Chapter 4

Methodology: Resources and Approaches

4.1 Resources

This chapter has two broad components. It presents an outline of the various resources that have been used (and created) for the study and also present an overview of the approached that have been followed.

The present section presents an overview of the resources. As has been mentioned earlier example-base of the English-to-Hindi parallel translation equivalents of the English phrasal verbs is an important requirement for the present study. However, as has also been reported above in chapter one, such a corpus is not yet available, at least in the public domain. Therefore, one of the imperative steps in the present research is development of the English-Hindi bilingual parallel-translation equivalents of English phrasal verbs, for the selected phrasal verbs. The linguistic analysis of the obtained Hindi translation equivalents of English phrasal verbs both in terms of the morpho-syntactic structure of Hindi verbs and the representation of semantic information is the other part and the rest of the research. The preparation of the dataset consisted of several steps:

i. selection of phrasal verbs and identification of their senses from the English WordNet

ii. selection of sample English sentences from the British National Corpus and dictionaries of PVs (both online and printed) along with their sense categorization

iii. manually assigning their appropriate equivalents in Hindi by looking into specific English-Hindi bilingual dictionaries, parallel corpus, including native speaker intuitions and validations.

The selection of EPVs is not a straightforward task as they are vast in numbers. Therefore, for the study some of the most frequent phrasal verbs in English have been identified and selected. This has been done on the basis of the study of EPVs in Liu (2011). Liu's (2011) comprehensive list of the most frequent EPVs is the most recent work on the subject. This is based on their frequency of occurrences through multi-corpus examination. This list has also been used as a reference for selecting phrasal verbs for developing a pedagogic corpus (Garnier & Schmitt, 2015) and presenting a semantic analysis and cross-linguistic mapping patterns. Liu's (2011) list has been referenced in various studies. Further, Dilin Myers (2018) has taken the 150 phrasal verbs of Liu's (2011)) list of the most frequently used EPVs for his study and Garnier and Schmitt (2015) for the general semantic analysis of the most common EPVs have also used the same list of the EPVs.

4.1.1 Selection of the phrasal verbs

For the present study, too, Liu (2011) has been used in identifying and selectecting the EPVs. However, I have worked on the list of the most frequent EPVs to further make it compatible with the various senses that I searched and listed from different sources including English WordNet and dictionaries. As has been briefly outlined in chapter 2, Liu (2011) presents a cross-English variety and cross-register examination of the frequency of occurrences of English phrasal verbs (EPVs). He took the Corpus of Contemporary American English (COCA) and the British National Corpus (BNC) as data. The corpus contains five sub-corpora: spoken, fiction, magazine, newspaper, and academic writing.

The study first identified the frequency and usage patterns of the most common PVs in these two corpora. It examined the frequencies of the most common EPVs in the COCA and compared the results with those reported by Biber et al. (1999) and Gardner and Davies (2007). The study resulted in providing a comprehensive list of the most common EPVs in American and British English with their rank in both corpora. This study identified 48 additional most frequently used phrasal verbs and uncovered the frequency information of 152 of them, including 100 from Gardner and Davies (2007), 4 from Biber et al. (1999), and the 48 additional most frequent phrasal verbs this study has identified. These 152 most frequently used phrasal verbs compiled in this study, while comprising only 1.2% of the total 12,508 phrasal verb lemmas in the BNC, cover 62.95% of all the total 512,305 phrasal verb (PV) occurrences. The study also presents a cross-register list of the most frequent PVs, showing in which register (s) each of the PVs is primarily used. The results show that phrasal verbs are much more common in fiction and spoken English than in magazines, newspapers, and especially in academic writing. This helps demonstrate the representativeness and usefulness of these most frequently used PVs. The number of PVs in Liu's (2011) list falls from 152 to a final total of 150 as he combined *look around* with *look round* and *turn around* with *turn round* (the different forms being simply a result of usage variation in British and American English). Thus, the comprehensive list of most frequent phrasal verbs in English includes 150 phrasal verbs. The PVs reported here are lemmatised, and many of them are polysemous. The distribution of the different meanings of a polysemous PV may vary significantly across registers. This list does not list their various potential senses. Therefore, I looked up WordNet to get their various potential senses. I searched 150 phrasal verbs (PVs) in the English WordNet and listed the total number of senses associated with each of these PVs. Table (4.1), as given below presents the 150 most frequent phrasal verbs with their

respective rank in the BNC and COCA, along with their potential number of senses as found in the English WordNet. These 150 phrasal verbs represent roughly 735 different senses.

