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# **TOWARDS A LEXICAL TYPOLOGY OF ‘FLYING’ AND ‘JUMPING’**

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## **TOWARDS A LEXICAL TYPOLOGY OF ‘FLYING’ AND ‘JUMPING’<sup>3</sup>**

This paper focuses on some lexical properties of two groups of verbs in the languages of the world, without trying to provide an exhaustive typological description of these groups. The first group includes the verbs of movement through air (verbs of ‘flying’); the other includes those verbs that designate temporary separation from a supporting surface (verbs of ‘jumping’).

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## 1. On differences

At first glance, and especially if we focus on the data from European languages, verbs of ‘flying’ and ‘jumping’ belong to two totally different semantic domains that have no overlap whatsoever. The former deals with temporally extended, continuous movement through the air. The latter describes a brief interruption of contact with a supporting surface. Smooth, mainly horizontal movement seems very different from an abrupt, mostly vertically-oriented series of movements which include rising in the air and falling down in succession.

It is true that the difference between these two groups may be very significant – both lexically and grammatically. We will start by providing a more detailed analysis of some important distinctions.

In the lexical domain, the most salient feature of European languages is that flying and jumping are lexicalized in two groups of roots, very distinct from the etymological viewpoint. The relevant verbs have no common material or any formal similarity, at least on the face of it. This is illustrated by the following examples from major European languages.

LANGUAGE

‘FLY’

‘JUMP’

English

*fly, flit, flutter, soar ...*

*jump, hop, leap* [esp. of a human heart], *spring* [e.g., of a lid, a mine, a spring, a tiger-cat], *bound ...*

German

*fliegen, flattern, schweben (in den Wolken) ...*

*springen, hüpfen (auf einem Bein) ...*

French

*voler, voltiger, voleter, planer ...*

[*sur*] *sauter, bondir ...*

Russian

*letet’ / letat’, porxat’, parit’ ...*

*prygnut’ / prygat’, skaknut’ / skakat’ / [pod-, v-, ot-, so-] skoit’ ...*

Hungarian

*repül, röpköd, száll ...*

*ugrik, ugrál ...*

As these examples show, languages tend to distinguish between different types of movements within both domains, and these distinctions within domains may be rather significant. For instance, the domain of ‘flying’ often distinguishes ‘hovering’ (English *soar*, German *schweben*, French *planer*) from the jerky, uneven movements of smaller birds and insects – ‘fluttering’ (English *flutter* or *flit*, German *flattern*, French *voleter* or *voltiger*, Hungarian *röpköd*). We will have a closer look at fluttering later. The domain of

jumping is even more diversified. Many languages use separate verbs for jumping on one foot (English *hop*, German *hüpfen*). Sometimes horizontal (“long jumping”) and vertical (“high jumping”) jumps are distinguished. The latter group in its turn may display distinctions between jumping down (cf. Russian *s-prygnut’*) and jumping up, usually not very high (cf. Russian *pod-prygnut’* or French *sur-sauter*); all verbs here are prefixal derivatives. There may be further, finer distinctions. Thus, an interesting and, apparently, unique distinction is made by Hungarian between two types of ‘flying’, *repül* and *száll*<sup>4</sup>. And the opposition between the Russian *prygat’* and *skakat’*, both jumping verbs, is worth a separate study.

Still, in spite of all the thrilling richness of internal distinctions within each of the two domains, the semantic distance between the verbs that belong to each of them seems much smaller than that between the domains themselves. There are apparently no semantic commonalities or overlap between the verbs of flying and the verbs of jumping.

This conclusion also seems to be supported by analysis of metaphors associated with each domain. This evidence is very important, because the difference in metaphorical extensions is a very strong empirical indication that the lexicalization – in terms of [Talmy 2000] – of ‘flying’ and ‘jumping’ is based on profiling different parameters of the situation. It is the profiled parameters that support metaphors emerging in the course of lexicalization.

