# Non-Agent Cognitive Alignment Frames in selected European languages

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*This article aims to summarize preliminary findings of our research in syntactic typology focusing on the activation of a sample of cognitive chains in selected European languages involving Non-Agent Arguments, subcategorized as Unintentional Performer, Cognizer, Perceiver, and Emoter. The languages analysed in this paper include English, Danish, Swedish, Italian, Spanish, Portuguese, Slovak, Lithuanian, Bulgarian, Hungarian, Basque, and Georgian. The research was conducted via syntactic datasheets filled out by bilingual academics, with English being a reference language. The author intended to test an onomasiological approach to syntactic typology, i.e. to take cognitive chains as the point of departure in typological analysis. The research was aimed to survey the coding flags and their combinations that speakers of the languages sampled employ to activate the selected Non-Agent cognitive chains; to identify the preferred cognitive alignments frames in a particular language; and to find if/how the cognitive alignment frames coincide with the genetic and morpho-syntactic typological classes of the languages sampled. The results might also be relevant for SAE-focused areal typology (SAE – Standard Average European), since they may be used as an indicative benchmarking set to test the eurouniversal hypothesizing that due to language contact Experiencer cognitive chains are predominantly flagged as NOM/Subject in the SAE languages.*

**Keywords:** *onomasiological syntactic typology, cognitive chains, non-agent argument, coding alignment, cognitive-alignment frames, Standard Average European*

## 1. Some theoretical considerations

### 1.1 *Onomasiological stance in syntactic typology – cognitive chains and coding alignment*

The research whose outcome is presented in this paper was motivated by the author´s interest in the findings of areal typology which is concerned with the study of languages whose speakers are cohabiting in the same geo-cultural area (Körtvélyessy 2015). In context of the languages of Europe, the term used to refer to this specific linguistic territory projected as distinct against the rest of the world is *Standard Average European* (2015:2). Areal typology experimentally ignores the genetic affiliation and morpho-syntactic language types and opens its research focus to mutual contact influences of languages. The fact of sharing the same geo-cultural area by speakers of various, even genetically or morpho-syntactically unrelated, languages invites an expectation that it might play a role in the shaping and structuring of language users´ cognitive experience, i.e. perception, conceptualization and structuring of the extra-linguistic reality which is shared by them. Cohabiting language users might be hypothesized to influence each other in perceiving the extra-linguistic world, and, consequently, some similarities might also be foreseen in the ways these extra-linguistic categories are mentally analysed and shaped into syntactically relevant abstractions and the ways they are projected in the surface syntagmas. While most of the current areal typologists studying language parameters on the level of syntax take a semasiological stance, based on the above expectation, in this research an onomasiological approach was pursued, i.e. cognitive chains were used as the point of departure for the analysis of the coding markers and their arrangement.

Thus, in an onomasiologically-grounded syntactic research the analysis starts from the arrangement of cognitive roles, cognitive (valence) chains. Valence taken cognitively may be understood as the chaining of the minimum obligatory accompaniments of verbal action to render a cognitively complete set. These obligatory members of valence chains are referred to as arguments. If valence is approached from a cognitive perspective, arguments are abstract categories of syntactic meaning, generally referred to as Agent, Perceiver, Cognizer, etc., which are projected on the surface of a clause as its clause elements Subject, Object, etc.

In order to activate particular argument chains language users choose from and combine various formal flags, or markers, available in their concrete language. These may be both explicit/surface and implicit. The former *coding properties* (Van Valin 2001: 34) include inflection (of nouns, pronouns, articles, adjectives, verbs), Subject / Verb agreement, pluripersonal concord, prepositions, aspect and tense verb contrasts, word order, prosody, etc. A particular, generalized, arrangement of coding properties will be further referred to as *coding* or *surface alignment*. The implicit means consist in the speaker´s ability to read a particular arrangement of arguments as cognitively plausible based on a so called *cognitive feasibility check* of a particular alignment of arguments that is inevitably performed when the overt flagging fails (Janigová 2014: 19). If comparing the argument reading of sentences (1) and (2) below, in English where the word order is used as explicit coding marker there is no ambiguity as to the argument ordering of the surface segments, while in Slovak the case syncretism within the neuter and masculine declension paradigms allows of two interpretation alternatives, and the recipient must employ a cognitive feasibility test, or context, to identify the intended alternative in a given situation:

(1)     *The car / is towing / a truck*.
        Agent   / Action   / Theme
versus

(2)     *Auto   / ťahá / kamión.*
        Agent /Action/ Theme        or
        Theme /Action/ Agent

In Slovak, for example, out of 24 inflectional nominal paradigms only four paradigms formally distinguish between NOM and ACC cases, which means that the case syncretism renders the Slovak sentence more exposed to the implicit markers than the English sentence with its grammaticalized word order (or the Slovak word order must be much more grammaticalized than it is usually admitted).

1.2 *Alignment polysemy and synonymy*

While studying an interaction between the coding and argument alignments, there may be observed cases of *alignment polysem*y and *alignment synonymy*. Instances of alignment polysemy include those where one surface string (identical in terms of its lexical units, word order and morpho-syntactic flagging) is capable of activating several cognitive chains. Thus an English sentence:

(3)     *John /dropped / a pen.*          may activate two cognitive chains:

(3) a.   Agent / Willed Action / Theme                    or

(3) b.   Unintentional Performer/Unwilled Action/Specifier

Cases of alignment synonymy, on the other hand, occur when two formally distinct surface strings activate the same cognitive chain. In Slovak, for example, there are two surface strings to activate the chain: Emoter+Emotion+Emotion Focus:

(4) a.   *Ja*            *mám*            *rád*        *tento obraz.*
         I.1.NOM.SG    have.1.SG.PRS        glad.M     this  picture.ACC.SG
         'I like this picture.'

    b.   *Páči*          *sa*      *mi*              *tento obraz.*
         like.3.SG.PRS   REFL     me**.**I.SG.DAT      this  picture.NOM.SG
         'I like this picture.'

Example (4)a. contains NOM-marked Emoter whereas in example (4)b. the Emoter receives DAT case. As usual with lexical synonymy, here, too, synonymy is never full. There is always a slight difference in the surface meaning which is due to a particular lexical nature of the verb itself. Alignment synonymy and polysemy is obviously language-specific. So the Slovak counterparts of the polysemantic alignment of the English sentence (3) would require two distinct lexical verbs for (3)a. and (3)b. cognitive chains. This also means that apart from the coding markers it is also the lexical items that are relevant in activating the intended argument contrast (antonymic pairs of lexical verbs, valency-relevant aspect contrasts, adverbials, such as *intentionally* inserted in (3)a.).   The English examples (3)a. and (3)b. will correspond in Slovak to (5)a. and (5)b., respectively, (two distinct lexical verbs and coding alignments are employed):

(5) a.   *John-0*            *odhod-il*              *per-o.*
         John-NOM.SG       dropped-1.SG.PST        pen-ACC.SG
         Agent              Willed Action           Theme

(5) b.   *John-ovi*              *spad-lo*               *per-o.*
         John-DAT.SG          dropped-3.SG.PST        pen-NOM.SG
         Unintentional Performer  Unwilled Action         Specifier

1.3 *Cognitive alignment frames*

In general, there are three major intransitive and monotransitive alignment types identified cross-linguistically according to Haspelmath (2005): "accusative alignment, neutral alignment and ergative alignment" (2005:1). These alignment types are based on the surface coding of the verb's elaborators. In the accusative alignment type the intransitive and transitive Subjects are treated alike and kept distinct from the Objects. In the neutral alignment type all of them are treated alike, i.e. they are identical in form, however, this ignores the fact that the Subjects and Objects are actually not treated alike because there are other coding markers than just inflection that distinguish them safely. Finally, in the ergative alignment it is the Subject of a transitive verb that is kept distinct from the intransitive Subject and Object which are formally identical.

Onomasiologically, the elements of these surface/coding alignment types are perceived as activators of argument chains. Hence, a mere identification of the coding alignment type does not render the onomasiologically relevant information because of the one-to-many side of the surface frames (argument synonymy and polysemy). There are languages that have distinct case frames for Agent-focused argument chains and Non-Agent-focused argument chains (Van Valin 2001: 28). Others may have special case frames even to activate finer distinctions within the category of Non-Agent. The Avar, for example, is able to distinguish formally the Agent, Perceiver/Cognizer and Emoter through the Ergative, Locative and Dative case frames, respectively (Černý 1971: 47, 50). We therefore introduced the concept of *cognitive alignment frames* or *CA-frames* which are a kind of interface between the argument chains and coding alignment. They were also used to facilitate the onomasiological annotation of syntactic structures. To exemplify the point, sentence (6) would be CA-frame annotated as follows:

(6)     *The car is towing a truck.*  $> \text{AG}_{\text{NOM}}\text{-Th}_{\text{OBL}}$

1.4 *Diachronic perspective in genetic affiliations*

Although in areal typology genetic ties among languages are neglected methodologically, for the purposes of the present research they cannot be omitted. 9 of the languages in our sample come from the common ancestor, i.e. the Proto-Indo-European. As for the Non-Agent argument chains, they are associated with impersonal case frames in Proto-Indo-European. As Bauer (2000) pointed out "[…] the impersonal verbs represent a pattern that was inherited from Proto-Indo-European: this assumption is based on the consistency in structure – which typically includes a third-person singular verb form – and also on the consistency in meaning. Impersonal verbs in Indo-European languages typically convey three categories of meaning, (I) meteorological conditions and natural events; (II) expression of emotions and feelings, and physical experience, and (III) expression of modality." (Bauer 2000:146).  In category (II), which is relevant for the present research, the structures typically showed the absence of Agent-Nominative, and the presence of Oblique cases (DAT, ACC) to convey Experiencers of emotional and physical conditions. It was in this category II where a shift started in Early Latin from impersonal to personal structures (the former being diachronically original), whereas personal instances were rather rare at that time, (although exact chronological order and direct evidence is missing) (Bauer 2000:146). "[…] a switch has taken place in the history of Latin during which  the "Experiencer-Obliquus" came to be replaced by a Subject-Nominative […] the development of these verbs is in line with the increasing importance of the Subject-Nominative in Indo-European languages." (Bauer 2000:128).

A similar shift as in Latin also occurred in other Indo-European groups. Its presence in the Germanic group of Indo-European languages may be demonstrated by the shift occurring in Old English and Middle English. OE had about 40 impersonal verbs distributed over categories I through III. Category II was coded by the Oblique cases DAT and ACC. OE impersonals survived to ME and for some time coexisted with their personal counterparts which started to develop over time also under the influence of Scandinavian languages and, especially, French. As Bauer (2000) pointed out, two important shifts occurred in respect of the genuine OE verbs:

a)  a shift from an impersonal verb governing a dative to an impersonal verb governing a prepositional phrase: hit happened hem > it happened to him

b) a shift from impersonal verbs governing an accusative or a dative to a construction consisting of a personal verb combined with a Subject-Nominative:
It reoweþ me > ich reowe hit – I regret it (Bauer 2000:128).

Thus the Oblique case frames employed to activate Experiencers are rather archaic forms that survived from proto-language families stages of development till today even though they had to compete with their Nominative rivals. The question is how universal this shift was in the SAE area and if it has succeeded at all. Although diachronic considerations obviously exceed the scope of the present research, and the author misses any data on the proto-case-frames for Hungarian, Basque and Georgian, it seems to be worth pointing out the proto-prominence of EXP<sub>OBL</sub> CA-frames in Indo-European languages in contrast to EXP<sub>NOM</sub> CA-frames.