Table (4.1): The most frequent phrasal verbs in Corpus of Contemporary American English (COCA) and the British National Corpus (BNC) with their respective rank (Liu, 2011), with their senses as identified from the English WordNet.

SI No.	*Phrasal Verb Lemmas*	*Rank in COCA*	*Rank in BNC*	*WordNet Senses*
1	Go on	1	1	5
2	Pick up	2	3	16
3	Come back	3	5	4
4	Come up	4	9	12
5	Go back	5	4	3
6	Find out	6	8	4
7	Come out	7	12	11
8	Go out	8	6	6
9	Point out	9	7	3
10	Grow up	10	53	1
11	Set up	11	2	15
12	Turn out	12	21	12
13	Get out	13	30	7
14	Come in	14	14	5
15	Take on	15	22	5
16	Give up	16	23	12
17	Make up	17	10	9
18	End up	18	32	1
19	Get back	19	19	3
20	Look up	20	26	1
21	Figure out	21	147	1
22	Sit down	22	20	3
23	Get up	23	25	8
24	Take out	24	31	14
25	Come on	25	13	5
26	Go down	26	15	8
27	Show up	27	119	2
28	Take off	28	46	9
29	Work out	29	16	8
30	Stand up	30	34	7
31	Come down	31	33	5
32	Go ahead	32	56	1
33	Go up	33	29	7
34	Look back	34	42	2
35	Wake up	35	62	2
36	Carry out	36	24	2

37	Take over	37	11	8
38	Hold up	38	61	7
39	Pull out	39	73	4
40	Turn a/round	40	64	3
41	Take up	41	18	13
42	Look down	42	43	*
43	Put up	43	36	9
44	Bring back	44	44	2
45	Bring up	45	40	8
46	Look out	46	59	2
47	Bring in	47	41	5
48	Open up	48	49	7
49	Check out	49	128	7
50	Move on	50	72	1
51	Put out	51	58	10
52	Look a/round	52	68	1
53	Catch up	53	63	2
54	Go in	54	51	1
55	Break down	55	45	8
56	Get off	56	90	11
57	Keep up	57	78	5
58	Put down	58	35	8
59	Reach out	59	104	3
60	Go off	60	47	6
61	Cut off	61	74	6
62	Turn back	62	75	5
63	Pull up	63	92	4
64	Set out	64	17	3
65	Clean up	65	105	4
66	Shut down	66	143	1
67	Turn over	67	102	9
68	Slow down	68	85	5
69	Wind up	69	111	4
70	Turn up	70	38	5
71	Line up	71	98	6
72	Take back	72	60	6
73	Lay out	73	148	5
74	Go over	74	101	4
75	Hang up	75	133	3
76	Go through	76	103	3
77	Hold on	77	107	5
78	Pay off	78	125	6
79	Hold out	79	67	5
80	Break up	80	81	19
81	Bring out	81	71	9
82	Pull back	82	120	5
83	Hang on	83	50	3
84	Build up	84	28	5

85	Throw out	85	140	5
86	Hang out	86	146	1
87	Put on	87	68	9
88	Get down	88	65	7
89	Come over	89	99	1
90	Move in	90	116	3
91	Start out	91	141	2
92	Call out	92	144	3
93	Sit up	93	87	2
94	Turn down	94	94	5
95	Back up	95	106	5
96	Put back	96	77	2
97	Send out	97	76	1
98	Get in	98	88	4
99	Blow up	99	117	8
100	Carry on	100	27	4
101	Set off	101	52	7
102	Keep on	102	110	1
103	Run out	103	86	8
104	Make out	104	89	10
105	Shut up	105	70	3
106	Turn off	106	126	3
107	Bring about	107	48	2
108	Step back	108	145	*
109	Lay down	109	97	2
110	Bring down	110	95	6
111	Stand out	111	113	4
112	Come along	112	82	2
113	Play out	113	149	4
114	Break out	114	100	5
115	Go a/round	115	55	5
116	Walk out	116	115	3
117	Get through	117	134	5
118	Hold back	118	112	6
119	Write down	119	66	2
120	Move back	120	131	1
121	Fill out	121	150	6
122	Sit back	122	109	2
123	Rule out	123	79	3
124	Move up	124	142	2
125	Pick out	125	108	2
126	Take down	126	118	4
127	Get on	127	39	7
128	Give back	128	138	1
129	Hand over	129	57	1
130	Sum up	130	84	3
131	Move out	131	129	2
132	Come off	132	136	3

