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A Qualitative Study of Actual and Non-Actual Motion Expressions in Telugu and its Implications for Some South Asian Languages

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Abstract This paper examines the similarities and differences between actual motion (AM) and non-actual motion (NAM) expressions in Telugu via a qualitative approach. The findings revealed the following similarities: (a) the extensive use of generic deictic verbs, (b) the obligatory use of case markers for encoding Path, (c) the limited number of path verbs and their uses, and (d) the use of spatial nouns for expressing Region. In addition, the findings also revealed that AM had a reasonable number of Manner expressions, whereas NAM contained almost no information about Manner.

Keywords Agglutinative languages. Dravidian. Motion Event Typology. South Asian Languages. Telugu.

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1 Introduction

Actual motion (AM) involves an object or entity moving from one place to another via self- or other-caused motion or being located in a place. For example, (1) involves a bottle carrying out a motion along a trajectory with respect to the cave. Here, *bottle* is a Figure that is defined as a moving entity, *cave* is the Ground or Landmark with reference to which the bottle moves, *into* is a Path that is a trajectory followed by the Figure, and the main verb *float* expresses both Motion and Manner. AM is examined extensively in the context of Talmy's Motion Event Typology (Talmy 2000b); he proposed a binary typology based on how languages express Path or the *core schema* in the main verb or "satellites"[1] in a Motion event. The binary language types are "satellite-framed" (henceforth SF) that express Path on "satellites", as illustrated in (1), and "verb-framed" (henceforth VF) that express Path on main verbs; see (2) and (3). Telugu belongs to neither of the two types, as illustrated in (4), in which Path is expressed by the dative case marker, Motion is expressed on the deictic verb; Region is expressed by the spatial noun; and Manner is expressed on the nonfinite. Most of these features, including case markers, have not received due attention in the binary typology. As a result of this undue attention to linguistic forms other than path verbs and satellites, many languages have been analysed with the aim of fitting the data into either of the two types. A classic case that is relevant to this paper is that of Tamil (Pederson 2006) and Hindi (Narasimhan 2003), two South Asian languages, which have been misclassified as archetypical VF languages. As part of this misclassification, Pederson (2006) claimed that manner verbs could not be used as the main verb in boundary-crossing situations in which the Figure crosses from one spatial boundary to another, which is a typical characteristic feature of VF languages. This is not always true. As exemplified in (5), Tamil clearly exhibits the use of manner verbs in a boundary-crossing situation, as do the other Indian languages in (6) and (7).

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1 Satellites are those form classes that are in constructions with verbs such as English particles and Russian verb prefixes (Talmy 2000b).

(1) The bottle floated$_{[\text{Manner}]}$[2] **into**$_{[\text{Satellite}]}$ the cave.

(2)

la	*botella*	***entró***$_{[\text{Path}]}$	*a la cueva*	*flotando*
the	bottle	moved.in	to the cave	floating

'The bottle floated into the cave'.*

* The pragmatic sense of this sentence appears to be "the bottle entered the cave floating", as in (4).

Spanish (Talmy 2000a, 49)

(3)

La	*barca*	***entrò***$_{[\text{Path}]}$	*nella*	*grotta*	*galleggiando*
the	boat	entered	into.the	cave	floating

'The boat entered the cave, floating'.

Italian (Folli, Harley 2020, 427)

(4)

bāṭil	*nīḷḷa mīda*	*tēlu-tū*	*guha-lō-**ki***$_{[\text{Path}]}$	*weḷḷi-M-di*
bottle	water above	float-PTCP	cave-in-**DAT**	go-PST-3SG.N

'A bottle went to the cave floating'.*[3]

Telugu

(5)

oru	*payyan*	*arai-kk-uḷ*	*oṭi-ṉāṉ*
one	boy	room-DAT-in	run-PST-3SG.M
	Figure	Landmark-Path:End-Region:In	Manner+ Motion

'A boy ran into the room'.

Tamil[4]

(6)

oka	*abbāyi*	*gadi-lō-ki*	*parigett-ā-ḍu*
one	boy	room-in-DAT	run-PST-3SG.M
	Figure	Landmark-Region:In-Path:End	Manner+ Motion

'A boy ran into the room'.

Telugu

2 Manner: various aspects of how motion takes place, such as bodily locomotion or the use of a vehicle; Path: a bounded event, with respect to the Beginning, Middle and/or End (such as "to", which is Path:End in "the manager rushed to the office"); Direction: an unbounded event along one or more vectors defined by an FoR (such as upwards or towards a speaker); Region: an area of space, usually defined in relation to the Landmark (such as "on" in "the girl danced on the floor"); Figure: the focal entity (such as "bottle" in "the bottle floated into the cave"); Landmark: one or more physical entities in relation to which the location or translocation of the Figure may be specified ("cave" in "the bottle floated into the cave"). For more details about motion components, see Naidu et al. 2018; Naidu, Zlatev, van-de-Weijer forthcoming; Talmy 2000a; Zlatev 2007; Zlatev et al. 2021.

3 In this paper, the glossing and translation of the Telugu examples are only for the convenience of the reader; I do not claim that they correspond to the native concepts.

4 The Author collected examples (5), (7), and (17) to (32) from native speakers. The uncited Telugu examples (such as 6) are constructed by the Author as a native speaker.

(7)	*ēkā*	*mulgā*	*khōlī-la*	*palāl-ā*
	one	boy	room-DAT	run.PST-3SG.M
		Figure	Landmark-Path:End	Manner+ Motion

'A boy ran to the room'.

