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A CONTRASTIVE ANALYSIS OF *SWEAT/POT* AND *TEARS/ŁZY* IN ENGLISH AND POLISH FROM A COGNITIVE-SEMANTIC PERSPECTIVE

This study compares the English words *tears* and *sweat* with their Polish counterparts *łzy* and *pot* from a cognitive-semantic perspective. Beyond their prototypical meanings as bodily fluids associated with the eyes and skin – especially of the face – these words develop overlapping figurative senses. The analysis identifies both shared and language-specific conceptual metaphors and metonymies underlying their semantics, as well as patterns of metaphor-metonymy interaction. The study draws on data from the COCA corpus for English and the NKJP corpus for Polish. The findings show that while similar cognitive mechanisms motivate the figurativeness of the examined concepts in both languages, they result in distinct semantic extensions and complex metaphonymic structures.

Keywords: sweat and tears, pot i łzy, metaphor, metonymy, metaphonymy

1. Introduction

Sweat and tears are bodily fluids that often appear on a person's face – either separately or together – and typically manifest as physiological reactions to various emotions. The face is that part of the body which is almost constantly displayed to others, and for that reason it constitutes an important medium for expressing our emotions and communicating our thoughts, feelings, and attitudes (Wierzbicka 1999: 172-175; Bogdanowska-Jakubowska 2010: 75-82). Notably, the names for those two bodily fluids form strong collocations in both English and Polish. For example, *sweat and tears* occurs 234 times in the *Corpus of Contemporary American English* (COCA), while its Polish counterpart *pot i łzy* appears 159 times in the *Narodowy Korpus Języka Polskiego* (NKJP). Further-

more, dictionary evidence shows that both *sweat/pot* and *tears/lzy* are polysemous, functioning with multiple meanings, including a variety of figurative senses. Some of these senses even overlap, as in the collocations mentioned above, where they collectively convey notions of effort and hard work.

Although numerous body-part terms have been widely examined in cognitive linguistics (e.g. Enfield and Wierzbicka 2002; Kövecses 2005; Sharifian, Dirven, Yu and Niemeier 2008), bodily fluids have received comparatively little scholarly attention. Following the principles of cognitive semantics (Lakoff and Johnson 1999; Lewandowska-Tomaszczyk 2007; Geeraerts 2010), one may argue that the meanings of polysemous words are frequently motivated by metonymic or metaphorical mappings. This leads us to the following research questions: Which conceptual metaphors and metonymies underlying the semantics of *tears/lzy* and *sweat/pot* are shared in English and Polish? What patterns of metaphor-metonymy interaction emerge in their meanings across the two languages? And which of these conceptual mappings are unique to either English or Polish?

The methodology adopted in this study combines the traditional, or lexical, approach to investigating conceptual metaphor (Kövecses 2011: 27) with a corpus-based perspective (Deignan 2015: 145). First, dictionary definitions enable us to compile a list of the potential polysemous senses of *sweat/pot* and *tears/lzy*, which in turn allows us to determine which of these senses are motivated by metaphorical or metonymic processes and should therefore be included in our semantic analysis. Second, authentic examples drawn from language corpora allow us to observe how metaphors and metonymies involving bodily fluids operate in actual usage. Because our aim is to examine the subtleties of the conceptualization patterns encoded in the semantics of the two lexical items, the study is qualitative in nature; quantitative questions fall outside the scope of this paper. For English, the data come from sources representing American usage: the *Merriam-Webster Dictionary* (MWD), one of the oldest and most extensive dictionaries of American English, accessible at <https://www.merriam-webster.com/>, and the *Corpus of Contemporary American English* (COCA), a one-billion-word corpus comprising both written and spoken texts, accessible at <https://www.english-corpora.org/coca/>. For Polish, the materials include Müldner-Nieckowski's *Wielki słownik frazeologiczny języka polskiego* (2003), which provides definitions along with numerous collocations and fixed expressions, and the *Narodowy Korpus Języka Polskiego* (NKJP), a corpus of more than one and a half billion words drawn from diverse text types, available at <http://nkjp.pl/>.

In the first stage of the analysis, the sources listed above were examined in detail to identify the existing meanings and uses of *sweat/pot* and *tears/lzy*. Subsequently, those senses motivated by conceptual metaphors, metonymies, or metaphonymies were isolated, and a representative example of each type of conceptual mapping was selected for discussion. It should be stressed that the

goal of this study is not to present and catalogue all existing collocations, phrases, or expressions containing *sweat/pot* and *tears/lzy*. Rather, our focus lies on the conceptual mappings underlying the semantics of the names of these bodily fluids in English and Polish, with particular attention to the patterns of interaction that arise between them.

The paper begins by examining the role of conceptual metonymy in the semantic extensions of *sweat/pot* and *tears/lzy* in both languages, noting the processes of metonymic expansion and reduction involved in these developments. This is followed by a discussion of the metaphorical extensions of the figurative meanings of the two bodily fluids. The final section explores the various patterns of metaphor-metonymy interaction found in the use of *sweat/pot* and *tears/lzy*, demonstrating the ways in which metonymy may serve as a source for metaphor in certain senses of these words.

2. Metonymic motivation behind the figurative meanings of *sweat/pot* and *tears/lzy*

In cognitive semantics, *conceptual metonymy* is understood as “a cognitive process in which one conceptual entity – the vehicle – grants mental access to another conceptual entity – the target – within the same idealized cognitive model (ICM)” (Radden and Kövecses 1999: 19-21). The metonymic process is perceived as an extremely productive way of extending the meanings of specific lexemes, and various languages can be said to possess their own “metonymy-generators” – lexical items with particularly rich polysemous meanings (Bierwaczek 2013: 268).

