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SEMANTIC DECOMPOSITION OF VERTICAL MOTION VERBS IN RUSSIAN, UZBEK, AND ENGLISH

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Introduction. Vertical motion is a fundamental spatial domain that directly reflects human embodied experience. As Padučeva (2004, p. 112) emphasises, the opposition 'up' vs. 'down' is anthropocentric: it is rooted in the upright posture of the human body and in the constant perception of gravity. Consequently, languages develop rich and diverse lexical and grammatical means to encode upward and downward movement. However, the way semantic components – such as direction, manner, causation, and aspect – are distributed across different linguistic structures varies typologically. This paper offers a semantic decomposition of vertical motion verbs in Russian (fusional, satellite-framed), English (analytic, satellite-framed), and Uzbek (agglutinative, with verb-framed tendencies), following the frameworks of Jackendoff, Talmy, and Levin.

The central research question is: Which semantic parameters are obligatorily grammaticalised in each language, and which are left to lexical or contextual specification? By decomposing the verbs into primitive features MOVE, PATH, MANNER, CAUSE, and ASPECT, we reveal systematic cross-linguistic differences in how the same physical event (e.g., an apple falling, a climber ascending, a mother lifting a child) is conceptualised and verbally encoded.

Our decomposition employs the Lexical-Conceptual Structure (LCS) proposed by Jackendoff (1990, ch. 3–4), where motion events are represented as functions such as:

GO (X, [Path]) – for motion without an external agent;
CAUSE (Y, [GO (X, [Path])]) – for causative motion.

Following Talmy's well-known typology, we distinguish between verb-framed languages (where the core Path is encoded in the verb root) and satellite-framed languages (where Path is expressed by a satellite – a prefix, particle, or adposition). Russian and English are both satellite-framed: Russian uses verbal prefixes (vz-, pod-, s-, u-) and English uses verb particles (up, down, off). Uzbek, however, is more complex: while the root often carries basic directional semantics (chiq- 'go out/up', tush- 'go down/fall'), the language also employs auxiliary verbs and case markers to specify the trajectory, and thus it exhibits both verb-framed and analytic properties (Kononov, 1960, p. 184). For a finer-grained analysis of verbal classes, we adopt Levin's (1993, ch. 2–3) classification of English verbs of motion and her treatment of causative alternations.

For each verb under analysis (we selected three core semantic frames: downward uncontrolled motion, upward controlled motion, and upward/downward causative transfer), we systematically assess the following parameters (after Apresjan, 1995, pp. 185–192; Dixon, 2005, pp. 140–146):

Parameter	Description	Examples
Direction (Vector)	Upward (+) or downward (–)	up/down; upper/lower; rise/fall
Causativity	Whether an external agent initiates the motion	causative vs. non-causative pairs
Manner	Specific way of moving: speed, contact with surface, effort, etc.	climb (with effort, using limbs) vs. soar (effortless, airborne)
Telicity / Boundedness	Whether the motion is	perfective vs.

	presented as reaching a final endpoint	imperfective in Russian; lexical aspect in English
Deixis / Speaker-orientation	Whether the verb encodes direction relative to the speaker or reference point	relevant for Uzbek chiq- vs. kir-

English is the prototypical satellite-framed language. Path is overwhelmingly expressed by particles (up, down, out, off), while the verb root is dedicated to fine-grained manner distinctions. As Levin (1993, p. 265) shows, English has an extraordinarily large inventory of manner-of-motion verbs: run, walk, crawl, swim, fly, roll, tumble, plunge, soar, hover, glide, ascend, descend – many of which can combine with up/down to create phrasal verbs. For vertical movement, the particle is almost always obligatory unless the verb inherently encodes direction (e.g., ascend/descend are Latinate and verb-framed, but they are stylistically marked and less frequent).

Causative alternations in English are often suppletive (Dixon, 2005, p. 143):

rise (intransitive) vs. raise (transitive) – e.g., The sun rises at 6 vs. She raises the flag.

fall (intransitive) vs. fell (transitive, rare) – but more commonly drop is used for both, with different argument structures: The glass dropped vs. He dropped the glass.

Aspect in English is not grammaticalised through verbal morphology but via periphrastic constructions (progressive: is rising – emphasises ongoing process; perfect: has risen – emphasises result). Thus, English verbs show a high degree of manner specificity but low aspectual obligatoriness in their lexical entries. For example:

The eagle soared up into the sky – [MOVE + UP] + [MANNER: effortless, gliding, no contact].

He climbed down the ladder carefully – [MOVE + DOWN] + [MANNER: effortful, using hands/feet, contact with surface].

In decomposition terms:

soar up: GO (Eagle, [Path UP]) + MANNER (aerial, smooth);

climb down: GO (He, [Path DOWN]) + MANNER (laborious, involving limbs) + [CONTACT].

Russian, like English, is satellite-framed, but its satellites are verbal prefixes rather than post-posed particles. As Apresjan (1995, p. 189) thoroughly documents, the Russian verbal system relies on prefixes to indicate the trajectory, while the root conveys the manner and medium: -let- (fly), -polz- (crawl), -bež- (run), -ezd- (ride). For vertical motion, the prefixes are:

- vz- / vo- – upward (vzletet' 'fly up', vzobrat'sja 'climb up');
- pod- – upward but often with a nuance of 'slightly' or 'approaching from below' (podnjat' 'raise', podnimat'sja 'rise');
- s- – downward (spustit' 'lower', svalit' 'knock down');
- u- – downward with a connotation of falling away (upast' 'fall', unesti 'carry down' – but less central).