**2. Empirical part – a method and process of empirical analysis**

2.1 *Datasheets processing*

Since, as was explained above, the empirical part of the research was approached from an onomasiological perspective, 12 bilingual academics received datasheets containing a set of 12 sentences in English along with onomasiological charts. Respondents were asked to supply the most natural counterparts of the English sentences in their second language (the list included English, Danish, Swedish, Italian, Spanish, Portuguese, Slovak, Lithuanian, Bulgarian, Hungarian, Basque, and Georgian). Since the sentences were decontextualized, rather simple and word-order neutral, the functional sentence perspective and context issues were disregarded. The onomasiological charts contained argument boxes into which respondents were asked to insert their second language segments which they considered as activators of the particular arguments. Segments were inserted in the boxes regardless of word order, while the whole sentence was also supplied in a natural word order. If several variants of a particular cognitive chain sounded equally natural, respondents were asked to supply both of them, i.e. the occurrences of alignment synonymy as explained above. Respondents were also asked to provide a brief morho-syntactic analysis using the Leipzig Glossing Rules. The morpho-syntactic analyses of particular sentences varied due to individual preferences of respondents, so the author sometimes had to tailor them to suit the research purposes of this study. The analysis in Slovak is used to exemplify the point:

(1) SK (from the research corpus):  *I like that picture. >>>*
*i. Páči sa mi ten obraz.*
*ii. Mám rada ten obraz.*

| Emoter | Emotion State | Emotion Focus |
|---|---|---|
| I PRON.1.NOM.SG | like V.1.SG | that PRON picture N.OBL.SG |
| mi PRON.1.DAT.SG | páči-0 V sa-REFL PART like-3.SG | ten PRON   obraz-0 N              picture-NOM.SG |

| (ja) PRON.1.NOM.SG<br>activated by-m- V Infl.1.SG | má-m AUX<br>have-1.SG | rad-a ADJ<br>glad-F | ten PRON<br> | obraz-0 N<br>picture-ACC.SG |
|---|---|---|---|---|

The sentences received from respondents were subsequently distributed into tables, each containing 12 language variants, and analysed as to the coding features, coding alignment and CA-frames employed to indicate the Non-Agent Arguments – Experiencers (Emoter in (1) and (2), Perceiver in (3), (4), Cognizer in (5), (6)), Unintentional Performer in (7), (9), (10), (11)) contrasted with Intentional Performer in (8) and Permitter in (12). The analysis is contained in Appendix.

Here is the list of research sentences:

(1)     *I like that picture.*
(2)     *I feel sorry.*
(3)     *My leg hurts.*
(4)     *I saw the man.*
(5)     *It seems to me that John….*
(6)     *I am interested in music.*
(7)     *I dropped a pen. (unwilled)*
(8)     *I dropped a pen (willed)*
(9)     *I broke my leg. (unwilled)*
(10)    *The car broke its axle.*
(11)    *Centipedes grow their legs.*
(12)     *John grows a beard in winter.*

2.2 *Typological ranking of languages in the sample*

The languages in our sample all come from the Indo-European language family but for Basque (no language family assignment), Hungarian (Ugro-Finnic language family) and Georgian (Southern Caucasian). As for dominant word order, they are all SVO-type, with the exception of Basque and Georgian which are SOV-type, and Hungarian that has no dominant word order. Some of them are falling with the synthetic language type, some with the analytical. Table 1 shows the respective typologies.

Table 1: Typological characteristics of languages according to Millward (2012), Skalička (2004) and Dryer (2013)

|  | Millward´s Genetic classification | Skalička´s morho-syntactic typology | Dryer´s word order typology |
|---|---|---|---|
| English | Indo-European/Germanic | Isolating | SVO |
| Danish | Indo-European/Germanic | Isolating | SVO |
| Swedish | Indo-European/Germanic | Isolating | SVO |
| Italian | Indo-European/Romance | Isolating | SVO |
| Spanish | Indo-European/Romance | Isolating | SVO |
| Portuguese | Indo-European/Romance | Isolating | SVO |

| Slovak | Indo-European/Slavic | Inflectional | SVO |
|---|---|---|---|
| Lithuanian | Indo-European/Slavic | Inflectional | SVO |
| Bulgarian | Indo-European/Slavic | Inflectional (verb inflection only) | SVO |
| Hungarian | Ugro-Finnic/Ugric | Agglutinative | No dominant word order |
| Basque | Basque | Agglutinative | SOV |
| Georgian | Kartvelian (Testelec 1998: 254) Southern Caucasian (Millward 2012: 47) | Inflectional/Agglutinative | SOV |

## 2.3 *Case identification and marking*

As for the formal marking of cases, according to WALS (Iggesen 2013), the languages sampled have the following features (Slovak and Portuguese ranked by the author):

Table 2: Morphological marking of nominal cases

| No morphological case marking in nouns | Spanish, Italian, Bulgarian, Portuguese |
|---|---|
| 2 cases distinguished by the noun form | English, Danish, Swedish |
| 6-7 cases distinguished by the noun form | Georgian, Lithuanian, Slovak |
| 10 or more cases distinguished by the noun form | Basque, Hungarian, |

Since all the languages in our sample, except for Basque and Georgian, can be ranked with the Nominative-Accusative languages, and also considering the onomasiological perspective of our approach, we used the terms Nominative case and Oblique case to indicate the contrast between the surface Subject and Object regardless of whether this contrast was activated by the morphological form, position, preposition or agreement. Terminological labels, such as Accusative and Dative, were used for languages which distinguish these cases by their morphological case paradigms (here it should be pointed out that even though respondents for languages, especially of the Romance language family, with no morphological case marking in nouns insisted on that their languages 'did not have cases', they tended to identify some of the Non-Agent entities as Datives or Accusatives, probably under the influence of the Latin declension system and the case semantics associated therewith). In Ergative-Absolutive languages (Basque and Georgian), the terms Ergative case, Absolutive case and Dative case were used in respect of clause elements in surface paradigms where Subjects of intransitive verbs and Objects of transitives were case-marked and cross-referenced in the agreement elements of the verb identically, and differently from the Subjects of transitive verbs. The case marking of transitive Subjects is called Ergative (in Basque mostly ending in -*k*), that of intransitive Subjects and transitive Objects is called Absolutive (mostly zero inflection in

nouns) (Etxepare 2003:2-3). Actually the zero case, Absolutive "[…] is taken as the default case, so that, unless otherwise stated, the absence of any case indication on a nominal means it is in the absolutive case" (Hualde 2003:vii).

The pluripersonal verb agreement scheme (i.e. the verb's morphological constituents indicating concord with both the Subject and Object at the same time, by means of inflectional prefixes, infixes, and suffixes) was a strikingly significant surface means that was employed to activate a particular reading of argument chains in Basque and Georgian.

The author must confess that the inflectional decomposition of particular words was not done thoroughly for all the inflected items in all the languages sampled. This was due to the lack of the specific linguistic information necessary to show it. So where the meta-data were limited, only the case was indicated as suggested by the respondent, which, however, fully sufficed for the purposes of the present research.

## 2.4 *Objectives of empirical analysis*

The following is a list of research questions/objectives:
1. What coding features were employed by respondents to activate the selected Non-Agent argument chains?
2. What was the distribution of coding features in the sample?
3. What Cognitive Alignment Frames were identified? What was the distribution of CA-frames across the genetic and morpho-syntactic types of languages in the sample?
4. What were the major coding markers and CA-frames for intentional argument chains?
5. Testing the applicability of the Haspelmath's EXP$_{NOM}$ SAE feature for the languages in the sample.

## 3. Empirical findings

### 3.1 *What coding features were employed by respondents to activate the selected Non-Agent argument chains?*

The following list includes about a dozen of recurring combinations of coding features that were identified to activate the Non-Agent. In most cases joint employment of two or more coding features was detected. Except for the coding alignments I (prominence of word order) and VI (prominence of preposition) which are typical of highly analytical languages, majority of the coding markers were inflectional, either nominal or verbal, or both. Moreover, the inflection was hardly ever used as the sole indicator; it was accompanied with word order and S-V concord, and in the case of Georgian and Basque with S-V-O pluripersonal concord activated by the internal inflection of the verb. The list also includes reflexive particles, Possessive forms and Genitive case as component of a noun phrase. The following is the list of coding alignments (I-X) with certain subtypes, including examples from our research corpus:

**I Nominative case indicated by word order / nominative form of pronoun**

| 7 EN | *I dropped a pen.* | SVO | I PRON.1.NOM.SG | dropp-ed-0 V<br>drop-PST-1.SG | a ART<br>pen N.OBL.SG |
|------|---------------------|-----|------------------|-------------------------------|------------------------|

**IIa Nominative case indicated by nominal inflection/form + verbal inflection + S-V concord**

| 1 PG | *Eu gosto deste quadro.* | SVO | eu PRON.1.NOM.SG -o-V Infl.1.SG | gost-o V like-1.SG | deste PREP+PRON quadro N.OBL.SG |
|---|---|---|---|---|---|

| 2 HU*ii* | *Kedvelem azt a képet.* 'I like that picture.' | (S)VO | (én) PRON.1.NOM.SG activated by -em-V Infl.1.SG | kedvel-em V like-1.SG/INF | azt PRON a ART kép-et N kép-ACC.SG |
|---|---|---|---|---|---|

## IIb Nominative case indicated by nominal inflection/form + verbal inflection + S-V concord + OBL reflexive pronoun/particle

| 9 SK | *Zlomil som si nohu.* 'I broke to myself a leg.' | (S)VO | (ja) PRON.1.NOM.SG activated by som-AUX be-PRS.1.SG si-REFL.DAT.SG | zlomi-l V break-PST.M.SG som AUX be-PRES.1.SG si-REFL.1.DAT.SG | nohu N.ACC.SG |
|---|---|---|---|---|---|

## III Absolutive case indicated by nominal form + verbal inflection + pluripersonal S-V-O concord (in Basque and Georgian)

| 6 BASQ | Ni musican interesatuta nago | SAV | ni PRON.1.ABS.SG | interesatuta V nag-o AUX nag-1.ABS.SG | musican N. LOC.SG |
|---|---|---|---|---|---|

## IVa Oblique case (DAT/ACC) indicated by nominal inflection/pronoun form + verbal inflection + S-O concord

| 1 SP | *Me gusta esta foto.* | OVS | me PRON.1.DAT.SG -a-V Infl.3.SG | gust-a V like-3.SG | esta PRON foto N. NOM.SG |
|---|---|---|---|---|---|

## IVb Oblique case (DAT/ACC) indicated by nominal inflection/pronoun form + verbal inflection + S-V-O pluripersonal concord   (in Basque and Georgian)

| 1GEO | *me momc'ons is surati* 'That picture pleases me.' | OVS | me PRON.1.DAT.SG activated by -m- DAT INFL INFIX of V under PLRPX | mo-m-c'on-s V PRV-DAT.SG-like-3.ABS.SG | is PRON surati N. ABS.SG |
|---|---|---|---|---|---|

## IVc Oblique case (DAT/ACC) indicated by verbal inflection + S-V-O pluripersonal concord (in Basque and Georgian)

| 3 GEO | *Pexi mt'k'iva.* | (O)SV | (me) PRON.1.DAT.SG activated by m- prefix of V under PLRPC | m-t'k'iv-a V 1.DAT.SG- t'k'iv-3.ABS.SG | pexi N.ABS.SG |
|---|---|---|---|---|---|

## V Oblique case (DAT/ACC) indicated by nominal + verbal inflection + reflexive particle

| 7 SP | *Se me cayo el boligrafo* | OVS | me PRON.1. OBL/.DAT.SG | se-REFL PART cay-o V fall-PAST.3.SG | el ART boligrafo N.NOM.SG |
|---|---|---|---|---|---|

## VI Oblique case indicated by preposition + oblique nominal form

| 5 SW | *För mig det verkar som att John är glad.* | OprepSVS_cl | för PREP mig PRON.1. OBL.SG | verkar-0 V seem-3.SG | det formal Subject som att John är glad (SUBORD FINITE CLAUSE) |
|---|---|---|---|---|---|

## VIIa Possessive case form as determiner in word-order-based NOM nominal phrase

| 3DAN*i* | *Mit ben gør ondt.* 'my leg does bad´ | SVA | mit PRON POSS.1.SG | gør V.3.SG&PL ondt ADJ | ben N.NOM. SG&PL |
|---|---|---|---|---|---|

## VIIb Possessive case form activated by nominal inflection in NOM nominal phrase

| 3HU | *Fáj a lábam.* | VS | -am-POSS.1.SG | fáj V.3.SG | a ART<br>láb-am N<br>NOM.POSS.1.SG |
|---|---|---|---|---|---|