According to Ruiz de Mendoza and Galera (2014: 170), the source and target of a metonymic mapping within a given ICM or conceptual domain may be related in two distinct ways. In a *source-in-target* metonymy, the source concept forms a constituent part or subdomain of the target concept. Conversely, in a *target-in-source* metonymy, the direction is reversed: the target is conceptualized as a subdomain of the source. *Source-in-target* metonymy leads to cognitive expansion, whereby the amount of conceptual content accessible from the initial point of reference increases. This metonymy can be illustrated by the sentence *The piano has the flu today*, where the word *piano* stands for a musician, following the INSTRUMENT FOR A MUSICIAN metonymy: here, “piano”, the source for the metonymic link, is a subdomain of “musician”, the metonymic target. *Target-in-source* metonymy, by contrast, results in cognitive reduction, as it highlights only a selected portion of the overall conceptual structure. This type of metonymy can be found in *The Picasso is in the lounge*, where the word *Picasso* stands for “painting”, but “painting”, which is the target of this meto-

nymy, constitutes a subdomain of the domain “Picasso”, the source of this mapping (Ruiz de Mendoza 2000: 124).

Our analysis has shown that the figurative senses of *sweat/pot* and *tears/lzy* are predominantly motivated by the source-in-target metonymy. In fact, the target-in-source mapping could only be identified in those figurative senses of the English *sweat* that are motivated by the more complex double metonymy.

2.1. The source-in-target metonymy in the figurative uses of *sweat/pot* and *tears/lzy*

There are two types of the source-in-target metonymy leading to the cognitive expansion of *sweat/pot* and *tears/lzy*: EFFECT FOR CAUSE or PHYSIOLOGICAL EFFECTS OF EMOTIONS FOR EMOTIONS. The first type of mapping emerges when *sweat* refers to effort, hard work, or exertion. Since individuals who engage intensely in a task – particularly a physical one – typically begin to sweat, the bodily effect becomes linguistically associated with the cause. This is reflected, for example, in the English expression *by the sweat of your brow* (1a) and its Polish counterpart *w pocie czoła* (1b). This expression ultimately traces back to the biblical story, where Adam is condemned by God to toil on the earth as punishment for the original sin: “By the sweat of your brow you will eat your food until you return to the ground, since from it you were taken; for dust you are and to dust you will return” (Gen 3:19).¹ Through the influence of the Bible on the cultures of European countries, the expression has spread to numerous languages, including English and Polish (Kuczok 2023: 107).

- (1a) What happens if you have to move it up a step? Well, then you would do it the old-fashioned way – **by the sweat of your brow**.² (COCA)
- (1b) Pracował przez całą noc **w pocie czoła**, przenosząc przez rzekę sosnę po sośnie, buk po buku, brzozę po brzozie. (NKJP) [He **worked by the sweat of his brow** all night, carrying pine by pine, beech by beech, birch by birch across the river.]

In a similar vein, *tears* and *lzy* can also stand metonymically for effort and hard work, and they may collocate with *sweat/pot* when used in this sense (2a-b). They can additionally appear on the human face as a result of putting significant effort into performing a difficult task. Interestingly, when used in this

¹ All biblical quotations used in this paper come from the English translation called the New International Version (2011) and available from the Bible Gateway website at: <https://www.biblegateway.com/>.

² In all the quotations from language corpora, we use the bold font to emphasize those words and phrases that are lexical correlates of the discussed metonymic and metaphorical mappings.

meaning, the two bodily fluids – sweat and tears – are often combined with *blood/krew*, which may likewise appear on one's face: when a person is working physically hard or fighting, they may easily get wounded and shed blood (Kuczek 2025: 194). The collocation *blood, sweat and tears / krew, pot i łzy* is also very common in both languages, accounting for 156 occurrences (67%) out of the total number of 234 uses of *sweat and tears* in COCA and 98 occurrences (62%) out of the 159 appearances of *pot i łzy* in NKJP. Moreover, *blood* and *sweat* co-occur in this metonymic sense in the English expression *to sweat blood* and the Polish phrase *krwawy pot* ("bloody sweat"), which refer to intense work and great effort. The latter can also be understood literally, as medicine recognizes the phenomenon of hematomatosis, in which individuals under extreme stress may excrete blood through their skin (MWD).³

- (2a) They steal our inheritance left by the **blood, sweat and tears** of our forefathers. (COCA)
- (2b) Fałszywi mesjasze polityczni to specjalność XX w. Przynieśli milionom **krew, pot i łzy**, niewyobrażalne zniszczenia i niepowetowane straty. (NKJP) [False political messiahs are a specialty of the 20th century. They have brought millions **blood, sweat and tears**, unimaginable destruction and irreparable losses.]

Apart from that, *tears* often appear in both English and Polish as a metonymic effect of suffering, as they may signal that the crying person is experiencing intense physical or emotional pain. This meaning of *tears/łzy* can be illustrated with the English collocation *vale of tears* (3a) and its Polish counterpart *padół łez* (3b).

- (3a) And look – hasn't the world always been this way? Vale of sorrow, **vale of tears**. (COCA)
- (3b) Ci, którzy uważali ziemię za **padół łez**, a żywot za pasmo cierpień wszelakich, nie mieli złudzeń, że to dopiero początek, pierwsze zwiastuny tego, co nadejdzie. (NKJP) [Those who considered the earth to be a **vale of tears** and life a series of all kinds of suffering had no illusions that this was only the beginning, the first signs of things to come.]

