

# Watercourse Metaphors in Polish and Russian

## The Case of the Metaphorical Classifiers *rzeka, potok, strumień,* *struga* and *reka, potok, ručej,* *struja*

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**Abstract** This paper examines binominal constructions in Polish and Russian of the type [N1 + N2.GEN], in which N1 belongs to the semantic domain of natural watercourses. Adopting a corpus-based approach, the study aims to identify the collocational preferences and semantic specializations of the selected N1s. Particular attention is given to the salient features metaphorically mapped from the aquatic source domain of N1 onto the target domain of N2, and to the motivations behind the choice of a given classifier in context. The study shows that, while the classifier *river* is used similarly in both languages, other classifiers behave differently in Polish and Russian.

**Keywords** Classifiers. Metaphorical mapping. Polish. Russian. Watercourse metaphors.

**Index** 1 Introduction. – 2 Analysis in Polish. – 3 Analysis of Russian Data. – 4 Comparison of Polish and Russian Data and Conclusions.



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## 1 Introduction

This study focuses on a specific subset of binominal constructions of the type [N1 + N2.GEN] in Polish and Russian, where N1 belongs to the semantic domain of natural watercourses.<sup>1</sup> In particular, the N1s under analysis are *rzeka* ‘river’, *potok* ‘torrent’, *strumień* ‘stream’, *struga* ‘streamlet’ in Polish, and *reka* ‘river’, *potok* ‘stream’, *ručej* ‘rivulet’, *struja* ‘jet’ in Russian. In both languages, these watercourse lexemes tend to become specialized as metaphorical classifiers “which do not fulfill a referential function based on their lexical meaning, but are used to characterize the entity denoted by the second constituent (N2) in terms of its salient cognitive features” (Latos, Benigni 2025, 102). For instance, in the expressions *rzeka ludzi* ‘river of people’ in Polish and *potok ljudej* ‘stream of people’ in Russian, the classifiers *river* and *stream* establish a complex semantic relationship by mapping onto the animate N2 *people* salient characteristics such as being numerous and in constant, progressive motion.

The N1s selected for analysis and comparison denote, in their literal sense, natural watercourses, but each carries distinct semantic and conceptual nuances that reflect differences in the size, speed, volume, or intensity of water flow. The Polish noun *potok*, for example, refers to a torrent or a swiftly flowing stream, typically evoking connotations of force, dynamism, or a sudden and intense outpouring. In contrast, *strumień* designates a narrow, shallow flow of water, quieter and more contained in character, often associated with continuity, steadiness, and directionality rather than power. A similar semantic differentiation and specialization is observed in Russian. *Potok* denotes a stream or torrent and is frequently used to describe intense flows, while *ručej* refers to a small rivulet, a narrow and typically gentle flow of water, and tends to be associated with liquids that appear in the form of droplets. Our working hypothesis is that these semantic differences are essential for understanding how each aquatic classifier functions metaphorically within binominal constructions.

Building on previous work (Benigni, Latos 2023; 2024; Latos, Benigni 2025), the present investigation aims to identify the salient features that are mapped from the aquatic source domain (SD) of N1 onto the target domain (TD) of N2 (metaphorical mapping; cf. Kövecses 2010; 2020; Lakoff, Johnson 1980). Specifically, the study has a twofold objective. First, through a corpus-based analysis, it seeks to identify the collocational preferences and semantic specializations of the selected aquatic classifiers in Polish and Russian. Second, it

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<sup>1</sup> The article is the result of close collaboration between the two authors. For academic purposes only, Agnieszka Latos is responsible for Sections 1 and 2, and Erica Pinelli for Sections 3 and 4.

examines cases of overlapping and competing usage, in which different classifiers co-occur with the same N2, revealing nuanced distinctions in metaphorical construal (e.g., Pl. *rzeka, potok, strumień, struga krwi*, 'a river/torrent/stream/trickle of blood'; Ru. *reka, potok, ručej, struja krovi* 'a river/stream/rivulet/jet of blood'). Of particular interest are the motivations behind the selection of a specific classifier in context and the cognitive features that underlie such choices.

The study is grounded in data extracted via Sketch Engine from large-scale web corpora, i.e. PlTenTen19 and RuTenTen17, qualitatively complemented by examples from the Polish National Corpus (NKJP) and the Russian National Corpus (NKRJa). The methodology combines quantitative analysis (frequency and distribution of N1-N2 pairings) with qualitative insights (contextual features, metaphorical entailments), drawing on frameworks such as collocational and collocation analysis.<sup>2</sup>

By adopting a contrastive perspective, this study contributes to the understanding of metaphorical classifiers across languages and highlights both convergences and divergences in the semantic structuring of aquatic binominal constructions. It also sheds light on the broader phenomenon of metaphorical categorization in language, where physical experiences, such as the flow of water, serve as cognitive templates for abstract conceptualization.