Marathi

Against these issues, while criticising the binary typology, Naidu et al. (2018), Naidu, Zlatev, van-de-Weijer (forthcoming), and Zlatev et al. (2021) recently proposed post-Talmian Motion Event Typology because languages such as Telugu do not fit into the original cognitive typology. In this post-Talmian approach, languages are analysed as belonging to at least four clusters. Languages such as Swedish represent the first cluster, while French belongs to the second cluster, and Thai and Telugu represent the third and fourth clusters, respectively. Since the fourth cluster is of particular interest for the present paper, I will discuss it in detail (Naidu et al. 2018); Naidu et al. (2022) proposed that Telugu should be considered as an example of the fourth cluster that was previously conflated with others due to the limitations of an overly constrained typology. The two joint works based on the AM data revealed that this fourth cluster can be characterised by at least four typological features: (a) the preferential use of Direction verbs rather than Path verbs; (b) case markers to encode Path; (c) the use of spatial nouns for expressing Region; and (d) the frequent use of Manner verbs in boundary-crossing situations, complemented by *adnominal* dominance over *adverbal* dominance.

Against this empirically established backdrop, the specific question that is addressed in this comparative study is whether NAM shows similar features to those of AM. Given the linguistic resources available in Telugu, I predict that Telugu may exhibit similar patterns in the expression of NAM. If this prediction is proved to be true, the present study will further confirm that Telugu forms a distinct cluster. In other words, the similarities in both domains will indicate that the features are not only characteristics of the AM domain but also mirror the NAM domain in Telugu. These features may imply that some other South Asian languages might have similar tendencies that could be investigated in future studies. In addition to the similarities, the present study also anticipated that there would be differences in AM and NAM with regard to the expressions of manner of motion. These differences may be explained via the principles of cognition and human experience. With these objectives, the remainder of the paper is organised as follows. Section 2 briefly introduces NAM, while section 3 describes the key linguistic features of Telugu. Section 4 describes the methodology for the study, while section 5 presents the similarities and differences in AM and NAM expressions. Section 6 presents the discussion of the findings, and section 7 concludes the paper.

2 NAM

(8) The ghat goes to the river.

Without having to consider the issue overly, two things may be noted in (8): first, it is as much a natural linguistic description as is any other grammatical description in English. Second, there is a ghat (a set of steps). As we know, this ghat only exists in a static mode. Why is it, then, that the motion verb 'go' is used for an object (ghat) that does not move at all? This simple question has prompted many linguists, particularly cognitive semanticists, to investigate the reasons for such a description. This is an example of NAM.[5] It has been studied in a wide range of languages, including English and Japanese (Amagawa 1997; Matsumoto 1996), English and Spanish (Rojo, Valenzuela 2003), Spanish (Rojo, Valenzuela 2009), and Swedish, French, and Thai (Blomberg 2015; Hoffmann 2012; Takahashi 2000). These studies observed that NAM was a common phenomenon across languages. Furthermore, it has been demonstrated that there are similarities and differences across languages when expressing NAM. Eye-tracking and picture-drawing studies (Matlock 2006; Matlock, Richardson 2004) have also made substantial contributions to the study of NAM in revealing the nature of the interactions between linguistic and nonlinguistic factors. Many of these studies have explicitly called for more research and a more diverse set of languages in order to better understand the nature of the interactions between cognitive and linguistic factors, as well as the ways in which languages express NAM. Since there is hardly any work on Indian languages regarding AM or NAM, or on both in general and Dravidian in particular, this comparative study may serve as a starting point for research on other Indian languages. This was one of the motivations for studying AM and NAM in Telugu.

3 About Telugu

Telugu is the largest Dravidian language in terms of the number of speakers. It is sixteenth on the Ethnologue list of the most frequently spoken languages in the world (Ethnologue 2021), and is mainly spoken in the southern states of Andhra Pradesh and Telangana India **[fig. 1]**. According to Government of India's 2011 language census report (Office of the Registrar General and Census), it is spoken by

5 I adopt the term NAM from Blomberg, Zlatev 2014, although in the literature it is widely known as fictive motion, abstract motion, or subjective motion (Langacker 2005; Matlock 2010; Matsumoto 1996; Talmy 1996; 2000a).

81,127,740 speakers. It is one of the 22 scheduled languages in the Eighth Schedule of the Constitution of India. A key function of the scheduled languages is that they are official languages in their respective states.

To provide a brief historical note about the two Indian states in which Telugu is spoken, following the downfall of the Kakatiya kingdom in the fourteenth century, the two states were invaded and were ruled as one state by various Muslim polities until the eighteenth century. During the eighteenth century, Telangana continued to be under Muslim rule, while Andhra Pradesh was under British rule as part of the treaty between the Muslim and British rulers. Nine years after India's independence in 1947, Andhra Pradesh and Telangana formed one state, and reverted to the former name, Andhra Pradesh. This was the first linguistic state to be formed in independent India. In 2014, the Telangana region separated from Andhra Pradesh and was granted statehood by the government of India (Ministry 2014).

Some of Telugu's key linguistic features are as follows: it is a predominantly suffixal, agglutinative language with relatively free word order (canonical SOV) and is largely head-final in structure. Modifiers such as adjectives and genitives precede nouns, and auxiliaries follow the main verb. Telugu is a nominative-accusative language, as the main verb agrees with the argument in the nominative case. Unlike English, there are no pleonastic constructions with *it*/*there* in Telugu. It is a pro-drop language, with the main verb encoding subject information in the form of agreement. It has case markers that indicate various syntactic and semantic relationships between the nouns and the verb. Telugu also has postpositions, which function syntactically as case markers. In this paper, we will see the importance of case markers, spatial nouns, and deictic verbs in expressing AM and NAM **[fig. 1]**.

