- were used only by the 20% of the speakers). We treated the uses of hinein- by those speakers as nondeictic, for they did not use hin- and her- contrastively. For many speakers the prefixed verb hineinschauen, rather than einschauen, appears to have lexicalized in the Deixis-neutral meaning of ‘look into’. (In some speakers, the distinction between hin- and her- appears to have been lost even in combination with other verbs: the half of those who used hineinshauen for Toward-the-speaker scene did not use her- at all in the description of Toward-the-speaker scenes of other motion events in the same experiment, whose results are outside the scope of this chapter.)

Thus, the expression of Deixis with Visual motion is restricted in many languages, due to the difficulty of using deictic verbs without their subject. It is very frequently indicated in Thai, however, which has an exclusive slot for Deixis, for which there is no competition with other meanings, and which allows a serial verb to be used without overtly specifying its subject.

5. Conclusion
Visual motion provides another domain in which linguistic patterns of motion event descriptions can be studied. The expressions of Path and Deixis with a verb of vision are restricted by the fact that in many languages verbs cannot be easily used to represent Path and Deixis (e.g., seen in Tagalog expressions of Path and Newar expressions of Deixis), given the lack of overt manifestation of Figure. Languages that code Path in nonverbal head-external elements relatively freely allow Path to be expressed in a way similar to the descriptions of Self- and Caused motion. Languages that code Path in the main verb in describing Self- and Caused motion, on the other hand, use what are available in those languages to mark Path in head-external positions, sometimes in an unusual way. The reliance on the Caused motion construction in these languages is not so frequent.

Thus, the patterns of the representation of Visual motion reveal a wider range of intralinguistic variations in representing motion events than have been thought, calling for a proper treatment such variations in the typology of motion event descriptions.

**Abbreviations**

ACC: Accusative  
AV: Actor Voice  
DAT: Dative  
F: Feminine  
GEN: Genitive  
GO: Goal  
INF: Infinitive  
INV: Inverse  
LOC: Locative  
M: Masculine  
N: Neuter  
NOM: Nominative  
NPST: Non-past  
PRF: Perfective  
PRE: Present  
PST: Past
PTCP: Participle
PV: Patient Voice
RL: Realis
SG: Singular
TOP: Topic

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