## 2 Analysis in Polish

### 2.1 Polish N1s in Dictionaries

The analysis and comparison of the four Polish classifiers - *rzeka* 'river', *potok* 'torrent', *strumień* 'stream', and *struga* 'streamlet' - which are used to structure conceptual mappings between aquatic source domains (N1s) and target domains (N2s), take as their point of departure the dictionary entries provided in the *Wielki Słownik Języka Polskiego* (WSJP),<sup>3</sup> the most recent usage-based online reference work for contemporary Polish vocabulary.

As indicated in the dictionary definitions numbered 1 to 3 for each lexeme [tab. 1], these aquatic expressions denote, in their literal sense, various types of naturally flowing water (Meaning 1: WATER), and are metaphorically extended to describe large quantities or profusions

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<sup>2</sup> See, for instance, Sinclair 1991; Stefanowitsch, Gries 2003; Gries, Stefanowitsch 2010.

<sup>3</sup> <https://wsjp.pl/>.

of different types of liquids (Meaning 2: LIQUIDS), as well as various non-liquid entities (Meaning 3: QUANTITY).

**Table 1** Definitions of the dictionary WSJP (translation mine)

<i>Rzeka</i>	<i>Potok</i>	<i>Strumień</i>	<i>Struga</i>
1. Water flowing from its sources toward its mouth along a bed shaped by the flow itself. 2. A large quantity of some liquid continuously flowing out from somewhere. 3. A large amount of sth, especially something moving slowly and steadily that appears continuously at a given moment.	1. A fast current of water flowing through a narrow channel. 2. A large volume of rapidly flowing liquid. 3. A large number of phenomena occurring continuously.	1. (mountainous) Water flowing through a narrow, shallow channel. 2. A large amount of flowing/pouring liquid (ex. alcohol). 3. A large quantity of sth directed toward someone or sth for a specific purpose (ex. money).	1. A narrow stream of rapidly flowing liquid in a narrow jet or stream. 2. A small river. 3. (literary) A visible or tangible narrow stream of some volatile substance.

On the basis of the comparison of dictionary definitions [tab. 1] and the collocational profiles and usage examples in the WSJP dictionary,<sup>4</sup> *rzeka* ‘river’ is the most general term, denoting a natural watercourse, but it also metaphorically emphasizes quantity or volume, continuity, and slowness (*wolno, nieprzerwanie przesuwać się* ‘slowly, continuously moving’). *Potok* ‘torrent’, typically associated with mountainous terrain (*potoki w górach* ‘mountain torrents’) and fast, turbulent flows (e.g. *oszałały / szalejący* ‘raging’, *rwący* ‘rushing’, *warki* ‘swift’), highlights continuity but also speed and force. *Strumień* ‘stream’ presents a more moderate and swift flow, typically found in mountain areas (Meaning 1: *strumień górski* ‘mountain stream’), and is commonly used in structured or purposeful contexts (*kierować / skierować* ‘to direct’). Finally, *struga* ‘streamlet’ refers to a narrower and rapid flow (*bystra* ‘swift’, *wąska* ‘narrow’), whether it is a small river (Meaning 2) or a thin stream of blood (Meaning 1) or smoke with its literary usage (Meaning 3). It is worth noting that, unlike the previously described lexemes, the dictionary lists the classifier meaning as the primary meaning of *struga* (Meaning 1), rather than the meaning referring to a natural watercourse (Meaning 2).

<sup>4</sup> The collocational profiles and usage examples available in the dictionary WSJP are extensive and cannot be fully quoted due to space limitations.

## 2.2 Corpora Data Analysis

The following section provides an analysis of the Polish corpus data. The data were retrieved from the PITenTen19 (Polish Web Corpus 2019), a large-scale corpus comprising approximately 4.2 billion words. The query pattern employed was [lemma="N1"] [tag="N2gen"], with a focus on identifying the most frequent second elements (N2s) in the genitive case. To ensure cross-linguistic comparability, a minimum frequency threshold of 0.005 occurrences per million words was applied. Additional data were drawn from the National Corpus of Polish (NKJP), which served to supplement and validate the findings from the web corpus.

### 2.2.1 *Rzeka*

As shown in Table 2, the Polish lexeme *rzeka* 'river' collocates with both concrete N2s, such as liquids (*krew* 'blood', *łza* 'tear'), people (*człowiek*), and money (*pieniądze*) as well as abstract N2s like *życie* 'life', *tajemnica* 'secret', *czas* 'time', *wiara* 'faith' or *miłość* 'love'. In many of these constructions, *rzeka* evokes processes that lack agency and are perceived as uncontrollable or overwhelming as in (1).

- (1) *Jesteśmy zalewani rzeką informacji.* (uwe.edu.pl)  
'We are being flooded by a river of information.'

