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## ON PROTOTYPE-RELATED METONYMIC MODELS IN SIGNED LANGUAGES

Basing on the data from five unrelated languages: American, British, Catalan, German, and Polish, the paper argues that categories of persons, social institutions, animals, plants, objects, actions, events, and numbers are accessed by means of signs that involve prototype-related metonymic models. Some of the models take the form of social stereotypes, ideals, and paragons (Lakoff 1987: 85-89). Most signs involve metonymic chains of varied structure and complexity (Fass 1997: 73): metonymies on the level of articulation serve to represent the prototypes, which further serve as metonymic vehicles allowing to comprehend the whole categories. In some signs, the metonymic models interact with conceptual metaphors (Goossens 1990). The scope of prototype-based categorisation in signed languages thus confirms the anti-objectivist claim of cognitive science, which denies the existence of a gap between epistemology and metaphysics (Lakoff/Johnson 1999: 21-23, 114).

### CLASSICAL VS. PROTOTYPE-BASED CATEGORIES

The classical view, based on Platonic principles, defines categories in terms of sets of necessary and sufficient properties. The properties are binary and form the “the essence” of the categorised entities (Givón 1986: 77; Lakoff 1987: xiv; Taylor 1989: 22-24).

Classical categories thus have clearly-delineated boundaries. The concept of ‘bachelor’, for example, can be decomposed into three individually necessary and jointly sufficient features or markers: [human], [male], [adult], and [never married]. Absence of any of them excludes an entity from the category (Katz/Postal 1964: 13, as cited in Taylor 1989: 30-32).

Prototype theory, based on empirical findings in anthropology and cognitive psychology, claims that human categorisation involves three-levels: superordinate, e.g. a vehicle, furniture, a tool; basic, e.g. a car, a table, a hammer; subordinate, e.g. a sports car, a kitchen table, a ball-peen hammer. The impossibility of forming a common image of entities on the superordinate level, or a common pattern of interaction with them, makes the level in the middle basic. For example, the category ‘vehicle’ is often accessed by reference to its most typical basic-level member, that is, a ‘car’ (Rosch/Mervis 1975; Rosch et al. 1976). The

level thus has a “cognitive priority”: because most knowledge is organised on it, it is optimal for human interaction with the environment (Lakoff/Johnson 1999: 27-30).

Rather than being defined in terms of sets of necessary and sufficient properties, categories involve graded membership. Entity judged to be a better category member than others is a salient example or a prototype, that is, “[...] the abstract representation of a category [...] defined by subjects’ judgments of the degree to which members fit their ‘idea’ or ‘image’ of the category” (Rosch/Mervis 1975: 575). A prototypical ‘mother’, for example, is a woman who gave birth to a child, nurtured it, remaining all the time married to the father. Adoptive, biological, foster, genetic, or surrogate mothers all diverge from the prototype in terms of degrees of family resemblance to it, which can be tested by goodness-of-example ratings (Wittgenstein 1953/1: 66-71; Lakoff 1987: 83-84).

Such model of categorisation offers many advantages. First, its economy makes it possible to “read off” the salient attributes of a category from its prototype; secondly, images of prototypes include all sensory modalities; third, the model takes into account the potential diversity of prototypes among different individuals; fourth, prototypes are present on the superordinate, basic, and subordinate levels of categorisation (Williams et al. 1982: 562-564).

#### PROTOTYPES AND METONYMY

Metonymy is “a cognitive process in which one conceptual entity, the vehicle, provides mental access to another conceptual entity, the target, within the same idealised cognitive model (ICM)” (Radden/Kövecses 1999: 21). Prototypes often act as vehicles by means of which whole categories can be comprehended. For example, the above-mentioned prototypical ‘mother’ is a reference point for judgments concerning all other category members. In a similar way, ‘aspirin’, being a prototypical ‘pain-relieving tablet’, is often used to refer to other similar tablets (Radden/Kövecses 1999: 34).

#### SIGNED LANGUAGES

In the 19<sup>th</sup> century, signed languages were regarded as a primitive form of communication:

it has to be noticed that the gesture language by no means matches, sign for word, with our spoken language. One reason is that it has so little power of expressing abstract ideas. The deaf-mute can show particular ways of making things, such as building a wall or cutting out a coat, but it is quite

beyond him to make one sign include what is common to all these, as we use the abstract term “to make”.