## VIIc Possessive case form as determiner in word-order-based OBL nominal phrase

| 9EN | *I broke my leg.* | SVO | I PRON.1.NOM.SG<br>my-POSS.1.SG in OBL NP | broke-0 V.PST-1.SG | leg N.OBL.SG |
|---|---|---|---|---|---|

## VIId Possessive case form as determiner in prepositional OBL nominal phrase

| 3 DAN*ii* | *Det gør ondt i mit ben.*<br>'it does bad in my leg´ | SVAA | mit PRON<br>POSS.1.SG | gør V.3.SG<br>ondt ADJ<br>det formal Subject | i PREP<br>ben N.OBL. SG&PL |
|---|---|---|---|---|---|

## VIII Genitive case form as component of NOM nominal phrase (+ reflexive pronoun)

| IT | *Si è rotto l'asse della macchina.* | VS | della PREP+ART<br>macchina N.GEN.SG | si REFL PART<br>é AUX<br>be-3.SG<br>rott-o<br>break-PST PTCP.M.SG | l'asse<br>ART+N.NOM.SG |
|---|---|---|---|---|---|

## IXa Ergative case indicated by nominal inflection + verbal inflection/auxiliary
## + S-V-O pluripersonal concord (in Basque and Georgian)

| 1 BASQ *i* | *Nik hori atsegin dut*<br>'I like that.' | SOV | ni-k PRON<br>ni-1.ERG.SG<br>-t ERG INFL SUFFIX<br>of V under PLRPC | atsegin-V<br>d-u-t-ERG/ABS AUX<br>ABS.3.SG-u-ERG.SG<br>'I have it' | hori PRON. 3.ABS.SG |
|---|---|---|---|---|---|

## IXb. Ergative case indicated by verbal inflection + S-V-O pluripersonal concord

| 4 GEO | *Me davinaxe k'aci.* | SVO | me PRON.1.ERG.SG<br>PLPRC<br>-v- ERG INFL INFIX of V under PLRPC | da-v-i-nax-e V<br>PST-ERG.SG-VERS-nax-ABS.SG | k'aci N.ABS.SG |
|---|---|---|---|---|---|

## X Hybrid
## II/IV – nominative verb inflection + OBL nominal form

| 2 PG*i* | *Sinto-me arrependido/a.* | (S)VOA | (yo) PRON.1.NOM.SG<br>activated by<br>-o-V INFL.1.SG<br>me PRON.1.ACC.SG | sent/sint-o V<br>feel-1.SG<br>arrependid-o/a<br>sorry-SG.M/F | context based |
|---|---|---|---|---|---|

## I+VIIa – word order + possessive form of pronoun in an OBL nominal phrase

| 9 EN | *I broke my leg.* | SVO | I PRON.1.NOM.SG<br>my-POSS.1.SG in OBL NP | broke-0 V.PST-1.SG | leg N.OBL.SG |
|---|---|---|---|---|---|

As can be seen, most of the coding alignments were further refined depending on the specific coding markers involved. The Non-Agent arguments occupy either the Subject or Object surface positions. Combinations involving the Possessive form of pronouns and the Genitive activating Perceiver show quite a striking imbalance between the prominence of their cognitive roles and their fully dependent surface position as either determiners within noun phrases (VIIa,c,d) or their postmodifiers (VIII). The activator of Perceiver may even be reduced to a morpheme level, as exemplified in Hungarian (VIIb). The Portuguese variant of sentence (2) allowed of a combination of the Nominative and Oblique cases in one complex form (see the hybrid coding alignment X above).

## 3.2 *What was the distribution of coding features in the sample?*

Table 3: Distribution of coding alignments used to activate the Non-Agent and two Agent cognitive chains.

| Sentence<br>Language | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 Willed | 9 | 10 | 11 | 12 Willed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| English | I | I | VIIa | I | VI | I<br>IVa | I | I + ADVL | VIIc | VIIc | I | I |
| Danish | I | I | VIIa<br>VIIa | I | IVa | I<br>IVa | I | I+CAUS+LEX | I | VIIa | I | I+CAUS+LEX |
| Swedish | I | I | VIIa<br>VIId | I | VI | I<br>IVa | I | I+CAUS+LEX | I | VIIa | I | I+CAUS+LEX |
| Italian | IVa | Iva | IVa<br>IVa | IIa | IVa<br>IVa | IIa<br>IVa | IVa | IIa+CAUS | V<br>IIb | VIII+refl | VIII | IIb+CAUS+REFL |
| Spanish | IVa | IIa | IVa | IIa | IVa | IVa | V | IIa+LEX | IVa | V+extra DAT | VI+extra ART DAT | IIb+CAUS+LEX |
| Portuguese | IIa | X<br>IIa | IVa | IIa | IVa | IIa | IVa | IIa+LEX<br>IIa+CAUS+LEX | IIa | IIa | VI+extra PRON DAT | IIa+CAUS |
| Slovak | IVa<br>IIa | IVa<br>IVa | IVa | IIa | IVa<br>IV | IIa<br>IVa | IVa | IIa+LEX | IIb | IIb<br>V | IVa | IIb+LEX<br>IIb+CAUS |
| Lithuanian | IVa | IVa | IVa | IIa | IVa | IIa<br>IVa | IVa | IIa+LEX | IIb | IVa | IVa | IIb |
| Bulgarian | IVa<br>IIa | IIa | IVa | IIa | IVa | IIa | IIa | IIa+LEX | IIb+refl | VIII+refl | VI+PRON POSS in NOM NP | IIb+LEX |
| Hungarian | VI<br>IIa | IIa | VIIb | IIa | IIa | IVa<br>IIa | IIa | II+ ADVL | VIIb | VIII | I+intensifier | IIa |
| Basque | IXa<br>IVc | - | IXa | IXa | IVc | III | IVb | IXa+LEX+AUX | VIIa | IXa | IXa | IXa |
| Georgian | IVc | III | IVc | IXb | IVc | IVc<br>III | IVc | IXb+LEX | IVc<br>IXb | IVb | IVb | III |

3.3 *What Cognitive Alignment Frames were identified? What was the distribution of CA-frames across the genetic and morpho-syntactic types of languages in the sample?*

From an onomasiological perspective, the coding alignments listed in 3.1 may be assigned to three major and two minor Cognitive Alignment Frames, or CA-frames, (as was explained above, the issue of case identification was approached onomasiologically in this research, i.e. the case as an interface between the syntactic meaning and form regardless of whether activated by the position, inflection, morphological form of a word, preposition, or concord). The cross-projection of coding alignments and CA-frames is summarized in the Table 4 below and distribution of CA-frames across the sample is summarised in Table 5.

Table 4: CA-frames, coding alignments and specification of coding markers

| | Cognitive Alignment Frame (CA-frame) | Coding (surface) Alignment | | Coding Markers | |
|---|---|---|---|---|---|
| A | $NA_{NOM/ABS}$ – $SP/FOC_{OBL}$ Nominative/Absolutive Non-Agent combined with Oblique Specifier/Focus | I | NOM+V+OBL | I | Word order |
| | | II | NOM+V+OBL | IIa IIb | N/VInfl+S-V Conc IIa detto +OBL Refl |
| | | III | ABS+V+OBL | III | N/VInfl+S-V-O Conc |
| B | $NA_{ERG}$ – $SP/FOC_{ABS}$ Ergative Non-Agent combined with Absolutive Specifier/Focus | IX | ERG+V+ABS | IXa IXb | N/VInfl+S-V-O Conc V Infl +S-V-O Conc |
| C | $NA_{OBL}$–$SP/FOC_{NOM/ABS}$ ObliqueNon-Agent combined with Nominative Specifier/Focus | IV IV IV | NOM+V+OBL ABS+V+OBL ABS+V+OBL | IVa IVb IVc | N/VInfl+S-V Conc N/VInfl+S-V-O Conc VInfl+S-V-O Conc |
| | | V | NOM+V+OBL | V | N/VInfl+ REFL |
| | | VI | NOM+V+$_{PREP}$OBL | VI | Prep + nominal form |
| D | $NA_{POSS}$ in $SP_{NOM}$ $NA_{POSS}$ in $SP_{OBL}$ Possessive Non-Agent in Nominative/Oblique Specifier | VII VII VII VII | $NOM_{POSS}$+V $NOM_{POSS}$+V NOM+V+$OBL_{POSS}$ NOM+V+$_{PREP}OBL_{POSS}$ | VIIa VIIb VIIc VIId | Determiner Nominal inflection Determiner Determiner + Prep |
| E | $NA_{GEN}$ in $SP_{NOM}$ Genitive Non-Agent in Nominative Specifier | VIII | $NOM_{GEN}$+$_{REFL}$V | VIII | Genitive postmodifier |

Table 5: Distribution of CA-frames in the sample, along with the genetic and morho-syntactic typology

| Genetic type | Morpho-syntactic type | Cognitive chain CA frame | NON-AGENT + FOCUS/SPECIFIER | | | | | | | | | Prevailing CA-frame |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | A | | | | B | C | | | D | E | |
| | | Coding type | I | II | III | IX | IV | V | VI | VII | VIII | |
| Indo-European | Isolating | END | 6 | | | | (1) | | 1 | 3 | | A |
| | Isolating | DAN | 7 | | | | 1(1) | | | 2 (1) | | A |
| | Isolating | SW | 7 | | | | 1(1) | | | 2 (1) | | A |
| | Isolating | IT | | 2(1) | | | 5(3) | 1 | | | 2 | C |
| | Isolating | SP | | 2 | | | 5 | 2 | 1 | | | C |
| | Isolating | PG | | 5 (1) | | | 3 | | 1 | | | A |
| | Inflect. | SK | | 4(1) | | | 6 (3) | (1) | | | | C |
| | Inflect. | LITH | 3 | | | | 7(1) | | | | | C |
| | Inflect. | BG | | 5(1) | | | 3 | | 1 | 1 | 1 | A |
| Ugro-Finnic | Agglut. | HU | 1 | 4(2) | | | 1 | | 1 | 2 | 1 | A |
| Basque | Agglut. | BASQ | | | 1 | 5 | 2(1) | | | 1 | | B |
| Caucasian | Agglut. | GEO | | | 2(1) | 1 (1) | 8 | | | | | C |
| Bracketed numbers show second-choice alternatives of respondents, however, they were counted as relevant for the overall CA-frame characteristics. | | | | | | | | | | | | |

As for the coding markers, word order was used as the sole activator of the $NA_{NOM/ABS}$ – $SP/FOC_{OBL}$ contrast in the prototypical analytical languages, namely English, Danish and Swedish. These languages were quite consistent in coding their Non-Agents by word order with minor exceptions of the Possessive form of pronouns as activators of the relationship between the Perceiver and its Specifier. The Argument polysemy of the NOM+OBL surface alignment frame in terms of its being used for both intentional and unintentional Argument chains was compensated by the employment of either causative semi-auxiliaries and distinct lexical verbs, or both (see sentences (8) and (12) in Appendix and also the commentary in Chapter 3.4).

From among the rest of the languages in our sample, the $NA_{NOM/ABS}$ – $SP/FOC_{OBL}$ CA-frame also prevailed in Hungarian: the Non-Agent was coded as NOM in 7 out of 10 sentences, in HU, in Bulgarian and Portuguese: 6 out of 10 sentences (quite interestingly, in Slovak: 5 out of 10 sentences were classified as A/II). Thus, although English, Danish, Swedish, Portuguese and Bulgarian, on the one hand, and Hungarian, on the other, are ranked with the distinct genetic and morphological types (the former being analytical/inflective Indo-European languages, the latter is a synthetic/agglutinative Ugro-Finnic language), when it comes to the activation of Non-Agent, they employ the same Cognitive Alignment Frame (although Hungarian as an agglutinative synthetic language activates the said contrast through inflectional endings rather than by word order). The rest of the languages, whether Romance, Slavonic, Basque or Georgian, showed preference for the $NA_{OBL}$–$SP/FOC_{NOM/ABS}$ CA-frame.

As data in Table 5 indicate, distribution of CA-frames does not thoroughly correspond to the genetic and morho-syntactic classifications. The major CA-frames for the Indo-European languages and the only Ugro-Finnic language in the sample were A and C, however, distributed unevenly across the genera (the only consistent genus in the sample seems to be the Germanic languages). Basque and Georgian were identified to employ all the three major CA-frames, with B being preferred in Basque and C in Georgian.