**Table 2** Results of corpus search [rzeka+N2.GEN]

N2	Frequency	Freq. per million	% of concordance
<i>krew</i> 'blood'	313	0.06	0.46366
<i>życie</i> 'life'	303	0.05809	0.44884
<i>woda</i> 'water'	252	0.04831	0.37329
<i>tajemnica</i> 'secret'	234	0.04486	0.34663
<i>człowiek</i> 'person'	188	0.03604	0.27849
<i>czas</i> 'time'	166	0.03182	0.2459
<i>pieniądz</i> 'money'	143	0.02741	0.21183
<i>wiara</i> 'faith'	120	0.023	0.17776
<i>lawa</i> 'lava'	106	0.02032	0.15702
<i>marzenie</i> 'dream'	97	0.0186	0.14369
<i>zapomnienie</i> 'oblivion'	95	0.01821	0.14073
<i>łza</i> 'tear'	95	0.01821	0.14073
<i>dzieciństwo</i> 'childhood'	90	0.01725	0.13332
<i>myśl</i> 'thought'	78	0.01495	0.11554
<i>muzyka</i> 'music'	77	0.01476	0.11406
<i>miłość</i> 'love'	65	0.01246	0.09629

N2	Frequency	Freq. per million	% of concordance
<i>ogień</i> 'fire'	64	0.01227	0.0948
<i>kłamstwo</i> 'lie'	60	0.0115	0.08888
<i>słowo</i> 'word'	59	0.01131	0.0874

The metaphorical uses of *rzeka* in Polish reveal a dual pattern (see also Benigni, Latos 2023, 139): as a metaphorical classifier and as part of a conceptual metaphor related to time, emotion, or existence. In the first pattern, N1 *rzeka* is the syntactic head of the binominal which functions as a metaphorical classifier mapping features such as progressiveness, continuity, and large quantity, while N2 serves as the semantic head of the construction, (see ex. (2)).

- (2) *Niemcy płacą najwięcej do UE, a Polska bierze tylko **rzekę pieniędzy**.* (trojmiasto.pl)  
'Germany pays the most into the EU, and Poland only takes **a river of money**.'

In the second pattern, *rzeka* is not only the syntactic head but also the semantic head of the construction, while N2 often refers to abstract concepts, particularly those related to time, existence, or inner experience such as *życie* 'life', *czas* 'time', or *młodość* 'youth', as exemplified in (3) by the LIFE IS A RIVER metaphor. Such structural metaphors emphasize continuity, progressiveness, and slowness, rather than quantity.

- (3) *Nakłania ona do pływnięcia pod prąd nurtem **rzeki życia**.* (NKJP)  
'It encourages swimming against the current of **the river of life**.'

This usage is particularly common in event denomination or titles (e.g. music festival *Rzeka Muzyki* 'River of Music'), proper names (e.g. name of the mythological river Lethe *Rzeka Zapomnienia* 'River of Forgetfulness') or biblical references such as *rzeka życia* 'river of life'.

Context plays a crucial role in determining whether *rzeka* functions primarily as a metaphorical classifier or as a symbolic representation of a continuous process. In (4), *rzeka miłości* 'a river of love' is a realization of the conceptual metaphor LOVE IS A RIVER, while in (5) *rzeka* 'river' acts as a classifier mapping the traits of hyperbolic quantity and interminability onto the N2 *miłość* 'love'.

- (4) *Dokąd niesie nas ta wielka rzeka, [...], **rzeka miłości**?* (NKJP)  
'Where is this great river carrying us, **the river of love** [...]?'  
  
(5) ***Rzeka Miłości**, Morze Radości, Ocean Szczęścia!* (empik.com)  
'**River of love**, sea of joy, ocean of happiness!'

### 2.2.2 Potok

The classifier *potok* ‘torrent’ is used both with concrete N2s such as people, vehicles, liquids (*łza* ‘tear’, *krew* ‘blood’, *deszcz* ‘rain’) and with abstract N2s such as *słowo* ‘word’, *ruch* ‘traffic’, *myśl* ‘thought’, *informacja* ‘information’, *mowa* ‘speech’, *życie* ‘life’ [tab. 3]. The mapping often involves dynamic features, such as speed or suddenness, as in (6):

- (6) *Pacjent wyrzuca z siebie potok słów.* (portal.abcdzdrowie.pl)  
‘The patient spits out a torrent of words.’

**Table 3** Results of corpus search [potok+N2. GEN]

N2	Frequency	Freq. per million	% of concordance
<i>słowo</i> ‘word’	1256	0.24078	11.06121
<i>podróżny</i> ‘traveller’	444	0.08512	3.91017
<i>łza</i> ‘tear’	392	0.07515	3.45222
<i>ruch</i> ‘traffic’	284	0.05444	2.5011
<i>pasażer</i> ‘passenger’	221	0.04237	1.94628
<i>woda</i> ‘water’	207	0.03968	1.82299
<i>krew</i> ‘blood’	186	0.03566	1.63804
<i>lawą</i> ‘lava’	155	0.02971	1.36504
<i>myśl</i> ‘thought’	136	0.02607	1.19771
<i>informacja</i> ‘information’	128	0.02454	1.12726
<i>pojazd</i> ‘vehicle’	102	0.01955	0.89828
<i>deszcz</i> ‘rain’	90	0.01725	0.7926
<i>człowiek</i> ‘person’	85	0.01629	0.74857
<i>samochód</i> ‘car’	75	0.01438	0.6605
<i>światło</i> ‘light’	61	0.01169	0.53721
<i>mowa</i> ‘speech’	52	0.00997	0.45795
<i>życie</i> ‘life’	49	0.00939	0.43153

As with *rzeka*, we can distinguish two main patterns of metaphorization for *potok*: one as a metaphorical classifier, and the other as a conceptual metaphor. The first pattern, illustrated in (7), is very frequent and applies to a wide variety of N2s.

