

Barbara Bacz
Laval University, Canada

On the image-schema proposals for the preposition *po* in Polish

1. Introduction

In its most prototypical usage, the Polish preposition *po* is a dynamic equivalent of the prototypically stative preposition *na*. This fact is illustrated by the pair of contrastive examples in (1):

(1a) *Kot siedzi NA dachu-LOC.*

‘A cat is sitting **on** the roof.’

(1b) *Kot chodzi PO dachu-LOC.*

‘A cat is walking **on** the roof.’

According to Kempf (1978), a Polish linguist of the 1970 sometimes (see e.g. Tabakowska 1995) referred to as a precursor of the cognitive framework in Polish linguistics, the basic semantic role of *po* is to denote motion on a surface (Kempf 1978:117). Thus, prototypically, PP's with *po* co-occur with the verbs of movement, such as *chodzić* ‘walk’, *plywać* ‘move on water’, *latać* ‘fly’, *biegać* ‘run’, *spacerować* ‘walk about’, etc. The movement indicated by *po* is in most cases highly indefinite, with no specification of the endpoints or the shape of the path traversed by the trajector. In her 1996 article on Polish perfectivizing prefixes, Dąbrowska (1996:480) proposes a graphic schema for that “indefinite” sense of *po* which, she suggests, can be approximated by the gloss ‘(all) over, around in’. Dąbrowska’s illustrative example of the “indefinite *po*” is reproduced in (2), and Figure (1) renders the indefinite *po*’s schema:

PO + LOCATIVE

(2) *Chodziliśmy po lesie-LOC.*

‘We walked **around in** the forest.’

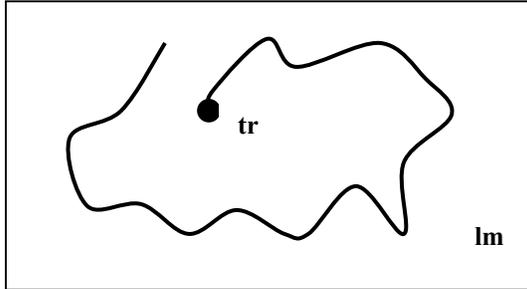


Figure 1 - Examples 2, 11

Obviously, the indefinite ‘all over, around in’ schema of *po* captures only one, though probably the most common, spatial sense of the preposition where *po* combines with the locative case. In addition to a whole series of spatial and non-spatial senses of *po* + LOC, the preposition *po* expresses still other meanings in combination with the accusative and the dative cases. Typical accusative-case and dative-case uses of *po* are illustrated by examples (3) and (4):

PO + ACCUSATIVE

(3a) *Janek poszedł po lekarza-ACC.*

‘Janek went **for (= to fetch)** the doctor.’

(3b) *Woda sięgała mu po pas-ACC.*

‘The water reached **up to** his waistline.’

PO + DATIVE

(4a) *Sprzedawał bulki po złotemu-DAT.*

‘He was selling rolls **for** a złoty each.’

(4b) *Zachował się **po** ludzku-DAT.*

‘He behaved as a human being would behave (in a way befitting a human).’

In this paper I am proposing several graphic representations for the different spatial senses of *po*¹. Also, I want to argue that the diverse senses of *po* represented by the spatial and non-spatial uses of the preposition in PP’s with the locative, accusative and dative are all motivated by one underlying idea: the idea of **following** something characteristic of the landmark². Thus, my argument is that *po*’s path is not entirely indefinite: its shape and the end-points are (directly or indirectly) determined by the physical configuration or by the abstract characteristics of the lm. Naturally, the characteristics of the lm have to be compatible with the semantics of other elements in the sentence, particularly with the lexical meaning of the predicate verb.

2. *Po* + locative

2.1 *Po*’s path = lm:

(5) *Idę **po** twoich śladach.*

‘I’m walking **in** your footsteps.’

(6) *Pociąg jedzie **po** szynach.*

‘The train moves **on** the rails.’

(7) *Prąd płynie **po** drucie.*

‘The current flows **through /by means of /in** the wire.’

Examples (5), (6) and (7) represent an elaboration of the underlying schema of *po* in which the lm, because of its inherently oriented shape, traces the path for the tr. In a

¹ The term “spatial senses” covers both real-space and mental-space meanings of *po*. The temporal senses of *po* will not be discussed in this paper because the idea of following in the temporal uses is obvious from the AFTER meaning of *po* in the time expressions. For a brief discussion of *po*’s temporal uses see Bacz 1998.