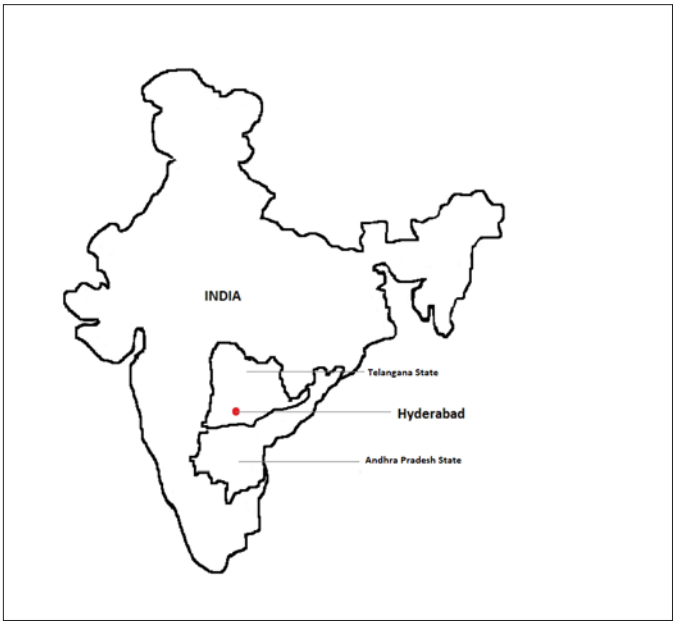

Figure 1 Map of India showing Andhra Pradesh and Telangana

4 Methodology

4.1 Participants

AM Participants

Thirty Telugu speakers (15 female and 15 male) were recruited from among the under-graduate and post-graduate students registered at the University of Hyderabad, India. The mean age was 21.9 years. At the end of the session, the participants were thanked and were compensated for their participation.

NAM Participants

Those who participated in the AM study also participated in the NAM study.

4.2 Material

The study used 38 video clips and 40 pictures that were developed in the PATOM project at Lund University.

AM Material

A set of 38 video clips of translocative[6] motion events were used. The clips lasted for a minimum of five to a maximum of eight seconds depending on how long it took for a particular Motion situation to conclude naturally. All the situations involved a human being, either as an agent or as a Figure performing an action. The list of translocative events is presented in Appendix A.

NAM Material

The stimuli consisted of 40 static pictures, of which 20 were control and 20 were experimental. Although both the control and the experimental stimuli depicted static situations, the former lacked (linear) paths. The list of stimuli is found in Appendix B.

4.3 Procedure

AM Procedure

Having obtained written informed consent, the participants were asked to sit on a comfortable chair in a quiet room and to read the instructions that were presented in Telugu on the computer screen. They were also requested to only begin their descriptions after viewing the video clips completely; at no point were the videos played twice. The descriptions were audio recorded using a Sony ICD-MP3, and were later transcribed for analysis. The number of clauses is presented in table 1.

6 It is defined as a change to a Figure's relative average position in a given frame of reference (Zlatev, Blomberg, David 2010). Also see Naidu et al. 2022.

NAM Procedure

The procedure was relatively more complex than the AM procedure presented above. A confederate to whom the experimenter (the Author of the present paper) explained the picture-guessing game task was recruited. The experimental pictures were placed on a whiteboard (60 cm in width by 60 cm in length) and handed to the confederate. The game entailed the confederate needing to identify the experimental pictures he had been given based on the participants' descriptions. Having explained the game to the confederate, a participant was invited to sit on a comfortable chair in a quiet room at a distance of 60 cm from the desktop computer. The participant was then requested to read the instructions shown on the computer screen carefully. The instructions that were originally provided in Telugu were as follows: "You are now going to play a game with a confederate. You will first be shown pictures on the computer screen. After seeing each picture, please describe it clearly in Telugu. While you describe the pictures, the confederate needs to identify the pictures. Therefore, your descriptions need to be as precise as possible". The instructions were followed by a practice session in which it was ensured that the participant understood the task. The participants' descriptions were audio recorded using a Sony ICD-MP3, and were later transcribed for analysis. The number of clauses is presented in **table 1**. There were more Motion clauses in AM than in NAM because the latter did not necessarily need to be described using a motion verb.

Table 1 Clauses in the AM and NAM data

	Clauses
AM	1,835
NAM	671

5 Patterns in the AM and NAM Studies

This section discusses motion patterns in the AM and NAM data qualitatively. The intent is not to provide a direct or one-on-one comparison of the data, as the corpora are not comparable; nor was this an objective of the paper. The following were the limitations in the direct comparisons: (i) the stimuli were different in each study. The AM study employed video clips, while the NAM study made use of static pictures. (ii) The methods and procedures also differed. For example, the AM study contained descriptions of individual video clips, while the NAM study consisted of descriptions of pictures and a gaming task (see the previous section). Therefore, given these good reasons, the data are not comparable in their entirety. However, the data are adequate for discussing linguistic patterns such as case markers and deictic verbs used for encoding subcomponents of Motion, such as Path. I will discuss four linguistic patterns that were similar in both the domains under the following headings:

a. the use of deictic verbs;
b. the less frequent use of Path verbs;
c. the use of the case markers;
d. the use of Region nouns.

These common patterns have implications for revisiting Talmy's motion event typology that is problematic for languages such as Telugu. In addition to these similarities and implications, there were also differences in the AM and NAM domains with regard to Manner of Motion expressions, as discussed in section 5.5.

5.1 The Use of Deictic Verbs in AM and NAM

Deictic verbs such as *weḷḷu* 'to go' (9) and *waccu* 'to come' (10) were frequently used to encode Motion. The relationship between deictic verbs and Motion is compositional in Telugu, as it does not conflate with any other semantic concept. Tables 2 and 3 present the ten most frequently used verb types and their frequencies in the two studies (**tables 2-3**). As shown, two generic deictic verbs (*weḷḷu* / *pōwu* 'to go' and *waccu* 'to come') occupied the first two positions, accounting for 41.60% and 41.03% in the AM and NAM studies, respectively. These percentages indicate that, in both domains, deictic verbs were more frequent than were other verb types, such as path verbs.