When it comes to the metonymy PHYSIOLOGICAL EFFECTS OF EMOTIONS FOR EMOTIONS, it is one of the most pervasive ways of conceptualizing emotions. Such metonymic patterns can, in turn, give rise to so-called *phy-*

³ Perhaps the best-known example of that phenomenon can be found in the Bible, where Jesus sweats blood while praying on the Mount of Olives before his passion: "And being in anguish, he prayed more earnestly, and his sweat was like drops of blood falling to the ground" (Luke 22: 44).

siological metaphors, which are common in the language of emotions (Kövecses 1990: 198-199; Kövecses 2014: 17-19; Kövecses 2020: 37-38), for instance ANGER IS HEAT (e.g. *to boil with anger*) or FEAR IS COLD (e.g. *to freeze with terror*). This metonymy can also be identified in a number of uses of *sweat/pot* and *tears/lzy*. First, *sweat* and *pot* may stand for fear – in both languages under comparison, the reference to sweat is connected with the conceptualization of fear as a health problem which makes people weak and feverish (Rewiś-Łętkowska 2019: 134). This meaning appears, for example, in the English expression *in a cold sweat* (4a) and the Polish phrase *oblać się zimnym potem* (literally: “to be covered with a cold sweat”) (4b).

- (4a) I woke up at 4:30 a.m. **in a cold sweat**, fearful that I was wrong, but again could not, for the life of me, dredge up the specifics. (COCA)
- (4b) Była to chwila nad wyraz przykra dla kapitana: nie mógł przypomnieć sobie rysów twarzy własnego synka. Doznał zabobonnego strachu. **Oblał się zimnym potem**. (NKJP) [It was a very unpleasant moment for the captain: he could not recall the facial features of his own son. He was overcome with superstitious fear. He **was covered with a cold sweat**.]

Additionally, the concepts of *sweat* and *pot* can be used metonymically to refer to the physiological effects of anxiety and distress. For example, in English, *being in a sweat* (5a), and in Polish, having sweat on one’s forehead (*pot na czole*) (5b), may function as symptoms of such emotions. In fact, in English there are a number of fixed, idiomatic expressions which are motivated by this metonymy, for instance, *to sweat about something*, *to sweat bullets*, *to sweat it out*, or *don’t sweat it*, and *no sweat*, all of which refer to the feelings of anxiety and worrying situations.

- (5a) He was **in a sweat** and finally he agreed to make that call to the White House. (COCA)
- (5b) Najpierw poczuł ból w dolnej części brzucha. Potem poczuł suchość w gardle i **pot na czole**. Powtarzało się to za każdym razem, gdy myślał o zamieszkaniu z Lone. (NKJP) [First he felt pain in his lower abdomen. Then he felt a dry throat and **sweat on his forehead**. It happened every time he thought about moving in with Lone.]

In line with the same metonymic mapping, *tears/lzy* in both English and Polish stand for a range of negative emotions, especially sadness (Cichmińska 1999: 15), but also regret, helplessness, sorrow, and rage. This can be illustrated, for example, with the English phrase *to be reduced to tears* (6a) and its Polish counterpart *doprowadzać kogoś do łez* (literally: “to bring someone to tears”) (6b).

- (6a) Have you seen scenes of multimillionaires **reduced to tears** because they lose their boat? (COCA)
- (6b) Nieraz **doprowadzała do łez** Polinę wytykając jej bezczynność i dziewczęce romantyczne marzenia. (NKJP) [She often **brought Polina to tears**, pointing out her inaction and girlish romantic dreams.]

However, as Kövecses (1990: 174) writes: “Crying, it should be noted, is not specific to any particular emotion. We can cry as a result of joy, anger, love, and fear, and not just sadness or grief (although prototypically it is associated with these latter emotions).” Thus, in both languages, *tears/lzy* may also metonymically represent positive emotions, such as joy or happiness, as seen in the expressions *tears of joy* (7a) and *lzy szczęścia* (7b).

- (7a) Tears of sorrow quickly turn to **tears of joy** for a young boy fighting to understand why God chooses some and leaves others behind. (COCA)
- (7b) Prawdziwy szal zaczął się po meczu. Na stadionie deszcz szampana, **lzy szczęścia** i trzy rundy honorowe wokół boiska. (NKJP) [The real frenzy began after the match. There was a shower of champagne at the stadium, **tears of joy** and three laps of honor around the pitch.]

2.2. Double metonymy with sweat in English

In some English uses of *sweat*, we can observe a more complex metonymic motivation for meaning, involving two metonymic mappings. This phenomenon is described by Ruiz de Mendoza and Galera (2014: 117) as *double metonymy* or *metonymic chain*. In example (8), the phrase *old sweat* refers to an experienced soldier, and its meaning can be explained through two metonymies connected with the effort and hard work characteristic of military service. Conceptually, these mappings operate within the ACTION ICM (Radden and Kövecses 1999: 19-21). First, the noun *sweat* stands metonymically for an action, following the mapping RESULT FOR ACTION, a subtype of the EFFECT FOR CAUSE metonymy (Panther and Thornburg 2000: 216). This is a source-in-target metonymy that expands the meaning of *sweat*. Subsequently, the action itself stands metonymically for the soldier, through the ACTION FOR AGENT mapping – an instance of metonymic meaning reduction involving a target-in-source metonymy. This mechanism of double metonymy underlying the meaning of *sweat* in this example is illustrated in Figure 2. In fact, the phrase *old sweat* can be used in English in a similar way to refer to experienced people representing other professions, not only to soldiers.