² Janda (1993), Janda & Clancy (2002) and Janda & Clancy (forthcoming) all observe that the meaning of the preposition *po* in Czech and in Russian PP’s with the dative (and/or with the locative) also involves the idea of following the path indicated by the dative (and/or the locative) referent (See e.g. Janda 1993:126).

sense, the lm constitutes the tr’s path, and the tr follows the lm’s orientation. In (5), the footprints (which are the signs of a directed motion) trace the path for the sentence’s subject (tr). In (6), the lm ‘railway’ is itself the path for the tr ‘train’. In (7), the tr ‘electric current’ cannot move but by means of the lm ‘wire’ which is thus its natural path. A graphic representation of the sense of *po* illustrated by examples (5) – (7) is suggested in Figure (2):

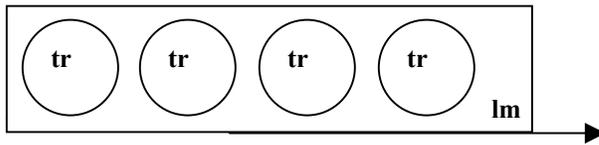


Figure 2 - Examples 5, 6, 7

Examples (8), (9) and (10) represent special cases of the “tr = lm” schema where the lm serves as the determining factor in specifying the tr’s path because of its internal characteristics. Additional details concerning the orientation and the shape of that path are supplied by the lexical content of the predicate verb. In (8), the verticality and the straightness of the path are determined by the shape of the ladder, but the direction (orientation) of the tr’s movement is communicated by the verbal predicate’s prefix (*wchodzić* ‘go UP’; *schodzić* ‘go DOWN’). Also in (9), the lexical meaning and the morphology of the verb *wspinać się* ‘climb up’ determine the direction ‘up’ of the tr’s path. In (10), the circular shape of the tr’s path is defined by the lm *orbita* ‘an orbit’, whose meaning is perfectly compatible with the lexical meaning of the verb *krążyć* ‘circulate’ and with the meaning of the preposition *po*. The graphic representations suggested in Figures (3), (4) and (5) correspond to the senses of *po* illustrated by examples (8), (9) and (10), respectively.

- (8) *Wchodził/schodził po schodach.*
'He went **up/down** the stairs.'

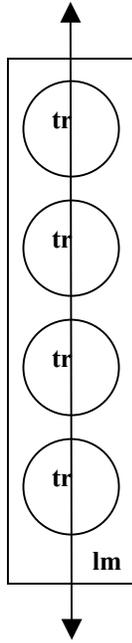


Figure 3 - Example 8

- (9) *Alpinista wspina się po murze.*
'An Alpine climber is **climbing** the wall (**up**).'

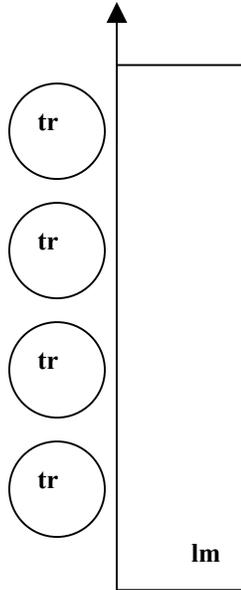


Figure 4 - Example 9

- (10) *Satelita krąży po orbicie.*
'The satellite **circulates (along)** the orbit.'

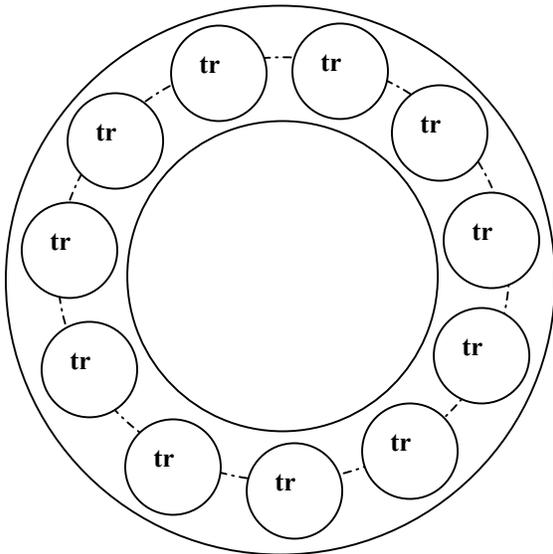


Figure 5 - Example 10

2.2 Indefinite *po*: elaborations of ‘all over, around in’

Examples (11), (12), (13) represent three different elaborations (schematic variants) of the indefinite ‘all over, around in’ sense of *po*, illustrated by example (2) and its schematic representation proposed in Figure (1). In these examples, the trajector moves along an indeterminate path with no specific shape or endpoints, covering the landmark or parts of it in its motion. I suggest that this usage is also an example of the following: since the path of the tr is conditioned by the characteristics of the lm, if the lm is indeterminate in shape, the path of the tr (which follows the lm) will necessarily also be indeterminate.