133	Pass on	133	80	7
134	Take in	134	137	17
135	Set down	135	139	6
136	Sort out	136	37	3
137	Follow up	137	96	2
138	Come through	138	129	4
139	Settle down	139	91	3
140	Come a/round	140	83	3
141	Fill in	141	54	4
142	Give out	142	135	4
143	Give in	143	127	2
144	Go along	144	123	3
145	Break off	145	132	5
146	Put off	146	121	5
147	Come about	147	122	1
148	Close down	148	93	1
149	Put in	149	114	6
150	Set about	150	124	3

*Note- * the phrasal verb is not listed in the English WordNet.*

In this list, the total number of phrasal verbs having 5 or more senses but less than 10 is 72. However, the 13 phrasal verbs have 10 or more senses each. These 150 most frequent phrasal verbs are the combinations of 62 lexical verb lemmas and 14 particles. All the lexical verbs do not combine with all 14 particles. Many lexical verbs combine with just 1 or 2 particles. The most frequent particles with lexical verb combinations in this list are *out* (with 36 occurrences), *up* (with 35 occurrences), *down* (with 17 occurrences), *back* (with 14 occurrences), *on* (with 11 occurrences), and *off* (with 10 occurrences). In other words, the particle *out* combines with 36 lexical verbs, *up* combines with 35, *down* combines with 17, *back* combines with 14, *on* combines with 11, and *off* combines 10 lexical verbs.

The table (4.2) below presents the list of English phrasal verbs from Liu's (2011) list having 10 or more senses listed in the English WordNet, in other words, the most polysemous phrasal verbs in this list. This includes 10 lexical verb lemmas (*break*, *take*,

pick, set, turn, come, give, get, make, and put) and 4 particles (*up, out, in, and off*). Here, particle 'up' combines with 6 lexical verbs (LVs) and particle 'out' combines with 5 LVs.

Table (4.2): Most polysemous phrasal verbs in English

SI No.	*Phrasal verb lemmas*	*WordNet senses*
1.	Break up	19
2.	Take in	17
3.	Pick up	16
4.	Set up	15
5.	Take out	14
6.	Take up	13
7.	Turn out	12
8.	Come up	12
9.	Give up	12
10.	Get off	11
11.	Come out	11
12.	Make out	10
13.	Put out	10

The list of 150 most frequent phrasal verbs is the combination of 62 lexical verb lemmas with 14 particles. The table (4.3) and (4.4) below list these 62 lexical verb lemmas and 14 particles respectively.

Table (4.3): The 62 lexical verb lemmas with their respective frequency of occurrences in the list.

SI No.	*Lexical verb lemmas*	*Frequency*
1.	Go	12
2.	Come	12
3.	Take	8
4.	Get	8
5.	Turn	7
6.	Put	7
7.	Bring	6
8.	Set	5
9.	Look	5

SI No.	*Lexical verb lemmas*	*Frequency*
32.	Grow	1
33.	Hand	1
34.	Wake	1
35.	Catch	1
36.	Write	1
37.	Cut	1
38.	Send	1
39.	Rule	1
40.	Pass	1
41.	Sum	1

10.	Move	5	42.	Slow	1
11.	Give	4	43.	Run	1
12.	Break	4	44.	Settle	1
13.	Hold	4	45.	Close	1
14.	Sit	3	46.	Follow	1
15.	Hang	3	47.	Line	1
16.	Pull	3	48.	Reach	1
17.	Pick	2	49.	Clean	1
18.	Make	2	50.	Back	1
19.	Carry	2	51.	Wind	1
20.	Stand	2	52.	Walk	1
21.	Fill	2	53.	Blow	1
22.	Shut	2	54.	Show	1
23.	Keep	2	55.	Pay	1
24.	Lay	2	56.	Check	1
25.	Point	1	57.	Throw	1
26.	Find	1	58.	Start	1
27.	Work	1	59.	Call	1
28.	Build	1	60.	Step	1
29.	End	1	61.	Figure	1
30.	Sort	1	62.	Play	1
31.	Open	1			

The frequency of lexical verb represents the total number of particles with which the lexical verb combines in this list. For example, the frequency of lexical verb *go* represents that it combines with 12 distinct particles.