(Tylor 1965 [1881]: 30, as cited in Armstrong 1999: 65)

Such views still prevailed in the first half of the 20<sup>th</sup> century. Myklebust (1957: 241-242, as cited in Wilcox 2008: 1113), for example, claimed that signed languages lacked “precision, subtlety, and flexibility” typical of verbal communication.

A pivotal change occurred in the 1960s. Structuralism provided a theoretical and methodological framework capable of describing each sign in terms of four articulatory parameters: shape, location, movement, and orientation of the hands in the process of signing (Stokoe 1960; Battison 1978). These four *cheremes* form the basis of visual phonology. They make meaningful distinctions between signs in a way parallel to phonemes in spoken languages, that is, by “patterning of the formational units of the expression system of a natural language” (Coulter/Anderson 1993: 5, as cited in Emmorey 2000: 319). For example, the American Sign Language (henceforth ASL) triplet of signs for ‘ugly’, ‘dry’, and ‘summer’ is differentiated only by the location of the hand in the process of signing; the signs for ‘train’, ‘tape’, and ‘chair’ involve the same hand-shape, orientation, and location, but differ with respect to movement; the signs for ‘candy’, ‘apple’, and ‘jealous’ are differentiated only on the basis of hand-shape (Poizner et al. 2000: 3).

Second generation cognitive linguistics sees each linguistic sign as a symbolic structure built of phonological and semantic poles residing in conceptual space (Langacker 1987). In signed languages, the phonological pole consists of the visible moving articulators, which can be conceptualised as objects or persons moving in space and performing specific functions (Wilcox et al. 2003: 141-143; Wilcox/Morford 2007: 177-178; Wilcox 2008: 1119). The semantic pole of signs, motivated by both referential and cognitive iconicity, often reflects mental models structured by metaphors, metonymies, and prototype-based categories (Mandel 1977: 94, as cited in Wilcox 2008: 1117; Wilbur 1987: 174-180, as cited in Wilcox 2000: 48-50; Wilcox 2000: 69-194; Taub 2001: 34, 74-76; Wilcox et al. 2003; Wilcox/Morford 2007: 179-181; Wilcox 2008: 1122-1124).

### PROTOTYPES OF PERSONS

The Polish Sign Language (*Polski Język Migowy*—henceforth PJM) sign for ‘man’ represents a property typically ascribed to the gender, that is, having hair on face that is usually shaved (Hendzel 1995: 141). The British Sign Language (henceforth BSL) sign for ‘man’ also reflects the same property (Smith 2010: 40).



Figure 1. The BSL sign for 'man' (Smith 2010: 40).

In both languages, these signs are also used to refer to men that do not grow beards. In this way, a typical case is extended to cover the atypical instances.

The PJM sign is more specific than its BSL counterpart, which only imitates stroking the beard. It highlights the action of removing hair from the cheeks by means of a hand-shaver, but hides putting shaving cream on it and rinsing, that is, the initial and the final sub-events of the scenario of shaving. The metonymy Central Sub-Event for Whole Event thus precedes the metonymy Prototypical Subcategory for the Whole Category. Unlike its BSL counterpart, which involves only the category-related metonymy, the sign is structured by a simple metonymic chain (Lakoff 1987: 79; Fass 1997: 73; Radden/Kövecses 1999: 32-33).

## STEREOTYPES

Stereotypes are conscious and very general representations of various social groups. They express the users' expectations and are subject to public discussion. Because they involve positive or negative evaluations of the target groups in terms of relatively fixed properties, they are usually resistant to change. In the United States, for example, the positive stereotype of the Japanese highlights their industriousness, politeness, and cleverness (Lakoff 1987: 85; Berting/Vil-lain-Gandossi 1995: 14-16).

Signed stereotypes have the same structure. For example, in the ASL and BSL signs for 'Ireland, Irish', the bent v-shaped fingers of the dominant hand touch the closed non-dominant hand (Smith 2010: 25; ASLUD).

Because both signs reflect the action of sticking a fork into a potato, they involve the metonymy Manner of Eating for Food Staple. In this way, they also reflect the stereotype of the Irish as poor people feeding on potatoes. It has its roots in the Irish Famine of 1845-46, which caused massive emigration from Ireland to America (Palmer 1962: 164-165).