(11) *Marysia biega/krąży po mieście.*(Singular)

‘Mary keeps running **about/around all over** the town.’

(12) *Marysia biegła po sklepach* (Plural) *przez cały tydzień.*

‘Mary kept running **from one store to another** for the whole week.’

The meaning of *po* in example (11) is the same as in example (2): *Chodziliśmy po lesie*, so the image schema in Figure (1) applies also to (11).. It should be noticed that in (2) and in (11) the lm is in the singular (*las*, *miasto*); that’s why the path of the tr needs to be continuous, and so it is perceived as circular, the type of continuous, unbroken line that comes to mind first. In (12), the lm is in the plural (*sklepy*), a fact, which imposes a number of stop points on the tr’s path. Mary (tr) keeps running from one store to another, briefly stopping at each of them, so the path her activity traces is not smooth (circular), but rather rectilinear, as illustrated by the image schema suggested in Figure (6):

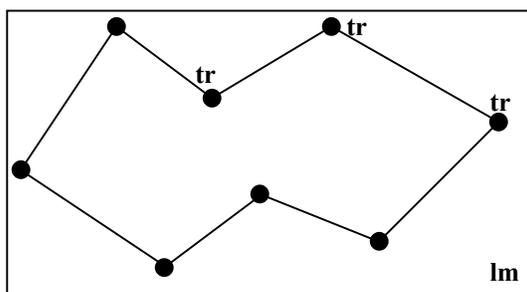


Figure 6 - Example 12

In both (11) and (12), the tr covers the whole territory indicated by the lm though that covering is accomplished in different manners, depending on the specific characteristics (Singular or Plural/ mass or collection) of the lm in each case.

1.3 Distributive *po*

Examples (13) – (15) illustrate yet another type of the covering, ‘all over’ sense of the preposition *po*, the sense which has been labelled “distributive” (Dąbrowska 1996:481; Bacz 1998: 40) because the focus here is not on the path of the tr but on its resultative distribution within the lm, as illustrated by the graphic schema in Figure (7):

- (13) *Samolot rozrzucił ulotki*(Plural) *po mieście*-LOC.
 ‘The plane **was throwing** flyers **all over** the city.’

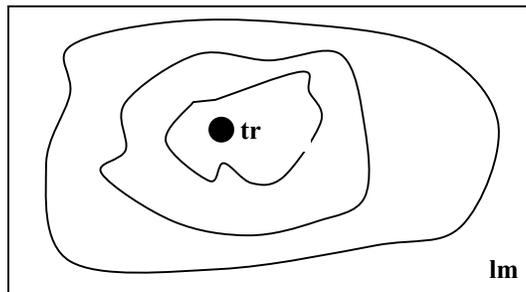


Figure 7 - Example 13

The path of the trajectors in example (13) can be described as ‘radial’. The motion of the flyers being thrown out of the plane in example (13) is conceptualized as emanating from one concrete source (the plane) and going in different directions, thus spreading all over the surface evoked by the lm (the city). The moving trajectors in this example are the flyers (Plural); their trajectory has the beginning point, the plane, which is the source of the motion. In (13), the tr does follow the lm because in the process of distribution it covers the surface indicated by the lm. The manner in which the covering occurs, however, depends on the presence of the additional elements indicating the source of the motion. Grammatically, the radial shape of the trajector’s path is indicated by the

distributive prefix *roz-* on the predicate verb, as is the case of *rozrzucić* ‘throw out in all directions’ in example (13). It might be of interest to note that in his analysis of spatial prepositions in Polish, German and Rumanian, Weinsberg (1973) treats the uses of *po* with the *roz-* verbs as an altogether separate semantic category.

