Consistency in Norwegian Motion Event Descriptions

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Abstract

In the literature on motion event descriptions, Norwegian is known to express path of motion by particles, prepositions, and their combinations. However, the question remains how consistently Norwegian adheres to such a coding pattern. Both intralinguistically and crosslinguistically, there are observed variations in path coding patterns across different types of paths or manners. To examine the consistency of Norwegian motion event descriptions, this study analyzes data elicited through Experiment C of the NINJAL (The National Institute for Japanese Language and Linguistics) Project on Motion Event Descriptions (MEDAL), a crosslinguistic video experiment that includes clips testing 15 paths and 2 manners. Based on the results of the experiment, this paper demonstrates that Norwegian is a highly consistent language with only subtle variations in its path coding. More specifically, I argue that (a) in Norwegian, path is consistently expressed by prepositions and combinations of particles and prepositions; (b) unlike other types of paths, the path notion of ACROSS is sometimes coded in the main verb position; and (c) when manner is WALK, path is slightly more likely to be expressed in the main verb, unlike when manner is RUN. Based on these findings, this study shows the importance of paying special attention to various kinds of paths and manners in studies of motion event descriptions.

1. Introduction

In Talmy's (2000) typology, languages are classified as being either satellite-framed and verb-framed based on the element in which path of motion is expressed in a single clause expressing both manner and path. In satellite-framed languages, path is typically expressed through "satellites", which are elements "in a sister relation to the main verb" (Talmy 2000: 102). By contrast, in verb-framed languages, path is expressed through the main verb. Consider examples from Norwegian, a satellite-framed language, in (1) and Turkish, a verb-framed language, in (2).[1]

(1) *En   mann   gikk   inn.*
    A   man   walk.PST in
    'A man walked in.'

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[1] Abbreviations used in this paper are as follows: ABL: ablative, CVB-converb, DAT: dative, DEF: definitive, PRS: present, PL: plural, POSS-possessive, PST: past, PTCP: participle, SG: singular, 3: third person. If not specified, examples are elicited from a native Norwegian speaker in his late 20s.

(2) *Adam*   *yürü-yerek*   *ev-in*   *iç-i-ne*   *gir-di.*
     man   walk-CVB   house-POSS   inside-3SG-DAT   enter-PST
     'The man entered the house walking.' (Nagaya, Suzuki & Enomoto 2020: 23)

In the Norwegian example in (1) , the path TO.IN is coded by the particle *inn*, while the manner of motion WALK is represented by the verb *gikk* 'walk.PST'. In contrast, in the Turkish example in (2), the path TO.IN is coded by the verb *gir-di* 'enter-PST', while the manner of motion WALK is expressed by the converb *yürü-yerek* 'walk-CVB'. Both sentences express motion events in which a figure of motion walks into a building, but path of motion is expressed in different syntactic positions in these two languages.

One of the central issues with motion event descriptions concerns how consistently languages adhere to different coding patterns of path, as in (1) and (2). It has been argued that languages tend to show intralinguistic and crosslinguistic variations when different kinds of paths, manners, and deixis are involved. To be more specific, with regard to path, it has been proposed that (a) atelic paths (e.g., TOWARD and ALONG) are less likely to be coded in the main verb (Aske 1989), (b) boundary-crossing paths (e.g., INTO, ACROSS, and THROUGH) are more likely to be coded in the main verb than non-boundary crossing paths (Slobin & Hoiting 1994), and (c) vertical paths (e.g., UP and DOWN) are more likely to be coded in the main verb than non-vertical paths (Matsumoto 2017a; Łozińska & Pietrewicz 2018). As for manner of motion, WALK is commonly treated as the default and is unmarked, unlike manners of motion like RUN and SKIP; therefore, it tends to be coded differently (Matsumoto 2017b: 11; Fagard, Stosic & Cerruti 2017). Lastly, some languages exhibit special coding patterns when deixis is involved. In some languages, such as English, deixis (which is considered to be a component of path [Talmy 2000: 53]) can be expressed in the main verb, while path notions are normally expressed elsewhere (Matsumoto, Akita & Takahashi 2017: 96).[2]

These kinds of variations are important to explore because they suggest that there is gradeability in the degree to which a language belongs to a certain typological type (cf. Filipović 2013 among others). Languages do not necessarily follow a single path coding pattern and may differ in terms of how pure they are in terms of their typological types. This has crucial implications for the studies of motion event descriptions. Rather than the Talmyan dichotomy, a more nuanced generalization may be needed to capture the nature of motion event descriptions.

This issue is particularly worth exploring in Germanic languages, including Norwegian. Germanic languages have been important in Talmy's typology of motion event descriptions and have been treated as representative of satellite-framed languages.[3] As illustrated in the Norwegian example (1), Germanic languages typically express manner in the main verb and path in elements other than the verb. Despite the typological significance of this pattern, the question of consistency in the coding patterns of path in

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[2] While Talmy (2000: 53) treats deixis as a component of path, Matsumoto, Akita & Takahashi (2017) claims the importance of treating deixis differently from other path notions.
[3] See Talmy (1991), Goldberg (1995: Chapter 7), Slobin (1996), Matsumoto (1997; 2017b), Cappelle (2012), Fanego (2017), and Hickmann et al. (2018) for English, Wienold (1995), Dewell (2011), De Knop & Gallez (2011), Berthele (2013), Harr & Hickmann (2013), and Meex (2020) for German, Zlatev & David (2003), Ragnarsdóttir & Strömqvist (2004), Athanasopoulos & Bylund (2013), Montero-Melis (2021), and Olofsson (2022) for Swedish, Holum (2010), Johansen (2011), Dimitrova-Vulchanova & Martinez (2013), Egan & Graedler (2015), and Tungseth (2008) for Norwegian, Slobin (2004) and Gehrke (2008) for Dutch, and Ragnarsdóttir & Strömqvist (2004) for Icelandic, to name a few.

Germanic languages has not been dealt with in depth. Previous work on Germanic motion event descriptions has mainly focused on similarities and variations found in Germanic languages (see for example, Berthele 2004; 2013; Ragnarsdóttir & Strömqvist 2004; von Stutterheim et al. 2012; Athanasopoulos & Bylund 2013), and have not particularly focused on differences between different kinds of paths and manners. Fagard et al. (2013) and Fagard, Stosic & Cerruti (2017) are exceptions to this; they investigated manner and path frequencies in six languages, including Swedish and German. They reported frequencies of manner and path expressions when manner was marked (e.g., running, jumping, or a combination of these) and unmarked (e.g., walking) and when path was boundary crossing or not. They did not report in detail where path was coded, which is the interest of this study. An empirical work is needed to investigate the extent to which Germanic languages stick to the satellite-framed pattern. Whether even Germanic languages show inconsistencies in path coding or not has a meaningful implication in the typology of motion event descriptions.