There are in total 14 particles that are used to form phrasal verbs in this list. The particle round and around is presented together because of their use's variation in American and British English. As, the phrasal verbs in this list are not separately used with the particle round and around. Therefore, the final list comprises of 13 particles.

Table (4.4): Particles List

SI No.	*Particle (s)*	*Frequency*
1.	out	36
2.	up	35

3.	down	17
4.	back	14
5.	on	11
6.	off	10
7.	in	9
8.	over	5
9.	a/round	4
10.	through	3
11.	about	3
12.	along	2
13.	ahead	1

The frequency of the particles represents the total number of lexical verb lemmas with which it attaches to the list. For instance, if the frequency of particle *out* is 36, this means that the particle out combines with 36 lexical verb lemmas to form the phrasal verb in this list.

Below, we present the verb and particle combinations in the table 4.5. It shows the productivity of a verb in forming phrasal verbs.

Table (4.5): Frequency of lexical verb and particle combinations.

SI No.	*Lexical verb lemmas*	*Particle(s) combinations*	*Frequency*
1.	go	on, back, out, down, up, off, in, a/round, ahead, over, through, and along.	12
2.	come	back, up, out, on, in, down, along, a/round, over, about, through.	12
3.	take	over, up, on, out, off, back, down, in	8
4.	get	back, up, out, on, down, in, off, through	8
5.	turn	out, up, a/round, back, down, over, off	7
6.	put	down, up, out, on, back, in, off	7
7.	bring	up, in, back, about, out, down	6
8.	set	up, out, off, about, down.	5
9.	look	up, back, down, out, a/round	5
10.	move	on, in, out, back, up	5
11.	give	up, in, out, back	4
12.	break	down, up, out, off	4
13.	hold	up, out, on, back	4

14.	sit	down, up, back	3
15.	hang	on, up, out	3
16.	pull	out, up, back	3
17.	pick	up, out	2
18.	make	up, out	2
19.	carry	out, on	2
20.	stand	up, out	2
21.	fill	in, out	2
22.	shut	up, down	2
23.	keep	up, on	2
24.	lay	down, out	2
25.	point	out	1
26.	find	out	1
27.	work	out	1
28.	build	up	1
29.	end	up	1
30.	sort	out	1
31.	open	up	1
32.	grow	up	1
33.	hand	over	1
34.	wake	up	1
35.	catch	up	1
36.	write	down	1
37.	cut	off	1
38.	send	out	1
39.	rule	out	1
40.	pass	on	1
41.	sum	up	1
42.	slow	down	1
43.	run	out	1
44.	settle	down	1
45.	close	down	1
46.	follow	up	1
47.	line	up	1
48.	reach	out	1
49.	clean	up	1
50.	back	up	1
51.	wind	up	1
52.	walk	out	1
53.	blow	up	1
54.	show	up	1
55.	pay	off	1
56.	check	out	1

57.	throw	out	1
58.	start	out	1
59.	call	out	1
60.	step	back	1
61.	figure	out	1
62.	play	out	1

Now we will list the total number of phrasal verbs combinations with each of the particles in this list with their potential senses as found in English WordNet.

Table (4.6): Phrasal verbs with the particle *OUT*: 36

SI No.	*Phrasal Verb Lemmas*	*WordNet Senses*	*SI No.*	*Phrasal Verb Lemmas*	*WordNet Senses*
1.	Take out	14	19.	Pull out	4
2.	Turn out	12	20.	Stand out	4
3.	Come out	11	21.	Give out	4
4.	Put out	10	22.	Point out	3
5.	Make out	10	23.	Set out	3
6.	Bring out	9	24.	Sort out	3
7.	Work out	8	25.	Rule out	3
8.	Run out	8	26.	Reach out	3
9.	Get out	7	27.	Walk out	3
10.	Check out	7	28.	Call out	3
11.	Go out	6	29.	Carry out	2
12.	Fill out	6	30.	Look out	2
13.	Hold out	5	31.	Pick out	2
14.	Break out	5	32.	Move out	2
15.	Throw out	5	33.	Start out	2
16.	Lay out	5	34.	Send out	1
17.	Play out	5	35.	Hang out	1
18.	Find out	4	36.	Figure out	1