(9)

oka	*pustakālu*	*unna*	*gadi-lō*
one	books	there	room-in
			Landmark-Region:In
nuMḍi	*ammāyi*		
ABL	girl		
Path:Begin	Figure		
eḍama waipu	*nuMḍi*	*bayaṭa-ku*	*weḷḷ-iM-di*
left side	ABL	out-DAT	go-PST-3SG.F
Direction:VC	Path:Begin	Region:Out-Path:End	Direction+MotionFoR:VC

'A girl went out from the left side of the room with books'.

(Event 4, participant 6)

(10)

ii	*bomma-lō*	*soraMgaM-lōpala-nuMci*
this	picture-in	tunnel-inside-ABL
rōḍḍu	*bayaṭi-ki*	*wastu-M-di*
road	outside-DAT	come-FUT.HAB*-3SG.N
Figure	Region:Outside-Path:End	Direction+MotionFoR:VC

'In this picture, a road is going outside from inside of the tunnel'.

* This is future-habitual tense as it has two meanings: it can either express action or state that will happen in future or express action or state that is habitual (Krishnamurti, Gwynn 1985, 153)

(Image 9, participant 4)

Table 2 Ten most frequently used verbs and their frequency in AM

Serial number	Verb	Frequency	Type
1	*weḷḷu/pōwu* ('go')	325	Deictic (Direction)
2	*waccu* ('come')	200	Deictic (Direction)
3	*parigettu* ('run')	244	Manner
4	*naḍucu* ('walk')	130	Manner
5	*ekku* ('ascend')	77	Deictic (Direction)
6	*kūrconu* ('sit')	73	Posture
7	*digu* ('descend')	63	Deictic (Direction)
8	*nilabaḍu* ('stand')	61	Posture
9	*jāgiMg cēyu* ('jog')	54	Manner
10	*koṭṭu* ('hit')	35	Action
		1,265	

Table 3 Ten most frequently used verbs and their frequency in NAM

Sl. no.	Verb	Frequency	Type
1	*wēyu* ('put/construct')	164	Action
2	*weḷḷu* ('go')	129	Deictic (Direction)
3	*waccu* ('come')	102	Deictic (Direction)
4	*paḍu* ('fall')	75	Manner
5	*ekku* ('ascend')	21	Deictic (Direction)
6	*nilabaḍu* ('stand')	21	Posture
7	*ōpen* ('open')	15	Action
8	*wēlāḍutū* ('hang')	13	Action
9	*kaṭṭu* ('construct')	12	Action
10	*pagulu* ('break')	11	Action
		562	

5.2 Less Frequent Use of Path Verbs in AM and NAM

Another systematic and consistent pattern was the less frequent use of path verbs, as shown in (11) and (12), in both domains. Path verbs always conflate Path + Motion in Telugu, as is the case in Germanic languages. Furthermore, path verbs indicate bounded events. In addition, when a path verb is used as in (11), Path is distributed in two linguistic expressions; that is, on a verb and as a case marker. In the AM study, there were three types and 18 tokens (**table 4**), while there were three types and 15 tokens in the NAM study (**table 5**). None of these path verb types found a place in the top ten most frequently used verbs, as illustrated in the previous section (see **tables 2-3**). Furthermore, it may be observed in tables 4 and 5 that the verb types were almost the same. Therefore, the participants were not only consistent, but were also systematic in the use of path verbs.

(11) *oka wyakti mellagā tana gadi-lō-ki* *prawēśiMc-ā-ḍu*
one man slowly his room-in-DAT enter-PST-3SG.M
Figure Manner Landmark-Region:In-Path:End Path+MotionPath:End
'One man slowly entered his room'.
(Event 13, participant 11)

(12) *bhawanaM cērukōw-aḍāni-ki meṭlu unn-ā-yi*
building reach-GER-DAT steps be-FUT.HAB-3PL.N
Path+Motion-Path:End
'To reach a building, there are steps'.
(Image 8, participant 5)

Table 4 Path verbs and their frequency in AM

Sl. no.	Path verb	Frequency
1	*prawēśiMcu* ('enter')	13
2	*cērukonu* ('reach')	3
3	*eMṭar* ('enter')	2

Table 5 Path verbs and their frequency in NAM

Sl. no.	Path verb	Frequency
1	*cēru* ('reach')	9
2	*dāṭu* ('cross')	4
3	*prawēŚiMcu* ('enter')	2

5.3 The Dominant Use of Case Markers for Path in AM and NAM

In two of the previous subsections, it was mentioned that deictic verbs outnumbered path verbs for expressing Motion. Furthermore, it was noted that the use of path verbs was insignificant. A logical question then relates to which form classes were used to express Path? The answer is case markers, as illustrated in (9), in which *-nuMḍi* and *-ki* express Path. They are to be distinguished from Talmy's satellites, as the former are not used in constructions with verbs, but are always used in constructions with nouns. The participants used such case markers to express Path in the AM and NAM studies consistently. The most common and frequent was the dative case, which accounted for 64.38% in the AM study (**table 6**), and for 50% in the NAM study (**table 7**). This is another significant typological feature that differentiates Telugu from other languages such as French, Swedish, and Thai, which mainly use path verbs, satellites, and serial verbs, respectively, to express Path.

Table 6 Case markers and their frequency in AM

Sl. no.	Case markers	Frequency
1	*-ki/-ku* ('to')	602
2	*nuMci* ('from')	311
3	*guMḍā* ('via')	7
4	*waraku* ('until')	7
5	*dwārā* ('via')	7
6	*mīdugā* ('via')	1

Table 7 Case markers and their frequency in NAM

Sl. no.	Case markers	Frequency
1	*-ki/-ku* ('to')	241
2	*nuMci/ nuMḍi* ('from')	199
3	*waraku* ('until')	27
4	*dwārā* ('via')	10
5	*guMḍā* ('via')	5

5.4 Dedicated Set of Spatial Nouns for Region

Another common pattern in the AM and NAM studies was that Telugu exhibited a set of spatial nouns to express Region. In (9), there are two spatial nouns, *lō* "in" and *bayaṭa* "outside", which express Region. Similarly, spatial nouns expressing Region can be seen in (10) and (11). The types were almost the same in the two studies, as presented in **tables 8** and **9**. The most common and frequent noun was *lō/lōpala* 'in(side)', which accounted for 36.69% in the AM study and for 47.63% in the NAM study. Furthermore, no AM or NAM was expressed without a Region and/or a Landmark expression.