Example (14) illustrates another “distributive” use of *po* with the tr *plamy* ‘spots’ in the plural and the focus on the end result of the motion depicted by the predicate verb: a haphazard distribution of the spots all over the lm, as illustrated by the image schema in Figure (8):

- (14) *Czerwone plamy wystąpiły mu po całym ciele-LOC.*
 ‘Red spots have appeared **all over** his body.’

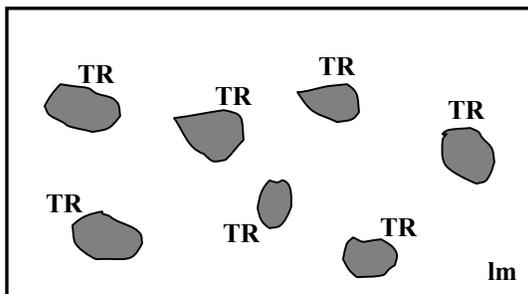


Figure 8 - Example 14

The difference between (13) and (14) lies in the type of the motion implied by the *po*-sentence. In (14), the motion’s starting point is not specified and the motion is not radial, which is indicated by the lack of a specific, informative prefix on the predicate verb (such as the prefix *roz-* in example (13)). By comparison with example (13), the distribution of the trajectors over the landmark appears more irregular in example (14), but the end result (covering of the lm) is the same as in example (13).

- (15) *Nalej każdemu po kieliszku-LOC wina.*
 ‘Pour out a glass of wine **for each** person present (for everybody).’

The sense of *po* in example (15), with the locative, closely resembles the distributive meaning of *po* in example (4a), with the dative. The end-result of the distribution process is in focus, but unlike in (14) where the trajectors covered the landmark in a chaotic fashion, the semantic effect produced by the distribution of wine, glass by glass (tr), is that of regularity. The locative and the dative marked trajectors of (15) and of (4a), i.e. *kieliszek* and *złoty*, denote units of measurement. They serve as measuring sticks in the process of the distribution of the wine and the money among the people who constitute the landmark. The presence of the qualifier *każdy* ‘each’ in (15) emphasizes the impression of regularity. The graphic representation of examples (15) and (4a) is given in Figure (9):

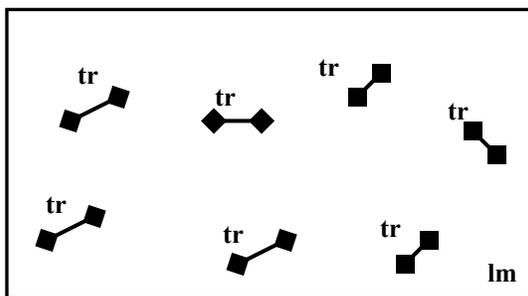


Figure 9 - Examples 15 and 4a

In the ‘distribution’ examples of *po* the idea of following is contained in the indefiniteness of the surface covered in the presupposed or actual motion of the tr. The specific characteristics of the trajectors (the mere plurality of the flyers and the spots versus the measuring quality of each *kieliszek* in (15) or the monetary unit *złoty* in (4a)) describe the manner in which the covering of the lm is accomplished.

2.4 *Po*: a path scanned mentally

(16) *Ciasto przypaliło się po bokach-LOC.*

‘The cake has burnt **on/ along** the edges.’

In (16), the *lm* is a cake, evoked as an object whose parts are easy to identify; the PP *po bokach* profiles the edges of the cake, which are a clearly distinguishable part of the *lm*. In contrast to the preceding, physical examples of spatial use, the movement implied by *po* in example (16) is mental: in order to identify the edges of the cake in the image of the scene required by this use of *po*, the speaker’s thought has to travel from the centre of the *lm* to the position highlighted by the PP with *po*, as illustrated by the graphic schema in Figure (10):