As for morpho-syntactic typology, analytical/isolating languages (6 in our sample) used both the A and C CA-frames, with A prevailing in four of them (EN, DAN, SW, PG), two of them (IT and SP) prefer the C CA-frame, however, using oblique nominal forms of pronouns as the coding marker (IVa coding marker) rather than the diagnostic analytical marker, i.e. word order. As for the three agglutinative languages, Hungarian, Basque and Georgian, each has its preferred CA-frame, i.e. A, B, and C, respectively. In the inflectional/fusional languages in our sample, the C CA-frame seems to prevail except for Bulgarian which prefers the A CA-frame.

Quite interestingly, Basque and Georgian do not employ the ERG case analogically, with Basque as if being more ERG-oriented. Another observation of a difference between Basque and Georgian is that in Georgian there were identified several instances of case syncretism (cf. sentences (7) and (8)) where the overt pluripersonal concord was accelerated in that the nominal form (pronoun *me*) was activated as DAT (7) or as ERG (8) solely by the verbal inflection:

| 7 GEO | *Me k'alami damivarda.* <br><br> 'I a pen dropped.' unwilled action | OSV | **me** PRON.1.DAT.SG PLRPC m- prefix of V | da-**m**-i-vard-a V PST-**1.DAT.SG**-VERS-vard-3.ABS.SG | k'alami N.ABS.SG | IVb/C PLRPC **-m-DAT** Object -a-ABS Subject |

| 8 GEO | *Me davagde k'alami.* <br><br> 'I dropped a pen.' willed action | SVO | **me** PRON.1.ERG.SG PLPRC -**v**- ERG INFL INFIX of V | da-**v**-a-gd-e V PST-1.ERG.SG-VERS-gde-ABS | k'alami N.ABS.SG | IXb/B **-v-ERG** infix (activating willed action) |

In Basque no such case was identified. Another interesting observation was the existence of the coding alignment subtype IXb (covert ERG Subject activated by the verb´s inflection solely) where the Subject valency element in ditransitive surface alignment was not expressed overtly but only activated by the inflection of the verb:

| 9GEO*ii* | *pexi movit'exe* 'I broke my leg.' | (O)SV | (me) PRON.1.ERG.SG activated by -**v**- infix of V under PLRPC | mo-**v**-i.t'ex-e PST-1.ERG.SG-VERS-break-ABS | pexi N.ABS.SG | |

And similar example in Basque for IVc coding alignment were the verb´s inflection activated the Non-Agent as the sole marker in sentences (1) and (5):

| 5 BASQ | *John pozik dagoela iruditzen zait.* | S<sub>cl</sub>V | Covert 1.DAT.SG activated by -i-DAT INFL INFIX of DAT/ABS AUX za-i-t under PLRPC | iruditzen-V za-**i**-t-DAT/ABS AUX za-1.DAT.SG-3.ABS.SG | John pozik dagoela (SUBORD, FINITE CLAUSE) | IVc/C PLRPC **-i-.DAT Object** -t ABS Subject |

3.4 *What were the major coding markers and CA-frames for intentional argument chains?*

Respondents were also invited to supply two intentional Argument chains, namely Intentional Performer+Theme in sentence (8) (*I dropped a pen*) and Permitter+Resultant in sentence (12) (*John grows a beard in winter*). It was found that the $AG_{NOM/ABS}$ – $PA_{OBL}$ CA-frame prevailed consistently for both sentences (8) and (12), except for Basque having the $AG_{ERG}$ – $PA_{ABS}$ CA-frame in both sentences, and Georgian having the $AG_{ERG}$–$P_{ABS}$ CA-frame in sentence (8), (probably because of the Aorist), and the $AG_{NOM/ABS}$ – $PA_{OBL}$ CA-frame in (12) (probably because of the Present), along with the employment of a distinct verb base for the willed and unwilled action.

        Comparing sentences (7) and (8), only English and Hungarian (also Italian in (9ii)) displayed alignment polysemy of the same formal realization of both the unintentional (7) and intentional (8) variants of *I dropped a pen*. The only indicator admitted by the Hungarian respondent to distinguish between (7) and (8) was to insert '*szándékosan/deliberately*' in sentence (8) (the same as in English, actually), otherwise sentence (8) was ambiguous due to its formal surface identity with (7). All the other languages, quite consistently, used a different lexical base to distinguish the intentionality of the action. Some of them (SW, DEN, IT, PG) also added a causative pseudomodal auxiliary, and, with Permitter, also a reflexive particle was added (IT, SP, SK, LITH, BG).

        Contrasting intentional and unintentional Argument chains in GEO and BASQ, Ergative surface alignment was used for both intentional and Non-Agent cognitive chains. While in BASQ the intentional variants were rendered in ERG+V+ABS surface alignment, in GEO the latter was used only in the Aorist in (8). However, since the ERG surface alignment was distributed across both the intentional and Non-Agent cognitive chains, its choice seemed to be motivated grammatically, i.e. by surface valency ties + tense of the verb in GEO. On the other hand, the GEO respondent admitted sentence (9) (*I broke my leg*) in ERG+V+ABS, while sentence (10) (*The car broke its axle.*) was inadmissible in ERG+V+ABS with her reasoning that in ERG sentence (10) would sound as if the car did it on purpose. Also if sentences (7) and (8) were contrasted as to intentionality (see Chapter 3.3), in the willed variant the Agent was coded as ERG, whereas in the unwilled variant the Patient received the ABS case although both verbs were in the past tense. This somehow indicates that it need not be solely the surface ties which motivate the choice of ERG+V+ABS surface alignment, but that there might be some cognitive motives as well. This would, however, require further examination of the phenomenon.

3.5 *Testing the applicability of the Haspelmath's $EXP_{NOM}$ SAE feature for the languages in the sample*

One of the 12 SAE features postulated by Haspelmath (2001), namely "a preponderance of generalizing predicates to encode experiencers" (2001:1492–1510), assumes that Experiencers appear as surface Subjects in NOM case in the SAE languages. From among the five cognitive alignment frames outlined above, it is the A CA-frame $NA_{NOM/ABS}$ – $SP/FOC_{OBL}$ which meets the parameters of this assumption (coding alignments I, II, III). Although in our research the category of Non-Agent arguments included beside Experiencers also Unintentional Performer and Permitter, the results might be taken as showing some trends.

As can be derived from Table 5, 6 out 12 SAE languages in our sample show preference for personal surface expression of Non-Agent, employing either analytical or inflectional coding markers for that purpose. 5 other languages prefer the C CA-frame, and 1 language employs B CA-frame. Although the number of languages is negligible for any SAE-relevant conclusions, our analysis, at least, indicates that an im/personal way of expressing Non-Agents is not bound to any of the morpho-syntactic or genetic types exclusively, and that each of the languages sampled was able to activate its Non-Agents via both A and C CA-frames.

On the other hand, depending on a particular category of Non-Agent there may be observed a kind of prioritization of certain CA-frames, for example, the A (personal) CA-frame was identified in 10 out of 12 languages for sentence (4) *I*-Perceiver *saw the man.*, or in 8 out 12 languages for sentence (9) *I*-Unintentional Performer *broke my leg*. On the other hand, in the sub-category of Cognizer the C (impersonal) CA-frame was preferred in 11 out of 12 languages for sentence (5) *It seems to me that John….*

As was mentioned above, the C CA-frame diachronically preceded the A CA-frame in the Indo-European language family, so it might be quite legitimate to hypothesize that the A CA-frame used to convey impersonal cognitive chains in the SAE area is due to language contact, as it was identified across genetic and morho-syntactic types of the languages in our sample. However, these preliminary findings do not indicate its massive synchronic prevalence (even the group of analytical languages does not seem to be uniform in this respect), and further research involving the SAE-relevant number of languages is required to either prove or disprove this eurouniversal assumption.


## 4. Conclusions

The research summarized in this paper showed that an onomasiological stance may be quite successfully applied in syntactic typology since it allows of examining language-specific combinations of coding markers employed to activate the cross-linguistically shared cognitive argument chains. It actually proved that each of the respondents in the languages sampled was capable of identifying the respective cognitive chains and rendering them by using their own language-specific flagging.  In our sample ten types of coding alignments were identified for the selected cognitive chains.

The surface arrangements of coding markers rendered five Cognitive Alignment Frames, namely $NA_{NOM/ABS} - SP/FOC_{OBL}$, $NA_{ERG} - SP/FOC_{ABS}$, $NA_{OBL} - SP/FOC_{NOM/ABS}$, $NA_{POSS}$ in $SP_{NOM}/NA_{POSS}$ in $SP_{OBL}$, and $NA_{GEN}$ in $SP_{NOM}$. Each of the languages in the sample employed at least two of the five CA-frames, favouring one of them.   We identified a certain language-specific preference for the respective CA-frames that did not thoroughly overlap with the genetic and morphosyntactic types of languages. Drawing on the genetic and morho-syntactic typology, this cognitive typological approach revealed that the genetically and morphologically distant languages may, in fact, prefer the same CA-frames, for example: English /Analytical-Germanic-Indo-European, Hungarian /Agglutinative Ugro-Finnic, Bulgarian/Analytical-Slavic-Indo-European all prefer the $NA_{NOM/ABS} - SP/FOC_{OBL}$ CA-frame, while the agglutinative ergative languages BASQ and GEO proved to prefer the $NA_{ERG} - SP/FOC_{ABS}$ and $SP/FOC_{NOM/ABS} - NA_{OBL}$, respectively.

The NOM/Subject Experiencer did not prove as the prevailing, first-choice, surface alignment in all of the SAE languages in our sample. Nevertheless, the results of this study are indicative only in this respect, limited by the goals of the research and the size of the corpus,

and further extensive examination would be necessary to draw linguistically substantiated conclusions.

**Abbreviations:**

ABS   Absolutive
ACC   Accusative
ADJ   Adjective
ADV   Adverb
AG    Agent
ART   Article
AUX   Auxiliary
BASQ Basque
BG    Bulgarian
CONC Concord
CAUS Causative pseudomodal auxiliary
CA    Cognitive alignment
DAN   Danish
DAT   Dative
EN    English
ERG   Ergative
EXP   Experiencer
F     Feminine
FOC   Focus
GEO   Georgian
HU    Hungarian
INF   Infinitive
INFL  Inflectional
INS   Instrumental
IT    Italian
LEX   distict lexical base
LITH  Lithuanian
LOC   Local
M     Masculine
N     Noun
NA    Non-Agent
NOM  Nominative
OBL   Oblique
PA    Patient
PG    Portuguese
PL    Plural
PLRPC Pluripersonal concord
PREP  Preposition
PRON Pronoun
PRS   Present
PST   Past
PTCP  Participle

REFL  Reflexive
SG    Singular
SP    Specifier
SK    Slovak
SP    Spanish
SW    Swedish
TH    Theme
V     Verb