Table 8 Region nouns and their frequency in AM

Sl. no.	Region noun	Frequency
1	*lō/lōpala* ('in/inside')	375
2	*paina* ('above')	150
3	*bayaṭa* ('outside')	161
4	*daggara* ('near')	116
5	*kiMda* ('below')	82
6	*mīda* ('above')	44
7	*muMdu* ('front')	34
8	*dūram* ('far')	16
9	*kuḍiwaipu* ('right side')	10
10	*pakkana* ('beside')	8
11	*eḍama* ('left')	5
12	*madhya* ('middle')	5
13	*akkaḍa* ('there')	3
14	*ān* ('on')	2
15	*cuṭṭu* ('around')	2
16	*ḍaun* ('down')	2
17	*dāni* ('in that')	1
18	*fraMṭ* ('front')	1
19	*ikkaḍa* ('here')	1
20	*insaiḍu* ('inside')	1

Sl. no.	Region noun	Frequency
21	*na* (‘end’)	1
22	*saiḍu* (‘side’)	1
23	*wadda* (‘near’)	1
		1,022

Table 9 Region nouns and their frequency in NAM

Sl. no.	Region noun	Frequency
1	*lō/lōpala* (‘in/inside’)	201
2	*kiMda* (‘below’)	46
3	*paina* (‘above’)	44
4	*bayaṭa* (‘outside’)	27
5	*madhya* (‘middle’)	18
6	*saiḍu* (‘side’)	15
7	*pakkana* (‘beside’)	11
8	*kuḍi* (‘right side’)	9
9	*daggara* (‘near’)	8
10	*akkaḍa* (‘there’)	7
11	*ikkaḍa* (‘here’)	7
12	*mīda* (‘above’)	6
13	*eḍama* (‘left’)	6
14	*muMdu* (‘front’)	5
15	*dūraM* (‘far’)	3
16	*raiṭu* (‘right’)	3
17	*aṭu* (‘there’)	3
18	*venaka* (‘backside’)	1
19	*civara* (‘end’)	1
20	*ap* (‘up’)	1
		422

5.5 Manner of Motion in the AM and NAM Studies

The use of manner of motion expressions differed to a considerable extent in the AM (13) and the NAM (14) studies. Qualitatively, this was the only difference that was observed in the two studies, in which expressions of manner of motion were absent except for one token in the NAM study (14), in which the inanimate was the Figure.[7] Furthermore, as shown in **table 10**, adverbs were completely absent in the NAM data, whereas they were present in the AM data. Moreover, as a native speaker, I found another difference between the use of AM and NAM. In the AM descriptions, when more than one motion verb (for example, Manner and Direction) was used in a video, the participants consistently used the following combination: a Manner verb as a participle/nonfinite form, and a Direction verb as a finite/main verb form, as illustrated in (15). By contrast, such constructions did not appear to be natural constructions in Telugu, as illustrated via an invented example in (16). In brief, the Manner of Motion was the only typological difference discovered in the AM and NAM studies, as all the other features discussed in the previous sections were found in both domains.

(13)	*oka*	*atanu*	*rōḍḍu*	*mīda*	*uruku-tunnā-ḍu*
	one	he	road	above	run-PROG-3SG.M
		Figure	Landmark	Region:Above	Manner+Motion

'A man is running along the road'.

(Event 3, participant 30)

(14)	*reMḍu*	*koMḍalu*	*zigzag-lāgā*	*unn-ā-yi*
	two	hills	zigzag-like	be-PST-3PL.N
		Figure	Manner	

'The two hills are like zigzag (in shape)'.

(Image 31, participant 17)

7 Here, I report the manner of motion expressions in which Figure was an inanimate object in NAM, as in "a road crawls through the coast", not instances such as "we can crawl on the road" that is considered to be an extended NAM (Andersen 2020). If we consider the latter, there were some manner verbs and adverbs that were still less frequent in NAM.

Table 10 Use of Adverbs in AM and NAM

Sl. no.	Study	No. of participants	No. of adverbs
1	AM	30	118
2	NAM	30	0

(15) *oka* *atanu* *prasāMtamaina* *rōḍḍu* *paina*
one he pleasant road above
Figure
urukkuM-ṭu *weḷ-tunnā-ḍu*
running-PTCP go-PROG-3SG.M
Manner+Motion Direction+ MotionFoR:VC
'A man is going along the pleasant road running'.
(Event 3, participant 20)

(16) *?rōḍḍu* *guha-lō-ki* *urukkuM-ṭū* *weḷ-tuM-di*
road cave-in-DAT running-PTCP go-PRS-3SG.N
'A road is going into the cave running'.

6 Discussion

In this paper, I examined the AM and NAM linguistic expressions in Telugu. The objective was to qualitatively investigate similarities and differences in both studies. Although the data obtained were not directly comparable due to the different stimuli, methods, and procedures, the data were sufficient and adequate in scope to examine the linguistic resources available for the expression of the semantic categories of motion events, such as Motion, Path, Region, and Manner in the AM and NAM data. The findings revealed that there was a considerable degree of similarity between the AM and NAM data, while they also showed some differences with regard to the Manner of Motion. The findings have implications for post-Talmian motion event typology in the context of South Asian languages.