- (7) *Ze słuchawki popłynął potok słów* [...]. (NKJP)  
‘A stream of words flowed from the receiver [...].’

In examples (6) and (7), the metaphorical mapping includes features of temporal arrangement (TEMPORAL SUCCESSION and CONTINUITY), enriched with values of dynamism, as well as those of large quantity (‘a lot of’). However, the classifier *potok* is often used to indicate a CONTINUOUS

FLOW OR a SPATIO-TEMPORAL ARRANGEMENT without any quantitative value. For instance: *potok + ruchu, mowy, myśli, światła* ‘flow of traffic, speech, thought, light’ as in (8) and (9):

- (8) *Szczegółowe badanie potoków podróżnych.* (nik.gov.pl)  
‘A detailed study of **passenger flows**.’
- (9) *Zdolność do kwalifikowania wyróżnionych z potoku mowy głosek [...].* (cdzn.pl)  
‘The ability to identify the distinctive sounds from **the speech stream** [...].’

In some uses, *potok* is also associated with agency or controllability, as in (10).

- (10) *Zgorzelec generuje potok podróżnych do Wrocławia.* (infokolej.pl)  
‘Zgorzelec generates **a flow of travelers** to Wrocław.’

The use of *potok* as a conceptual metaphor is rather rare. In (11), *potok życia* ‘torrent of life’ is not just a metaphorical container, but a complex conceptual metaphor representing life as a rushing torrent one can immerse oneself in and be carried along by:

- (11) *Pokaże, jak [...]; zanurzyć się w całości w rwącym potoku życia.* (NKJP)  
‘He will show you how [...], to fully immerse yourself in the rushing **torrent of life**.’

### 2.2.3 *Strumień*

The classifier *strumień* ‘stream’ is used with concrete N2s such as liquids (*woda* ‘water’, *mocz* ‘urine’, *krew* ‘blood’), volatile and transmissible substances like waves (*powietrze* ‘air’, *światło* ‘light’, *ciepło* ‘heat’, *energia* ‘energy’, *para* ‘steam’), waste (*odpad*), money (*pieniądze*), and with a limited number of abstract N2s such as *dana* ‘data’, *wideo* ‘video’, and *informacja* ‘information’ [tab. 4]. Collocations with *strumień* tend to become lexicalized as fixed terms, i.e. *strumień świadomości* ‘stream of consciousness’ or *strumień objętości* ‘volumetric flow/volume flow rate’.

**Table 4** Results of corpus search [strumień+N2.GEN]

N2	Frequency	Freq. per million	% of concordance
woda 'water'	7061	1.35361	19.6128
powietrze 'air'	4149	0.79537	11.52436
światło 'light'	2058	0.39452	5.71635
świadomość 'consciousness'	1185	0.22717	3.29148
dana 'data'	1164	0.22314	3.23315
odpad 'waste'	985	0.18883	2.73596
pieniądz 'money'	858	0.16448	2.3832
ciepło 'heat'	767	0.14704	2.13044
energia 'energy'	676	0.12959	1.87767
mocz 'urine'	663	0.1271	1.84156
gaz 'gas'	503	0.09643	1.39714
krw 'blood'	443	0.08492	1.23049
para 'steam'	369	0.07074	1.02494
objętość 'volume'	345	0.06614	0.95828
wideo 'video'	310	0.05943	0.86106
informacja 'information'	304	0.05828	0.8444

The primary function of *strumień* is that of a classifier of spatio-temporal arrangement, meaning 'stream, jet, flow'. The quantification 'a lot of' is typically absent (12) or secondary to the form of arrangement (13).

(12) *Zewnętrzna część włosów nie jest narażona na bezpośredni **strumień** gorącego powietrza.* (megamedia.pl)

'The outer part of the hair is not exposed to a direct **stream** of hot air.'

(13) *Do kieszeni inwestorów wkrótce popłynie **strumień pieniędzy**.* (federacja-anarchistyczna.pl)

'A **stream of money** will soon flow into investors' pockets.'

The classifier is used in contexts that express the directionality of movement 'from' and 'towards/into/to', as illustrated in (13) and (14-15).

(14) *Po co komu kreski na mapie, jeśli nie płynie z tego **strumień złota**.* (NKJP)

'What's the use of lines on a map if no **stream of gold** flows **from** it?'

(15) *Ku świętemu źródłu, sunie wciąż **strumień pielgrzymów**.* (sbc.org.pl)

'**Toward** the holy spring, a **stream of pilgrims** is still moving.'

### 2.2.4 *Struga*

As shown in Table 5, the classifier *struga* ‘streamlet’ collocates exclusively with concrete N2s such as liquid and semi-liquid substances (*deszcz* ‘rain’, *krew* ‘blood’, *pot* ‘sweat’, *ciecz* ‘liquid’, *łza* ‘tear’) or volatile and transmissible ones such as *powietrze* ‘air’, *światło* ‘light’, *gaz* ‘gas’.