This study thus sheds new light on motion event descriptions of Norwegian by evaluating their consistency in path coding. It investigates whether or not Norwegian speakers consistently follow the coding pattern shown in (1) when different kinds of paths and manners of motion are involved. Note that this paper focuses on path coding patterns for different kinds of paths and manners only (see Tanigawa, Takahashi & Matsumoto (to appear) for the interaction between path coding patterns and deixis).

For the purpose of eliciting motion event descriptions of different kinds of paths and manners, I used Experiment C produced by the Motion Event Descriptions across Languages (MEDAL) project of The National Institute for Japanese Language and Linguistics (NINJAL). This experiment is designed to test consistency of path coding patterns across different languages in the world. The experiment uses clips testing two types of manner of motion, WALK and RUN, and the following fifteen paths of motion listed in (3).

(3)   Vertical paths: UP, DOWN
       Boundary crossing paths: ACROSS, PAST, TO.IN, OUT, THROUGH,
       Non vertical or non boundary crossing: ALONG, AROUND, FROM, OVER, TOWARD, TO,
       VIA+BETWEEN/UNDER

Based on the results of the experiment, this paper demonstrates that Norwegian is a highly consistent language with only minor variations in its path coding. More specifically, this paper claims the following three findings. First, Norwegian speakers consistently express path via prepositions and combinations of particles and prepositions. Second, Norwegian shows subtle variations when various kinds of paths are taken into account. Unlike other types of paths, the path notion of ACROSS is sometimes coded in the main verb position. Lastly, manner of motion also causes intralinguistic variations in Norwegian. When the manner is WALK, path is slightly more likely to be expressed in the main verb, unlike when the manner is RUN. Based on these findings, this study demonstrates the importance of paying attention to various kinds of paths and manners in studies of motion event descriptions.

The structure of this paper is as follows. After introducing Matsumoto's (2003, 2017a, 2020) distinction of head path-coding versus head-external path-coding, I introduce Experiment C of the MEDAL

project in Section 3. In Sections 4 and 5, I present and discuss the results of the experiment. Finally, Section 6 concludes the paper.

2. Framework and inventory of motion expressions in Norwegian

In this section, after briefly introducing the framework proposed by Matsumoto (Matsumoto 2017b; Matsumoto & Kawachi 2020) in Section 2.1, I will give an overview of the inventories of motion expressions in Norwegian in Section 2.2.

2.1. Framework

Instead of adopting Talmy's (2000) distinction of satellite-framed and verb-framed languages, this paper adopts the distinction between head path-coding versus head-external path-coding proposed by Matsumoto (Matsumoto 2017b; Matsumoto & Kawachi 2020). In Matsumoto's framework, motion event descriptions are characterized in terms of whether path of motion is coded in the head position (the main verb of a clause) or in the head-external positions. Talmy's and Matsumoto's distinctions differ in the following two respects. First, the term "head-external elements" encompasses a broader range of elements than "satellites". Matsumoto argues that the notion of "satellite", defined as elements that are in sister relation to the main verb root, is too narrow to cover all forms that are supposed to be covered by this term (see Croft et al. 2010; Imbert, Grinevald & Söres 2011; Fortis & Vittrant 2016; Slobin 2017 on related discussions). For example, prepositions, which play a pivotal role in motion event descriptions in Germanic languages, including Norwegian, are not strictly included in the definition of "satellite". In contrast, Matsumoto's term "head-external" categorization covers any items that occur outside the main verb root, including prepositions, as in (4).

(4) *En   kvinne   gikk   opp trappene.*
    A   woman   walk.PST up   stairs.DEF
    'A woman walked up the stairs.'

In (4), the path notion of UP is expressed by the preposition *opp.* This sentence is an instance of the head-external path-coding pattern because the path is expressed outside the main verb. In contrast, it is not strictly an instance of the satellite-framed pattern because prepositions are not included in the term "satellite".[4]

      Second, Matsumoto's distinction of head path-coding vs head-external path-coding is also free from the notion of event integration: the integration of a core event (i.e., a path schema) and a co-event (e.g., manner) into a simplex sentence (Talmy 1991, 2000). Unlike what is assumed in Talmy's typology, not all descriptions of motion events integrate path and manner this way, as can be seen in the Turkish (5) and Norwegian examples (6) below.

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[4] Despite this, literature on motion event descriptions has treated sentences like (4) as instances of satellite-framed path coding.

(5) *Genç   kadın   merdiven-ler-den   çık-tı.*
    young   woman   stair-PL-ABL   ascend-PST
    'The young woman ascended the stairs.' (Nagaya, Suzuki & Enomoto 2020: 13)

(6) *En   kvinne   krysset   veien.*
    a   woman   cross.PST   road.DEF
    'A woman crossed the road.'

In (5), the path UP is coded by the verb *çık-tı* 'ascended', but manner of motion is not expressed. Similarly, in (6), the path ACROSS is coded by the verb *krysset* 'crossed', but manner of motion is not coded. Such sentences are not included in the Talmy's typology of event integration. However, they do fit into Matsumoto's framework: Matsumoto's distinction of head path-coding vs head-external path-coding allows discussions of the coding position of path whether or not the motion event description has undergone event integration.

In summary, this paper adopts Matsumoto's framework for the benefit of the range of path-coding devices covered and the range of motion-event descriptions to which they apply. Matsumoto's term "head-external" covers prepositions which play a pivotal role in Norwegian motion event descriptions (see Section 2.2.2 and 4.2). This framework also allows discussions of sentences that do not undergo event integration, as in (6).

2.2. Norwegian

In this section, I begin by introducing the lexical inventories Norwegian possesses for expressions of manner (Section 2.2.1) and path (Section 2.2.2). Later in Section 4, I investigate what kind of strategies were actually employed for motion event descriptions of different paths in the experiment.

2.2.1. Manner

In Norwegian, manner of motion can be expressed by verbs and adverbs, and it has a rich set of manner verbs. Major manner verbs are listed in (7).

(7) *fly* 'fly', *galoppere* 'gallop', *gå* 'walk'[5], *hoppe* 'jump', *jogge* 'jog', *kjøre* 'drive', *løpe* 'run', *ri* 'ride', *rusle* 'amble, plod', *skippe* 'skip', *slentre* 'amble', *spasere* 'stroll', *sprette* 'strut', *springe* 'bound, leap, run', *sprinte* 'sprint', *spurte* 'put on a spurt', *sykle* 'bike', *trampe* 'tramp', *trippe* 'step', *tusle* 'stroll', *vandre* 'wander', etc.

In Norwegian, manner verbs can be used as main verbs, as illustrated by *løper* 'run' in (8), but also as present participles with path verbs or deictic verbs as main verbs, as illustrated by *løpende* in (9).

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[5] This verb is polysemous and sometimes corresponds to English *go* (Dimitrova-Vulchanova & Martinez 2013: 152; Egan & Graedler 2015: 17; Tanigawa 2021). However, it often expresses the manner of motion WALK when the figure in motion is an animate subject.