Based on the empirical data presented in the previous section, I obtained the following results. Beginning with deictic verbs, they outnumbered path and manner verbs in both domains irrespective of the stimuli and methodology. In this regard, both studies were consistent in the use of deictic verbs to express Motion. With regard to Path verbs, Telugu speakers consistently used fewer path verbs in both experiments, which distinguishes Telugu from other languages such as French and Thai (Naidu et al. 2018; Naidu et al. 2022; Zlatev et al. 2021) that use more path verbs. Since the use of path verbs is insignificant in Telugu, I naturally questioned which other linguis-

tic form was used to express Path. The answer was case markers, which predominated in both the studies, as illustrated figure 2. Here, case markers could not be considered to be Talmy's "satellites", as the former did not occur in constructions with verbs. In Telugu, case markers (for example, the accusative *-ni/-nu* and the dative *-ki/-ku*) always occur in constructions with nouns. Of particular interest in this paper are those case markers that express Path, such as the dative case and the ablative case. Such case markers have not received adequate attention in the literature on Motion Event Typology (Naidu et al. 2022). In other words, case markers are the only category that shoulder Path in Telugu and have not received sufficient attention in the Talmian work. Concerning the expressions of Region, Telugu employs a set of spatial nouns to express Region. These spatial nouns, unlike other nouns, do not inflect for number; that is, singular versus plural. Nor do they carry any agreement with the main verb (Krishnamurti, Gwynn 1985). Some of them can be used independently with appropriate case markers (*bayaṭa-ku* in *nēnu bayaṭa-ku waccānu* 'I outside-DAT came'), while others are always dependent on nouns (*-lō* in *nēnu imṭ-lō parigattānu* 'I home-to ran'; **nēnu lō parigettānu*). Since they are limited in number, they may be considered to be 'closed-class forms' in Telugu. However, it may be noted that this closed class can be distinguished from other closed forms, such as case markers, for multiple reasons such as carrying 'noun status', inflecting for case markers, and being independent, as illustrated above. It should be emphasised that no AM or NAM was described without a Region/Landmark expression, thus suggesting that such expressions are equally as important as any other expressions of Motion component, such as Path expressions. By contrast, Talmian studies focused only on path verbs and satellites **[fig. 2]**.

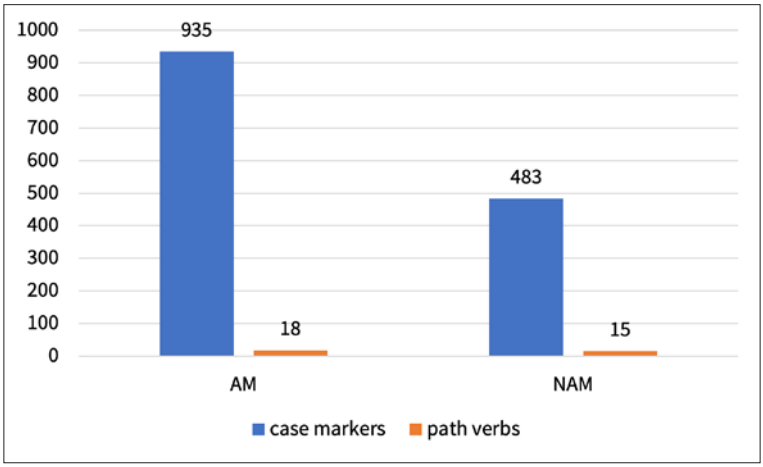

Figure 2 Path-expressing case markers and Path verbs in the AM and NAM data

Drawing on these typological features, I propose that these features are not simply characteristic features of the AM domain, as demonstrated in Naidu et al. 2018, Naidu et al. 2022, Zlatev et al. 2021, but are also characteristic features of the NAM domain. In this regard, the two domains were consistent in showing similarity, which supports the earlier proposal that was based on the AM data indicating that the use of deictic verbs, case markers, and spatial nouns were some of the defining characteristics of the fourth cluster in post-Talmian motion typology. In addition, Region and/or Landmark expressions, together with case markers, were the most frequent linguistic patterns in the two studies; they exceeded any other expressions, as illustrated in figure 3, resulting in *adnominal* dominance over *adverbal* dominance, which distinguishes Telugu from other languages such as Thai, Swedish and French, as the latter are typical *adverbal-dominant* languages. What are the implications of these typological features? One natural implication is that they respond to critics who may say that simply because "Telugu does not fit the known clusters [i.e. SF and VF] is not in itself evidence that it belongs to a different typological cluster – it could just present its own idiosyncratic pattern"; this is not true, as features were found in more than one domain, namely in AM and in NAM. The second implication is that other Dravidian languages and Indo-Aryan languages may have similar tendencies, as illustrated in (17)-(32), which needs to be investigated in future studies via experimental methods, corpus data, or other means. Since Kannada, Kurukh, Malayalam, Tamil (Dravidian), Bengali, Hindi, Marathi, and Sambalpuri (Indo-Aryan)

exhibit similar patterns (such as use of deictic verbs, case markers, Region expressing nouns) in AM and NAM domains (17)-(32), experimental, corpus and comparative studies along these lines are strongly anticipated in future studies **[fig. 3]**.