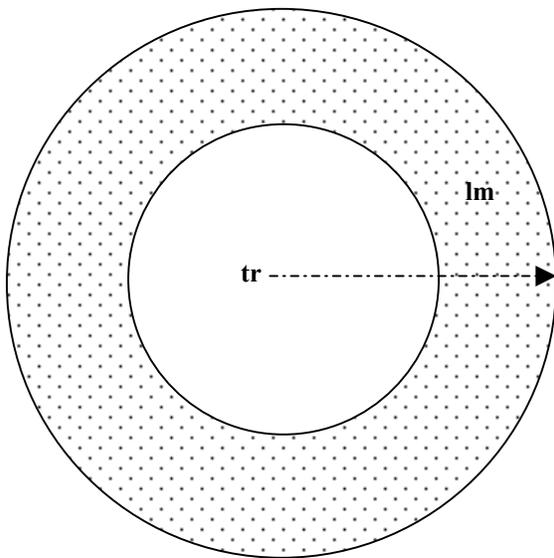


Figure 10 - Example 16

Conversely, in order to understand the meaning of the *po*-phrase in (16), the interlocutor has to scan mentally the distance from the internal axis or the central point in the *lm* to the part profiled in the PP, thus following the *lm*’s internal configuration. That mental movement is part of the trajectory, with the viewer being the *tr* and the edges of the cake (and the cake itself) constituting the *lm*. On this interpretation of the example, the idea of following is present in the very process of mentally scanning a path.

1.5 *Po* and relationships of containment or possession

In examples (17), (18) and (19) the original relationship between the trajector and the landmark is that of containment or of possession (the tr here is located within the lm), and the preposition *po* indicates the trajector’s movement out of, into or back to a location defined by the lm.

(17) *Sklep przyjmie butelkę po piwie-LOC z powrotem.*

‘The store will take the beer bottle back.’

In example (17), the lm is the bottle and the tr is the beer which was contained in the bottle. The preposition *po* in the PP *po piwie* ‘after beer (= emptied of beer)’ indicates that the beer container has been emptied, i.e. that the tr (beer) has left the lm’s boundaries behind in the process of moving out of the lm (bottle). The situation is illustrated by the image schema in Figure (11):

not linked to the lm’s size or shape, but to its
 and containers have three basic functions: to
 is that last function, typical of the container
 nature of the bottle, that is being followed by the trajector’s path out of the lm indicated
 by the preposition *po* in example (17).

(18) *Dziewczynka ma czarne oczy po mamie-LOC.*

‘The girl has her mom’s black eyes.’

In example (18) the little girl’s black eyes, which she inherited from (i.e. after) her mother, are interpreted as the trajector that has left the original lm (the mother) in which it was contained and is now seen as part of a new location, the lm *dziewczynka* ‘little

girl’. The preposition *po* in the PP *po mamie* ‘from (after) the mom’ indicates that something the original lm (the mother) possessed has been transferred (has followed?) into the new lm (the mother’s daughter) in the process of transmitting life to a member of the next generation. This transfer is depicted by the tr’s path from lm_1 into lm_2 , as indicated in Figure (12):

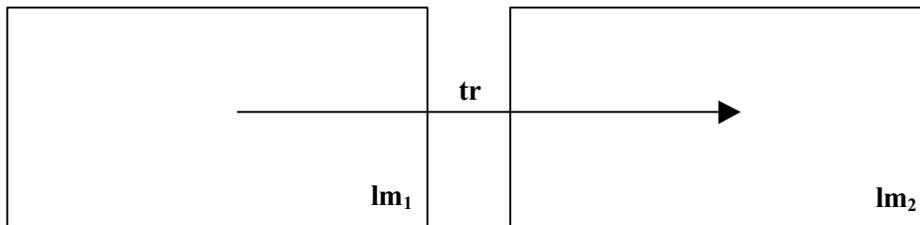


Figure 12 - Example 18

(19) *Po twojej minie-LOC widzę, że egzamin nie poszedł ci dobrze.*

‘From the look on your face I can tell that you didn’t do well on the exam.’

Example (19) depicts a causal relationship: the look on the subject’s face takes us back to the event which has caused that look (the exam). The preposition *po* indicates a mental movement back to the cause of the current tr/lm relationship, in which the tr is the subject’s look and the lm (lm_2) is the face which locates (or contains) that look. The preposition *po* indicates a mental movement (in time) back to the event which has caused the current tr/lm relationship. Figure (13) proposes a graphic representation of the abstract relationship of causality expressed by example (19). It is the reverse of the image schema suggested for example (18) in Figure (12), but in Figure (13), lm_1 (the exam which generated the look on the subject’s face, i.e. the current tr/ lm_2 relationship) is an event visualized as a mental-space container while in Figure (12), lm_1 belonged to real space.