**Table 5** Results of corpus search [struga+N2. GEN]

N2	Frequency	Freq. per million	% of concordance
<i>deszcz</i> ‘rain’	2860	0.54827	56.94942
<i>woda</i> ‘water’	549	0.10524	10.9319
<i>powietrze</i> ‘air’	320	0.06134	6.37196
<i>krew</i> ‘blood’	181	0.0347	3.60414
<i>światło</i> ‘light’	97	0.0186	1.9315
<i>pot</i> ‘sweat’	48	0.0092	0.95579
<i>gaz</i> ‘gas’	42	0.00805	0.83632
<i>ciecz</i> ‘liquid’	40	0.00767	0.7965
<i>łza</i> ‘tear’	34	0.00652	0.67702

*Struga* functions as a classifier of spatial arrangement meaning ‘streamlet, trickle, small stream’, as illustrated in (16)-(17), and is associated with the rapidity and narrow scale of flow. As a metaphorical classifier, *struga* typically refers to very small flows of N2. However, the plural form *strugi* may, in certain contexts, convey hyperbolic quantification, as in (16), where its use enhances the depiction of heavy, torrential rain.

(16) *Zimny poniedziałkowy poranek skąpany w **strugach deszczu**.* (e-wesele.pl)  
‘A cold Monday morning soaked in **streams of rain**.’

(17) *Po jej nogach ściekały **strugi krwi** z ran.* (scribd.com)  
‘**Streams of blood** were trickling down her legs from the wounds.’

As previously observed in Benigni and Latos (2024), watercourse classifiers may compete with one another by collocating with the same N2 (“overlapping cases”). All classifiers in our dataset are found to recurrently collocate with the N2 *krew* ‘blood’ [tab. 6].

**Table 6** Results of corpus search [N1+ krwi ‘of blood’]

<b>N1+ N2 krwi</b>	<b>Frequency</b>	<b>Freq. per million</b>	<b>% of concordance</b>
<i>rzeka krwi</i> ‘river of blood’	313	0.06	0.46366
<i>potok krwi</i> ‘torrent of blood’	186	0.03566	1.63804
<i>strumień krwi</i> ‘stream of blood’	443	0.08492	1.23049
<i>struga krwi</i> ‘trickle of blood’	181	0.0347	3.60414

Analyzing their use with this N2 further highlights and confirms the distinctions previously identified. The classifier *rzeka* occurs with the N2 *blood* in both literal and metonymic contexts, particularly in reference to wars, armed conflicts, and violence (see also Latos, Benigni 2025, 106-7). However, metonymic uses, emphasizing the continuity and vastness of the denoted phenomenon, predominate. Similarly, the classifier *potok* appears in both literal and metonymic senses, the latter typically associated with contexts of conflict or assaults. Both uses are frequent and commonly characterized by suddenness and intensity. While the classifier *strumień* may also occur in metonymic contexts, its predominant use refers to the literal flow of blood. Finally, the classifier *struga* is used exclusively in a literal sense, denoting a trickle of blood.

### 3 Analysis of Russian Data

#### 3.1 Russian N1s in Dictionaries

As for Polish data, the analysis of Russian N1s starts from their dictionary definitions [tab. 7]. In particular we refer to the *Bol’soj Akademičeskij Slovar’ Russkogo Jazyka* (BAS, Gerd 2004-24), the most important and still ongoing academic lexicographic project for contemporary Russian.

**Table 7** Entries of the dictionary BAS (translation mine)

<i>Reka</i>	<i>Potok</i>	<i>Ručej</i>	<i>Struja</i>
A permanent natural stream of water with a natural flow along the channel it has developed from the source down to the mouth, fed by surface and underground runoff from its basin. A huge amount, a moving mass of something.	The rapidly flowing mass of water of a river or stream. A rapidly flowing mass of something. A multitude or a mass of something or someone that moves in one direction.	A small stream of water formed by snowmelt or rainfall runoff or by groundwater discharge to the surface. Any liquid flowing profusely.	A narrow stream of water or any liquid. A continuous stream or narrow band of light, smoke, smell, etc.

As we can see in Table 7, *reka* generally refers to a natural watercourse but is also used to refer to a large amount or a mass of something (not necessarily liquid). *Potok* is characterized by its rapid and tumultuous nature, but it also refers to a multitude that moves in one direction. *Ručej* refers to a small watercourse, but it can also be used to define any kind of liquid that flows profusely. Differently from other N1s considered for the present analysis, *struja* does not refer to a natural watercourse in contemporary Russian. However, we included *struja* in the analysis of metaphorical classifiers because it is etymologically linked to the Indo-European root *\*sreyu* ‘flow’, the same of Polish *strumień* and *struga*.<sup>5</sup> The feature that seems to characterize *struja* is its narrowness but, differently from *ručej*, *struja* refers to a narrow flow not only of liquids, but also of air or light.