Nevertheless, such a sense of *pot* is absent from Polish. A possible translation of the example would be: *Kompania nr 3 zbuntowała się. Byli to głównie starzy*

wyjadacze, którzy mieli już dość, where instead of *old sweats*, the expression *starzy wyjadacze* (literally: “old eaters”) is used. Although it also has a figurative meaning, it is based on an entirely different semantic motivation.

- (8) No 3 company mutinied. They were mostly **old sweats** and they’d had enough. (COCA)

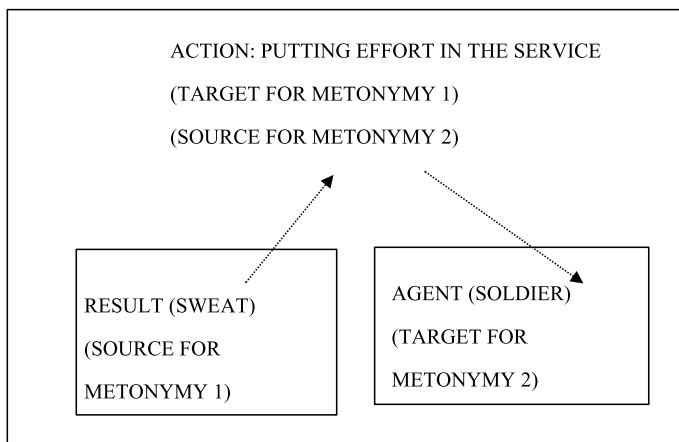


Figure 1. Double metonymy in *old sweat*: the metonymic expansion with the source-in-target metonymy (1) RESULT FOR ACTION (sweat for putting a lot of effort) combined with the metonymic reduction with the target-in-source metonymy (2) ACTION FOR AGENT (putting effort for a soldier)

In the same vein, and only in English, the plural noun *sweats* appears with the meaning “pants or an outfit made of cotton used as sportswear,” as illustrated in example (9). The presence of the bodily fluid *sweat* in the name of this garment seems to be motivated by two metonymies within the ACTION ICM. First, the RESULT FOR ACTION metonymy applies, where *sweat* stands for performing sports; next, the ACTION FOR INSTRUMENT metonymy occurs, as the sports activity explains the use of *sweat* to refer to the special pants used as the gear – or a sort of indispensable instrument – necessary to do the sport. The former is a source-in-target mapping, resulting in an expansion of the meaning of *sweat*, whereas the latter is a target-in-source metonymy, reducing the meaning of the action to the sports gear. The mappings involved in this double metonymy are presented in Figure 2. Moreover, the same metonymic motivation appears to underlie the meaning of a number of English compound nouns, such as *sweat-pants*, *sweatshirt*, or *sweatsuit*, which are often worn by athletes while exercising. In Polish, this type of metonymic motivation based on the bodily fluid *pot* seems to be absent in the names for these sports clothes: *sweats* are *spodnie dresowe*, *sweatsuit* is *dres*, and *sweatshirt* is *bluza*.

- (9) I don't get dressed up all the time either. In fact right now I have a tee and **sweats** on. (COCA)

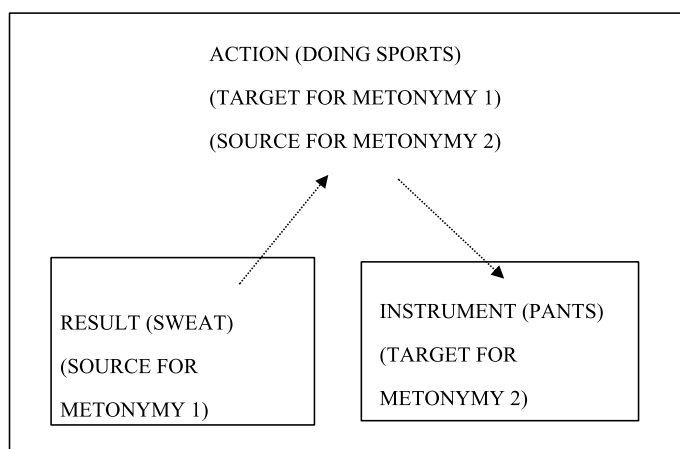


Figure 2. Double metonymy in *sweats*: the metonymic expansion with the source-in-target metonymy (1) RESULT FOR ACTION (sweat for putting a lot of effort) combined with the metonymic reduction with the target-in-source metonymy (2) ACTION FOR INSTRUMENT (putting effort for pants)

3. Metaphorical extensions of *sweat/pot* and *tears/lzy*

In cognitive semantics, *metaphor* is defined as a mapping between two distinct conceptual domains: the source (or donor) domain is partially projected onto the target (or recipient) domain, which is consequently understood in terms of the source (Barcelona 2000: 3-4). This distinguishes metaphor from metonymy, which operates within a single conceptual domain. According to Lakoff and Johnson (2003: 5), a conceptual metaphor involves “understanding and experiencing one kind of thing in terms of another,” as people rely on metaphors to conceptualize and describe abstract concepts across various aspects of life, including art, emotions, and time.