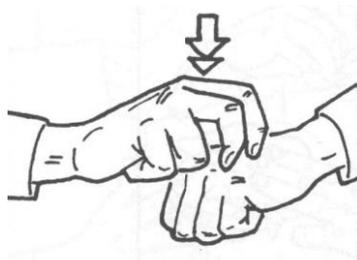


Figure 2. The BSL sign for 'Ireland, Irish' (Smith 2010: 25).

The ASL sign for 'Russia, Russian' imitates the gesture of wiping ale of one's mouth (ASLUD), so it presents the Russians as addicted to alcohol. Highlighting only a final part of the scenario of alcohol consumption, it is based on the metonymy Final Sub-Event for Whole Event (Radden/Kövecses 1999: 32-33).

The German Sign Language (*Deutsche Gebärdensprache*—henceforth DGS) sign for 'Poland, Polish' is produced by a dominant hand tracing an arch over the upper arm of the non-dominant hand. The articulation is shape-for-shape iconic of a tight upper arm muscle, which, by means of the metonymy Body Part for Person, points out to physical work. The sign reflects a German stereotype of Poles as physical workers.

Stereotypes suggest that a highlighted group of people represents the whole category. The articulation-level metonymies thus motivate the metonymic models of the type Stereotypical Subcategory for the Whole Category (Lakoff 1987: 79, 85-86), and all these signs are structured by simple metonymic chains.

#### PEOPLE AS PARAGONS OF IDEAS

Paragons are individual cases, that is, persons, objects, or events which represent more abstract categories, both ideals and their opposites (Lakoff 1987: 87-88). For example, the expression *a second Pele* picks out the Brazilian football star as a model of excellence in football skills.

Catalan Sign Language (*Lengua de Signes Catalana*—henceforth LSC) sign for 'Adolf Hitler', which imitates the dictator's short moustache, also means 'bad' and 'evil'. Hitler thus functions as a paragon of these qualities. The sign for 'Salvador Dali', which imitates the painter's upturned moustache, also means 'crazy'. The eccentric artist thus serves as a paragon of such behaviour. Both signs are based on simple metonymic chains: the articulation-level metonymy Physical Characteristic for Person is paired with the metonymy Characteristic of Person for General Quality (Wilcox et al. 2003: 145-146). It is the second metonymy that reflects the paragon nature of both signs.

## INDIVIDUALS AS "REVERSED" PARAGONS

A reversed strategy is present in BSL signs used to refer to people by means of their proper names. Persons sharing a name with a famous namesake can be referred to by means of a sign originally used to refer to them. For example, the sign for 'Winston Churchill', that is, either the cigar or the v-shaped hand standing for 'victory', can be used to refer to any other person bearing that name (Sutton-Spence/Woll 2010: 237). Churchill does not function here an individual representing some more general quality, but is regarded as the most recognizable example of the category of all Churchills. In other words, a person well-known for their actions is used to represent persons that do not have such qualities.

## PROTOTYPES OF SOCIAL INSTITUTIONS

The PJM sign for 'school' is a compound (Hendzel 1995: 262). In the first part, the dominant inward-oriented e-shaped hand placed aslant in front of the forehead touches its middle with the fingertips. The hand-shape and location are the source domain of the ontological metaphor which, following its description in ASL, can be called *Ideas Are Objects To Be Manipulated or Placed* (Wilcox 2000: 112-116).<sup>1</sup> The articulation thus represents 'putting ideas into the head'. In the second part of the sign, the four fingers of the dominant inward-oriented m-shaped hand are placed under the upper arm of the non-dominant hand. The hand-shape and the location are iconic of a book being held under a pupil's arm. The sign as a whole thus represents 'school' by means of prototypical actions and objects. The interaction of the above-mentioned metaphor with the metonymies *Prototypical Action for Institution* and *Prototypical Object for Institution* is an instance of *metaphor-within-metonymy* (Goossens 1990: 335).

In the ASL sign for 'school', open hands, with downward-oriented right palm and fingers pointing out, and upwards-oriented left palm with fingers pointing right, are clapped twice. The action visualises the teacher calling the class to order (Lane 1990: 150; Duke 2009: 198). The sign combines the metonymies *Action for Person* and *Prototypical Person for Institution* into a simple chain.

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<sup>1</sup> The same hand-shape, known as the flat o-morpheme, is used in the ASL sign which involves the metaphor (Wilcox 2000: 113).