(8) *En*   *mann*   *løp*   *over*   *en*   *vei.*

    a   man   run.PST   across   a   road

    'A man ran across a road.'

(9) *En*   *mann*   *krysset*   *en*   *vei*   *løpende.*

    a   man   cross.PST a   road   run.PRS.PTCP

    'A man crossed a road running.'

In (8), the manner of motion RUN is expressed in the main verb *løp* 'run.PST', while, in (9), it is expressed in the present participle *løpende* 'run.PRS.PTCP'.

Norwegian has numerous manner verbs, but supplementary information such as the speed of movement is sometimes expressed by adverbs, as listed in (10). In such cases, adverbs are often used immediately after verbs, as in (11).

(10) *fort* 'rapidly'*, kjempefort* 'very rapidly'*, langsomt* 'slowly'*, lett* 'lightly'*, rolig* 'slowly'*, sakte* 'slowly', etc.

(11) *En*   *mann*   *gikk*   *sakte*   *mellom*   *to*   *trær*

    a   man   walk.PST slowly   between two trees

    'A man walked slowly between two trees.'

In (11), the speed of motion is expressed by the adverb *sakte* 'slowly' in addition to the manner of motion WALK expressed in the main verb *går* 'walk'.

2.2.2. Path

In Norwegian, path of motion can be expressed by verbs, particles, prepositions, and combinations of particles and prepositions. Norwegian has a small set of path verbs[6] shown in (12).

(12) Vertical paths: *bestige* 'mount', *falle* 'fall', *synke.* 'sink'

    Boundary crossing paths: *entre* 'enter', *krysse* 'cross, traverse', *passere* 'pass through'

    Non vertical/non boundary crossing paths: *forlate* 'leave', *nærme seg* 'approach', *nå* 'reach', *sirkle* 'circle'

Verbs such as *falle* 'fall', *nå* 'reach', and *synke* 'sink' have their origins in Old Norse, while other verbs are borrowed from Middle Low German (e.g., *krysse* 'cross', *forlate* 'leave', and *bestige* 'mount') or Romance languages (e.g., *passere* 'to pass through' and *entre* 'enter').[7] Unlike English, which borrowed a number of words from Romance languages after the Norman Conquest (e.g., *descend* from Old French), Norwegian has a limited number of path verbs.

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[6] The lexical inventory of path verbs in Norwegian is much smaller than that of Japanese, for example. Japanese has path verbs that express path notions such as UP *noboru* 'go up', *kudaru, oriru* 'go down', *deru* 'go out', *mawaru* 'go around', and *koeru* 'go over', unlike Norwegian.

[7] I consulted *Det Norske Akademis Ordbok* (The Dictionary of Norwegian Academy, URL; https://naob.no) for the etymologies of the path verbs.

Norwegian lacks vertical path verbs that express UP and DOWN that are neutral in manner of motion.[8] Norwegian also lacks path verbs that express boundary crossing path notions such as OUT and THROUGH. Moreover, path verbs that express other path notions such as ALONG, OVER, VIA+BETWEEN/UNDER are also absent in Norwegian. Instead, such path notions are expressed by other elements, such as prepositions and particles, as shown below.

Norwegian path verbs can be used both as a main verb as in (13a) and as a participle with other verb as a main verb, as in (13b).

(13) a. *Støv*   *falt*   *fra*   *taket.*
          dust   fall.PST   from   ceiling.DEF
          'Dust fell from the ceiling.'
      b. *Støv*   *kom*   *fallende*   *fra taket.*
          dust   come.PST   fall.PRS.PTCP   from cealing.DEF
          'Dust came falling from the ceiling.'

In (13), the path notion DOWN is expressed in the main verb position, while in (13), it is expressed by the participle *fallende* 'fall.PRS.PTCP' with the deictic verb *kom* 'came' as a main verb.

Contrary to path verbs, Norwegian has various prepositions that express path of motion. They take a nominal complement that expresses a ground (e.g., goal of movement as *sykkelen* in (15)) directly. Norwegian path prepositions are listed in (14). Examples of path prepositional phrases are given in (15) and (16).

(14) *til* 'to', *mot* 'toward', *fra* 'from', *i* 'in', *på* 'on', *over* 'over, across', *langs* 'along', *mellom* 'between', *gjennom* 'through', *rundt* 'around', *opp* 'up', *ned* 'down', *etc.*

(15) *Vennen*   *min*   *jogget*   *mot*   *sykkelen.*
      friend.DEF   my   jog.PST   toward   bicycle.DEF
      'My friend jogged toward the bicycle.'

(16) *Vennen*   *min*   *løp*   *inn*   *døra.*
      friend.DEF   my   run.PST   to.inside   door.DEF
      'My friend ran in through the door.'

In (15), the path TOWARD is expressed by the preposition *mot* 'toward' and takes the nominal complement *sykkelen* 'bicycle'. In (16), the path TO.IN is expressed by the preposition *inn* 'to inside' and takes the nominal complement *døra* 'the door'.

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[8] The path verb *bestige* 'mount' expresses not only the path of motion UP but also the manner of motion of climbing. The path verb *synke* express DOWN and implies that the figure of motion moves downwards unwillingly. The path verb *synke* 'sink' expresses DOWN and specifies that the figure of motion goes down below the surface or towards the bottom of a liquid or soft substance.

Norwegian also has a variety of path-indicating forms traditionally called particles (cf. Tungseth 2005; Egan & Graedler 2015; Faarlund 2019; Lundquist & Ramchand 2013 among others). They are listed in (17) and an example is given in (18).

(17) *inn* 'to inside', *ut* 'out', *opp* 'up', *ned* 'down', *bort* 'away', *vekk* 'away'

(18) *Han   gikk   ut.*
    he   walk.PST   out
    'He walked out.'

In (18), the particle *ut* expresses the path of motion OUT. Note that *inn* 'to inside'*, ut* 'out'*, opp* 'up'*,* and *ned* 'down' listed in (17) can function not only as particles, as in (18), but also as prepositions that take a nominal complement directly, as in (16) above (Lundquist & Ramchand 2013).[9]

In Norwegian, certain path notions need to be expressed by the combination of particles and prepositions. For example, the path TO.IN is expressed by a combination of the particle *inn* 'to inside' and a preposition like *i* 'in', *på* 'on', or *til* 'to', as illustrated in (19).

(19) *Maria   gikk   inn   i   bygningen.*
    Maria   walk.PST   to.inside   in   building.DEF
    'Maria walked into the building.'

In (19), the path TO.IN is expressed by the particle *inn* with the location preposition *i* 'in'.

2.2.3 Summary: Inventory of Norwegian motion expressions

The lexical inventories of Norwegian motion event expressions can be summarized as in Table 2.