### 3.2 Watercourse Metaphorical Classifiers in Russian

In this section we provide the analysis of Russian data retrieved from the RuTenTen17 (Russian Web Corpus 2017) that contains approximately 14 billion words. The query pattern employed to retrieve data was [lemma=“N1”][tag=“N2gen”]. As for Polish data, only the most frequent N2s are shown in the following tables and a minimum frequency threshold of 0.005 occurrences per million words was applied. Additional data were drawn from the Russian National Corpus (RNKJa), in particular for exemplification.

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**5** It is also worth noting that, similarly to Russian *struja*, Polish *struga* mainly refers to a stream or a jet of liquid or volatile substance [tab. 1]. Although in contemporary Polish *struga* can still refer to a natural watercourse, the definitions given in the WSJP dictionary seem to confirm that it is following the same process of grammaticalization as Russian *struja*.

### 3.2.1 *Reka*

The N1 *reka* can occur with different kinds of N2, in particular liquids (*krov* ‘blood’ and *sleza* ‘tear’), abstract concepts (*žizn* ‘life’ and *istorija* ‘history’) and, less frequently, concrete entities (*čelovek* ‘person’) [tab. 8].

**Table 8** Results of corpus search [reka+N2.GEN]

N2	Frequency	Freq. per million	% of concordance
<i>krov</i> ‘blood’	2147	0.19097	0.90372
<i>vremja</i> ‘time’	1959	0.17425	0.82459
<i>žizn</i> ‘life’	1810	0.16099	0.76187
<i>voda</i> ‘water’	655	0.05826	0.2757
<i>sleza</i> ‘tear’	214	0.02357	0.11154
<i>lava</i> ‘lava’	192	0.01708	0.08082
<i>pamjat</i> ‘memory’	179	0.01592	0.07534
<i>ljubov</i> ‘love’	165	0.01468	0.06945
<i>čelovek</i> ‘person’	146	0.01299	0.06145
<i>istorija</i> ‘history’	104	0.00925	0.04378

When *reka* occurs with concrete N2s, both liquids and concrete entities, it functions as a classifier of quantity and spatio-temporal arrangement and refers to a big amount of N2s that flows continuously and that can be barely contained or controlled as in (18) and (19).

(18) *Iz glaz polilis’ reki slěz i iz gorla vyrvalsja krik.* (girlsgames-club.ru)  
‘**Rivers of tears** poured from his eyes and a scream burst from his throat.’

(19) *Reka ljudi medlenno unosila ego, no on vse že uvidel menja [...].* [É. Volodarskij. *Dnevnik samoubijcy* (1997)] (NKRJa)  
‘**A river of people** was slowly carrying him away, but nevertheless he saw me [...].’

Similarly to Polish *rzeka*, Russian *reka* can also function as the syntactic and semantic head of a construction in which a conceptual metaphor is involved. This happens with abstract N2s, as in (20), where *reka žizni* ‘river of life’ is a linguistic manifestation of the LIFE IS A RIVER conceptual metaphor (cf. Benigni, Latos 2024, 145).

(20) (20) *Za odin god reka žizni mozet unesti tak daleko. Kto znaet, gde my vse okažemsja čerez god?* (colta.ru)  
‘In one year, **the river of life** can carry you so far. Who knows where we’ll all end up in a year?’

### 3.2.2 *Potok*

In Table 9, the N2s that occur with *potok* are listed.

**Table 9** Results of corpus search [potok+N2.GEN]

N2	Frequency	Freq. per million	% of concordance
<i>vozduch</i> 'air'	28600	2.54386	8.73579
<i>voda</i> 'water'	19573	1.74094	5.97851
<i>energija</i> 'energy'	13759	1.22381	4.20265
<i>informacija</i> 'information'	13643	1.21349	4.16721
<i>dannye</i> 'data'	10067	0.89542	3.07494
<i>turist</i> 'tourist'	7673	0.68248	2.3437
<i>židkost</i> 'liquid'	5576	0.49596	1.70317
<i>soznanie</i> 'consciousness'	5500	0.4892	1.67996
<i>gaz</i> 'gas'	5404	0.48067	1.65064
<i>mašina</i> 'car'	5348	0.47568	1.63353
<i>čelovek</i> 'person'	5148	0.45789	1.57244

If we compare Table 8 and Table 9, we can notice that, in comparison to *reka*, *potok* occurs in binominal constructions with a significantly higher frequency. In fact, as already stated in Benigni and Latos (2024, 146-7), while *reka* is only partially interested by this phenomenon, the Russian noun *potok* is mainly used as a metaphorical classifier. Moreover, *potok* can occur with a wider variety of N2s: liquids (*voda* 'water', *židkost* 'liquid', ex. 21), gas or other volatile substances (*vozduch* 'air', *energija* 'energy', *gaz* 'gas'), abstract elements (*informacija* 'information', *dannye* 'data' and *slovo* 'word',<sup>6</sup> ex. 22), but also concrete entities (*turist* 'tourist', *mašina* 'car' and *čelovek* 'person').