Table (4.7): Phrasal verbs with the particle *UP*: 35

SI No.	*Phrasal Verb Lemmas*	*WordNet Senses*	*SI No.*	*Phrasal Verb Lemmas*	*WordNet Senses*
1.	Break up	19	19.	Keep up	5
2.	Pick up	16	20.	Back up	5

3.	Set up	15	21.	Shut up	V-3, Adj-1
4.	Take up	13	22.	Pull up	4
5.	Come up	12	23.	Clean up	4
6.	Give up	12	24.	Wind up	4
7.	Make up	9	25.	Sum up	3
8.	Put up	9	26.	Hang up	3
9.	Get up	8	27.	Wake up	2
10.	Bring up	8	28.	Catch up	2
11.	Blow up	8	29.	Sit up	2
12.	Go up	7	30.	Follow up	2
13.	Stand up	7	31.	Show up	2
14.	Open up	7	32.	Move up	2
15.	Hold up	7	33.	Look up	1
16.	Line up	6	34.	End up	1
17.	Build up	5	35.	Grow up	1
18.	Turn up	5			

Table (4.8) Phrasal verbs with the particle *DOWN*: 17

SI No.	*Phrasal Verb Lemmas*	*WordNet Senses*	*SI No.*	*Phrasal Verb Lemmas*	*WordNet Senses*
1.	Go down	8	10.	Take down	4
2.	Put down	8	11.	Sit down	3
3.	Break down	8	12.	Settle down	3
4.	Get down	7	13.	Write down	2
5.	Bring down	6	14.	Lay down	2
6.	Set down	6	15.	Close down	1
7.	Come down	5	16.	Shut down	1
8.	Slow down	5	17.	Look down	*
9.	Turn down	5			

*Note- * represents that this particular phrasal verb is not listed in the English WordNet.*

Table (4.9): Phrasal verbs with the particle *BACK*: 14

SI No.	*Phrasal Verb Lemmas*	*WordNet Senses*	*SI No.*	*Phrasal Verb Lemmas*	*WordNet Senses*
1.	Take back	6	8.	Look back	2
2.	Hold back	6	9.	Bring back	2
3.	Turn back	5	10.	Put back	2
4.	Pull back	5	11.	Sit back	2
5.	Come back	4	12.	Move back	1

6.	Go back	3	13.	Give back	1
7.	Get back	3	14.	Step back	*

Table (4.10): Phrasal verbs with the particle *ON*: 11

SI No.	*Phrasal Verb Lemmas*	*WordNet Senses*	*SI No.*	*Phrasal Verb Lemmas*	*WordNet Senses*
1.	Put on	V-9, Adj-1	7.	Hold on	5
2.	Get on	7	8.	Carry on	4
3.	Pass on	7	9.	Hang on	3
4.	Go on	5	10.	Move on	1
5.	Come on	5	11.	Keep on	1
6.	Take on	5			

Table (4.11): Phrasal verbs with the particle *OFF*: 10

SI No.	*Phrasal Verb Lemmas*	*WordNet Senses*	*SI No.*	*Phrasal Verb Lemmas*	*WordNet Senses*
1.	Get off	11	6.	Pay off	6
2.	Take off	9	7.	Put off	5
3.	Set off	7	8.	Break off	5
4.	Go off	6	9.	Turn off	3
5.	Cut off	V-6, Adj-1	10.	Come off	3

Table (4.12): Phrasal verbs with the particle *IN*: 9

SI No.	*Phrasal Verb Lemmas*	*WordNet Senses*	*SI No.*	*Phrasal Verb Lemmas*	*WordNet Senses*
1.	Take in	17	6.	Get in	4
2.	Put in	6	7.	Move in	3
3.	Come in	5	8.	Give in	2
4.	Bring in	5	9.	Go in	1
5.	Fill in	4			