Table 2. Inventory of Norwegian motion expressions

	Inventory
Manner	Verbs and adverbs
Path	Verbs, particles, prepositions, and combinations of particles and prepositions

Manner of motion in Norwegian can be expressed by verbs (e.g., *gå* 'walk' and *løpe* 'run') and adverbs (e.g., *fort* 'fast' and *sakte* 'slowly'). Path of motion in Norwegian can be expressed by verbs (e.g., *krysse* 'cross' and *passere* 'past'), particles (e.g., *inn* 'to inside' and *ut* 'out'), prepositions (e.g., *til* 'to' and *i* 'in'), and combinations of particles and prepositions (e.g., *inn i* 'into').

3. Method: Experiment C

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[9] This is true of *opp* 'up', *ned* 'down'. *Inn* and *ut* can also take a nominal complement only when they represent a traversed entity such as *dør* 'door', as in (16). When *inn* and *ut* take a nominal complement that expresses a goal of movement, as in (19), they need to be expressed together with particles such as *i* 'in' and *av* 'of'.

The NINJAL project on Motion Event Descriptions Across Languages (MEDAL) is a crosslinguistic collaborative project on motion event descriptions that features a video-based experimental method. Native speakers of target languages are asked to produce descriptions of video stimuli after watching them on a web browser.

For the purpose of eliciting descriptions of motion events of different kinds of paths and manners, this paper used Experiment C of the MEDAL project. The stimuli of the experiment are appropriate for this study because this experiment focuses on differences among paths, featuring 15 different types of path: ACROSS, ALONG, AROUND, DOWN, FROM, OVER, THROUGH, TO, TO.IN, TO.OUT, TOWARD, UP, PAST, VIA+BETWEEN/UNDER.[10] For each type of path, two types of manner (WALK and RUN) and one type of deixis (ORTHOGONAL) were included in the stimuli. See Figures 1 and 2 for samples of the video stimuli used in the experiment and 15 image-schematic representations of paths tested, respectively.

manner /Walk/ + path /From/   manner /Walk/ + path /Down/

manner /Walk/ + path /To.out/   manner /Walk/ + path /Past/

Figure 1. Video stimuli for Experiment C

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[10] Throughout this paper, paths are written in all capital letters (e.g., TO.IN); the video clips are named according to the path featured in them with the path placed between slashes (e.g., /To.in/).
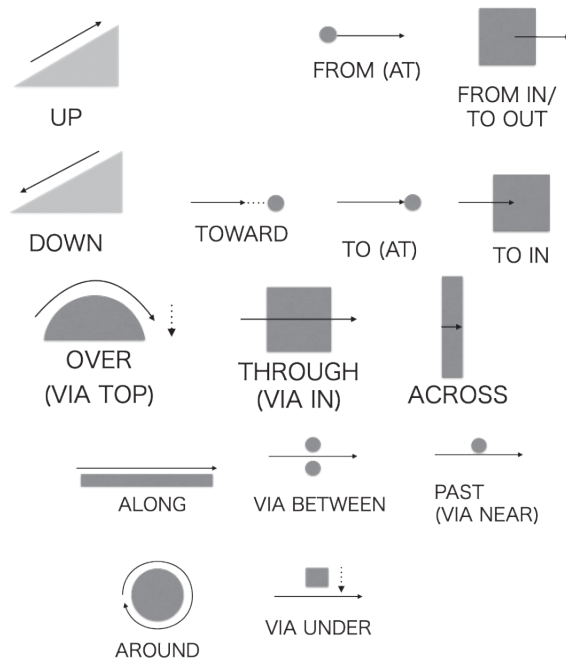
Figure 2. 15 Image-schematic representations of paths tested

In order to explore Norwegian motion event descriptions, I have collected production data from 20 native speakers of Norwegian (5 female and 15 males) between 19 and 36 years old. All the participants were native speakers of the Eastern dialect of Norwegian.

The sentences produced by the participants were recorded and transcribed using ELAN. For the analysis of this paper, 30 of the 44 video stimuli (15 paths x 2 manners), i.e., 600 examples (30 production * 20 participants), were included in the calculation of the experimental results. The list of 30 stimuli is shown in the appendix. The order of the clips was randomized and two versions were prepared with the order reversed. The experiment was conducted from November 2018 to March 2019 in Japan. The experiment kit was localized for Norwegian, as in Figure 3.
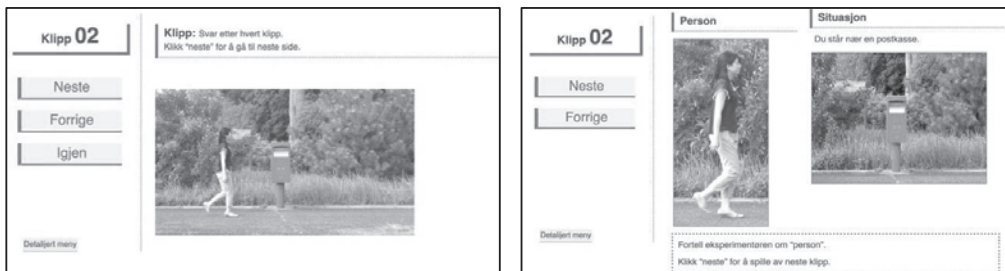

Figure 3. Experiment kit prepared in Norwegian

4. Results

In Section 2, I introduced the lexical inventories available for motion descriptions in Norwegian. In this section, I report the expressions the participants in Experiment C actually employed to describe different motion events of different kinds of paths and manners. After presenting semantic components coded in the main verb position in Section 4.1, Section 4.2 reports frequencies in which path was indicated by prepositions or by combinations of particles and prepositions. In Section 4.3, I report a subtle difference observed between when manner was WALK or RUN. Finally in Section 4.4, I summarize this section.

4.1. Semantic component coded in main verb position

Table 3 presents the total occurrence and percentage of cases in which manner, path, and deixis were expressed by the main verb (2 types of manner x 20 participants = max. 40 cases). The percentages shown in Table 3 are illustrated in Figure 4.

Table 3. Total occurrence (and percentage) of
semantic components coded in main verb position

Path category	Scene	Manner	Path	Other[11]	Total
Vertical	/Down/	40 (100.0%)	0 (0%)	0 (0%)	40
	/Up/	40 (100.0%)	0 (0%)	0 (0%)	40
Boundary crossing	/Across/	34 (85.0%)	6 (15.0%)	0 (0%)	40
	/Past/	39 (97.5%)	1 (2.5%)	0 (0%)	40
	/To.in/	40 (100.0%)	0 (0%)	0 (0%)	40
	/To.out/	37 (92.5%)	0 (0%)	3 (7.5%)	40
	/Through/	40 (100.0%)	0 (0%)	0 (0%)	40
Non vertical/	/Along/	39 (97.5%)	0 (0%)	1 (2.5%)	40
non boundary crossing	/Around/	40 (100.0%)	0 (0%)	0 (0%)	40
	/Via.between/	40 (100.0%)	0 (0%)	0 (0%)	40
	/Via.under/	40 (100.0%)	0 (0%)	0 (0%)	40
	/From/	40 (100.0%)	0 (0%)	0 (0%)	40
	/Over/	39 (97.5%)	0 (0%)	1 (2.5%)	40
	/Toward/	38 (95.0%)	0 (0%)	2 (5.0%)	40
	/To/	40 (100.0%)	0 (0%)	0 (0.0%)	40

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[11] The column "Other" shows instances in which verbs such as the deictic verb *komme* 'come' or the copular verb *være* 'be' are used, as in (i) and (ii), respectively. Examples of these verbs are given in (i) and (ii).