Ruiz de Mendoza and Galera (2014: 43-44) argue that metaphors generally arise either from resemblance or from experiential correlation. Resemblance metaphors establish a correspondence between two entities based on perceived similarity. For example, in *His nose is an elephant's trunk*, the resemblance is structural, whereas in *Her skin is silk* or *Her eyes could stir the dead*, the similarity lies in certain non-structural attributes (ibid.: 166-168). Metaphors based on experiential correlation, by contrast, link concepts through shared experiences. An example is *warm greetings*, which metaphorically conveys affec-

tion via temperature: since affection is often experienced as physical closeness, it is associated with the bodily warmth of human contact (ibid.: 159-160). However, according to Kövecses (2013: 89), in correlation-based metaphors there must exist a metonymic link between the non-figurative experience and the metaphorical stage of conceptualization. As he explains, “Given a frame in which the correlations apply between two elements, there must be a logically prior metonymic relationship between the elements before one element is moved out of the initial frame to establish a new and independent frame, which will form either a metaphoric source or target” (Kövecses 2020: 49).

When it comes to resemblance metaphors in the analyzed material, they include the MOISTURE / LIQUID IS SWEAT mapping. It can be identified in those examples from the corpora where moisture appears on various objects, such as glass (10a and 11a), cheese (10b and 11b), windows (10c), or walls (11c), though some of them, like *spocony ser* (“sweaty cheese”) in (11b), can be examples of creative metaphors rather than common, conventionalized expressions.

- (10a) An icy-cold Coca-Cola appeared – you could see the **glass sweating**. (COCA)
- (10b) In the glow of the dying night his body is waxy and pale, like a **sweating cheese**. (COCA)
- (10c) The **windows sweated** with steam. (COCA)
- (11a) Można było się także dowiedzieć, że **szkło się poci** lub pokrywa pajęczyną drobnych spękań i że są to zmiany nieodwracalne. (NKJP) [You could also learn that **the glass sweats** or becomes covered with a web of tiny cracks and that these are irreversible changes.]
- (11b) Turnus lipcowy, śniadanie z półmiskiem fajansowym, a na nim wylegują się **spocony ser** przytulony do wysuszonego pasztetu, wtuleni w siebie plaster w plaster. (NKJP) [A July session, breakfast with a faience platter, and on it lying **sweaty cheese** cuddled up to a dried-out pate, snuggled up together slice by slice.]
- (11c) Zjawisko „**pocenia się ścian**” jest naturalnym procesem przy zastosowaniu technologii ścian szczelinowych. (NKJP) [The phenomenon of “**wall sweating**” is a natural process when using diaphragm wall technology.]

Additionally, there are figurative uses of the verb *to sweat* in English that follow the mapping EXUDING SOMETHING IS MAKING IT SWEAT. In example (12a), vegetables can be *sweated*, meaning they release juices when heated. In example (12b), robbing someone’s garage is described colloquially as *sweating* the place, and in sentence (12c), *sweating* is used metaphorically

to mean joining pieces of metal by melting them. None of these figurative meanings of *sweat* occur in Polish. The English *to sweat vegetables* can be translated as *zeszklić warzywa*, a figurative verb literally meaning “to vitrify the vegetables,” perhaps because hot onions and garlic covered in their juices appear as if coated with glass. The translation of *to sweat a garage* might be *oskubać*, which is also metaphorical and literally means “to pluck.” The Polish equivalent of *to sweat the pipe* is *lutować*, which corresponds directly to the English verb *to solder*.

- (12a) In a saucepan melt butter; **sweat onions and garlic**; add shrimps. (COCA)
- (12b) Someone broke the window and wanted **to sweat my garage**. (COCA)
- (12c) Tim, we’ll be **sweating** the pipe. (COCA)

When it comes to *tears*, in both English and Polish we can observe the metaphor X IS A TEAR / TEARS, which is based on the perceived resemblance between the shape or qualities of the target domain and tears. Examples from English include rain (13a), dew (13b), and wax (13c).

- (13a) Thunder jars the windows. We go and stand outside in the first **tears of rain**. (COCA)
- (13b) They wish they could be plants and lie very still near the ground all night and in the morning be covered with **tears of dew**. (COCA)
- (13c) Two **waxen tears** appear. # Inside the chapel – bitter cold. (COCA)

Examples from Polish include referring to something clean, such as water, which is described as “as clean as a tear” (14a). Similarly, the same Polish expression can be used to describe a person who is morally pure (14b). The English equivalent of this Polish simile might be *as clean as a whistle*, which appears to convey the same meaning and usage.

- (14a) Woda wypływająca z filtrów jest **czysta jak łza** – zapewnia zastępcę kierownika zakładu wodociągu centralnego. (NKJP) [The water flowing out of the filters is **as clean as a whistle** – assures the deputy manager of the central water supply plant.]
- (14b) Gen. Komornicki jest **czysty jak łza**. Jest to bardzo solidny i porządny generał, który dobrze wykonuje obowiązki służbowe. (NKJP) [Gen. Komornicki is **as clean as a whistle**. He is a very solid and decent general who performs his duties well.]