In the semantic domain of flying, the main consideration is that the subject of the movement (trajector) be in the air for a relatively long period of time. Types of movement associated with this domain are, typically, quick and unidirectional; slow and chaotic movement occurs in specific cases. Therefore, the verbs of flying are primarily extended to cover various types of quick unidirectional movement.

The semantic domain of jumping profiles momentary contact with a supporting surface that is successively lost and regained. Therefore, in their metaphorical uses, verbs of jumping are conceptualized primarily as verbs of quick, jerky movements that may destroy or decrease the object’s physical integrity. Examples are the English *spring* or French *sauter* (in the sense of ‘blow up’), as well as Russian verbs *ot-sko*

*it’* or *so-sko*

*it’* ≈ ‘become disconnected (of a part of an object or its detail)’.

Lexical distinctions are supported by grammatical evidence. Many verbs of ‘jumping’ include iteration as their semantic component. As was already mentioned, ‘jump’ may describe a situation of repeatedly interrupted contact with a supporting surface. It is then only natural that languages like Slavic, where the distinction between semelfactive and multiplicative situations is grammaticalized, often clearly distinguish the verbs of flying vs. jumping not only lexically, but also grammatically (and/or morphologically). In Slavic languages, only verbs of jumping combine with the semelfactive suffix (Russian *-nu-* etc.). The obvious reason is that only a jumping

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The first verb refers rather to flying of a stone that was thrown through the air or to flying of a plane than to a bird’s flying. (The Hungarian word for ‘plane’ is *repülőgép*, literally ‘flying machine’.) The second verb refers to the flying of a bird (or to the falling of a snowflake), and also has a large number of derived meanings that use the metaphor of a (quick) ascent, as in ‘get on a bus’, ‘engage [in a fight]’, ‘go to one’s head [of wine etc.; i.e., of an alcoholic drink that is starting to take its effect]’, etc. We wish to thank Valentin Goussev for his help with the Hungarian data.

situation may be conceptualized as divisible into repeating ‘quanta’ or ‘portions’ of individual jumps. Each jump may in principle be ‘jumped’ separately, not as a member of a series but as a single event, whether the other jumps take place or not. It is well-known that a multiplicative interpretation is available only for those situations whose single quantum is pragmatically salient enough to be linguistically categorized as a separate lexical item (cf. [Padu

eva 1996: 120; Xrakovskij 1997; Xrakovskij 1999: 231]). This applies perfectly to the pair *prygat’* ‘jump [repeatedly], be jumping’ / *prygnut’* ‘jump, make one jump.’ The prototypical ‘fly’ situation, on the contrary, is not pragmatically divisible into quanta.

Thus, not only lexical but also grammatical properties provide important arguments for considering ‘flying’ and ‘jumping’ to be two distinct semantic domains. Thorough analysis of the data, however, shows that this distinction is not absolute. The two groups of verbs obviously have a non-trivial semantic component in common. This component may be observed even in the European linguistic area; and if we start looking more broadly at languages in other areas, it becomes hard to overlook.

## 2. On similarities

We will proceed in the same way as above, and start with the vocabulary. We need to reconsider the European data from the following viewpoint. Without overlapping lexically in their central, primary uses, metaphorical extensions of the two domains may sometime fuse. For the European lexical stock, the similarity between the domains of ‘flying’ and ‘jumping’ is indirect, and is manifested in some of their metaphorical uses being synonymous.

Thus, verbs of both groups may be used to refer to the decrease in the object’s physical integrity. Cf. English *fly ~ spring into pieces* or Russian pairs like *ot-letet’ ~ ot-sko*

*it’* where both of the verbs may describe the sudden falling-off of some component of a mechanism (a wheel, screw, etc.) Interestingly, Russian also provides another possible synonymy (*mja*

*otletet / otsko*

*il daleko v storonu*, lit., ‘the ball flew / jumped far away’). This kind of synonymy is also possible in other languages; cf. English *fly ~ spring into one’s arms*.<sup>5</sup>

Apparently, the verbs of flying and jumping penetrate into each other’s domain. The decrease in an object’s integrity is a primary metaphor in the domain of ‘jumping;’ verbs of flying, however, may also metaphorically extend in this direction. Conversely, quick movement is a primary metaphorical extension of the verbs of flying; however, the use of verbs of jumping is also possible here.