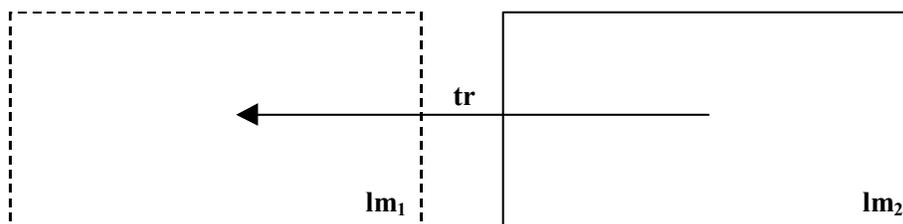


Figure 13 - Example 19

3. PO + ACCUSATIVE : end-focus + goal elaboration

The typical uses of *po* with the ACC are illustrated by examples (20/3a) and (21/3b):

(20/3a) *Janek poszedł po lekarza-ACC.*

‘Janek went **for** (= **to fetch**) the doctor.’

(21/3b) *Woda sięgała mu po pas-ACC.*

‘The water reached **up to** his waistline.’

The ACC examples of *po* represent a combination of PATH and GOAL schemas. The ACC-marked *lm* in both types of the ACC use denotes a GOAL of the motion implied by the predicate verb. The verb in the type of use represented by (20/3a) is always a verb of movement (*iść po*), as in the prototypical, ‘indefinite-motion-on-a-surface’ examples with the LOC, such as (2) or (7). The difference between PO + LOC and PO + ACC lies in the fact that the semantic effect produced by PO + ACC is that of a goal-oriented motion³ (physical or mental), an impression deriving from the meaning of the ACC. In (20/3a): *Janek poszedł po lekarza*, the goal (the doctor) is placed outside the surface covered by the tr’s path. The sense of the *po* uses of this type is not only to reach the goal indicated by the ACC but also to bring the attained entity back onto the territory of the tr, as illustrated by the arrows in Figure (14):

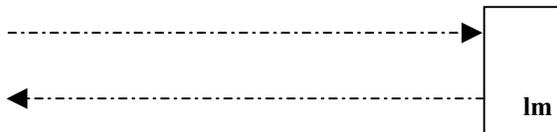


Figure 14 - Example 20/3a

³ Kempf (1978) and Weinsberg (1973) denote goal-oriented motion, which is the opposite of “ablative motion” (i.e. motion from), using the term “adlative motion” (i.e. motion to).

In (21/ 3b), the spatial limit of the container evoked by the *lm pas* ‘waist- line’ is put in focus. The end-point of the *tr*’s path indicated by the verb *sięgać* ‘reach’ (and other verbs, such as *napełniać* ‘fill up’, *wpaść* ‘fall in’, etc.) is seen as the goal of the movement. The preposition *po* in combination with the goal meaning of the ACC in this use evokes a sense of COMPLETENESS. The image schema here would be that of the completeness of a goal-oriented path (see Bacz 1998:145), as illustrated by the graphic representation of this sense of *po* in Figure (15):

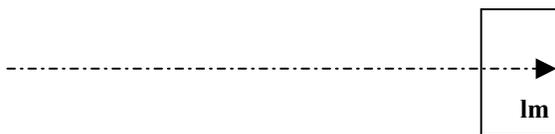


Figure 15 - Example 21/3b

4. PO + DATIVE : following the *lm*’s model

Many linguists qualify PO + DAT phrases of the type *po polsku*, *po swojemu*, *po królewsku...* etc., as lexical adverbials, ignoring the role of the dative case in these expressions (see e.g. Rudzka-Ostyn 1996). Polish dictionaries, however, recognize the presence of the DATIVE in the PO + DAT phrases. For instance, discussing the preposition PO in his *Słownik poprawnej polszczyzny*, Doroszewski (1980:517) says the following: “*Po* normally combines with the locative, less frequently with the accusative, **and rarely, with the dative**” (my translation and emphasis -BB). I think that the PO + DAT expressions in Polish should be treated as PP’s and not dumped into the indefinite all-covering class of lexical adverbials. There are at least two reasons for treating the PO + DAT phrases as preposition + case structures: First, these expressions are not as rare and as archaic in modern Polish as one would expect. The new *Słownik współczesnego języka polskiego* by Dunaj (1996) lists more than fifty entries of PO + DAT phrases, and from the point of view of its semantics, the structure appears quite productive in the spoken language. New colloquial expressions indicating manner and derived from nouns rather than adjectives, such as *po pijaku*-LOC ‘as a drunk’, next to the classical *po pijanemu*-DAT ‘when drunk’ or *po dobroci*-LOC ‘according to the good will’ next to the