   (i)   *Han   er   på   vei   langs   elva.*
        he   is   on   way   along   river.DEF
        'He is on his way along the river.' (C1-15 [WALK-ALONG], 05)
  (ii) *En   mann   kommer   ut   av   en   åpen dør.*
        a   man   come.PRS out of   a   open door
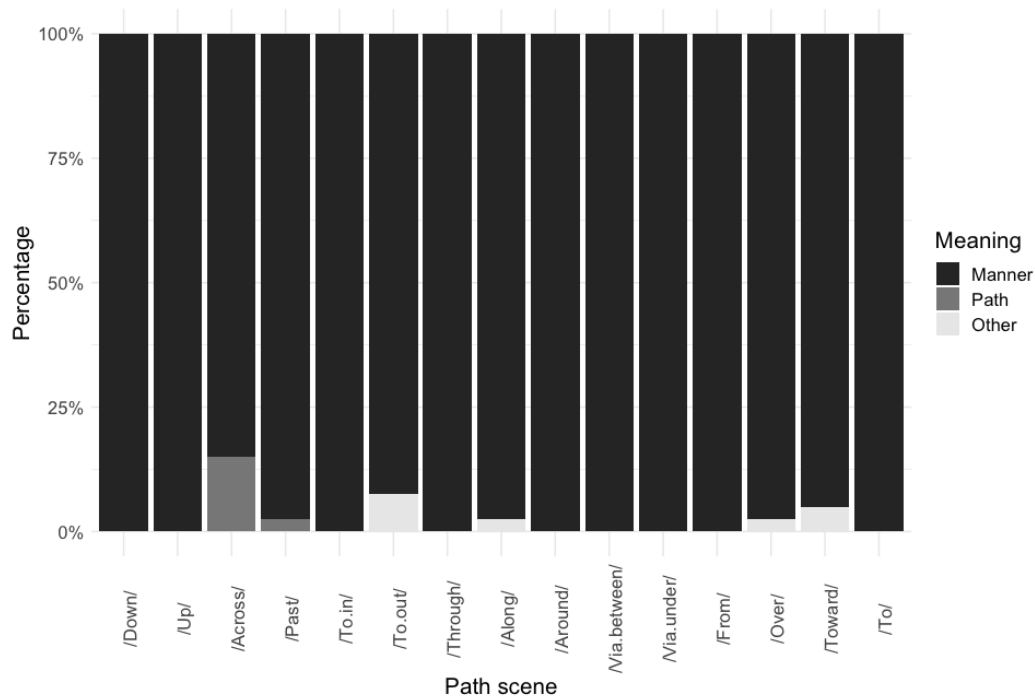   'A man comes out of an open door.' (C1-13 [WALK-OUT], 11)

Figure 4. Manner, path, and deixis in the main verb position for each path scene

From Table 3 and Figure 4, it can be observed that in all types of path scenes, the main verb position is occupied overwhelmingly by manner verbs. Examples (20)–(25) present some instances in which manner verbs such as *gå* 'walk', *tusle* 'stroll', *vandre* 'wander', *løpe* 'run', *spurte* 'spurt', and *sprinte* 'sprint' are expressed in the main verb position.

(20) *Han   går   vekk   fra   bordet.*
     he   walk.PRS away   from   table.DEF
     'He walks away from the table' '(C1-15 [WALK-ALONG], 12)[12]

(21) *Ei   jente   tusler   opp   trappa.*
     a   girl   stroll.PRS   up   stair.DEF
     'A girl strolls up the stairs.' (C1-07 [WALK-UP], 10)

(22) *En   mann   vandrer   langs   elven.*
     a   man   wander.PRS   along   river.DEF
     'A man wanders along the river.' (C1-15 [WALK-ALONG], 04)

(23) *En   mann   løper   inn   i   en   bygning.*
     a   man   run.PRS   to.inside in   a   building
     'A man runs into a building.' (C1-12 [RUN-TO.IN], 19)

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[12] The data elicited from the experiment are indicated as follows (C1-Clip number [MANNER-PATH], Participant ID).

(24) *Personen   spurter   mellom   to   trær.*
person.DEF   sprint.PRS   between   two   trees
'The person sprints between two trees.' (C1-30 [RUN-VIA.BETWEEN], 01)

(25) *Han   sprinter   over   veien.*
he   sprint.PRS   across   road.DEF
'He sprints across the road.' (C1-18 [RUN-ACROSS], 05)

In (20)–(25), manner of motion is expressed by verbs while path of motion is expressed by prepositions, such as *fra* 'from', *opp* 'up', *langs* 'along', etc., and a particle *inn* 'in'.

It can be further observed that path was sometimes indicated by verbs when the path scene was /Across/. In the /Across/ scenes, the path ACROSS was expressed by the path verb *krysse* 'cross' in 6 out of 40 cases. In the /Past/ scenes, the path PAST was expressed by the path verb *passere* 'past' in only one instance out of 40 cases. Although there are path verbs in Norwegian (see (12) in Section 2.2.2), such as *entre* 'enter' and *sirkle* 'circle', the results of the experiment show that such path verbs were not employed in the responses to the stimuli. Examples (26) and (27) are instances in which path verbs were used.

(26) *En   kvinne   krysser   en   vei.*
a   woman   cross.PRS   a   road
'A woman crosses a road.' (C1-17 [WALK-ACROSS], 16)

(27) *Hun   passerte   ei   postkasse.*
she   pass.PST   a   postbox
'She passed a postbox.' (C1-19 [WALK-PAST], 15)

In (26), the path notion of ACROSS is expressed by the main verb *krysser* 'cross'. Similarly, in (27), the path notion of PAST is expressed by the main verb *passerte* 'passed'.

4.2. Head-external path-coding pattern

This section reports how path of motion was encoded outside the main verb by the participants in the current study. Table 4 illustrates how many times path was encoded by prepositions or combinations of particles and prepositions out of 40 responses per path scene. As can be seen in Table 4, the participants never encoded path only via particles. When the head-external total number is less than 40, it means that path was either coded by a path verb or not coded at all. Figure 5 presents a graphic visualization of the data from Table 4.