## Appendix  Analysis of sentences

### Analysis of Sentence 1      *I like that picture.*

| Lg | Sentence | WO | Emoter | Emotive state | Emotion focus | Coding marker/ Alignment type |
|---|---|---|---|---|---|---|
| EN | *I like that picture.* | SVO | I PRON.1.NOM.SG | like-0 V.PRS-1.SG | that PRON picture N. OBL.SG | I/A |
| DAN | *Jeg synes om det billed.* | SVO | jeg PRON.1.NOM.SG | synes-0 V like-1.SG om-PART | det ART billed N. OBL.SG | I/A |
| SW | *Jag tycker om den bilden.* | SVO | jag PRON.1.NOM.SG | tycker-0 V like-1.SG om-PART | den ART bilden N. OBL.SG | I/A |
| IT | *Mi piace quella foto.* | OVS | mi PRON.1.DAT.SG -e-V Infl.3.SG | piac-e V like-3.SG | quella PRON foto N. NOM.SG | IVa/C |
| SP | *Me gusta esta foto.* | OVS | me PRON.1.DAT.SG -a-V Infl.3.SG | gust-a V like-3.SG | esta PRON foto N. NOM.SG | IVa/C |
| PG | *Eu gosto deste quadro.* | SVO | eu PRON.1.NOM.SG -o-V INFL.1.SG | gost-o V like-1.SG | deste PREP+PRON quadro N.OBL.SG | IIa/A |
| SK*i* | *1.Páči  sa mi ten obraz.* | VOS | mi PRON.1.DAT.SG | páči-0 V like-3.SG sa-REFL PART | ten PRON obraz N.NOM.SG | IVa/C |
| SK*ii* | *2.Mám rada ten obraz.* | (S)VO | (ja)PRON.1.NOM.SG activated by-m- V INFL.1.SG | má-m AUX have-1.SG rad-a-ADJ glad-F | ten PRON obraz N.ACC.SG | IIa/A |
| LITH | *Man patinka tas paveikslas.* | OVS | man PRON.1.DAT.SG | patinka V.3.SG/PL | tas PRON paveikslas N.NOM.SG | IVa/C |
| BG*i* | *Тази картина ми харесва.* | SOV | mi PRON.1.DAT.SG -a-V INFL.3.SG | haresv-a V like-3.SG | tazi PRON kartina N.NOM.SG | IVa/C |
| BG*ii* | *Аз харесвам тази картина.* | SVO | az PRON.1.NOM.SG -am-V INFL.1.SG | haresv-am V like-1.SG | tazi PRON kartina N.OBL.SG | IIa/A |
| HU*i* | *Tetszik nekem az a kép.* 'That picture pleases for me.' | VOS | nekem- PREP+PRON.1.OBL. SG 'for me' | tetszik-0 V like-3.SG/INF | az PRON.ACC.SG a-ART kép N.NOM.SG | VI/C |

| | | | | | | |
|---|---|---|---|---|---|---|
| HU*ii* | *Kedvelem azt a képet.* 'I like that picture.' | (S)VO | (én) PRON.1.NOM.SG activated by -em-V INFL.1.SG | kedvel-em V like-1.SG/INF | azt PRON a ART kép-et N kép-ACC.SG | IIa/A |
| BASQ *i* | *Nik hori atsegin dut.* 'I like that.' | SOV | ni-k PRON ni-1.ERG.SG -t ERG INFL SUFFIX of V under PLRPC | atsegin-V d-u-t-ERG/ABS AUX ABS.3.SG-u-ERG.SG 'I have it' | hori PRON. 3.ABS.SG | IXa/B PLRPC -t ERG Subject -d ABS Object |
| BASQ *ii* | *Hori atsegin zait.* 'That pleases me.' | SV | Covert 3.DAT.SG activated by -i- DAT INFL INFIX of DAT/ABS AUX za-i-t under PLRPC | atsegin-V za-i-t-DAT/ABS AUX 'it/s/he is to me' za-1.DAT.SG-3.ABS.SG | hori PRON. 3.ABS.SG | IVc/C PLRPC -i-DAT Object -t ABS Subject |
| GEO | *Me momc'ons is surati.* 'That picture pleases me.' | OVS | me PRON.1.DAT.SG activated by -m- DAT INFL INFIX of V under PLRPC | mo-m-c'on-s V PRV-DAT.SG-like-3.ABS.SG | is PRON surati N. ABS.SG | IVc/C PLRPC-m-DAT Object -s ABS Subject |

**Commentary:**

A Danish/Swedish respondent admitted that historically they had the form *mig synes* … '(to) me {OBL; V-passive}, also pointing out that the verb conjugation in Danish and Swedish has no person differentiation, and that there is no case inflection in nouns, except for the -s Possessive case.

In BASQ*i dut* is the bivalent transitive (ABS/ERG) present and past indicative form of ´*edun/ezan´* to have´ for a 3rd person ABS argument: -t manifests concord with the first person singular Ergative Experiencer Subject. At the same time the d-manifests concord with the third person Absolutive Focus Object (Hualde 2003: 210, 221-222).

In BASQ*ii zait* is the bivalent intransitive (ABS/DAT) present indicative form of *izan* ´to be´ for a 3rd person ABS argument: -*i*- infix indicates Dative Experiencer – 'to me', while -*t* manifests concord with ABS Stimulus. (Hualde 2003: 210, 212-213). Basque as a highly inflectional language encodes arguments within the internal morphological structure of the verb:

    *dakar-ki-zu-t* (bring-it-to you-I) ki-Theme, zu-Recipient, t-Agent

    *dakar-ki-da-zu* (bring-it-to me-you) ki-Theme, da-Recipient, zu-Agent (Hualde 2003: 209)

In BASQ*i* the Experiencer is the Ergative Subject and the Focus/Stimulus is the Absolutive Object. In BASQ*i* The Focus/Stimulus is the Absolutive Object, and the Experiencer is the Dative Subject. The alternance is reminiscent of the difference between the Latin temere class (temere/fear class with Subject Experiencer) and the piacere class (piacere/appeal to class taking object Experiencer). (Etxepare 2003:44-45)

In Basque two surface strings are available:

SOV: ERG/S+ABS/O + V+ABS/ERG AUX (*dut*) = 'I that like', where the auxiliary manifests concord with the ERG Experiencer in the inflectional suffix -t, or

SV:    ABS/S+V+ABS/DAT AUX (*zait*) = 'That pleases me', where the auxiliary manifests concord with the ABS Focus/Stimulus in the inflectional suffix -*t*-, and, moreover, special attention deserves the fact that the infix -*i*- activates DAT Experiencer, as a sole marker.

Hence, there is a choice between the transitive and intransitive auxiliaries (*dut/ zait*) and inflectional items indicating the syntactic arguments. As can be seen in one string Subject Experiencer is ERG-marked and the required concord is displayed in the selected ERG/ABS auxiliary. Whereas in the other string the Experiencer is coded in the ABS/DAT auxiliary.

In GEO *me* is a case-neutral form of personal pronoun, its ERG or DAT reading is activated by the inflection of the verb based on the rules of pluripersonal concord.

As a generalizing observation it can be pointed out that NOM arguments, whether fixed by word order or nominal/verbal inflection, occur in SVO word order.

## Analysis of Sentence 2      *I feel sorry.*

| Lg | Sentence | WO | Emoter | Emotive state | Emotion focus | Coding marker /Alignment type |
|---|---|---|---|---|---|---|
| EN | *I feel sorry.* | SVA | I PRON.1.NOM.SG | feel-0 V.PRS-1.SG<br>sorry ADJ/ADV | Context based (about that) | I/A |
| DAN | *Jeg er ked af det.* | SVA | jeg PRON.1.NOM.SG | er AUX/copula.1.SG<br>ked-ADJ | af det PREP+ PRON | I/A |
| SW | *Jag är ledsen.* | SVA | jag PRON.1.NOM.SG | är AUX/copula.1.SG<br>ledsen-ADJ | Context based | I/A |
| IT | *Mi dispiace.* | (S)O$_i$V | mi PRON.1.DAT.SG<br>-e-V INFL3.SG | dispiac-e V<br>feelsorry-3.SG | Contex-based | IVa/C |
| SP | *Lo siento.* | (S)OV | -o V INFL.1.SG | sient-o V<br>feelsorry-1.SG | Lo PRON. 3.OBL.SG | IIa/A |
| PG*i* | *Sinto-me arrependido/a.* | (S)VOA | (yo) PRON.1.NOM.SG activated by<br>-o-V INFL.1.SG<br>me PRON.1.ACC.SG | sent/sint-o V<br>feel-1.SG<br>arrependid-o/a<br>sorry-SG.M/F | context based | X/A-C |
| PG*ii* | *Tenho pena.*<br>'I feel regret.' | (S)VO | (yo) PRON.1.NOM.SG activated by<br>-o-V INFL.1.SG | tenh-o V<br>feel-1.SG<br>pena-N<br>regret-ACC.SG | context based | IIa/A |
| SK*i* | *Je mi (to) ľúto.*<br>'Is to me (that) sorry.' | VO(S)A | mi PRON.1.DAT.SG | je AUX<br>be.3.SG<br>ľúto ADV<br>sorry ADV | to PRON.3. NOM.SG | IVa/C |
| SK*ii* | *Mrzí ma to.*<br>'It feels sorry to me.' | VOS | ma PRON.1.ACC.SG | mrz-í V<br>feelsorry-3.SG | To PRON.3. NOM.SG | IVa/C |
| LITH | *Man gaila.* | O(V)A | man PRON.1.DAT.SG | (yra) V PRS.3.SG copula 'be' can be omitted in the present tense | gaila ADV | IVa/C |
| BG | *Съжалявам.* | (S)V | (az) PRON.1.NOM.SG activated by<br>-m-V INFL.1.SG | sâzhalyava-m V<br>feelsorry-1.SG | Contex-based | IIa/A |
| HU | *Sajnálom.* | (S)V | (én) PRON.1.NOM.SG activated by<br>-om-V INFL.1.SG | sajnál-om V<br>feelsorry-1.SG | Context-based | IIa/A |
| BASQ | *Barkatu.* | (S)V | unexpressed emoter | barkatu V<br>impersonal | Context-based | Impersonal verb form |
| GEO | *(Me) vc'uxvar.* | (S)V | (me) PRON.1.ABS.SG activated by v- INFL PREFIX of V under PLRPC | v-c'ux-var V<br>ABS.S-sorry-be | Context-based | III/A<br>v-ABS Subject |

**Commentary:**
PG*i* is interesting in combing NOM nominal and verbal inflection, however, the 1SG verb takes a pronominal particle *-me* that was interpreted by the respondent as the Accusative case. So it seems as a hybrid subtype in between II and IV types.

# Analysis of Sentence 3 *My leg hurts.*

| Lg | Sentence | WO | Perceiver-whole | Perception state | Perceiver-part | Coding marker/ Alignment type |
|---|---|---|---|---|---|---|
| EN | *My leg hurts.* | SV | my PRON POSS.1.SG | hurt-s V.PRS-3.SG | leg N.NOM.SG | VIIa/D |
| DAN*i* | *Mit ben gør ondt.* 'My leg does bad.' | SVA | mit PRON POSS.1.SG | gør V.3.SG&PL ondt ADJ | ben N.NOM. SG&PL | VIIa/D |
| DAN*ii* | *Det gør ondt i mit ben.* 'It does bad in my leg.' | SVAA | mit PRON POSS.1.SG | gør V.3.SG ondt ADJ det formal Subject | i PREP ben N.OBL. SG&PL | VIIb/D |
| SW*i* | *Mitt ben gör ont.* | SVA | mitt PRON POSS.1.SG | gör V.3.SG&PL ondt ADJ | ben N.NOM. SG&PL | VIIa/D |
| SW*ii* | *Det gör ont i mitt ben.* | SVAA | mitt PRON POSS.1.SG | gör V.3.SG ont ADJ det formal Subject | i PREP ben N.OBL. SG&PL | VIIb/D |
| IT*i* | *Mi fanno male le gambe.* 'To me legs do disease.' | OVS | mi PRON. 1.DAT.SG | fanno V.3.PL male N.M.SG | le ART gambe N.NOM.PL | IVa/C |
| IT*ii* | *Mi dolgono le gambe.* (formal register) | OVS | mi PRON. 1.DAT.SG | dolgono V.3.PL | le ART gambe N.NOM. PL | IVa/C |
| SP | *Me duele la pierna.* | OVS | me PRON. 1.DAT.SG | duele V.3.SG | la ART pierna N.NOM.SG | IVa/C |
| PG | *Dói-me a perna.* | VOS | me PRON. 1.DAT.SG | dói V.3.SG | a ART perna N.NOM.SG | IVa/C |
| SK | *Bolí ma noha.* | VOS | ma PRON. 1.ACC.SG | bol-í V hurt-3.SG | noha N.NOM.SG | IVa/C |
| LITH | *Man skauda koją.* | OVS | man PRON. 1.DAT.SG | skauda V.3. SG | koją N.NOM.SG | IVa/C |
| BG | *Боли ме кракът.* | VOS | me PRON. 1.ACC.SG | boli V.3.SG | Krakât N.NOM.SG +ART | IVa/C |
| HU | *Fáj a lábam.* | VS | -am-POSS.1.SG | fáj V.3.SG | a ART láb-am N NOM.POSS.1.SG | VIIc/D |
| BASQ | *Nik mina daukat nire hankan.* | SVO | ni-k PRON ni-1.ERG.SG -t ERG INFL SUFFIX of AUX under PLRPC nire-POSS-1.SG | mina-V d-auka-t -ERG/ABS AUX; ABS.3.SG-auka-ERG.SG | hankan N.ABS.SG | IXa/B PLRPC -t ERG Subject -d ABS Object |
| GEO | *Pexi mt'k'iva.* | (O)SV | (me) PRON.1.DAT.SG activated by m- INFL PREFIX of V under PLRPC | m-t'k'iv-a V 1.DAT.SG-t'k'iv-3.ABS.SG | pexi N.ABS.SG | IVc/C m-DAT Object -a-ABS Subject |

**Commentary:**
In HU the Possessive case is activated synthetically by the nominal inflection rather than by a separate pronoun.
In BASQ the auxiliary *daukat* is a 1st person singular present indicative form of *eduki* 'to have' (transitive verbs) of a 3rd person singular object; -*t* manifests pluripersonal agreement of the auxiliary with the Ergative Subject and *d*- with the Absolutive Object. (Hualde 2003: 234). Moreover, the Possessive case is overtly realized by the possessive pronoun *nire*.
In GEO *m*-inflectional prefix of the verb activates the DAT Object Perceiver leaving it fully covert. This is possible based on the pluripersonal concord rules (the combination of the *m*- implied Object Perceiver and -*a* implied ABS Subject/Part of Perceiver (*pexi*/ABS), with no possessive indicator in contrast to BASQ.