Table (4.13): Phrasal verbs with the particle *OVER*: 5

SI No.	*Phrasal Verb Lemmas*	*WordNet Senses*
1.	Turn over	9
2.	Take over	8
3.	Go over	4
4.	Hand over	1
5.	Come over	1

Table (4.14): Phrasal verbs with the particle *A/ROUND*: 4

SI No.	*Phrasal Verb Lemmas*	*WordNet Senses*
1.	Go a/round	5
2.	Turn a/round	V3, N-1
3.	Look a/round	1
4.	Come a/round	1, 2

Table (4.15): Phrasal verbs with the particle *THROUGH*: 3

SI No.	*Phrasal Verb Lemmas*	*WordNet Senses*
1.	Get through	5
2.	Come through	4
3.	Go through	3

Table (4.16): Phrasal verbs with the particle *ABOUT*: 3

SI No.	*Phrasal Verb Lemmas*	*WordNet Senses*
1.	Set about	3
2.	Bring about	2
3.	Come about	1

Table (4.17): Phrasal verbs with the particle *ALONG*: 2

SI No.	*Phrasal Verb Lemmas*	*WordNet Senses*
1.	Go along	3
2.	Come along	2

Table (4.18): Phrasal verbs with the particle *AHEAD*: 1

SI No.	*Phrasal Verb Lemmas*	*WordNet Senses*
1.	Go ahead	1

4.1.2 Dataset Creation

This section presents the strategies followed and resources accessed for creating English-Hindi Parallel Translation Equivalents of the selected English phrasal verbs. In order to carry out the present research work, I consulted online and printed dictionaries on English phrasal verbs and studied their contextual uses by examining a few online sources, such as WordNet and BNC (British National Corpus). For the creation of the dataset, I used multiple resources. At first, English WordNet has been used to identify the potential number of senses of selected phrasal verbs. Subsequently, their sense distribution is examined in the British National Corpus and certain relevant online and printed dictionaries of phrasal verbs in English. The British National Corpus (BNC) has been primarily used for curating sample English sentences of the target phrasal verbs based on their sense distribution. The online search engine of the British National Corpus (available at: https://www.english-corpora.org/bnc/) has been extensively used for this purpose. The study selects 100 random sample English concordance lines from the BNC for each of the selected phrasal verbs resulting in a total of fifteen thousand concordance lines for 150 selected phrasal verbs for this study. The occurrence of each of these phrasal verbs in the BNC is randomly selected. Subsequently, each of the contextual occurrences has been categorized based on the sense exhibited by English phrasal verbs. Apart from the corpus resources, I also looked up some relevant online and printed dictionaries of phrasal verbs for collecting sample English example sentences (at least for the senses of EPVs that were not specified in the sample occurrences collected from the BNC). Online

dictionaries include *Oxford Learner's English Dictionary* and *Cambridge English Dictionary*. Printed dictionaries include the *Oxford Phrasal Verbs Dictionary for Learners of English (2nd ed.), Cambridge Phrasal Verbs Dictionary (2nd ed.),* and the *Longman Phrasal Verbs Dictionary.* The sample English sentences collected from the dictionaries resulted in fifteen hundred sentential occurrences.

Further, In the absence of an English-Hindi parallel translation corpus of English phrasal verbs, the sample English examples thus obtained are manually translated into Hindi by looking into certain English-Hindi dictionaries and corpus resources, including native speaker intuitions and validations. Subsequently, in the absence of the English-Hindi bilingual parallel-translation equivalents of English phrasal verbs, we separately listed the equivalent Hindi expression for each of the senses and checked in Hindi dictionaries and texts.

Finally, a total of 16500 English sentences with the selected phrasal verbs have been extracted from different sources (primarily BNC) and their Hindi translation equivalents (16500 sentences) have been created (primarily manually). Thus, a total of 33000 sentences become the example base for the present study.

4.1.3 English WordNet

WordNet is a large lexical database of English. Nouns, verbs, adjectives and adverbs are grouped into sets of cognitive synonyms (synsets), each expressing a distinct concept. Synsets are interlinked by means of conceptual-semantic and lexical relations. The resultant network of meaningfully related words is freely and publicly available and can be downloaded or navigated with the browser. WordNet's structure makes it a useful tool for computational linguistics and natural language processing. WordNet superficially resembles a thesaurus, in that it groups words together based on their meanings. WordNet

interlinks specific senses of words and labels the semantic relations among words. The main relation among words in WordNet is synonymy. Therefore, the English WordNet has played a dominant role in identifying the total number of senses of English phrasal verbs.