traditional adjectival expression *po dobremu*-DAT ‘when willing good’ support that observation. Second, the PO + DAT adverbials are systematically different in meaning from the group of the PO + LOC and/or PO + ACC expressions that dictionaries also qualify as lexical adverbials, such as *po czasie*-LOC ‘after the time limit’, *po części*-LOC ‘in part’, *po drodze*-LOC ‘en route’, *po diabła*-ACC ‘what the devil’, etc. The PO + DAT phrases always indicate a mode of behavior or being characteristic of the noun the dative-marked adjectives in the structure are derived from (see Bacz 1998:144). The non-dative lexical expressions with *po* are not uniform in their meaning. It could perhaps be argued that the semantic uniformity of the PO + DAT phrases results from the presence of adjectives rather than nouns in the dative-marked nominals, but one might also want to suggest that the semantic uniformity of the structure is motivated by the meaning of the dative.

Historically, the dative was used to denote movement on a surface in situations depicted by the PO + LOC phrases in modern Polish, such as example (2); the PO + DAT phrases are used in this function in modern Russian. In modern Polish, however, the use of the dative in *po*-phrases is limited to two PO + ADJ structures illustrated by examples (22/4a) and (23/4b):

(22/4a) *Sprzedawał bułki po złotemu*-DAT.

‘He was selling rolls **for** a złoty each.’

(23/4b) *Zachował się po ludzku*-DAT.

‘He behaved as a human being would behave (in a way befitting a human).’

The dative case examples with a noun, such as (22/4a), are archaic and extremely rare. The meaning of *po* in these examples is identical to the distributive sense of the preposition in example (15): *Nalej każdemu po kieliszku*-DAT ‘Pour out a glass for everybody’, and can be depicted by the graphic representation in Figure (9). The PO + DAT use represented by example (23/4b), however, with the adjective, is quite frequent. The DAT-marked adjectives in this structure are derived from and are semantically

related to the corresponding nouns. In (23/4b), *po ludzku*-DAT refers to the manner of acting or behavior which is typical of human beings. Similarly, *po polsku*-DAT ‘in Polish’ denotes the way of speaking which characterizes Poles, so the archaic dative form of the adjective *polski* is semantically related to the noun *Polak* ‘a Pole’; in the expression *Żyj po bożemu*-DAT ‘Live according to God’s commandments’, the adjective *boży* indicates a way of life prescribed by God, so the semantic correspondence between the noun and the adjective is evident. *Po* sentences with a dative-marked adjective, such as (23/4b), are all motivated by the idea of following a model set by the referent of the noun the adjective is derived from. Following a model of behavior is like following a path, so this use of PO can also be treated as an abstract elaboration of the spatial “TR follows LM” schema.

5. Conclusion: implications of the analysis

In this paper I have proposed several image schemas for the various spatial senses of *po* in Polish. Examples of these diverse senses of *po* in prepositional phrases with the LOC, ACC and DAT are grouped together in the table below (Figure 16) which summarizes the findings of the data analysis carried out in this paper:

Figure 16: Table of the spatial senses of *po* with LOC, ACC and DAT

PO + LOCATIVE	PO + ACCUSATIVE	PO + DATIVE
<p>Indefinite <i>po</i>: <i>-Kot chodzi po dachu.</i> ‘A cat is walking on the roof.’ <i>- Chodziliśmy po lesie.</i> ‘We walked around in the forest.’ <i>- Marysia biega/krąży po mieście.</i> ‘Mary keeps running around all over the town.’ <i>- Marysia biegła po sklepach przez cały tydzień.</i> ‘Mary kept running from one store to another for the whole week.’</p> <p>Po’s path = lm: <i>- Idę po twoich śladach.</i> ‘I’m walking in your footsteps.’ <i>-Pociąg jedzie po szynach.</i> ‘The train moves on the rails.’ <i>- Prąd płynie po drucie.</i> ‘The current flows through /by means of /in the wire.’</p> <p>Po and lm’s orientation: <i>-Wchodził/schodził po schodach.</i> ‘He went up/down the stairs.’ <i>-Alpinista wspina się po murze.</i> ‘An Alpine climber is climbing the wall (up).’</p>	<p>Po and goal: <i>Janek poszedł po lekarza.</i> ‘Janek went for (= to fetch) the doctor.’</p> <p>Po and completeness: <i>Woda sięgała mu po pas.</i> ‘The water reached up to his waistline.’</p>	<p>Distributive <i>po</i>: <i>Sprzedawał bułki po złotemu.</i> ‘He was selling rolls for a złoty each.’</p> <p>Po and model to follow: <i>Zachował się po ludzku.</i> ‘He behaved as a human being would behave (in a way befitting a human).’</p>
<p>Distributive <i>po</i> and covering: <i>-Samolot rozrzucił ulotki po mieście.</i> ‘The plane was throwing flyers all over the city.’ <i>-Czerwone plamy wystąpiły mu po całym ciele.</i> ‘Red spots have appeared all over his body.’</p> <p>Po and regular distribution: <i>-Nalej każdemu po kieliszku wina.</i> ‘Pour out a glass of wine for each person present (for everybody).’</p>		
<p>Po’s path scanned mentally: <i>Ciasto przypaliło się po bokach.</i> ‘The cake has burnt on/ along the edges.’</p>		
<p>Po and containment: <i>Sklep przyjmie butelkę po piwie z powrotem.</i> ‘The store will take the beer bottle back.’</p>		
<p>Po and possession: <i>Dziewczynka ma czarne oczy po mamie.</i> ‘The girl has her mom’s black eyes.’</p>		
<p>Po and causality: <i>Po twojej minie widzę, że egzamin nie poszedł ci dobrze.</i> ‘From the look on your face I can tell that you didn’t do well on the exam.’</p>		

I have also argued that the apparently unrelated senses of *po* in PP's with the locative, accusative and dative can be brought together into a unified semantic network because they are all motivated by the common underlying idea of **following** something in the landmark. Mark Johnson (1987) has defined *image-schema* as "a recurring, dynamic pattern of our perceptual interactions and motor programs". FOLLOWING has not been listed among the dozen or so image-schematic patterns of human behavior Johnson (1987, 1991) and later, Gibbs and Colston (1995) have proposed. Accordingly, to maintain the principle of psychological reality in cognitive linguistics descriptions, the central image-schema of *po* would have to remain very general and be nothing more than a psychologically attested PATH-schema. Yet, the evidence considered in this paper strongly suggests that the image-schematic description of the Polish preposition *po* should be supplemented by the abstract concept of following which motivates and unifies the apparently diverse senses of that preposition observed in usage.

REFERENCES:

- Bacz, B. (1998) "Three-case prepositions in Polish: the semantics of PO". *LACUS Forum* XXV, 137-147.
- Dąbrowska, E. (1996) "The spatial structuring of events: A study of Polish perfectivizing prefixes". In Putz, M. & R. Dirven (eds.) *The Construal of Space in Language and Thought*. Berlin-New York: Mouton de Gruyter, 467-490.
- Doroszewski, W. (1980) *Słownik poprawnej polszczyzny*. Warszawa: PWN
- Dunaj, B. (1996) *Słownik współczesnego języka polskiego*. Warszawa: Wydawnictwo Wilga.
- Gibbs, R.W. & H.L. Colston (1995) "The cognitive psychological reality of image schemas and their transformations". *Cognitive Linguistics* 6-4, 347-378.
- Janda, L. (1993) *A Geography of Case Semantics. The Czech Dative and the Russian Instrumental*. Berlin- New York: Mouton de Gruyter.
- Janda, L. A. & S. J. Clancy (2002) *The Case Book for Russian*. <http://www.seelrc.org>
- Janda, L. A & S. J. Clancy (2002) *The Case Book for Czech*. <http://www.seelrc.org>
- Johnson, M. (1987) *The Body in the Mind*. Chicago: University of Chicago Press.
- Johnson, M. (1991) "Knowing through the body". *Philosophical Psychology* 4, 3-18.
- Kempf, Z. (1978) *Próba teorii przypadków*. Opole: Polskie Towarzystwo Naukowe.
- Rudzka-Ostyn, B. (1996) "The Polish Dative". In W. Van Belle & W. Van Langendonck (eds.) *The Dative. Descriptive Studies*. Amsterdam & Philadelphia: John Benjamins, 341-394.
- Tabakowska, E. (1995) *Język i obrazowanie. Wprowadzenie do językoznawstwa kognitywnego*. Kraków: Polska Akademia Nauk.
- Weinsberg, A. (1973) *Przyimki przestrzenne w języku polskim, niemieckim i rumuńskim*. Wrocław: Ossolineum.