Table 4. Head-external path-coding positions

Path category	Scene	Preposition only	Particle + preposition	Head-external Total
Vertical	/Down/	40	0	40
	/Up/	40	0	40
Boundary crossing	/Across/	34	0	34

	/Past/	38	0	38
	/To.in/	14	24	38
	/To.out/	6	33	39
	/Through/	37	1	38
Non vertical/	/Along/	37	0	37
non boundary	/Around/	40	0	40
crossing	/Via.between/	40	0	40
	/Via.under/	40	0	40
	/From/	12	28	40
	/Over/	40	0	40
	/Toward/	38	2	40
	/To/	40	0	40
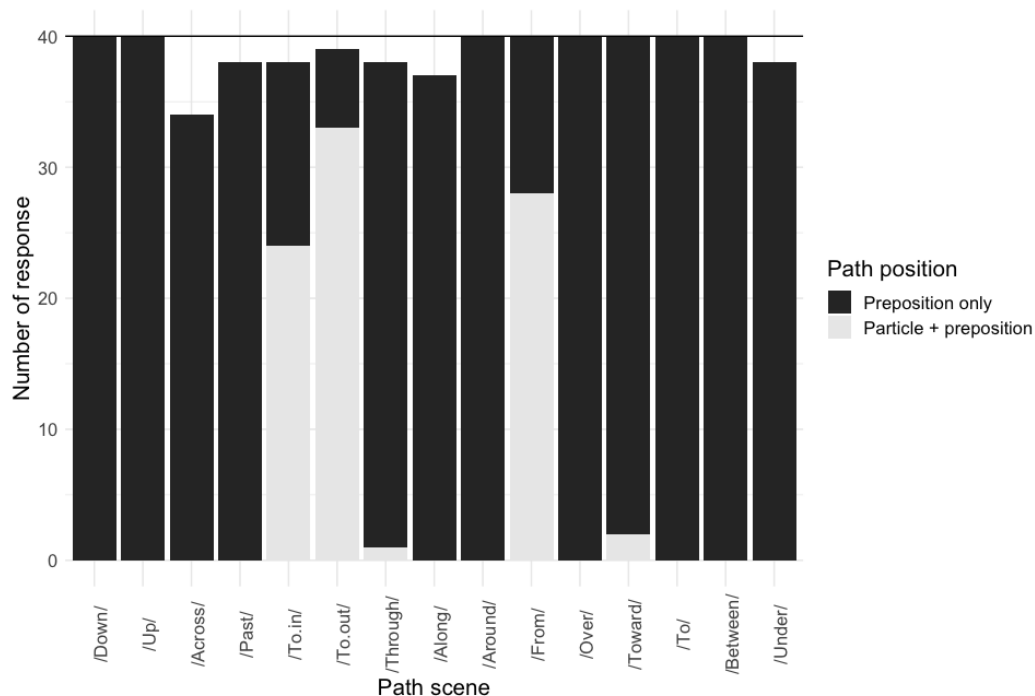
Figure 5. Head-external path-coding position

As can be seen from Table 4 and Figure 5, path was almost always indicated via a preposition, and sometimes by the combination of a preposition and a particle in all path scenes. In the /Across/ scenes, the path was represented by the verb *krysse* 'cross' several times (Table 2 and Figure 5). Since path is lexicalized in this verb, the total number of head-external path-coding is slightly lower than in the other path scenes. Some of the motion event descriptions with path prepositions are illustrated in (28)–(32).

(28) *En dame går ned en trapp.*
    a woman walk.PRS down a staircase
    'A woman walks down a staircase.' (C1-09 [WALK-DOWN], 14)

(29) *Han løp til bordet.*
    he run.PST to table.DEF
    'He ran to the table.' (C1-02 [RUN-TO], 12)

(30) *Hun tusler over veien.*
    she stroll.PRS across road.DEF
    'She strolls across the road.' (C1-17 [WALK-ACROSS], 05)

(31) *Mannen går under parasolen.*
    man.DEF walk.PRS under parasol.DEF
    'The man walks under the parasol.' (C1-31 [WALK-UNDER], 9)

(32) *En mann går rundt et tre.*
    a man walk.PRS around a tree
    'A man walks around a tree.' (C1-26 [WALK-AROUND], 08)

In (28)–(32), path notions are expressed by prepositions such as *ned* 'down', *til* 'to', *over* 'across', *under* 'under', and *rundt* 'around'.

It can be observed that particles were used together with prepositions especially when path scenes were /To/, /From/, /To in/, and /To.out/. In the /To/ scenes, the particle *bort* 'away' co-occurred with the preposition *til* 'to' to emphasize that the figure of motion reached the ground (i.e., goal of motion) in 18 out of 40 responses. In the /From/ scenes, particles like *bort* 'away' and *vekk* 'away' co-occurred with the preposition *fra* 'from' in 28 out of 40 responses. In the /To.in/ scenes, the particle *inn* 'to inside' co-occurred with the preposition *i* 'in' in 24 out of 40 responses. In the /To.out/ scenes, the particle *ut* 'out' co-occurred with the preposition *av* in 33 out of 40 responses. Thus, combinations of prepositions and particles were frequently employed to express certain path notions in the responses of the stimuli.[13] Some of the motion event descriptions with path indicating particles and prepositions are exemplified in (33)–(36).

(33) *En mann går bort til et bord.*
    a man walk.PRS away to a table
    'A man walks away to a table.' (C1-01 [WALK-TO], 11)

---

[13] Note that the path notion of TO and FROM can be expressed without particles. Examples (33) and (34) are fully acceptable without the particles *bort* and *vekk,* but they were employed together with prepositions. Such particles are used to emphasize that the figure of motion reached the goal (e.g., *et bord* 'a table' in (33) or is away from the source of motion (e.g., *et bord* 'a table' in (34)). As mentioned in Footnote 10, TO.IN and TO.OUT can also be expressed only by particles only when the nominal complement represents a traversed entity, such as *dør* 'door', as in (16). When *inn* and *ut* take a nominal complement that expresses a goal of movement as in (35) and (36), they need to be expressed together with particles such as *i* 'in' and *av* 'of'.

(34) *En   mann   går   vekk   fra   et   bord.*
    a   man   walk.PRS   away   from   a   table
    'A man walks away from a table.' (C1-03 [WALK-FROM], 08)

(35) *Mannen   går   inn   i   bygningen.*
    man.DEF   walk.PRS   to.inside   in   building.DEF
    'The man walks into the building.' (C-11 [WALK-TO.IN], 09)

(36) *En   mann   går   ut   av   bygningen.*
    a   man   walk.PRS   out   of   building.DEF
    'A man walks out of the building.' (C1-13 [WALK-TO.OUT], 04)

In (33)–(36), path notions are expressed by combinations of particles, e.g., *bort* 'away' + *til* 'to', *vekk* 'away' + *fra* 'from', *inn* 'to inside' + *i* 'in', and *ut* 'out' + *av* 'of'.