4.1.4 Dictionaries

Dictionaries are essential sources of information as they provide a detailed account of various context-specific senses of English phrasal verbs along with contextual occurrences that are how that sense is reflected in actual speech or writing. For the selection of sample English sentences, I relied on both online and printed dictionaries of English. Online dictionaries include *Oxford Learner's English Dictionary* and *Cambridge English Dictionary*. Printed dictionaries include the *Oxford Phrasal Verbs Dictionary for Learners of English (2nd ed.), Cambridge Phrasal Verbs Dictionary (2nd ed.),* and the *Longman Phrasal Verbs Dictionary.*

4.1.5 British National Corpus

The British National Corpus (BNC) is a 100-million-word collection of written and spoken language samples from a wide range of sources, designed to represent a broad cross-section of British English from the later part of the 20th century, both spoken and written. The written part of the BNC (90%) includes, for example, extracts from regional and national newspapers, specialist periodicals and journals for all ages and interests, academic books and popular fiction, published and unpublished letters and memoranda, school and university essays, among many other kinds of text. The spoken part (10%) consists of orthographic transcriptions of unscripted informal conversations (recorded by volunteers selected from different ages, regions and social classes in a demographically balanced way) and spoken language collected in different contexts, ranging from formal business or government meetings to radio shows and phone-ins. BNC is one of the most

comprehensive resources to study the use of particular linguistic elements in actual speech or writing. It is widely used in linguistic research, language teaching, and lexicography for analysing language patterns, vocabulary usage, sense distribution and grammatical structure. It is the standard and balanced corpus of the British variety of English.

4.1.6 English-Hindi Parallel Corpus

The study has initially used two major English-Hindi parallel corpora, namely "IIT-Bombay English-Hindi Parallel Corpus" and "Samanantar English-Hindi Parallel Corpus" of the general domain as a reference corpus. These two corpora were not used directly in this research as this is a general domain corpus, and I need a special domain corpus focusing on the parallel translation equivalents of English phrasal verbs in Hindi. Besides, the *samanantar* corpus were not found to be of adequately good quality for use in the present context. Therefore, this study has used these corpora as reference material to consult in case of specific occurrences only.

4.2 Theoretical Approaches

This section briefly presents the theoretical insights that have been used to examine the cross-linguistic mapping patterns of the English phrasal verbs, particularly in their corresponding equivalents verb forms in Hindi, to determine how these constructions are mapped into Hindi. To analyse the representation of the spatial directional sense of English phrasal verbs in Hindi, we have followed certain relevant linguistic theories and concepts. This framework combines structural, cognitive, and semantic perspectives to provide a comprehensive analysis of how English phrasal verbs are represented in Hindi. The study employs Langacker's (1987) Cognitive Grammar, particularly the Trajector

(TR) - Landmark (LM) relation between entities, to investigate how spatial concepts are conceptualised and expressed in both languages. The focus is to understand how English and Hindi speakers conceptualise space and direction. Talmy's (2000) work on Event Integration has also been used to understand the Phrasal verb structures of English and their counterparts. In the work, we have integrated Johnson's (1987) Image-schema theory to analyse the senses of the phrasal verbs and their translations and showed how image schema transformation leads to conceptualise the complex event structures as a single event. The study employs image schemas (like "PATH", "CONTAINER", and "SOURCE-GOAL") to elucidate how English phrasal verbs and equivalent Hindi verbs represent these schemas. Further, by employing Lakoff's (1987) image Schema Transformation, we can have been able to connect two events or a sub-event inside an event to conceptualise it as a single whole frame.

4.2.1 Cognitive Grammar

For spatial analysis of the senses of the selected particles, we have followed Langacker's (1987) cognitive grammar, which outlines the representation of non-spatial concepts as spatial relations. The key point is the Trajector (TR) - Landmark (LM) relation between the entities, where the TR denotes the moving entity and the LM is the place (point, container, surface) in relation to which the trajector moves. The foregrounded entity refers to the trajector that denotes an object, a person, a feeling, a thought, or, in fact, any entity that captures our attention and generally relates to smaller size, flexible and moving objects. We associate or localise it with respect to another (bigger) fixed object or place: the landmark, which we conceive as a container or surface. The moving entity that captures our attention is the trajector, whereas the landmark is the container or surface which serves as the background. For instance, in *John went home, John* is the trajector (TR), and *home* serves the function of landmark (LM).