## IDEALS OF SOCIAL INSTITUTIONS

Ideals are cultural models that help people to organise their lives. There are ideal marriages, spouses, homes, etc. (Lakoff 1987: 87). For example, it is often believed that ideal spouses are connected by an emotional and physical bond, which reflects the conception of love as a strong attachment, harmony, and a “perfect match” (Kövecses 1986: 62-67).

The ASL signs for ‘husband’ and ‘wife’ involve two clasped hands as a part of their structure (Lane 1990: 88, 192).

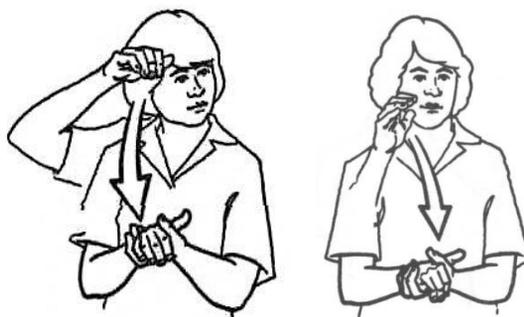


Figure 3. The ASL signs for ‘husband’ and ‘wife’ (Lane 1990: 88, 192).

The PJM signs for ‘marriage’, ‘spouse’, ‘husband’, and ‘wife’ all involve two b-shaped hands coming together as a part of their structure (Hendzel 1995: 136, 139, 330). In both languages, the configuration of the hands reflects the source domains of the ontological metaphor *Love Is a Unity of Two Complementary Parts* and the primary metaphor *Intimacy Is Closeness* (Kövecses 1986: 62-67; Lakoff/Johnson 1999: 50). All these signs combine articulation-level metaphors with the metonymies *Ideal Subcategory for the Whole Category* for the Whole Category (Lakoff 1987: 79, 87).

## PROTOTYPES OF ANIMALS

In the PJM sign for the superordinate category ‘animal’, inward-oriented clawed hands make a single inward circular movement in front of the chest (Hendzel 1995: 327). The articulation, based on the metonymy *Action for Animal*, points out to a basic-level land animal that uses paws in such a way, e.g. a dog, a wolf, or a fox. Birds and sea animals, also being basic-level entities, are regarded as less representative examples of the superordinate category. The second metonymy in the sign’s structure is *Prototypical/Basic-Level Subcategory for the Superordinate Category*.

In the ASL sign for the concept, fingertips of both hands touch the chest and the hands are rocked back and forth, which imitates an animal breathing (Duke 2009: 161). The sign thus also highlights a land animal as a typical category member and involves the same metonymic chain in its structure.

The PJM sign for the basic-level category ‘bird’ imitates the flapping of the wings (Hendzel 1995: 218). It is based on the metonymy Prototypical Action for Animal. Its ASL and BSL counterparts are both articulated by thumb and index fingers opening and closing in front of the mouth (Lane 1990: 21; Smith 2010: 111). Both signs thus represent beaks<sup>2</sup> and are structured by the metonymy Prototypical Property for Animal.

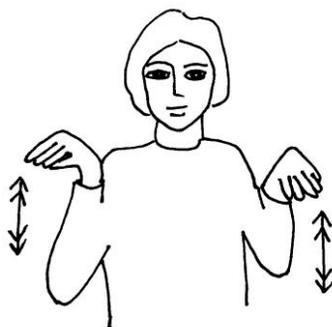


Figure 4. The PJM sign for ‘bird’ (Hendzel 1995: 218).

It is, however, the PJM sign that highlights the aspect most commonly associated with the category, that is, the ability to fly (Aitchison 1998: 54-58).

#### PROTOTYPES OF PLANTS

The ASL sign for ‘tree’ is shape-for-shape iconic of a plant with a straight, bare trunk growing out of the ground and having a network of branches widening at the top. All other kinds of trees, e.g. those that are not straight, have differently formed branches, or even grow out of cliff walls, can be represented by means of it as well (Taub 2001: 29-30).

It is one of the signs called “frozen” because they “tend to represent a whole category, rather than a specific referent; the image that is chosen to represent the category can be a prototype or salient category member, or it can be an action or item metonymically associated with the category” (Taub 2001: 35). The sign is

<sup>2</sup> The PJM sign whose articulation imitates a curved beak is used for ‘eagle’ (Hendzel 1995: 172). The DGS sign for the concept is similar (Wilcox/Morford 2007: 175).

thus based on the metonymy Prototypical Subcategory for the Whole Category (Lakoff 1987: 79).