The most striking difference from English is the obligatory grammatical aspect (perfective vs. imperfective) which is a constitutive feature of every Russian verb (Padučeva, 2004, p. 158). For example:

vzletat' (imperfective) – 'to be taking off' (process, no endpoint);

vzletet' (perfective) – 'to take off' (successfully reaching the air, bounded event).

This aspectual opposition is not merely a matter of tense; it fundamentally changes the event structure. Padučeva (2004, pp. 160–165) argues that perfective verbs impose a natural boundary on the motion, whereas imperfective verbs present the motion as an open process. Consequently, Russian speakers cannot describe a vertical movement without committing to a specific aspectual viewpoint, which is not a lexical requirement in English or Uzbek.

Causativity in Russian is frequently marked by the reflexive postfix -sja (or -s') which detransitivises the verb:

podnjat' (transitive) – 'lift, raise' → podnimat'sja (intransitive) – 'rise, get up'.

However, this is not always regular: opustit' 'lower' → opustit'sja 'descend' (also reflexive). The derivational morphology is quite systematic (Zaliznjak et al., 2005, ch. 6), but there are also lexical causative pairs like padat' (fall) vs. ronjat' (drop), which are not morphologically related.

Uzbek offers a typologically distinct pattern. According to the foundational grammar by Kononov (1960, pp. 183–188), basic verbs of vertical displacement are chiq- (which can mean 'go out, ascend, come up') and tush- (which means 'go down, descend, fall, alight'). Importantly, these roots inherently encode a directional vector, but they are not pure vertical markers: chiq- also implies movement from inside to outside (deictic orientation away from the speaker), and tush- often includes the idea of moving from a higher to a lower position, but also 'get off (a vehicle)'. Thus, the semantic decomposition must consider **deixis** as an additional parameter, as noted by Rahmatullaev (1966, pp. 45–50).

Causative derivation in Uzbek is exceptionally productive and regular (Hojiyev & Mahmudov, 2000, p. 98). The suffixes -dir-, -t-, -iz-, -g'iz- can attach to almost any verb to form a causative:

turmoq 'stand up' (intransitive) → turg'izmoq 'make stand, raise' (transitive).

tushmoq 'go down' → tushirmoq 'lower, drop' (causative).

chiqmoq 'go up/out' → chiqarmoq 'take out, bring up' (causative).

This morphological regularity contrasts sharply with English suppletion and with Russian derivational but less uniform patterns. Consequently, in Uzbek the parameter [CAUSE] is almost always grammatically overt and predictable from the verb's form.

Another unique feature is the extensive use of analytical forms that split the semantic components between two verb stems (Kononov, 1960, p. 312). For example:

ko'tarib chiqdi – literally '(having) lifted, went out/up' – means 'carried/pulled up (something)'.

kela tushdi – literally '(having) come, went down' – conveys 'suddenly fell / came down unexpectedly'.

In these constructions, the first verb (often a gerund/convertb) encodes the manner or accompanying action, while the second verb provides the path/deictic orientation. This distribution of semantic features is reminiscent of verb-framed languages, where the core verb (the second one) carries the path, and the manner is subordinated. Talmy (2000, vol. II, p. 226) mentions that languages like Uzbek with productive serialisation are less strictly verb-framed than Romance languages, but they display a clear preference for encoding Path in the main verb. For instance,

Tosh yerga tushdi – 'The stone fell to the ground.' (simple intransitive, downward).

U tog'dan pastga tushdi – 'He went down from the mountain.' (downward with ablative case -dan and directional pastga).

Onasi bolani ko'tarib oldi – 'The mother lifted (took up) the child.' Here ko'tar- 'lift' + ol- 'take' (auxiliary) forms a complex predicate that adds a shade of 'for oneself' or 'completely'.

The following table summarises the main differences in the obligatory coding of semantic parameters in vertical motion verbs (based on the works cited):

Parameter	Russian	English	Uzbek
Direction (Path)	Verbal prefix (satellite)	Particle (satellite) or verb root (Latinate)	Verb root (chiq- / tush-) or directional case/postposition
Manner	Root semantics, but less fine-grained than English	Highly detailed root semantics (numerous distinct verbs)	Often delegated to converbs or auxiliary verbs in serial constructions

Causativity	Often via reflexive -sja or lexical pairs; semi-regular	Suppletive or same verb with different syntax	Regular derivational suffixes (-dir-, -t-, etc.)
Aspect / Telicity	Grammaticalised category (perfective vs. imperfective) obligatory	Lexical / periphrastic (not obligatory at verb level)	Not grammaticalised; expressed by lexical adverbs or context
Deixis	Rarely encoded in vertical verbs (mostly spatial only)	Rarely (except come up vs. go up in some contexts)	Intrinsic to roots chiq- (away/up) and kel- (towards speaker)

The semantic decomposition of vertical motion verbs across Russian, English, and Uzbek reveals that universal conceptual primitive – such as MOTION, PATH, MANNER, CAUSE, and TELICITY – are packaged differently in each language's lexical and grammatical systems. Russian makes aspect (telicity) obligatory and uses prefixes as satellites; English prioritises manner and uses particles; Uzbek relies on deictic-rich roots and regular causative suffixes and often splits the semantic load across serial verbs. These differences are not mere surface variations but reflect distinct cognitive construals of vertical events. Our findings confirm Talmy's typological continuum while adding important nuances regarding agglutinative morphology and serialisation.

For further research, a corpus-based quantitative analysis of frequency patterns and collocational preferences would complement the qualitative decomposition presented here.

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