4. Metaphtonymies in the figurative meanings of *sweat/pot* and *tears/lzy*

Metaphor and metonymy can interact to form more complex conceptual patterns, known as *metaphtonymies* (Goossens 2002: 366-369). Ruiz de Mendoza and Diez (2002: 522) note that “(...) because of its domain-internal structure, metonymy is always subsidiary in conceptual interaction to metaphor, i.e. metonymy always takes place within the source or the target domain of the metaphor.” Building on the notions of source-in-target and target-in-source metonymy, Ruiz de Mendoza and colleagues (Ruiz de Mendoza and Diez 2002: 489-532; Ruiz de Mendoza 2011: 103-124; Ruiz de Mendoza and Galera 2014: 107-116) identify four fundamental patterns of metaphor-metonymy interaction. The first involves metonymic expansion of the metaphorical target domain (or parts of it) via source-in-target metonymy, as in the expression *to knit one's brows*, where bringing the eyebrows together stands for “being angry” in line with the EFFECT FOR CAUSE metonymy; this metonymy, however, occurs within the target domain of the metaphor PUTTING EYEBROWS TOGETHER IS KNITTING CLOTHES. The second pattern is metonymic reduction of the metaphorical target domain via target-in-source metonymy, exemplified by the authors with *to break someone's heart*, where *heart* represents “love” (the PART OF THE HUMAN BODY FOR THE CULTURALLY ASSOCIATED FUNCTION metonymy), and the abstract concept of the heart is metaphorically reified into an object that can be broken. The third type listed in the sources mentioned above, metonymic expansion of the metaphorical source domain via source-in-target metonymy, occurs in the expression *to beat one's breast*, often used to express apology, where the gesture stands for showing sorrow (EFFECT FOR CAUSE) and simultaneously maps metaphorically onto the act of apologizing (APOLOGIZING IS BREAST BEATING). Finally, the fourth pattern, metonymic reduction of the metaphorical source domain via target-in-source metonymy, is illustrated by the quoted authors with the sentence *Humboldt is the Shakespeare of travelers*, where *Shakespeare* stands for “superior ingenuity or excellent skills in writing poetry” (ENTITY FOR ITS SALIENT PROPERTY) while also invoking the metaphorical mapping ALEXANDER HUMBOLDT IS WILLIAM SHAKESPEARE as a way of conceptualizing Alexander Humboldt's remarkable attributes in the realm of traveling and exploring the world.

When it comes to the extensions of *sweat/pot* and *tears/lzy*, the metaphtonymies identified in our analysis are based on the metonymic expansion of either the source domain or the target domain of a metaphorical mapping.

4.1. Metonymic expansion of the metaphorical source domain

Sweat/pot and *tears/lzy*, when used metonymically to conceptualize hard work and unstinting effort, as discussed above, can give rise to a correlation metaphor, resulting in metaphonymy. As noted by Charteris-Black (2001: 282-284), the collocation *blood, sweat and tears* is generally used figuratively rather than in its literal sense. Thus, in examples (15a) from English and (15b) from Polish, the effort and hard work involved in writing a book or a movie script are conceptualized through the bodily fluids sweat and tears, in line with the mapping MENTAL OR NON-PHYSICAL EFFORT IS PHYSICAL EFFORT. This constitutes an example of metonymic expansion of the metaphorical source domain, with the EFFECT (blood) FOR CAUSE (effort) metonymy, as illustrated in Figure 3.

- (15a) Written in the blood, **sweat and tears** of the author and her family, and featuring expert clinical perspectives, *Chasing Silhouettes* blazes a trail. (COCA)
- (15b) Scenariusz filmowy to nie plwocina, tylko krew, **pot i lzy**. (NKJP)
[A movie script is not spit, but blood, **sweat and tears**.]

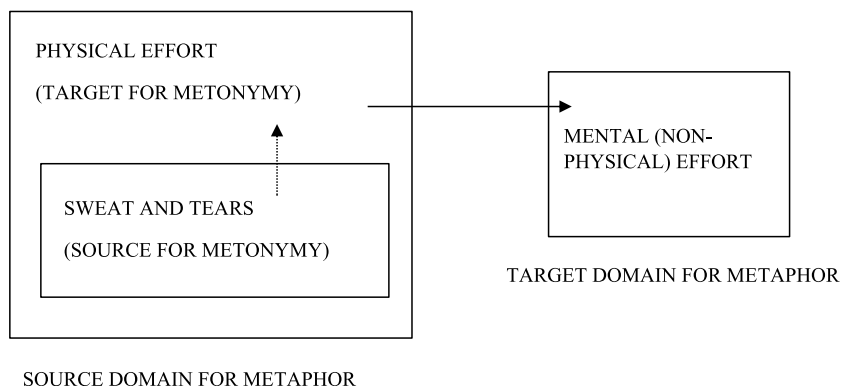


Figure 3. Metonymic expansion of the metaphorical source domain (mental (non-physical) effort is physical effort) with the source-in-target metonymy (effect for cause (tears / sweat for physical effort)) in *sweat and tears/pot i lzy*

Apart from that, the same metaphor-metonymy interaction can be observed in the English phrase *without tears* (16), where it conveys that a given activity can be performed easily, without much effort or difficulty. The Polish translation of this example might be *Metody maszynowego uczenia się bez bólu – podręcznik dla ekologów*, where *without tears* is rendered as *bez bólu* (“without pain”), or alternatively *Metody maszynowego uczenia się dla opornych – podręcznik dla*

ekologów, although, in this version, the phrase *dla opornych* (literally: “for the reluctant”) is based on a different conceptualization pattern.

- (16) Machine learning methods **without tears**: A primer for ecologists.
(COCA)

4.2. Metonymic expansion of the metaphorical target domain

With respect to the metonymic expansion of the metaphorical target domain, both English and Polish provide examples of the resemblance-based personification of *tears*, meaning they are described as if they possess human qualities or behave like people, in line with the mapping TEARS ARE PEOPLE. In English, for instance, tears can *run down someone's face* (17a) or *stand in someone's eyes* (17b), while in Polish they can crowd in one's eyes (*cisnąć się do oczu*) (17c), run to one's eyes (*nabiegły do oczu*) (17d), or stand in one's eyes (*stanęły w oczach*) (17e). Regardless of the human-like activity attributed to them, tears also metonymically represent emotions, following the mapping PHYSIOLOGICAL EFFECTS OF EMOTIONS FOR EMOTIONS. This metonymy occurs within the target domain of the metaphorical mapping, as illustrated in Figure 4.