4.3. Manner types and path coding positions

This section reports the findings of this study regarding the relationship between manner types and path coding. Table 5 presents the total occurrence and percentage of cases in which manner, path, and deixis were expressed by the main verb in the two manner scenes. The percentages are shown in Figure 6.

Table 5. Number of semantic components coded in main verb position in two path scenes

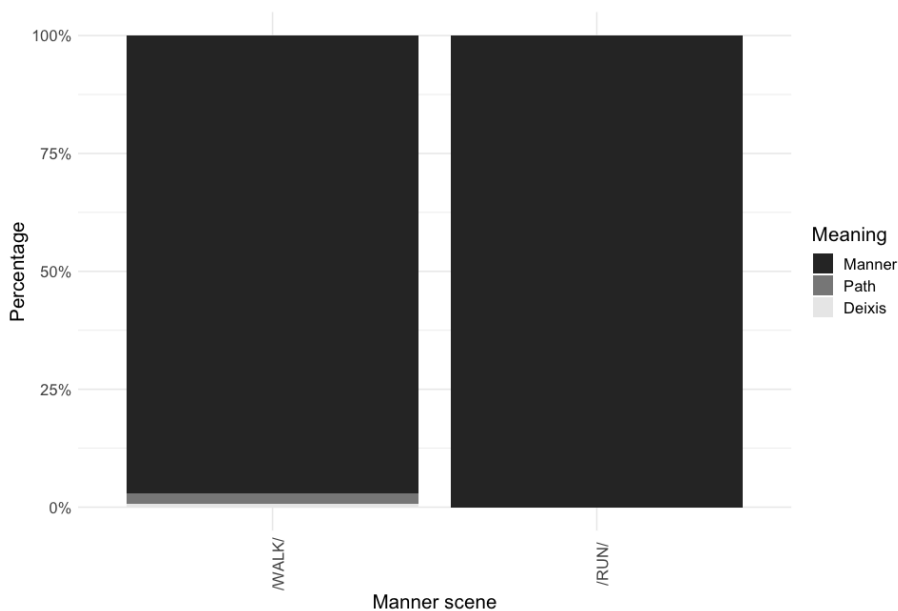| Scene	Manner	Path	Deixis	Total
/Walk/	289 (97.0%)	7 (2.3%)	2 (0.7%)	298 (100.0%)
/Run/	298 (100.0%)	0 (0.0%)	0 (0.0%)	298 (100.0%)

Figure 6. Percentage of semantic components coded in main verb position

As can be observed in Table 5 and Figure 6, when manner was WALK, path verbs were sometimes used in the main verb position. In the experimental results, in 9 out of 298 cases, path verbs or the deictic verb *komme* 'come' were used in the main verb position, as in (37) and (38), while manner WALK was represented by the main verb, as in (39), in the remaining cases.

(37) *En dame krysser veien.*
 a woman cross.PRS road.DEF
 'A woman crosses the road.'

(38) *Han kommer ut fra bygningen.*
 he come.PRS out from building.DEF
 'He comes out of the building.'

(39) *Han tusler igjennom hvilestedet.*
 he stroll.PRS in through resting place.DEF
 'He strolls in through the resting place.'

In contrast, when manner was RUN, manner was consistently expressed by the main verb, as in (40). As mentioned in Section 2.1.2., although it is grammatically possible in Norwegian to express path by main verbs and manner by participles, as in (41), such usage was never observed in the present experiment.

(40) *En mann løper over veien.*
 a man run.PRS across road.DEF
 'A man runs across the road.'

(41) *En mann krysser løpende veien.*
 a man cross.PRS running.PTCP road.DEF
 'A man crosses the road running.'

4.4. Summary

In this section, I reported the following three findings based on the results of the experiment. First, in all types of path scenes, the main verb position was occupied overwhelmingly by manner verbs and rarely by path verbs (Section 4.1). Second, paths were consistently expressed either by prepositions or combinations of particles and prepositions, not by verbs (Section 4.2). Lastly, while RUN and SKIP were always expressed in the main verb position, WALK was sometimes omitted, and path or deictic verbs were used instead (Section 4.3).

5. Discussion

Based on the results of the experiment, this section discusses the typological characterization of Norwegian motion event descriptions with special regard to consistency of path coding in Norwegian. After discussing the typological status of Norwegian in Section 5.1, Section 5.2 discusses the correlation between the lexical inventory of Norwegian and motion event descriptions in Norwegian. Finally, the relationship between the type of manner and the position of path coding is addressed in Section 5.3.

5.1. Typological status of Norwegian

This study empirically shows that Norwegian speakers consistently described motion events with the head-external path-coding pattern regardless of the type of path and manner. Norwegian has been treated as a language that tends to express path of motion in elements other than main verbs, such as particles and prepositions (Holum 2010; Johansen 2011b; Dimitrova-Vulchanova & Martinez 2013; Egan & Graedler 2015; Tanigawa, Takahashi & Matsumoto Under review). The study empirically confirmed that this is true even when different kinds of paths and manners are taken into account.

The high degree of consistency of Norwegian motion event descriptions is important given that inconsistencies in the typology of motion event have been observed in different languages (Section 1). It has been reported in the literature that different languages display different coding patterns depending on telicity, boundary crossing, or verticality of paths (Section 1). In contrast, as reported in Section 4, in the current study Norwegian speakers expressed motion events with the same consistent coding pattern with manner in the main verb and path outside the main verb, regardless of the properties of the paths.

Norwegian is also highly consistent when two types of manner of motion, WALK and RUN, are taken into account. Crosslinguistically, WALK tends to be coded differently in different languages because it is commonly treated as the default and is unmarked, unlike manners of motion like RUN and SKIP (Matsumoto 2017b: 11). For example, Serbian is a head-external path-coding language, but Serbian speakers consistently choose a head path-coding pattern to describe motion events in which the figure of motion walks, but not when it runs or jumps (Fagard, Stosic & Cerruti 2017). In contrast with such inconsistencies observed in many other languages, Norwegian speakers consistently choose to express motion events with head-external path-coding pattern.

In summary, it can be concluded that Norwegian is a particularly consistent language when it comes to coding patterns of motion event descriptions. Even when different kinds of paths and manners are involved, Norwegian speakers stick to a single coding pattern with manner in the main verb and path outside of it.

5.2. Correlation between lexical inventory and motion event descriptions

Although it is true that Norwegian speakers almost always adopt the head-external path coding pattern, the results of the current experiment indicate that there is a slight difference in path coding, depending on the type of path. While the path verb *krysse* 'cross' was used in 6 out of 40 responses, other path verbs such as *passere* 'past', *entre* 'enter', *sirkle* 'circle', *nærme seg* 'approach', and *forlate* 'leave' were used only once (in the case of *passere*) or not used at all. Instead, relevant paths were expressed head-externally, as in (42).