Indirectly, the semantic adjacency of the two domains is manifested by relations of ‘translation equivalency’ between various languages. Verbs of jumping are often translated into another language by verbs of flying, and vice versa. We have just observed that the Russian *razletet’sja na kuski* ‘break (lit., fly) into pieces’ is translated into

English not only by *fly*, but also by *spring* (as in *spring into pieces*), while the French *sauter en l'air* ‘blow up,’ lit., ‘**jump** in the air’ corresponds to the Russian *vzletet’ na vozdux* ‘blow up, explode,’ lit., ‘**fly** onto the air.’ Polish to Russian correspondences are also illustrative in this perspective. The Polish verb for ‘fly,’ *latać* is used in some contexts where Russian would use ‘jump;’ cf. the Polish *usta mu latają*, lit., ‘his lips/mouth are flying,’ with its Russian equivalent *u nego prygajut guby*, lit., ‘his lips are jumping’ – expressions referring to someone who is extremely excited or angry or on the verge of crying.

However, these similarities are secondary. They are not supported by the evidence from direct, primary meanings. An example of where the two groups come close to each other in the primary meaning of the verb is the French *voltiger* that, in addition to movement through the air (fluttering subtype), may also refer to a very specific type of jumping – equestrian vaulting in a circus setting. But this second meaning of the French verb may also be interpreted as a metaphorical extension for which flying is the source domain.

To find examples of direct, non-metaphorical connections between the two groups of verbs we have to leave the ‘Standard European.’ In a broader typological perspective, ‘flying’ and ‘jumping’ may come very close to each other – so close that both meanings are even conveyed by the same lexical item. In other words, there are languages where one verb is used to refer to both movement through the air or abrupt take-off.

This kind of polysemy is not frequent. However, it is attested consistently in at least one linguistic area, namely in the Caucasus and adjacent regions, where it is typical of various Daghestanian languages and present in Armenian, Persian and some Indo-Arian languages.

Below we only provide a selection of facts, the most significant part of our data.

The modern East Armenian verb *t<sup>h</sup>ərc<sup>h</sup>el* (dial. *t<sup>h</sup>ərneł*) means to ‘jump, bounce; fly,’ and may refer both to directed movement through the air or to jumping. The noun *t<sup>h</sup>ərc<sup>h</sup>un* ‘bird,’ its derivative, seems to inherit elements of both meanings. Birds are conceptualized as both flying and jumping animals, which accounts for the poetical metaphor used in the following poem by Hamo Sahəyan, a contemporary Armenian poet:

*Tun*  
<sup>h</sup>-*unēir*, house NEG-have-IPF:1SG  
*Bun*  
<sup>h</sup>-*unēir*, nest NEG-have-IPF:1SG  
*T<sup>h</sup>ərc<sup>h</sup>un ēir*, bird be-IPF:1SG  
*Gišer-c<sup>h</sup>erek t<sup>h</sup>ərc<sup>h</sup>-um ēir...* night-day fly / jump-PTC be-IPF:1SG

‘I had no house, I had no nest. I was a bird, flitting all day long.’<sup>6</sup>

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Strictly speaking, the last line literally means ‘night and day flying/jumping I-was’. However, it does not refer either to flying – a man can not fly in the literal sense – or to jumping. It suggests an idea of a flippant and thoughtless inconstancy, flitting and jumping from one place to another, without staying anywhere for a long time. Abbreviations used in the glosses are: NEG – negation, IPF – imperfect, SG – singular, PTC – participle.