## Analysis of Sentence 4 *I saw the man.*

| Lg | Sentence | WO | Perceiver | Perception State | Perception focus | Coding marker /Alignment type |
|----|----------|----|-----------|------------------|------------------|------------------------------|
| EN | *I saw the man.* | SVO | I PRON.1.NOM.SG | saw-0 V.PST-1.SG | the ART man N.OBL.SG | I/A |
| DAN | *Jeg så manden.* | SVO | jeg PRON.1.NOM.SG | så-0 V saw-1.SG | mand-en N OBL.SG-ART | I/A |
| SW | *Jag såg mannen.* | SVO | jag PRON.1.NOM.SG | såg-0 V saw-1.SG | mann-en N OBL.SG-ART | I/A |
| IT | *Ho visto l'uomo.* | (S)VO | (io) PRON.1.NOM.SG activated by -o-V INFL.1.SG | h-o-AUX have-1.SG vist-o-PST PTCP see-M.SG | l'-uomo ART-N.OBL.SG | IIa/A |
| SP | *Vi al hombre.* | (S)VO | (yo) PRON.1.NOM.SG activated by -i-V INFL.1.SG | v-i V see-PST.1.SG | al ART hombre N.OBL.SG | IIa/A |
| PG | *Vi o homem.* | (S)VO | (eu) PRON.1.NOM.SG activated by -i-V INFL.1.SG | v-i V see-PST.1.SG | o ART homem N.OBL.SG | IIa/A |
| SK | *Videl som toho muža.* | (S)VO | (ja) PRON.1.NOM.SG activated by som-AUX be-PRS.1.SG | vide-l-0 V see-PST-M som-AUX be-PRS.1.SG | toho PRON muža N. ACC/OBL.SG | IIa/A |
| LITH | *Pamačiau žmogų.* | (S)VO | (aš) PRON.1.NOM.SG activated by V INFL | pamačiau V.1;SG | žmogų N. OBL/ACC.SG | IIa/A |
| BG | *(Аз)Видях мъжа.* | (S)VO | (az) PRON.1.NOM.SG activated by -h-V INFL.1.SG | vidya-h V see-PST.1.SG | mâzha N. OBL/ACC.SG | IIa/A |
| HU | *Láttam az embert.* | (S)VO | (én) PRON.1.NOM.SG activated by -m-V INFL.1.SG | lát-ta-m V lát-PST-1.SG | az ART embert N. OBL/ACC.SG | IIa/A |
| BASQ | *Nik gizona ikusi nuen.* | SOV | ni-k PRON ni-1.ERG.SG n- ERG INFL PREFIX of AUX under PLRPC | ikusi-V n-u-en ERG/ABS AUX ERG.SG-u-ABS.3.SG | gizona N.ABS.SG | IXa/B PLRPS n- ERG Subject -en ABS Object |
| GEO | *Me davinaxe k'aci.* | SVO | me PRON.1.ERG.SG PLPRC -v- ERG INFL INFIX of V under PLRPC | da-v-i-nax-e V PST-ERG.SG-VERS-nax-ABS.SG | k'aci N.ABS.SG | IXb/B PLRPS -v- ERG Subject -e- ABS Object |

**Commentary:**
In BASQ the bivalent transitive ABS/ERG past indicative form of ´edun/ezan´ to have´ is used to activate a third person ABS argument in combination with the ERG Subject. In the present tense the ERG Argument (the Subject) is encoded by a suffix (du-t) (see the analysis of sentence 1 in BASQi), in the past by a prefix n-. (Hualde 2003:222). It is so called *ergative displacement* (ibid 207).

**Analysis of Sentence 5** *It seems to me that John is happy.*

| Lg | Sentence | WO | Cognizer | Cognition state | Cognition Focus | Coding marker /Alignment type |
|---|---|---|---|---|---|---|
| EN | *It seems to me that John is happy.* | SVOprepS_cl | to PREP me PRON.OBL.SG | seem-s V.PRS-3.SG | it formal Subject that John is happy (SUBORD. FINITE CLAUSE) | VI/C |
| DAN | *Det forekommer mig at John er glad.* | SVOiS_cl | mig PRON.1.OBL.SG | forekommer-0 V seem-3.SG | det formal Subject at John er glad (SUBORD FINITE CLAUSE) | IVa/C Word Order rather than SV concord is employed |
| SW | *För mig det verkar som att John är glad.* | OprepSVS_cl | för PREP mig PRON.1.OBL.SG | verkar-0 V seem-3.SG | det formal Subject som att John är glad (SUBORD FINITE CLAUSE) | VI/C |
| IT*i* | *Mi sembra che John sia felice.* | OVS_cl | mi PRON.1.OBL/DAT. SG | sembr-a V seem-3.SG | che J. sia felice (SUBORD. FINITE CLAUSE in SUBJUNCTIVE MOOD) | IVa/C |
| IT*ii* | *John mi sembra felice.* | SOVA | mi PRON.1.OBL/DAT. SG | sembr-a V seem-3.SG | John N.NOM.SG felice ADJ- split cognitive unit | IVa/C |
| SP | *Me parece que John esta contento.* | OVS_cl | me PRON.1.OBL/DAT.SG | parece V.3.SG | que John esta contento (SUBORD FINITE CLAUSE) | IVa/C |
| PG | *Parece-me que o João está feliz.* | VOS_cl | me PRON.1.OBL/DAT.SG | parece V.3.SG. | que o João está feliz (SUBORD. FINITE CLAUSE) | IVa/C |
| SK*i* | *Zdá sa mi, že John je šťastný.* | VOS_cl | mi PRON.1; OBL/DAT.SG | zdá-0 V seem-3.SG sa-REFL PART | že John je šťastný (SUBORD FINITE CLAUSE) | IVa/C |
| SK*ii* | *John sa mi zdá šťastný.* | SOVA | mi PRON.1.OBL/DAT.SG | zdá V.3.SG sa REFL PART | John N.NOM.SG šťastný ADJ split cognitive unit | IVa/C |
| LITH | *Man atrodo, kad Jonas laimingas.* | OVS_cl | man PRON.1.OBL/DAT.SG | atrodo V.3.SG | kad Jonas laimingas (SUBORD. FINITE CLAUSE) | IVa/C |
| BG | *Струва ми се, че Джон е щастлив.* | VOS_cl | mi PRON.1.OBL/DAT.SG | struva V.3.SG se REFL PART | che Dzhon e tshastliv (SUBORD. FINITE CLAUSE) | IVa/C |
| HU | *Úgy vélem, (hogy) János boldog.* | AVS_cl | (én) PRON.1.NOM.SG activated by -em-V INFL.1.SG | úgy ADVL vél-em V seem-1.SG | (hogy) János boldog (SUBORD. FINITE CLAUSE) | IIa/A |

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| BASQ | *John pozik dagoela iruditzen zait.* | S$_{cl}$V | Covert 1.DAT.SG activated by -i-DAT INFL INFIX of DAT/ABS AUX za-i-t under PLRPC | iruditzen-V za-i-t-DAT/ABS AUX za-1.DAT.SG-3.ABS.SG | John pozik dagoela (SUBORD, FINITE CLAUSE) | IVc/C PLRPC -i-.DAT Object -t ABS Subject |
| GEO | *Me mečveneba, rom džoni bednieria.* | OVS$_{cl}$ | me PRON.1. DAT.SG PLRPC m- DAT INFL PREFIX of V under PLRPC | m-e-čveneb-a V 1.DAT.SG-PASS-čveneb-3.ABS.SG | rom džoni bednieria. (SUBORD. FINITE CLAUSE) | IVc/C PLRPC m-DAT Object -a-ABS Subject |

**Commentary:**
Similarly as in Emoter in sentence 1, BASQ activates DAT Cognizer solely by the verb´s inflection.
The only language activating Cognizer in this sentence by NOM is Hungarian. All the other languages employ OBL cases.

## Analysis of Sentence 6    *I am interested in music.*

| Lg | Sentence | WO | Cognizer | Cognition state | Cognition focus | Coding Marker/ Alignment type |
|---|---|---|---|---|---|---|
| EN*i* | *I am interested in music.* | SVCsA | I PRON.1.NOM.SG | am-AUX.PSR.1.SG interested-PTCP | in PREP music N.OBL.SG | I/A |
| EN*ii* | *Music interests me.* | SVO | me PRON.1.OBL.SG | interest-s V interest-3.SG | music N.NOM.SG | IVa/C |
| DAN*i* | *Jeg er interesseret i musik.* | SVCsA | jeg PRON.1.NOM.SG | er AUX be.1.SG interesseret -ADJ | i PREP music N.OBL.SG | I/A |
| DAN*ii* | *Musik interesserer mig.* | SVO | mig PRON.1.OBL.SG | interesserer-0 interest-3.SG | music N.NOM.SG | IVa/C |
| SW*i* | *Jag är intresserad av musik.* | SVCsA | jag PRON.1.NOM.SG | är AUX be.1.SG intresserad –ADJ | av PREP music N.OBL.SG | I/A |
| SW*ii* | *Musik intresserar mig.* | SVO | mig PRON.1.OBL.SG | intresserar-0 V interest-3.SG | music N.NOM.SG | IVa/C |
| IT*i* | *Sono interessato alla musica.* | (S)VCsA | (io) PRON.1.NOM.SG activated by -o-V INFL SUFFIX.1.SG | son-o AUX be-M.1.SG interesat-o-PST PTCP interested-M.1.SG | alla PREP+ART. F musica N. OBL.SG | IIa/A |
| IT*ii* | *Mi interessa la musica.* | OVS | mi PRON.1.OBL/DAT.SG | interess-a V interest-3.SG | la ART musica N. NOM.SG | IVa/C |
| SP | *Me interesa la musica.* | OVS | me PRON.1.OBL/DAT.SG | interes-a V interest-3.SG | la ART musica N. NOM.SG | IVa/C |
| PG | *Estou interessado/a em música.* | (S)VCsA | (eu) PRON.1.NOM.SG activated by -ou-V INFL SUFFIX.1.SG) | est-ou-AUX be-1.SG interessad-o-ADJ interested-1.M | em PREP música N. OBL.SG | IIa/A |
| SK*i* | *Zaujímam sa o hudbu.* | (S)VA | (ja) PRON.1.NOM.SG activated by -m-V INFL SUFFIX.1;SG | zaujíma-m V interest-1.SG sa-REFL PART | o PREP hudbu N.LOC.SG | IIa/A |
| SK*ii* | *Zaujíma ma hudba.* | VOS | ma PRON.1.OBL/ACC.SG | zaujím-a V interst-3.SG | hudba N.NOM.SG | IVa/C |