- (17a) The **tears run** silently down his face. (COCA)
 (17b) **Tears stood** in her eyes. (COCA)
 (17c) I nagle poczułem, że **lzy cisną mi się** do oczu. (NKJP) [And suddenly I felt **tears crowding** in my eyes.]
 (17d) **Lzy nabiegły** matce do oczu. W pierwszym odruchu chciała syna przytulić, ale raptem uciekła do łazienki. (NKJP) [**Tears ran** to the mother's eyes. At first, she wanted to hug her son, but suddenly she ran to the bathroom.]
 (17e) Panna Urszula pobladła, **lzy stanęły** jej w oczach – ostatnie słowa Stadnickiego wydały się jej zwróconymi wprost do niej... (NKJP) [Miss Urszula turned pale, and **tears stood** in her eyes – Stadnicki's last words seemed to be addressed directly to her...]

5. Conclusions

Our analysis of the possible patterns of metonymic and metaphorical motivation behind the senses of *sweat/pot* and *tears/lzy* in English and Polish has shown that both bodily fluids exhibit metonymies, metaphorical extensions of their meanings, and interactions between metaphor and metonymy. In terms of metonymy, in both languages *sweat/pot* and *tears/lzy* may stand for hard work and effort, following the EFFECT FOR CAUSE mapping. The same metonymy also

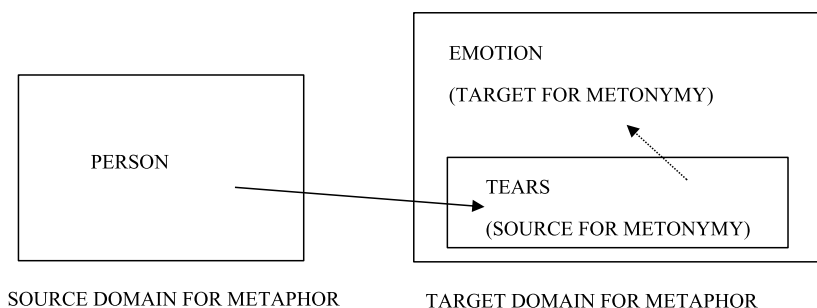


Figure 4. Metonymic expansion of the metaphorical target domain (TEARS ARE PERSONS) with the source-in-target metonymy (PHYSIOLOGICAL EFFECT (tears) FOR EMOTION (sadness)) in personifications of *tears/lzy*

motivates the use of *tears/lzy* to denote suffering. Moreover, in both English and Polish, these bodily fluids represent a range of emotions in line with the metonymic mapping PHYSIOLOGICAL EFFECTS OF EMOTIONS FOR EMOTIONS. Accordingly, *sweat/pot* can stand for fear, anxiety, or distress, while *tears/lzy* can represent either negative emotions, such as sadness, sorrow, rage, and regret, or positive ones, such as joy and happiness.

In English only, we have identified examples of double metonymy, as in *old sweat*, meaning an experienced soldier, and *sweats*, meaning pants worn for sports. In these cases, the RESULT FOR ACTION metonymy co-occurs with either the ACTION FOR AGENT or ACTION FOR INSTRUMENT metonymy.

There are also two common resemblance metaphors of *sweat/pot* and *tears/lzy*: the MOISTURE/LIQUID IS SWEAT metaphor and the X IS TEARS metaphor. The former describes drops of liquid on surfaces, such as glass, or damp on a wall, while the latter is found in English for objects taking the shape of tears, for instance rain, dew, or wax. In Polish, the X IS TEARS metaphor can describe something as clean as a tear, such as water or a person's character. Additionally, in English only, there are metaphorical extensions of *sweat* based on the EXUDING SOMETHING IS MAKING IT SWEAT metaphor, where vegetables, a place, or metal are described as sweating.

Regarding metaphor-metonymy interaction, our study has shown examples of metonymic expansion of either the metaphorical source or target domain in so-called correlation metaphors of *sweat/pot* and *tears/lzy*. Through the EFFECT FOR CAUSE metonymy, both bodily fluids extend the metaphor NON-PHYSICAL EFFORT IS PHYSICAL EFFORT, as illustrated by the phrase *blood, sweat and tears/krew, pot i lzy*. These findings support the view that in experience-based correlation metaphors, it is necessary to include metonymies as conceptual links between experiences and metaphorical extensions of meaning. Metonymic expansion of the metaphorical target domain can also be observed in the resem-

blance-based personification of *tears* (TEARS ARE PERSONS), which metonymically stand for emotions via the PHYSIOLOGICAL EFFECTS OF EMOTIONS FOR EMOTIONS mapping. This metaphonymy is found in both languages, where tears are described as behaving like people.

In conclusion, the contrastive analysis of *sweat/pot* and *tears/lzy* shows that both English and Polish rely on shared embodied experience to motivate figurative meanings through metonymy, metaphor, and their interaction. These bodily fluids systematically conceptualize effort, emotion, and suffering, while language-specific differences reveal the influence of cultural conventions. Further research could examine how metaphor and metonymy motivate the meanings of words denoting other bodily fluids in English and Polish, and potentially in other languages as well.