- (21) *Pod zapornoj armaturoj ponimajutsja special'nye ustrojstva, kotorye montirujutsja na truboprovod v celjach obespečit' upravlenie **potokom židkosti**. (tehprom.ru)*  
'Shut-off valves are special devices that are mounted on a pipeline in order to control **the stream of liquid**.'
- (22) *Voz'mem, k primeru, **potok slov**, obrušennyj na soznanie rossijan v poslednie dni v svjazj s teraktami [...]. (zinoviev.ru)*  
'Let us take, for example, **the stream of words** that has been unleashed on the consciousness of Russians in recent days in connection with terrorist attacks [...].'

<sup>6</sup> Due to space limitations, Table 9 includes only the N2s with the highest frequency of occurrence in our corpus. The N2 *slovo* 'word', which is not listed in the table, occurs 1240 times in combination with *potok*.

Russian *potok* often refers to a continuous and rapid flow of N2. It is mainly used as a classifier of spatio-temporal arrangement (ex. 21), but in some specific contexts a quantitative reading can also appear (ex. 22). Differently from *reka*, *potok* mainly occurs in cases in which the large flow of N2s can be managed, controlled or, at least, directed (cf. Rachilina, Su-Chèn 2009, 26-7; Benigni, Latos 2024, 147). Several elements that convey the idea of control can be often found in the context, such as *upravlenie* ‘control’ in (21) and *nužno organizovat’* ‘must be organized’ in (22). Moreover, *potok* also occurs in collocations that have become lexicalized fixed terms, such as *potok soznaniija* ‘stream of consciousness’ (ex. 23).

- (23) *Tut u nego v golove opjat’ čto-to ščelknulo i potok soznaniija nakryl našego geroja s golovoj.* [A. Kuper. *Istopnik*, “Dal’nij Vostok”, 2019] (NKRJa)  
‘Then something clicked in his head again and the **stream of consciousness** covered our hero with his head.’

### 3.2.3 *Ručej*

The way *ručej* functions in binominal constructions is interesting and, as for other N1s, is due to the semantics of the word itself.

**Table 10** Results of corpus search [ručej +N2.GEN]

N2	Frequency	Freq. per million	% of concordance
<i>sleza</i> ‘tear’	168	0.01494	2.12242
<i>krov’</i> ‘blood’	105	0.00934	1.98977
<i>voda</i> ‘water’	96	0.00854	1.81922
<i>pot</i> ‘sweat’	65	0.00578	1.23176

As we can see in Table 10, *ručej* only occurs with N2s that refer to liquids that tend to appear as droplets, such as tears (*sleza*), blood (*krov’*) or sweat (*pot*). This shows that *ručej* functions as a classifier of spatial arrangement: the liquid takes the shape of small “stripes” formed by little drops, as in (24).

- (24) *Pod tolstoj rezinoj kostjuma s menja tekli ruč’i pota, slovnjo ja stoju pod nebol’šim dušem.* (zhurnal.lib.ru)  
‘**Rivulets of sweat** were flowing under the thick rubber of my suit, as if I were standing in a small shower.’

It is interesting to notice that in this construction *ručej* mainly appears in the plural form. In certain contexts, the plural form of *ručej* also acquires a quantitative interpretation. For example, in

(25), *ruč'i slěz* 'rivulets of tears' conveys the idea that the quantity of droplets (tears) arranged in little stripes is considerable.

- (25) *Prosti menja, njanečka dorogaja! – kričal Volodja, prolivaja iz glaz ruč'i slěz.* [D. Lipskerov. *Poslednij son razuma* (1999)] (NKRJa)  
'Forgive me, dear nanny! Volodja shouted, shedding **rivulets of tears** from his eyes.'

### 3.2.4 *Struja*

Let us now look at the binominal construction with the N1 *struja*. As we can see in Table 11, among the collocates of *struja* we only find liquids (*voda* 'water', *sperma* 'sperm', *moča* 'urine') and volatile substances (*vozduch* 'air', *gaz* 'gas', *par* 'steam' and *dym* 'smoke').

**Table 11** Results of corpus search [struja+N2.GEN]

N2	Frequency	Freq. per million	% of concordance
<i>voda</i> 'water'	18553	1.65022	40.99114
<i>vozduch</i> 'air'	4659	0.4144	10.29363
<i>sperma</i> 'sperm'	2504	0.22272	5.53236
<i>moča</i> 'urine'	1407	0.12515	3.10864
<i>gaz</i> 'gas'	1126	0.10015	2.48779
<i>židkost</i> 'liquid'	889	0.07907	1.96416
<i>dožd</i> 'rain'	880	0.07827	1.94428
<i>par</i> 'steam'	863	0.07676	1.90672
<i>dym</i> 'smoke'	738	0.06564	1.63054
<i>krov</i> 'blood'	518	0.04607	1.14447

*Struja* can only be used as a classifier of spatial arrangement that refers to a narrow stream of liquid or volatile substance that might also be released with high intensity. Elements that focus on the intensity of *struja* can be easily found in context: in (26) the jet hits the skin (*udar o kožu*), and in (27) the jet is even able to arrange thick hair (*ukladyvat' tolstye volosy*).