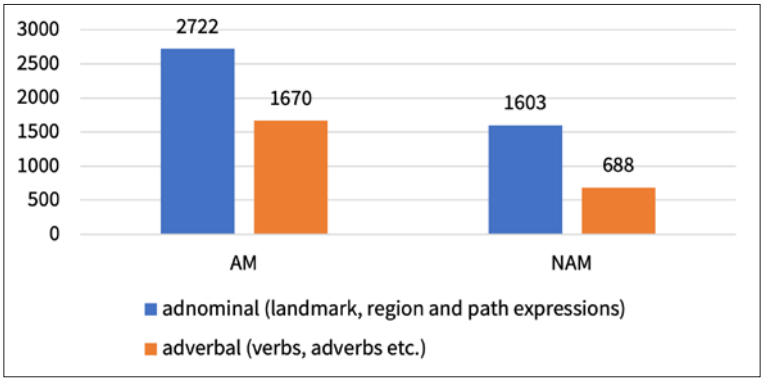

Figure 3 Adnominal and adverbal expressions in the AM and NAM data

6.1 AM Patterns in other Dravidian and Indo-Aryan Languages

(17) *obba* *huḍuga* *kōṇey-oḷa-ge* *hō-da-nu*
one boy room-in-DAT go-PST.3SG.M
Figure Landmark-Region:In-Path:End Direction+MotionFoR:VC
'A boy went into the room'.
Kannada

(18) *onṭe* *ālās* *koṭhri-nu* *ker-a-s*
one man room-DAT go-PST.3SG.M
Figure Landmark-Path:End-Region:In Direction+MotionFoR:VC
'A man went into the room'.
Kurukh

(19) *oru* *āṇkuṭṭi* *muṟi-yil-ēkke* *pō-yi*
one boy room-LOC-DAT go-PST
Figure Landmark-Region:In-Path:End Direction+MotionFoR:VC
'A boy went into the room'.
Malayalam

(20) *oru* *payyaṉ* *aṟai-kk-uḷ* *pō-ṇāṉ*
one boy room-DAT-in go-PST.3SG.M
Figure Landmark-Path:End-Region:In Direction+MotionFoR:VC
'A boy went into a room'.

Tamil

(21) *ēkaṭā* *chēlē* *rum-ē* *gēla*
one boy room-in go.PST.3SG.M
Figure Landmark-Region:In Direction+MotionFoR:VC
'A boy went to the room'.

Bengali

(22) *laḍkā* *kamrē-mē* *gayā*
boy room-in go.PST.3SG.M
Figure Landmark-Region:In Direction+MotionFoR:VC
'A boy went into the room'.

Hindi

(23) *ēka* *mulagā* *khōlī-la* *gēl-ā*
one boy room-DAT go-PST.3SG.M
Figure Landmark-Path:End Direction+MotionFoR:VC
'A boy went to the room'.

Marathi

(24) *gute* *bāḷaka* *kuthi-ku* *ga-lā*
one boy room-DAT go-PST.3SG.M
Figure Landmark-Path:End Direction+MotionFoR:VC
'A boy went to the room'.

Sambalpuri

6.2 NAM Patterns in Other Dravidian and Indo-Aryan Languages

(25) *dāri* *guhe-yoḷa-ge* *hōgu-tta-de*
road cave-in-DAT go-PRS.3SG.M
Figure Landmark-Region:In-Path:End Direction+MotionFoR:VC
'The road goes into the cave'.

Kannada

(26) *ā* *dahre* *māḍa-nu* *kāl-i*
that road cave-DAT go-PST.3SG.N
Figure Landmark-Path:End Direction+MotionFoR:VC
'A road goes into the cave'.

Kurukh

(27) *ī* *wazhi* *guha-yil-ēkke* *ānu* *pō-kunnathu*
this road cave-LOC-DAT COP go-PRS
Figure Landmark-Region:In-Path:End Direction+MotionFoR:VC
'This road goes into the cave'.

Malayalam

(28) *inta* *cālai* *kukai-kku-uḷḷe* *pō-kiṟ-atu*
this road cave-DAT-in go-PRS-3SG.N
Figure Landmark-Path:End-Region:In Direction+MotionFoR:VC
'This road goes into the cave'.

Tamil

(29) *mʊmbaɪ* *sṭeɪʃən-thēkē* *ek* *rēla* *lā'ina*
Mumbai station-ABL one railway line
Landmark-Path:Begin Figure
hāẏadrābādae *Jāy*
Hyderabad go.PRS
Landmark Direction+MotionFoR:VC
'A railway line goes from the Mumbai station to Hyderabad'.

Bengali

(30) *mʊmbaɪ* *sṭeɪʃən-se* *ek* *reɪlweɪ* *lāin*
Mumbai station-ABL one railway line
Landmark-Path:Begin Figure
haydarābāda-(ko) *jātī hai*
Hyderabad-DAT go.PRS
Landmark-Path:End Direction+MotionFoR:VC
'A railway line goes from the Mumbai station to Hyderabad'.

Hindi

(31) *mʊmbaɪ* *sṭeɪʃən-wərun* *ek* *relwe* *lain*
Mumbai station-ABL one railway line
Landmark-Path:Begin Figure
haydarābāda-la *jāic-i*
Hyderabad go-PRS.3SG.F
Landmark-Path:End Direction+MotionFoR:VC
'A railway line goes from the Mumbai station to Hyderabad'.

Marathi

(32) *mumbāi* *ṣṭēsana-ru* *gute* *relwe* *lāin* *hāidrābāda* *ʤa:isi*
Mumbai station-ABL one railway line Hyderabad go.PRS
Landmark-Path:Begin Figure Landmark Direction+MotionFoR:VC
'A railway line goes from the Mumbai station to Hyderabad'.

Sambalpuri

In addition to the similarities and the implications thereof, I found differences in the AM and NAM data with regard to Manner of Motion expressions. This was the only qualitative difference that was found in the data. Manner of Motion was only present in the AM data. As shown in the previous section, there was only one form of Manner, and no adverbs were found in the NAM data. This finding is in line with the literature on NAM that states that Manner verbs have constraints (Matsumoto 1996), and are highly restricted in general. However, one may not jump to the conclusion that Manner of Motion is completely unavailable for NAM in Telugu, as factors such as the method and stimuli might have been limitations resulting in the poor presence in the current data. For example, the stimuli did not really include 'a running road', a 'crawling bridge' or the like. In fact, it may be extremely challenging to design such stimuli.[8] Even if we attempt to do so, participants may prefer a deictic verb or similar to a Manner verb due to the cognitive reasons that are explained in the next paragraph. An in-depth reflection may be necessary to produce an experimental design that can reflect a 'running road' to incorporate Manner components in the stimuli. Then, one may explore the aspect of Manner in NAM with Manner-oriented stimuli.