| LITH*i* | *Domiuosi muzika.* | (S)VA | (aš) PRON.1.NOM.SG | domiuosi V interst-1.SG.REFL | muzika N.OBL/INS.SG | IIa/A |
|---|---|---|---|---|---|---|
| LITH*ii* | *Mane domina muzika.* | OVS | mane PRON.1.OBL/ACC.SG | domina V interest-3.SG | muzika N.NOM.SG | IVa/C |
| BG | *Интересувам се от музика.* | (S)VA | (az) PRON.1.NOM.SG -m-V INFL SUFFIX.1.SG | interesuva-m V interest-1.SG se-REFL PART | ot PREP muzika N.OBL.SG | IIa/A |
| HU*i* | *Érdekel engem a zene.* 'Music interests me.' | VOS | engem PRON.1.OBL.SG | érdekel V interst-3.SG | a ART zene N.NOM.SG | IVa/C |
| HU*ii* | *Foglalkozom a zenével.* 'I deal with music.' | (S)VA | (én) PRON.1.NOM.SG activated by -om-V INFL SUFFIX.1.SG | foglalkoz-om V deal-1.SG | a ART zené-vel N.OBL.SG | IIa/A |
| BASQ | *Ni musican interesatuta nago.* | SAV | ni PRON.1.ABS.SG | interesatuta V nag-o AUX nag-1.ABS.SG | musican N.LOC.SG | III/A OBL-LOC |
| GEO*i* | *Me maint'eresebs musik'a.* | OVS | me PRON.1.DAT.SG PLRPC m- prefix of V | m-a-intereseb-s V 1.DAT.SG-VERS-interseb-3.ABS.SG | musik'a N.ABS.SG | IVc/C PLRPC m-DAT Object -s-ABS Subject |
| GEO*ii* | *Me daint'eresebuli var musik'it.* | SVA | me- PRON.1.ABS.SG | daint'eresebuli-PTCP/ADJ var-PASS.1.SG | musik'-it N musik'-OBL/INSTR.SG | III/A OBL-INSTR |

**Commentary:**
BASQ *-an* in *musican* is a locative inflectional ending (Hualde 2003:185)
In GEO, 1SG pronoun has the same form for both the DAT Object and ABS Subject (and also ERG Subject in sentence 4), so it is the verb's inflection that activates a particular DAT/ABS/ERG interpretation of the nominal element.

## Analysis of Sentence 7     *I dropped a pen.* (unwilled action)

| Lg | Sentence | WO | Unintentional Performer | Unwilled Action | Specifier | Coding marker/ Alignment type |
|---|---|---|---|---|---|---|
| EN | *I dropped a pen.* | SVO | I PRON.1.NOM.SG | dropp-ed-0 V drop-PST-1.SG | a ART pen N.OBL.SG | I/A |
| DAN | *Jeg tabte en pen.* | SVO | jeg PRON.1.NOM.SG | tabte V drop-PST.1.SG | en ART pen N.OBL.SG | I/A |
| SW | *Jag tappade en penna.* | SVO | jag PRON.1.NOM.SG | tappade V drop-PST.1.SG | En ART penna N.OBL.SG | I/A |
| IT | *Mi è caduta una penna.* | OVS | mi PRON.1.OBL/DAT.SG | é-0 AUX be-3.SG cadut-a fall-PST PTCP.F.SG | una ART penna N.NOM.SG | IVa/C |
| SP | *Se me cayo el boligrafo.* | OVS | me PRON.1.OBL/.DAT.SG | se-REFL PART cay-o V fall-PAST.3.SG | el ART boligrafo N.NOM.SG | V/C |
| PG | *Caiu-me uma caneta.* | VOS | me PRON.1.OBL/.DAT.SG | caiu-0 V fall-PST.3.SG | uma ART caneta N.NOM.SG | IVa/C |
| SK | *Spadlo mi pero.* | VOS | mi PRON.1.OBL/DAT.SG | spadl-o V fall-PST.3.SG | pero N.NOM.SG | IVa/C |
| LITH | *Man iškrito pieštukas.* | OVS | man PRON.1.OBL/DAT.SG | iškrito-0 V fall-PST.3.SG | pieštukas N.NOM.SG | IVa/C |
| BG | *Изпуснах един химикал.* | (S)VO | (az) PRON.1.NOM.SG activated by | izpusna-h V drop-PST.1.SG | edin NUM himikal N.OBL.SG | IIa/A |

| | | | -h-V INFL SUFFIX.1.SG | | | |
|---|---|---|---|---|---|---|
| HU | *Leejtettem egy tollat.* | (S)VO | (én) PRON.1. NOM.SG -em (V Infl; 1;SG) | leejt-ett-em V drop-PST-1.SG | egy ART tollat N.OBL/ACC.SG | IIa/A |
| BASQ | *Niri boligrafoa erori zait.* | OSV | niri PRON.1.DAT.SG -i- DAT INFL INFIX of DAT/ABS AUX za-i-t under PLRPC | erori V za-i-t-DAT/ABS AUX 'it/s/he is to me' za-1.DAT.SG-3.ABS.SG | boligrafoa N. ABS.SG | IVb/C PLRPC -i-DAT Object -t ABS Subject |
| GEO | *Me k'alami damivarda.* | OSV | me PRON.1.DAT.SG PLRPC m- prefix of V | da-m-i-vard-a V PST-1.DAT.SG-VERS-vard-3.ABS.SG | k'alami N.ABS.SG | IVc/C PLRPC -m-DAT Object -a-ABS Subject |

**Commentary:**

The term Specifier is used to refer to a component of the Unintentional Performer, its belongings, body part etc.

## Analysis of Sentence 8     *I dropped a pen.* (willed action)

| Lg | Sentence | WO | Intentional Performer | Willed Action | Theme | Coding Marker/Alignment type |
|---|---|---|---|---|---|---|
| EN | *I dropped a pen (intentionally).* | SVO | I PRON.1.NOM.SG | dropp-ed-0 V drop-PST-1.SG | a ART pen NOBL.SG | I/A+ADVL |
| DAN | *Jeg lod en pen falde.* 'I let a pen fall.' | SVO | jeg PRON.1.NOM.SG | lod-0 AUX let-1.SG falde V INF | en ART pen N.OBL.SG | I/A+ pseudomodal causative AUX+ lexical verb |
| SW | *Jag lät falla en penna.* 'I let a pen fall.' | SVO | jag PRON.1.NOM.SG | lät-0 AUX let-1.SG falla V INF | en ART penna N.OBL.SG | I/A+ pseudomodal causative AUX+ lexical verb |
| IT | *Ho fatto cadere una penna.* 'I made a pen fall.' | (S)VO | (io) PRON.1. NOM.SG activated by -o-V INFL.1.SG | h-o AUX have-1.SG fatt-o-PST PTCP made-M.SG | una ART penna N.OBL.SG | IIa/A+pseudomodal causative AUX |
| SP | *He tirado el boligrafo.* 'I threw a pen.' | (S)VO | (yo) PRON.1. NOM.SG activated by -o-V INFL.1.SG | h-e AUX be-1.SG tirad-o PST PTCP throw-M.SG | el ART boligrafo N.OBL.SG | IIa/A+lexical verb |
| PG*i* | *Atirei uma caneta.* 'I threw a pen.' | **(S)**VO | (eu) PRON.1. NOM.SG activated by -ei-V INFL.1.SG | atir-ei V throw-PST.1.SG | uma ART caneta N.OBL/ ACC.SG | IIa/A+lexical verb |
| PG*ii* | *Eu deixei cair a caneta.* 'I let fall a pen.' | SVO | eu PRON.1.NOM.SG -ei-V INFL.1.SG | deix-ei AUX let-PST.1.SG cair V INF | a ART caneta N.OBL/ACC.SG | IIa/A+ pseudomodal causative AUX + lexical verb |
| SK | *Z/odhodil som pero.* 'I threw a pen.' | (S)VO | (ja) PRON.1.NOM.SG activated by | z/odhodi-l V throw-PST.M.SG som AUX | pero N.ACC.SG | IIa/A+lexical verb |

| | | | som-AUX be-PRS.1.SG | be-PRS.1.SG | | |
|---|---|---|---|---|---|---|
| LITH | *Išmečiau pieštuką.* | (S)VO | (aš) PRON.1. NOM.SG | išmečiau V throw-PST.1.SG | pieštuką N.ACC.SG | IIa/A+lexical verb |
| BG | *Хвърлих един химикал.* | (S)VO | (az) PRON.1. NOM.SG activated by -h-V INFL SUFFIX.1.SG | hvarli-h V throw-PST.1.SG | edin NUM himikal N.OBL.SG | IIa/A+lexical verb |
| HU | *(Szándékosan) Leejtettem egy tollat.* | (A)(S) VO | (én) PRON.1. NOM.SG -em-V INFL SUFFIX.1.SG | leejt-ett-em V drop-PST-1.SG szándékosan ADVL intentionally | egy ART tollat N.ACC.SG | IIa/A+ADVL |
| BASQ | *Nik boligrafoa bota dut.* | SOV | ni-k PRON ni-1.ERG.SG -t ERG INFL SUFFIX of V under PLRPC | bota V d-u-t-ERG/ABS AUX 3.ABS.SG-u-ERG.SG 'I have it' | boligrafoa N.ABS.SG | IXa/B PLRPC -t ERG Subject -d ABS Object |
| GEO | *Me davagde k'alami.* | SVO | me PRON.1.ERG.SG PLPRC -v- ERG INFL INFIX of V | da-v-a-gd-e V PST-1.ERG.SG-VERS-gd-ABS | k'alami N.ABS.SG | IXb/B v-ERG infix (activating willed action) |

## Analysis of Sentence 9 *I broke my leg* (unwilled action)

| Lg | Sentence | WO | Unintentional Performer | Unwilled Action | Specifier | Coding Marker/Alignment type |
|---|---|---|---|---|---|---|
| EN | *I broke my leg.* | SVO | I PRON.1.NOM.SG my-POSS.1.SG in OBL NP | broke-0 V.PST-1.SG | leg N.OBL.SG | VIId/D |
| DAN | *Jeg brækkede benet.* | SVO | jeg PRON.1.NOM.SG | brækkede V break-PST.1.SG | benet N+ART.OBL.SG | I/A |
| SW | *Jag bröt benet.* | SVO | jag PRON.1.NOM.SG | bröt V break-PST.1.SG | benet N+ART.OBL.SG | I/A |
| ITi | *Mi si è rotta una gamba.* | OVS | mi PRON.1.DAT.SG | é AUX be-3.SG rott-a break-PST PTCP.F. SG si REFL PART | la ART gamba N.NOM.SG | V/C |
| ITii | *Mi sono rotto la gamba.* | OVS | (io) PRON.1.NOM.SG activated by -o V inflection mi PRON.1.DAT.SG | son-o AUX be-1.SG rott-o break-PST PTCP.1. SG | la ART gamba N.OBL.SG | IIb/A |
| SP | *Me he roto la pierna.* | OVS | me PRON.1.DAT.SG | h-e AUX be-3.SG rot-o break-PST PTCP.M.SG | la ART pierna N.NOM.SG | IVa/C |

| Lg | Sentence | WO | | | | |
|---|---|---|---|---|---|---|
| PG | *Parti uma perna.* | **(S)**VO | (eu) PRON.1.NOM.SG activated by -i-V INFL.1.SG | part-i V break-PST.1.SG | uma ART perna N.ACC.SG | IIa/A |
| SK | *Zlomil som si nohu.* 'I broke to me a leg.' | (S)VO | (ja) PRON.1.NOM.SG activated by som-AUX be-PRS.1.SG si-REFL.DAT.SG | zlomi-l V break-PST.M.SG som AUX be-PRES.1.SG si-REFL.1.DAT.SG | nohu N.ACC.SG | IIb/A |
| LITH | *Susilaužiau koją.* | (S)VO | (aš) PRON.1.NOM.SG | susilaužiau V REFL.1.SG | koją N.ACC.SG | IIb/A |
| BG | *Счупих си крака.* | (S)VO | (az) PRON.1.NOM.SG activated by -h-V INFL SUFFIX.1.SG si-PRON REFL.1. OBL/DAT.SG. | schupi-h V break-PST.1.SG si-PRON REFL.1.DAT.SG | krakâ N.OBL.SG+ART | IIb/A |
| HU | *Eltört a lábam.* 'I broke my leg.' | VS | -am NOM.POSS.1.SG | eltört V break-PST.3.SG | a ART láb-am N. NOM.POSS.1.SG | VIIc/D |
| BASQ | *Nire hanka apurtu dut.* | SV | nire- PRON POSS.1.SG | apurtu-V.PERF dut-AUX.ABS (present perfect consists of perfect verb form + indicative form of AUX – intransitive) | hanka N.ABS.SG | VIIa/D |
| GEO | *(Me) pexi momt'q'da.* | (O)SV | (me) PRON.1.DAT.SG activated by -m- INFIX of V under PLRPC | mo-m-t'q'-d-a V PST-1.DAT.SG-t'q-PASS-ABS | pexi N.ABS.SG | IVc/C m-DAT Object -a-ABS Subject |
| GEO*ii* | *Pexi movit'exe.* | (O)SV | (me) PRON.1.ERG.SG activated by -v- INFIX of V under PLRPC | mo-v-i.t'ex-e PST-1.ERG.SG-VERS-break-ABS | pexi N.ABS.SG | IXb/B |

**Commentary:**
In IT , as results from the respondents´ comments, the variant ITii is most frequently used. On the other hand, it activates argument polysemy since it may also be interpreted intentionally if John did the breaking intentionally. Although the intentional variant would be pragmatically improbable, it may be activated by the use of disjunct *intenzionalmente* that would render the willed argument chain: *Mi sono rotto la gamba volontariamente / intenzionalmente.* Another intentional variant may be *Ho rotto la mia gamba.* which would not sound quite common, but would be interpretable as a willed argument chain most probably due to the pronoun *mia*.