- (26) *Sinjaki – vpolne obyčnoe posledstvie ot udara strui vody o kožu.* (azbukadiet.ru)  
'Bruises are an absolutely common consequence of hitting the skin with a **jet of water**.'
- (27) *Zdorovyje tolstye volosy možno ukladyvat' očen' gorjačej struej vozducha* [...]. (strizhka-volos.ru)  
'Healthy thick hair can be styled with a very hot **jet of air**.'

As for Polish N1s, all the Russian N1s under investigation collocate with the N2 *krov* ‘blood’ [tab. 12]. The analysis of contexts shows that the selection of N1 reflects the differences identified so far.

**Table 12** Results of corpus search [N1+ *krovi* ‘of blood’]

N1+ N2 <i>krwi</i>	Frequency	Freq. per million	% of concordance
<i>reka krovi</i> ‘river of blood’	2147	0.19097	0.90372
<i>potok krovi</i> ‘stream of blood’	4062	0.3613	1.24073
<i>ručej krovi</i> ‘rivulet of blood’	105	0.00934	1.98977
<i>struja krovi</i> ‘jet of blood’	518	0.04607	1.14447

*Reka* mainly occurs when *blood* is used metonymically and conveys the idea of continuous and massive violence. Although less frequently, *reka* can also be used when *blood* is understood literally. The classifier *potok* is used when blood is meant both literally and metonymically and the intense flow is oriented or regulated. The classifier *ručej* may occur in metonymic contexts, but its predominant use refers to the literal flow of blood, while *struja* is used exclusively in a literal sense, denoting a jet of blood.

#### 4 Comparison of Polish and Russian Data and Conclusions

The data presented in Sections 2 and 3 show that Polish *rzeka* and Russian *reka* behave similarly, functioning as metaphorical classifiers of both quantity and spatio-temporal arrangement. In both languages, *rzeka* and *reka* also serve as syntactic and semantic heads in constructions where abstract and complex concepts, such as history (Ru. *reka istorii*) or life (Pl. *rzeka życia*), are metaphorically conceptualized.

While *rzeka* and *reka* function in similar ways and emerge as more generic and versatile aquatic classifiers, the same does not hold true for the other classifiers examined in the study. In both Polish and Russian, *potok* tends to grammaticalize as a metaphorical classifier of quantity and spatio-temporal arrangement. Polish and Russian *potok* occur with a wide variety of N2s and emphasize a sudden and rapid flow of N2. In both languages, *potok* can be used to express a controllable flow. However, while Russian *potok* is mainly used in contexts where the flow can be oriented, in Polish, such cases typically require the metaphorical classifier of spatio-temporal arrangement *strumień*. Additionally, Polish *potok* also occurs, though rarely, in constructions as part of a conceptual metaphor N2 IS A TORRENT.

The Polish N1 *strumień* can also refer to a jet, which in Russian is expressed by *struja*. Both Polish *struga* and Russian *struja* function as metaphorical classifiers of spatial arrangement in reference to narrow flows. However, some uses of Polish *struga* are instead covered by the Russian N1 *ručej*, which occurs only with liquids and, in particular, with drops, and serves as a metaphorical classifier of spatial arrangement and, in its plural form, of quantity.

A pictorial representation of the semantic overlapping of Polish and Russian watercourse metaphorical classifiers is given in Figure 1.

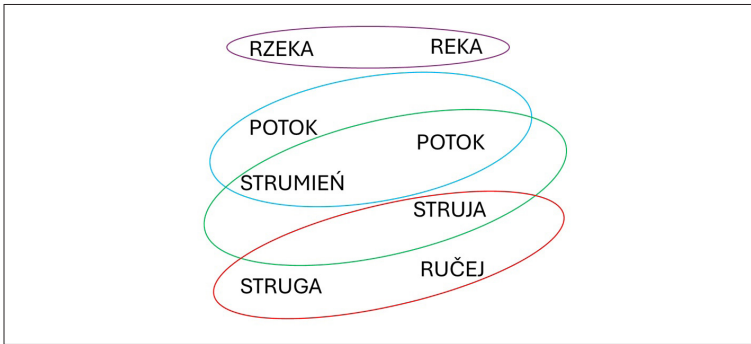


Figure 1 How meaning and use of N1s overlap in Polish and Russian

The features of each N1 as a watercourse are reflected in their use as metaphorical classifiers and are mapped onto the domain of N2. This becomes particularly evident when investigating cases of overlap, i.e. instances in which all N1s occur with the same N2. The analysis of overlapping cases with the N2 *krw/krov* 'blood' has shown that in both languages, *rzeka/reka* and *potok* mainly occur in contexts in which *blood* is used metonymically to refer to continuous and extensive violence, while Polish *strumień* and *struga* and Russian *ručej* and *struja* mainly refer to literal flows of blood.

In conclusion, the results of this usage-based analysis offer a more detailed characterization of the aquatic nominal elements under examination and their functioning as metaphorical classifiers within binominal constructions, an aspect not documented in existing dictionaries or in the relevant research literature.

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