4.2.2 Event Integration Theory

Talmy's (2000) work on Event Integration has also been used to understand the phrasal verb structures of English and their counterparts in Hindi. Event Integration refers to a process where two distinct events which can be understood as a complex event and syntactically can be represented as a multi-clause construction can also be expressed alternatively with a single clause and conceptualized as a single event. For instance, this kind of event integration happens in the causative construction which can be conceptualized as a single event where both the events of the causer and the cause are conceptualized as a single emergent event. The language like Hindi which has morphological causative syntactically also expresses this as a single cause. We have explored the event integration in terms of phrasal verbs of English and complex predicates of Hindi.

4.2.3 Image-Schema Theory

Apart from cognitive grammar and Event integration theory, we have considered the notion of *image schema* as that is also crucial for interpreting the central meanings of particles as well as their extended senses in the English phrasal verbs. The concept of image schema helps us understand how embodied experiences shape our cognition. It is a theory of concept formation and language understanding. The theory was originally developed in the late 80s by Lakoff (1987) and Johnson (1987). According to Johnson (1987) "an image schema is a recurring dynamic pattern of our perceptual interaction and motor programs that gives coherence and structure to our experience." Image schemas represent pre-conceptual configurations arising from everyday bodily experiences, perceptual interactions, and ways of manipulating objects. Image schemas are recognised as a fundamental ingredient in human cognition and creative thought. They have been studied extensively in areas of cognitive linguistics. We discuss, in particular, a selection

of image schemas related to the notion of 'path' and show how they can be mapped from English to Hindi in the context of the conceptual mapping of the English phrasal verbs.

Image-Schemas can also be internally complex (Evans & Green, 2018). For instance, the SOURCE-PATH-GOAL (also called PATH schema) illustrated in figure 3.1. This schema, which is based on our bodily experience of moving from one location to another, consists of several structural elements: a SOURCE or starting point, a destination or GOAL, a PATH (a series of contiguous locations connecting the source and the destination), and a DIRECTION (orientation towards the destination).

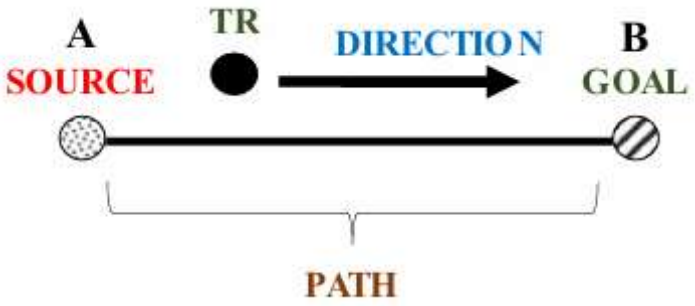

Figure 3.1: The PATH image schema

4.2.4 Image-Schema Transformations

Our conceptualizations involve transformations of image-schemas (Johnson 1987: 25-27; Lakoff 1987: 440-444). Most simple events and actions involve transformations of image-schemas. By image schema transformation, we can connect two events or a sub-event inside an event to conceptualize it as a single whole frame. Lakoff (1987) identifies four primary image schema transformations.

(a) **Path focus to end-point focus**: starts with a movable object's path but ends up foregrounding the end-point of the path as it is found in any change of state verb which has two sub-events: process and the end product or result.

(b) **Trajectory**: conceptually tracks the path of a continuously moving object.

(c) **Multiplex to mass**: schema transformation is found when we see a cluster of things from near and then go far to conceptualize them as a whole unit of mass.

(d) **Superimposition**: Imagine a large sphere and a small cube. Now, increase the size of the cube until the sphere can fit inside it. Now reduce the size of the cube until it fits back inside the sphere.

The theoretical outlines presented above have been primarily used to examine how the spatial senses of the particle elements are mapped onto their Hindi equivalwents (details in the second section of chapter 5).