## PROTOTYPES OF OBJECTS

Objects can be represented by means of three types of signs. Classifiers serve to access very general, often superordinate, categories. Frozen signs reflect both superordinate and basic-level categories. There are also signs which reflect new technological inventions.

### CLASSIFIERS

Classifiers are hand-shapes that usually “identify larger classes of referents” than frozen signs (Taub 2001: 35). The referents share similar features, e.g. size or shape. Combined with the parameters of location, orientation, and movement, these signs are capable of expressing actions (Supalla 1986; Duke 2009: 127).

Classifiers usually represent entities that cannot be grouped into superordinate categories in the Roschian sense. The ASL Classifier C/“C” Hand, for example, can be used to sign various cylindrical objects, e.g. a glass, a flashlight, a cup, a bowl, a vacuum hose, or a vase (Duke 2009: 128-129). These objects belong to various categories that could themselves be regarded as superordinate, e.g. containers or instruments.

The ASL “three-finger classifier”, also called Classifier 3/CL 3, is employed to represent vehicles, that is, “cars, boats, trains, motorcycles, bicycles, and more” (Duke 2009: 129).



Figure 5. The ASL three-finger classifier/CL 3 (Duke 2009: 129).

It is highly schematised in that it covers a very broad class of referents:

[...] the referents' visual images are schematised to different degrees. At the highly schematised end of the continuum, we have semantic classifiers [...] representing broad classes of referents. Examples are the *vehicle classifier* [...], in which the 3-hand-shape (thumb, index, and middle fingers extended from the fist) with thumb pointing upward represents a vehicle of some sort, and the *person classifier*, in which the i-hand-shape (index finger extended from a fist) pointing upward represents a person. Here, the only match between the referent image and linguistic form is broad outline (i.e. horizontal oblong vs. vertical rod).

(Taub 2001: 69-70)

The vehicle classifier hand-shape, however, is most iconic of a car, which is a basic-level entity and a prototypical vehicle:

once you form this hand-shape, think of it as your mini-car. [...] The index and the middle fingers are the hood of your mini-car, the thumb is the seat, and the base of the thumb to your wrist is the trunk. [...] To open the hood, lift your index finger. [...] This hand-shape easily demonstrates movement. For example, you can use this three-finger hand-shape to describe a car race and one car cutting off the other.

(Duke 2009: 233)

Though the hand-shape can represent other vehicles as well, all of them being basic-level entities, the overall car shape is the primary association. The classifier is thus structured by the metonymy Prototypical and Basic-Level Subcategory for the Whole Category.

#### FROZEN SIGNS

The PJM, ASL, and BSL signs for 'house' all represent a building with straight walls and a pointed roof, but they can be used to refer to all other kinds of houses, including those with flat roofs (Hendzel 1995: 66; Taub 2001: 35; Sutton-Spence/Woll 2010: 176). The house with a sloping roof is thus regarded as a prototype of the category.

The ASL and BSL signs for 'alarm' both use the extended index finger of the dominant hand to represent a gong hitting a metal surface, that is, a part of the mechanism of an electric alarm (Lane 1990: 6; Smith 2010: 67).

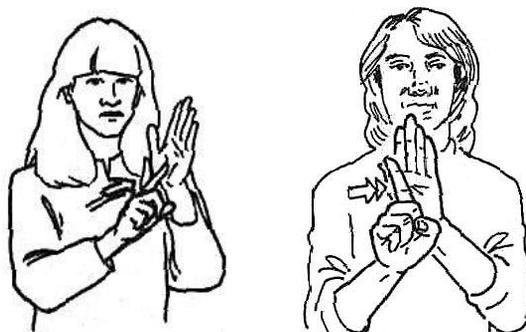


Figure 6. The ASL and BSL signs for 'alarm' (Lane 1990: 6; Smith 2010: 67).

They can be used to refer other kinds of alarms as well, e.g. the electronic ones. On the level of articulation, both signs involve the metonymy Manner of Operation for Instrument.

The ASL, BSL<sup>3</sup>, and PJM signs for 'coffee' all represent the turning of the hand-operated coffee grinder (Lane 1990: 40; Smith 2010: 109; Hendzel 1995: 106; Wilbur 1987: 165, as cited in Wilcox 2000: 88).



Figure 7. The ASL sign for 'coffee' (Wilcox 2000: 88).