Another theoretical explanation for the infrequent use of Manner in NAM is the conceptualisation of the NAM experience by human beings. In other words, the Manner of Motion is deeply rooted at the experiential level. That is, as language speakers, we typically and frequently attribute Manner to animate objects. For example, a person can walk, crawl, rush, run, climb, and so on. We perform the actions. We experience them. We conceptualise them. We observe them. By contrast, we do not typically attribute Manner to inanimate objects as frequently as we do to animate objects. An example is a 'road' which, by itself, cannot perform different kinds of Manner. Nor do we typically observe a 'road's' walk, run, and so forth. Therefore, there is less Manner of Motion in NAM.

8 However, it is relatively easier to create an AM video clip depicting "a running boy" or a "crawling baby".

7 Conclusion

The main objective of this paper was to argue that the typological features of Telugu are not confined to the AM domain, but are also mirrored in the NAM domain, thus suggesting that the features are a tendency at least in two domains in Telugu. The features may be deemed to be core form classes in expressing both domains in Telugu. The common typological features in both domains were as follows: the participants frequently employed deictic verbs for Motion, case markers for Path, spatial nouns for expressing Region, and a smaller number of Path verbs. The paper then argued that these typological features had implications for Motion event typology in the post-Talmian approach. First, given these empirical findings, neither Talmy's binary typology nor Slobin's trichotomy is adequate for Telugu. Furthermore, these features support earlier proposals that were based on the AM data (Naidu et al. 2018; Naidu et al. 2022), namely that Telugu, with its distinct features, may call for a fourth cluster in the post-Talmian Motion Event Typology. The study also categorically presented a proposal that these defining characteristics in the Telugu AM and NAM studies may also be found in other South Asian languages, such as Kannada, Kurukh, Malayalam, Tamil (Dravidian), Bengali, Hindi, Marathi, and Sambalpuri (Indic), which should be investigated thoroughly in future research.

In addition to the similar patterns, the study found that there were differences in AM and NAM with regard to expressions of Manner of Motion, as the latter had almost no Manner information in Telugu. Explanations for the lack of Manner expressions in NAM are twofold. One is that it is relatively in agreement with the NAM literature, which demonstrated that the Manner of Motion is highly restricted across languages. The second explanation is that, as language speakers, we do not typically experience or conceptualise Manner as being attributed to inanimate objects such as roads, unlike the case for human beings. Therefore, Manner occurring less often in NAM is deeply rooted in our cognition.

In conclusion, the paper presented the characteristic features of AM and NAM in Telugu that may be considered to be defining characteristic features of some, if not all, South Asian languages, given their linguistic convergence (Emeneau 1956; Masica 1976); this should be investigated in future studies.

Appendix A: AM Stimuli

1 Woman Walks Up Hill
2 Girl Hops From Tree
3 Man Runs Towards
4 Girl Walks Out of Room
5 Man Runs To Tree
6 Boy Runs Away
7 Man Walks Down Hill
8 Woman Walks Out of Hut
9 Boy Puts Cat Into Car
10 Woman Runs Straight Towards
11 Man Throws Ball Up
12 Boy Walks Down Hill
13 Boy Walks Into Room
14 Woman Walks Out of Room
15 Boy Climbs Down Tree
16 Girl Rushes Into Hut
17 Girl Takes Cat Out of Car
18 Girl Throws Ball From Cliff
19 Man Walks Into Garage
20 Boy Climbs Up Cliff
21 Man Puts Cat Into Car
22 Girl Runs Down Hill
23 Boy Throws Ball To Tree
24 Woman Takes Cat Out of Car
25 Man Runs Up Hill
26 Man Walks Into Room
27 Woman Runs From Tree
28 Man Makes Dog Come To Him
29 Girl Walks Up Hill (1pp-camera)
30 Girl Kicks Ball From Bench
31 Girl Rolls Toy Car Towards
32 Boy Rushes Out of Garage
33 Boy Hops To Tree
34 Woman Throws Ball From Tree
35 Man Kicks Ball To Bench
36 Woman Makes Dog Come To Her
37 Man Runs Straight Away
38 Boy Rolls Toy Car Away

(Zlatev et al. 2021, 90)

Appendix B: NAM Stimuli

	Target	**Control**
Spatially extended objects (affordable)	1. Bridge 1pp 2. Bridge 3pp 3. Cave 1pp 4. Cave 3pp 5. Ladder 1pp 6. Ladder 3pp 7. Stairs 1pp 8. Stairs 3pp 9. Tunnel 1pp 10. Tunnel 3pp	21. Apple Branch 22. Ball umbrella 23. Bench Park 24. Bin Table 25. Cactus Desert 26. Cloud Mountain 27. Flower vase 28. Gum table 29. House Buildings 30. Lighthouse Cliff 31. Moon Mountains
Spatially extended objects (non-affordable)	11. Chain 1pp 12. Chain 3pp 13. Crack 1pp 14. Crack 3pp 15. Fence 1pp 16. Fence 3pp 17. Line buildings 1pp 18. Line buildings 3pp 19. Ray of light 1pp 20. Ray of light 3pp	32. Plant Rock 33. Sun Skyscraper 34. TV house 35. Temple Forrest 36. Tent 37. Volcano Lake 38. Lamp bed 39. Lamp shelf 40. Tree meadow

Andersen 2020, 94

Abbreviations

3	third person
ABL	ablative
COP	copula
DAT	dative
F	feminine
FUT.HAB	future habitual
GER	gerund
LOC	locative
M	masculine
N	neuter
PL	plural
PROG	progressive
PRS	present
PST	past
PTCP	participle
SG	singular

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