Similar polysemy is present in Persian (*pāridān* ‘jump; fly, flutter’) and, most probably, in Gujarati (uD- ‘fly; soar; leap, bound, rush or fall upon’), as well as in the following Daghestanian languages [Kibrik, Kodzasov 1988; Nikolaev, Starostin 1994]:

- Bezhta (Tsezic) *b=ok’ic’* - / *b=ogic’* - ‘fly; jump’
- Rutul (Lezxic) *la=w=*  
- ‘fly; jump.’

The fact that the meanings ‘fly’ and ‘jump’ sometimes combine not in one language but in etymological cognates of two or more closely related languages should be considered evidence of a slightly different kind. In other words, lexical items from genetically related languages, clearly related to each other etymologically, in some languages mean ‘fly’ and in some other languages mean ‘jump.’ This is e.g. the case of the Tabassaran (Lezxic) *urs-* ‘jump’ and its Dargwa cognates *urs-* (Urakha Dargwa) and *urc-* (Akusha Dargwa), both meaning ‘fly.’ Less safe (because of the deepness of reconstruction) are parallels with Abkhaz-Adyghean (West Caucasian) languages; [Nikolayev, Starostin 1994] tentatively provide a Tabassaran-Dargwa root with Abkhaz-Adyghean cognates meaning ‘fly,’ ‘bird’ or ‘wing.’

Especially interesting in this respect are the Baltic data, e.g., Lithuanian *lėkti* ‘fly’ corresponding to Latvian *lekt* ‘jump.’ Both Baltic verbs are often compared with the Slavic *\*let-* / *\*lēt-* ‘fly.’ Reflexes of this root are sometimes posited for other Indo-European languages (e.g. Germanic), meaning ‘jump, make jumps’ (but also ‘kick,’ and ‘trample,’ inter alia) [Vasmer 1986, vol. 2: 488].

These data indicate that the two domains are closely related semantically. What do flying and jumping have in common? What are the similarities that make some languages use one and the same lexical unit to refer to both situations? To answer these questions, we suggest that the concept of flying is not homogeneous, but contains at least two different prototypes, which can be referred to as “active” and “passive” flying. The term “active flying” stands for the flying of living creatures, birds and insects, made possible by the regular movement of wings. “Passive flying” is thus the flight of an object that has been caused to move through the air by applying an external force – i.e., throwing. Indeed, these two types of flying differ substantially from a physical viewpoint, and referring to them by the same predicate is a choice that is neither obvious nor, as we have seen in some of the examples, universal.

Active (but not passive!) flying has a number of parameters that make it similar to jumping. The two situations have a common component of ‘abrupt, regularly repeated movements of the limbs.’ This parameter is prominent in the fluttering (rather than hovering) subtype of active flying with its frequent and observable movements of the wings. Notably, from the grammatical viewpoint, it is the verbs of flying belonging to the ‘fluttering’ subtype that may be marked as multiplicative or semelfactive. For these verbs, a single act of wing movement may become cognitively important, cf. Russian *porxat* ‘flutter’ ~ [*vs-*] *porx-nu-t* ‘take off fluttering’. We have noted above that with *letat* ‘fly,’ the main Russian verb of flying, this morphological distinction is impossible. However, the verbs of active flying may be considered as multiplicativa tantum, similar to ‘chewing’ or ‘sawing.’ Verbs like ‘chew’ and ‘saw’ do not have pragmatically natural semelfactives, but, physically, fit perfectly into the multiplicative model because they refer to a series of homogeneous and iterated movements. The flight of a bird through the

air (unlike the flight of a stone or arrow) includes the homogeneous repeated flapping of the bird's wings and is not very different from the inherently multiplicative actions of 'chewing' and 'sawing.'

We thus suggest a three-point scale:

(1) Pairs of semelfactive ~ multiplicative actions, as Russian *pryg-nu-t'* 'jump [once]' ~ *prygat'* 'jump [repeatedly], be jumping, bouncing,' *skak-nu-t'* 'jump, hop [once]' ~ *skakat'* 'jump, hop [repeatedly], be jumping, hopping; caper,' *porx-nu-t'* 'flutter (from one place to another)' ~ *porxat'* 'flutter in the air,' in which one single movement is pragmatically natural and may be lexicalized.