References

- Barcelona, A. 2000. The cognitive theory of metaphor and metonymy. In A. Barcelona (ed.), *Metaphor and Metonymy at the Crossroads: A Cognitive Perspective*, 1-28. Berlin: Mouton de Gruyter.
- Bierwiaczonek, B. 2013. *Metonymy in Language, Thought and Brain*. Sheffield: Equinox.
- Bogdanowska-Jakubowska, E. 2010. *FACE. An Interdisciplinary Perspective*. Katowice: Wydawnictwo Uniwersytetu Śląskiego.
- Charteris-Black, J. 2001. Blood, sweat and tears: A corpus-based cognitive analysis of blood in English phraseology. *Studi Linguistici Teoretici e Applicativi* 30: 273-287.
- Cichmińska, M. 1999. Towards an analysis of the concept of sadness in Polish: A cognitive view. *Acta Neophilologica* 1: 11-23.
- Deignan, A. 2015. MIP, the corpus and dictionaries: What makes for the best metaphor analysis? *Metaphor and the Social World* 5: 145-154.
- Enfield, N.J., and A. Wierzbicka (eds.). 2002. *The Body in the Description of Emotion: Pragmatics and Cognition*. Amsterdam: John Benjamins.
- Geeraerts, D. 2010. *Theories of Lexical Semantics*. Oxford: Oxford University Press.
- Goossens, L. 2002. Metaphonymy: The interaction of metaphor and metonymy in expressions for linguistic action. In R. Dirven and R. Pörrings (eds.), *Metaphor and Metonymy in Comparison and Contrast*, 349-377. Berlin: Mouton de Gruyter.
- Kövecses, Z. 1990. *Emotion Concepts*. New York: Springer.
- Kövecses, Z. 2005. *Metaphor in Culture: Universality and Variation*. Cambridge: Cambridge University Press.
- Kövecses, Z. 2011. Methodological issues in conceptual metaphor theory. In S. Handl and H.-J. Schmid (eds.), *Windows to the Mind: Metaphor, Metonymy and Conceptual Blending*, 23-39. Berlin: Mouton de Gruyter.

- Kövecses, Z. 2013. The metaphor-metonymy relationship: Correlation metaphors are based on metonymy. *Metaphor and Symbol* 28: 75-88.
- Kövecses, Z. 2014. Conceptualizing emotions: A revised cognitive-linguistic perspective. *Poznań Studies in Contemporary Linguistics* 50: 15-28.
- Kövecses, Z. 2020. *Extended Conceptual Metaphor Theory*. Cambridge: Cambridge University Press.
- Kuczok, M. 2023. The semantics of bodily fluids in Biblical Hebrew and contemporary English: A contrastive study from the cognitive-linguistic perspective. In M. Banaś and G. Wlaźlak (eds.), *Language, Culture, Identity: Between Ethnolinguistics and Ethnomethodology*, 93-113. Göttingen: Vandenhoeck and Ruprecht Unipress.
- Kuczok, M. 2025. Between metaphor and metonymy: A cross-linguistic study of *blood* in English and *krew* in Polish from a cognitive-semantic perspective. *Metaphor and Symbol* 40: 189-205.
- Lakoff, G., and M. Johnson 1999. *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought*. New York: Basic Books.
- Lakoff, G., and M. Johnson 2003. *Metaphors We Live By*. Chicago: University of Chicago Press.
- Lewandowska-Tomaszczyk, B. 2007. Polysemy, prototypes, and radial categories. In D. Geeraerts and H. Cuycens (eds.), *The Oxford Handbook of Cognitive Linguistics*, 139-169. Oxford: Oxford University Press.
- Merriam-Webster Dictionary*. n. d. Available at <https://www.merriam-webster.com/> (accessed 10 September 2025).
- Müldner-Nieckowski, P. 2003. *Wielki słownik frazeologiczny języka polskiego*. Warszawa: Świat Książki.
- New International Version*. 2011. Available at <https://www.biblegateway.com/> (accessed 21 September 2025).
- Panther, K.-U., and L. Thornburg 2000. The EFFECT FOR CAUSE metonymy in English grammar. In A. Barcelona (ed.), *Metaphor and Metonymy at the Crossroads*, 215-232. Berlin: Mouton de Gruyter.
- Radden, G., and Z. Kövecses 1999. Towards a theory of metonymy. In K.-U. Panther and G. Radden (eds.), *Metonymy in Language and Thought*, 17-59. Amsterdam: John Benjamins.
- Rewiś-Łętkowska, A. 2019. The anatomy of fear: interplay between metaphor, metonymy and image schema in the conceptualization of fear/strach in English and Polish. *Studia Pigioniana* 2: 119-143.
- Ruiz de Mendoza, F. 2000. The role of mappings and domains in understanding metonymy. In A. Barcelona (ed.), *Metaphor and Metonymy at the Crossroads: A Cognitive Perspective*, 109-132. Berlin: Mouton de Gruyter.
- Ruiz de Mendoza, F. 2011. Metonymy and cognitive operations. In R. Benczes, A. Barcelona and F. Ruiz de Mendoza (eds.), *Defining Metonymy in Cognitive Linguistics: Towards a Consensus View*, 103-124. Amsterdam: John Benjamins.
- Ruiz de Mendoza, F., and O. Díez 2002. Patterns of conceptual interaction. In R. Dirven and R. Pörings (eds.), *Metaphor and Metonymy in Comparison and Contrast*, 489-532. Berlin: Mouton de Gruyter.

- Ruiz de Mendoza, F., and A. Galera 2014. *Cognitive Modeling: A Linguistic Perspective*. Amsterdam: John Benjamins.
- Sharifian, F., R. Dirven, N. Yu and S. Niemeier (eds.). 2008. *Culture, Body and Language: Conceptualizations of Internal Body Organs Across Cultures and Languages*. Berlin: Mouton de Gruyter.
- Wierzbicka, A. 1999. *Emotions Across Languages and Cultures*. Cambridge: Cambridge University Press.