However, they also refer to all other kinds of coffee, e.g. instant or drip<sup>4</sup> (Wilbur 1987: 165, as cited in Wilcox 2000: 88). On the level of articulation, the signs involve a simple chain of metonymies Manner of Operation for Instrument and Instrument for Substance.

The ASL sign for 'medicine', in turn, reflects the process of hand-preparation of the medicament by the chemist, that is, the mixing of ingredients (Lane 1990: 109).

<sup>3</sup> It is only one of several variants of the BSL sign for 'coffee' (Smith 2010: 109).

<sup>4</sup> Many further metonymy-based extensions of the sign are possible, e.g. "to mean the beans; a certain kind of ice cream or candy; a dark rich colouring; a particular type of break at a work station; or the plant itself" (Wilcox 2000: 89).



Figure 8. The ASL sign for 'medicine' (Lane 1990: 109).

Its PJM counterpart is similar except that it represents the action by means of a bunched hand (Hendzel 1995: 127). Both signs are structured by the metonymy Manner of Preparation for Substance, and they also refer to medicaments produced on a mass scale.

In the PJM sign for the superordinate category 'clothes/dress', inward-oriented a-shaped hands move down and in from the sides of the shoulders till they assume a parallel position in front of the chest (Hendzel 1995: 284). The articulation imitates the action of putting on a shirt or a jacket, both basic-level entities. The sign, based on the metonymy Manner of Wearing for Piece of Dress<sup>5</sup>, also refers to all other pieces of clothes. The ASL sign for the concept is produced with the five-hand-shapes starting on the chest level and brushing down as if trying to remove lint from the surface of a piece of clothes (ASLUD). Similarly to the PJM sign, the location points out to a piece of dress covering the trunk of the body, e.g. a shirt, a sweater, or a jumper, but the scope of its reference is more general. The sign involves the metonymy Action Related to Object for the Object.

The ASL sign for the superordinate category 'tool' can either be finger-spelled or expressed by the l-shaped dominant hand moving at a sharp angle towards the inwards-oriented palm of the non-dominant hand, which is iconic of the action of drilling (ASLUD). Drill is a basic-level object, and the sign is based on the metonymy Manner of Use for Tool.

Except for the first sign, which is not metonymic on the level of articulation, the signs are structured by metonymic chains in which the articulation-level metonymies are followed by metonymies related to category structure. The categories of 'clothes/dress' and 'tool' are accessed by reference to prototypical basic-level entities, so they involve the metonymy Prototypical and Basic-Level Subcategory for the Whole Category. The signs for 'alarm', 'coffee', and 'medicine' all reflect entities that are losing or have already lost the status of proto-

<sup>5</sup> Being articulated against the trunk of the body, the sign may be motivated by the image-schema of centre-periphery (Johnson 1987: 124-125). The central part of the body is most important – that is why a piece of clothes covering it is regarded as representative of the whole category.

types. They are thus structured by the metonymies Less- or Non-Prototypical Subcategory for the Whole Category.

#### NEW SIGNS

Signed languages adjust to technological progress. They represent the new inventions either by modifying the existing signs or by introducing entirely new elements into their lexicons.

The first way can be illustrated by the PJM sign for ‘mobile phone’, which involves a change in morphological structure: a simple sign becomes a compound. Its initial part is the old simple sign for ‘telephone’, which is iconic of holding a receiver close to one’s ear and mouth (Hendzel 1995: 273); in the second part, the fingers of the downwards-oriented dominant hand in five-shape wiggle on the upwards-oriented non-dominant hand, which is iconic of the action of using the keyboard. Both parts of the sign are based on the metonymy Prototypical Interaction with a Device for the Device.

The ASL sign for ‘bank’ was originally finger-spelt. The widespread use of automatic teller machines (ATMs) and bank cards has, however, motivated the emergence of a new sign: it fingerspells “ATM” and mimes putting the card or the deposit envelope into the machine (Duke 2009: 104).



Figure 9. The ASL sign for ‘bank’ (Duke 2009: 105).

In either of the versions, the articulation is based on the metonymy Sub-Event for Whole Event (Radden/Kövecses 1999: 32-33): such elements of the scenario as using the personal identity number and taking away the card and the money are back-grounded. Because the ATM transactions are regarded as prototypical today, the sign also involves the metonymy Prototypical Interaction with a Device for the Device. It is thus structured by a simple metonymic chain.