(2) Multiplicativa tantum, such as Russian *ževat'* 'chew', that have no semelfactive correlate but, semantically, preserve the cyclic event structure characteristic of multiplicatives; languages that mark multiplicatives morphologically may ascribe multiplicative marking also to multiplicativa tantum, as iterative / multiplicative reduplication in Chamalal (Andic, Nakh-Daghestanian), cf. *k'anzi* 'jump [once]' ~ *k'anzi=zi* 'jump [repeatedly]' alongside with *ča=čani* 'chew' (\**čani*); see [Plungian 1997] for more details.

(3) Verbs that refer to homogeneous situations, as 'flow' or 'burn,' that do not qualify as multiplicative situations.

Cross-linguistically, verbs of flying are distributed along the scale constituted by these three classes. Active flying may be either a regular multiplicative (with corresponding semelfactives) or multiplicativa tantum. Passive flying tends to be classified with the verbs of the third class and is not conceptualized as multiplicative even in the broader sense of the term (which includes multiplicativa tantum).

Passive flying is more easily associated with falling than with jumping. Indeed, both falling and passive flying describe free movement through the air, most often at a relatively high speed.

There is thus another group of predicates that, together with verbs of jumping, are conceptual 'competitors' of the verbs of flying. This domain covers verbs of free falling and has much in common with passive flying. This explains why in various languages the meanings 'fall' and 'fly' are interchangeable in some contexts, cf. English *fall off* ~ *fly off* (see also Note 3). There are also cases when the meanings 'fly' and 'fall' are combined within one predicate (similarly to what we have seen for 'fly' and 'jump'); native speakers then perceive the two meanings as closely related to each other. Probably the best-known case of this is the example of Sanskrit, in which the verb *pat-* had the two meanings 'fall' and 'fly;' this polysemy is preserved in many modern Indo-Arian languages.

We suggest that to explain these data from the viewpoint of lexical typology, the following approach should be adopted.

1. Apparently, the situation of flying is not a cognitively basic, elementary human concept. Flying is not a typically human activity – because people do not fly – so it is modeled by speakers of different languages by means of other situations that are more natural and basic from the human point of view.



2. Looking for natural prototypes to construct the concept of flying, a language uses one of two sources: either a multiplicative situation of jumping (which is similar to active flying) or a homogeneous situation of falling (which is similar to passive flying).

3. The lexical domain of 'flying' ('moving through the air') thus proves not to be elementary from the viewpoint of a universal inventory of parameters relevant for lexical systems cross-linguistically.<sup>7</sup> In the languages of the world it often splits into two zones, or sub-domains. The active sub-domain covers the action of a living creature who stays in the air by abruptly moving its limbs. The passive sub-domain describes an inanimate object's movement through the air, caused by the application of an external force.

The cognitive distinction between the two sub-domains is manifested in different strategies of conceptual assimilation applied in the two cases. Flying may be conceptualized either as jumping (active flying) or falling (passive flying).

The non-elementary structure (divisibility) of the meaning of lexical items, i.e. the absence of a one-to-one correspondence between lexical meanings and the semantic parameters of the universal inventory, is a well-known phenomenon. The same is also characteristic of grammatical meanings. However, in order to be a member of the universal inventory, the grammatical meaning has to be a 'surface' grammatical category in at least one language. The approach to lexical meanings is necessarily more sophisticated, because the meaning of a word is always much more complex than the corresponding 'primitive' from the universal inventory of lexical meanings. At the present level of linguistic knowledge, nobody can even be absolutely positive as to whether this inventory does exist. However, the domain of movement through air is split into active and passive sub-domains, in exactly the same way as, for example, the domain of movement in the water (cf. the representative data in [Maisak & Rakhilina, 2007]). It thus seems highly probable that this parameter is typologically relevant.

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