(42) *En   mann   går   inn   i   en   bygning.*
     a   man   walk.PRS   to.inside   in   a   building
     'A man walks into a building.' (C1-11 [WALK-INTO], 14)

In (42), the path of notion TO.IN is expressed by the combination of the particle *inn* and the preposition *i*.

This means that the existence of path verbs in the repertoire of Norwegian does not necessarily predict that path notions will be expressed by verbs. Even though Norwegian possesses path verbs for most of the path notions (e.g., *entre* 'enter'), path notions other than ACROSS were all consistently expressed head-externally by Norwegian speakers. Moreover, it can be argued that it is not necessarily the lack of path verbs that motivates Norwegian speakers to choose to employ manner verbs in the main verb position. In Talmy's typology, manner expression in satellite-framed languages is thought to be linked to the existence of a 'vacant' slot, i.e., lack of path verbs. However, at least from a synchronic perspective, it is not the case in Norwegian. Norwegian does possess a set of path verbs, but its speakers nevertheless choose to express manner in the main verb and path outside of it. Thus, it is not necessarily the case that Norwegian speakers employ manner verbs because the slot is vacant. This analysis is in line with the discussions of Fagard, Stosic & Cerruti (2017) who argue that language structure does not systematically predict a speaker's behavior, based on the observations on Serbian motion event descriptions. To conclude, there does not seem to be a strong correlation between the lexical inventory and consistency of Norwegian, nor the subtle variation observed in the motion event descriptions of Norwegian speakers.

5.3. Relation between manner types and path coding positions

This study argues that the type of manner slightly affects the consistency of path coding in Norwegian. As observed in Section 4.3, when manner was WALK, the manner information was sometimes omitted, and path was expressed in the main verb instead (7 out of 289 examples). On the other hand, when manner was RUN, manner was consistently expressed by the main verb. Although it is grammatically possible in Norwegian to express path by main verbs and manner with participles, as in (43), such a usage was never observed in the present experiment.

(43) *En   mann   krysser   veien   løpende.*
     a   man   cross.PRS   road.DEF running.PRS.PTCP
     'A man crosses the road running.'

That being said, the overall tendency is that Norwegian speakers consistently choose to express manner of motion in the main verb and path outside of the verb regardless of the type of manner. Importantly, this consistency is not a matter of course in the typology of motion event descriptions. Matsumoto (2017: 11) points out that when manner is unmarked (e.g., WALK), it is sometimes omitted, and languages tend to describe patterns of motion descriptions in ways that differ from the norm. Fagard, Stosic & Cerruti (2017) also argue that Serbian speakers consistently choose a verb-framed (≈ head path-coding) pattern when the figure of motion walks, even though Serbian is a satellite-framed (≈ head-external path-coding) language in structure. Thus, it can be concluded that Norwegian is a highly consistent language in its path coding position regardless of the type of manner, as well as the type of path.

6. Conclusion

Based on the results of the experiment, this paper argued that Norwegian is a highly consistent head-external path-coding language with only subtle variations in its path coding. More specifically, this paper

reported the following three findings. First, Norwegian speakers consistently express path by prepositions and combinations of particles and prepositions. Second, at the same time, Norwegian shows minor, yet important, variations when various kinds of paths are taken into account. Unlike other types of paths, the path notion of ACROSS is sometimes coded in the main verb position. Lastly, manner of motion also causes intralinguistic variations in Norwegian. When manner is WALK, path is slightly more likely to be expressed in the main verb, unlike when manner is RUN.

Based on these findings, this study shows the importance of paying special attention to various kinds of paths and manners in studies of motion event descriptions. Even Norwegian, which has been said to be a typical head-external path-coding (≈ satellite-framed) language, shows different framing patterns when different kinds of motion concepts are involved.

Acknowledgement

Appendix

34 stimuli of Experiment C analyzed in this paper

Clip ID	Manner	Path	Ground
C-01	WALK	TO	table
C-02	RUN	TO	table
C-03	WALK	FROM	table
C-04	RUN	FROM	table
C-05	WALK	TWARD	table
C-06	RUN	TWARD	table
C-07	WALK	UP	stairs
C-08	RUN	UP	stairs
C-09	WALK	DOWN	stairs
C-10	RUN	DOWN	stairs

C-11	WALK	TO.IN	small building
C-12	RUN	TO.IN	small building
C-13	WALK	OUT	small building
C-14	RUN	OUT	small building
C-15	WALK	ALONG	river
C-16	RUN	ALONG	river
C-17	WALK	ACROSS	road
C-18	RUN	ACROSS	road
C-19	WALK	PAST	postbox
C-20	RUN	PAST	postbox
C-21	WALK	THROUGH	gazebo
C-22	RUN	THROUGH	gazebo
C-23	WALK	OVER	small hill
C-24	RUN	OVER	small hill
C-25	WALK	VIA.UNDER	bridge
C-26	RUN	VIA.UNDER	bridge
C-27	WALK	AROUND	tree
C-28	RUN	AROUND	tree
C-29	WALK	VIA.BETWEEN	trees
C-30	RUN	VIA.BETWEEN	trees

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ノルウェー語の移動表現の一貫性

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　　　　　様態

要旨

　移動表現の類型論でノルウェー語は他のゲルマン諸語と同様に、様態を動詞で表し、経路を動詞以外の要素で表す言語であるとされてきた。しかし、ノルウェー語に関して、どれほど一貫してそのような移動表現のパターンをするのかという議論が十分にされてこなかった。移動表現における一貫性は、通言語的にも個別言語的にも様々なバリエーションを見せるため重要な問題である。そこで、本論文は、国立国語研究所 MEDAL (Motion Event Descriptions Across Languages) プロジェクトで開発された通言語的ビデオ実験 (C 実験) の結果を分析し、ノルウェー語母語話者が様々な経路や様態を含んだ移動事象をどのように表現するかを分析する。この実験の結果、初めて実証的にノルウェー語が一貫した経路表示パターンを見せる言語であり、通言語的には珍しくバリエーションをあまり見せないということを主張する。より具体的には、以下の三点を明らかにする。第一に、ノルウェー語母語話者は、一貫して経路を主動詞以外の助詞や前置詞で表す。第二に、それと同時に、ノルウェー語では経路の種類によって若干バリエーションが見られる。経路が ACROSS の場合、稀に経路情報が主動詞で表されることがある。第三に、様態の種類によってもバリエーションが若干見られる。様態が WALK の場合、RUN などの場合とは異なり、様態が主動詞で表されず、経路が表されることがある。このように、本研究は、ノルウェー語の個別言語的研究および移動表現の類型論に、一貫したパタンを見せる言語の新たな実証データを提示し、様々な経路や様態を含めた研究の重要性を示唆する。

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