The sign for ‘computer’ is a new element in the PJM lexicon. It is articulated with inward-oriented hands in five-shapes moving up and down in front of the chest with fingers wiggling. The movements imitate using the keyboard, and the sign is based on the metonymy Prototypical Interaction with a Device for the Device.

## PROTOTYPES OF ACTIONS

The ASL sign for ‘cut/cut off’ and the PJM sign for ‘cut’ both involve the dominant v-shaped hand making a cutting motion, which is shape-for-shape and movement-for-movement iconic of using scissors (Lane 1990: 45; Hendzel 1995: 55; Taub 2001: 68-79). The adverbial of manner ‘with scissors’ is incorporated into their structure, and both signs involve the metonymy Manner of Use of a Prototypical Instrument for Action.

The ASL sign for ‘vote’ represents various forms of voting. Its articulation, however, reflects only the traditional way, that is, putting the ballot into the ballot-box (Lane 1990: 182), so the sign is frozen.



Figure 10. The ASL sign for ‘vote’ (Lane 1990: 182).

Highlighting only the final part of the scenario, the sign involves the metonymy Final Sub-Event for Whole Event (Radden/Kövecses 1999: 32-33). The category-related metonymy in its structure can be called Prototypical Subcategory for the Whole Category (Lakoff 1987: 79).

## PROTOTYPES OF EVENTS

The ASL sign for ‘accident’ is articulated with both hands in curved five-shapes closing to s-shapes with knuckles touching in front of the chest as the hands move in (Lane 1990: 2).



Figure 11. The ASL sign for ‘accident’ (Lane 1990: 2).

The sign is frozen in that it represents a head-on collision as a prototypical example of the event. It is thus based on the metonymy Prototypical Subcategory for the Whole Category (Lakoff 1987: 79).

The BSL sign for the concept is more flexible. In two of the forms that do not involve finger-spelled elements, “fists pointing in bang into each other, or right fist bangs into left palm” (Smith 2010: 67). It is therefore possible to choose a version that fits the scenario in the context, that is, either a head-on collision or one vehicle hitting the back of another.

### PROTOTYPES OF NUMBERS

The PJM sign for ‘number’ is articulated with the extended index finger of the dominant hand going down the tips of all fingers of the non-dominant hand in five-shape (Hendzel 1995: 128). It thus represents integers from 1 to 4 as most representative of the whole category.

The sign is based on the cognitive model called generator: central members of a category are used to define other members by means of general rules. Because natural numbers are usually understood as integers between zero and nine, “the single digit numbers [...] generate the entire category, given general arithmetic principles” (Lakoff 1987: 88). The underlying metonymy is called Prototypical Subcategory for the Whole Category (Lakoff 1987: 79).

### THE ONTOLOGICAL STATUS OF SIGNED PROTOTYPES

Objectivist philosophy holds that metaphysics is independent from epistemology. Categories and concepts in terms of which we understand the world are based on inherent, necessary, and sufficient properties (Lakoff 1987: xiv). Signed languages, however, access categories by means of signs based on metonymic models which represent various prototype effects “incompatible with objectivist views on cognition and language” (Lakoff 1987: 202). Moreover, the prototypes serve to comprehend both basic-level and superordinate categories.

The scope of such categorisation is especially evident in the multi-layered category of frozen signs. On top are the instances that reflect prototypes of the respective categories. It is, for example, the case of the ASL sign for ‘tree’, which imitates a plant with a straight trunk and a wide network of branches at the top (Taub 2001: 29-30). Below them are the signs that access categories by means of members whose prototypical status is debatable and may be subject to change. The ASL sign for ‘vote’, for example, reflects putting the ballot into the box

(Lane 1990: 182), but new methods of voting, e.g. by punching holes or the ones using electronic devices, gradually become widespread. Finally, there are categories accessed by highlighting members which have long lost the status of prototypes. It is, for example, the case of the ASL, BSL, and PJM signs for ‘coffee’ (Lane 1990: 40; Smith 2010: 109; Hendzel 1995: 106), which all imitate the use of the old-fashioned coffee grinder, as well as the ASL and PJM signs for ‘medicine’ (Lane 1990: 109; Hendzel 1995: 127), which represent hand-prepared medicaments.

Signed languages thus represent prototypes in a “graded” manner. This additionally validates the cognitive linguistic claim that there is no gap between epistemology and metaphysics (Lakoff/Johnson 1989: 21-23, 114). It also shows how much flexibility and abstraction is possible in signed communication.

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