## Analysis of Sentence 10 *The car broke its axle.*

| Lg | Sentence | WO | Unintentional Performer | Unwilled Action | Specifier | Coding Marker/Alignment type |
|---|---|---|---|---|---|---|
| EN | *The car broke its axle.* | SVO | the ART car N.NOM.SG its PRON POSS.3.SG in OBL NP | broke-0 V.PST-1.SG | axle N.OBL.SG | VIId/D |
| DAN | *Bilens hjul gik i stykker.* | SV | bilens N.GEN.SG | gik V go-PST.3.SG i PREP stykker OBL.PL 'went into pieces' | hjul N.NOM.SG | VIIa/D |

| | | | | | | |
|---|---|---|---|---|---|---|
| SW | *Bilens hjul gick sönder.* | SV | bilens N.GEN.SG | gick V<br>go-PST.3.SG<br>sönder ADJ | hjul<br>N.NOM.SG | VIIa/D |
| IT | *Si è rotto l'asse della macchina.* | VS | della PREP+ART<br>macchina N.GEN.SG | si REFL PART<br>é AUX<br>be-3.SG<br>rott-o<br>break-PST<br>PTCP.M.SG | l'asse<br>ART+N.NOM.SG | VIII/E + REFL PART |
| SP | *Al coche se le ha roto la rueda.* | SVO | al ART<br>coche N.OBL.SG<br>le PRON.3.DAT.SG | se REFL PART.3.SG<br>h-a AUX<br>have-3.SG<br>rot-o<br>break-PST PTCP.M.SG<br>se REFL PART.3.SG<br>for unplanned occurrence | la ART<br>rueda<br>N.NOM.SG | V/C<br>(N-DAT<br>Le- DAT<br>Se- REFL PART) |
| PG | *O carro partiu o eixo.* | SVO | o ART<br>carro N.NOM.SG<br>-iu (INFL; NOM, 3SG) | part-iu V<br>break-PST.3.SG | o ART<br>eixo<br>N.ACC.SG | IIa/A |
| SK*i* | *Auto si zlomilo nápravu.* | SVO | aut-o N.NOM.SG<br>si PRON<br>REFL.1.DAT.SG | zlomi-l-o V<br>break-PST-N.3.SG<br>si PRON<br>REFL.1.DAT.SG | náprav-u N.ACC.SG | IIb/A+REFL |
| SK*ii* | *Autu sa zlomila náprava.* | OVS | aut-u N.SG.DAT | zlomi-l-a V<br>break-PST-F.3.SG<br>sa REFL PART | náprav-a N.NOM.SG | V/C |
| LITH | *Automobiliui sulūžo ašis.* | OVS | automobiliui N.DAT.SG | sulūžo V<br>break-PST.3.SG | ašis<br>N.NOM.SG | IVa/C |
| BG | *Счупи се оста на колата.* | VS | na PREP<br>kolata N+ART<br>OBL/GEN.SG | schupi V.3.SG<br>se REFL PART | os-ta<br>N.OBL.SG-ART | VIII/E +REFL PART |
| HU | *Az autó kereke eltört*<br>'Car wheel-its broke.' | SV | az ART<br>autó N.NOM.SG | eltör-t V<br>break-PST.3.SG | kerek-e N.OBL.SG-POSS.3 | VIIc/D+POSSESSIVENESS<br>activated by -e suffix of Specifier |
| BASQ | *Kotxeak bere gurpila apurtu zuen*<br>'Car his wheel broke.' | SOV | kotxeak N.ERG.SG<br>bere PRON.POSS.3.SG<br>z- ERG INFL PREFIX of AUX under PLRPC | apurtu-V<br>z-u-en-ERG/ABS AUX<br>ERG.SG-u-ABS.3.SG | gurpila<br>N.ABS.SG | IXa/B<br>PLRPC<br>z- ERG Subject<br>-en- ABS Object |
| GEO | *Mankanas lilvi most'q'da.* | OSV | mankana-s N<br>mankana-DAT.SG<br>PLRPC<br>-s-DAT INFL INFIX of V | mo-s-t'q'-d-a V<br>PST-3.DAT.SG- t'q'-PASS-ABS<br>/Preverb-Ind.OBJ-brake-PASSIV-3SUBJ/ | lilvi<br>N.ABS.SG | IVb/C<br>PASS verb form (passive indicated by -d- infix)<br>-s- DAT Subject<br>-a-ABS Subject |

**Commentary:**
In BASQ auxiliary *z-u-en* the ERG concord is activated by the prefix -z (Hualde 2003:222).
Only EN and PG allow of the NOM Subject frame. SK has a NOM variant of Subject, but it is accompanied with DAT reflexive pronoun. BASQ ERG/NOM frame is possible while in GEO it is DAT/ABS only. As the respondent remarked the sentence would sound funny in Ergative as if a car were animated and it broke its axle willingly. This note might support an

idea that in GEO ERG plays a certain role as cognitive indicator, although in most of the sampled sentences it is used as coding marker of the Subject when combined with ABS Argument in Aorist only.

## Analysis of Sentence 11 *Centipedes grow their legs* *(at different points in their development).*

| Lg | Sentence | WO | Unintentional Performer | Unwilled Action | Specifier | Coding Marker/Alignment type |
|---|---|---|---|---|---|---|
| EN | *Centipedes grow their legs.* | SVO | centipedes N.NOM.PL their PRON POSS.3.PL in OBL NP | grow-0 V.PRS-3.PL | legs N.OBL.PL | I/A + POSS PRON – DET in OBL NP |
| DAN | *Tusindben får ben.* | SVO | tusindben N.NOM. SG&PL | får-0 V grow-3. SG&PL | ben N+ART.OBL. SG&PL | I/A |
| SW | *Tusenfotingar utvecklar ben .* | SVO | tusenfotingar N.NOM.PL | utvecklar-0 V grow-3.PL | ben N+ART OBL.SG&PL | I/A |
| IT | *Le gambe dei millepiedi crescono.* | SV | dei PREP+ART millepiedi N.GEN.PL | crescon-o V grow-3.PL | le ART gambe N.F.NOM. PL | VIII/E |
| SP | *A los ciempiés les crecen las piernas.* | OVS | a los PREP+ART ciempiés N.DAT.PL las ART.DAT.3.PL | crecen-0 V grow-3.PL | las ART piernas N.NOM.PL | VI/C + extra ART DAT |
| PG | *Às centopeias crescem-lhes pernas.* 'To the centipedes grow-to.them legs.' | OVS | ás ART centopeias N.DAT.PL lhes PRON.DAT.3PL | crescem V.3.PL | pernas ART+N.NOM.PL | VI/C + extra PRON DAT |
| SK | *Stonožkám rastú nohy (v rôznych vývojových štádiách).* | OVS | stonožk-ám N leg-DAT.PL | rast-ú V grow-3.PL | noh-y N leg-NOM.PL | IVa/C |
| LITH | *Lūpakojams išauga kojos.* | OVS | lūpakojams N.DAT.PL | išauga V.3.PL | kojos N.NOM.PL | IVa/C |
| BG | *На стоножките краката им израстват.* | OSV | na PREP stonozhkite N+ART.OBL-PL im PRON POSS.3.PL | izrastvat V.3.PL | krakata N+ART. NOM.PL | VI/C+ PRON POSS in NOM NP |
| HU | *A százlábúak önmaguk növesztik lábaikat.* | SVO | a ART százlábúak N.NOM.PL önmaguk Intensifier 'they themselves' | növesztik V.3.PL | lábaikat 0ART+N. ACC.PL | I/C+Intensifier |
| BASQ | *Ehunzangoek bere hankak hasten ditu.* | SOV | ehunzangoek N.ERG.SG bere PRON POSS.3.SG -u ERG INFL SUFFIX of AUX under PLRPC | hasten-V d-it-u ERG/ABS AUX 3.ABS.PL-it-ERG.SG | hankak N.ABS.PL | IXa/B PLRPC u- ERG Subject d- ABS Object |
| GEO | *Cxrapexebs pexebi ezrdebat.* | OSV | cxrapex-eb-s N cxrapex-PL-DAT | e-zrdeba-t V PASS-zrdeba-3.PL | pexebi N.ABS.PL | IVb/C |

**Commentary:**
In Basque case endings are specified according to Hualde (2003:176), auxiliaries (ibid:222).
In Georgian the respondent did not indicate the pluripersonal concord in this sentence.
ENG, DAN, SW and HU code Unintentional Performer in NOM and BASQ as ERG. PG, SK, LITH and GEO activate it as DAT via inflection and BG and SP via preposition adding also an extra DAT pronoun (in BG it behaves as a possessive). In PG an extra DAT pronoun is added, too.

**Analysis of Sentence 12**     *John grows a beard in winter.* **(willed action)**

| Lg | Sentence | WO | Permitter (intentional) | Willed Action | Resultant (part of Permitter) | Coding Marker/Alignment type |
|---|---|---|---|---|---|---|
| EN | *John grows a beard in winter.* | SVO | John N.NOM.SG | grow-s V.PRS-3.SG | a ART beard N.OBL.SG | I/A |
| DAN | *John lader skægget stå om vinteren.* | SVO | John N.NOM.SG | lader V Causative.3.SG stå V INF | skægget N+ART.OBL.SG | I/A + pseudomodal causative AUX +LEX |
| SW | *John låter skägget växa på vintern.* | SVO | John N.NOM.SG | låter V Causative.3.SG växa V.INF | skägget N+ART; OBL.SG | I/A + pseudomodal causative AUX+LEX |
| IT | *John si fa crescere la barba in inverno.* | SVO | John N.NOM.SG si PRON REFL.3.DAT.SG | fa V Causative.3.SG crescere V INF si PRON REFL.3.DAT.SG | la DEF ART F.SG barba N.OBL.F.SG | IIb/A+ pseudomodal causative AUX + si PRON REFL DAT |
| SP | *John se deja barba en invierno.* | SVO | John N.NOM.SG se PRON REFL.3.DAT.SG | deja V.3.SG se PRON REFL.3.DAT.SG | barba N.OBL.SG | IIb/A+LEX se PRON REFL/DAT |
| PG | *O João deixa crescer a barba no inverno.* 'João lets grow, permits to grow.' | SVO | o ART João N.NOM.SG | deixa V Causative.3.SG crescer V INF | a ART barba N.ACC.SG | IIa/A +pseudomodal causative AUX |
| SK*i* | *John si pestuje bradu v zime.* | SVO | John N.SG.NOM si PRON REFL.DAT.SG | si PRON REFL.DAT.SG pestuje V.3.SG | brad-u N beard-ACC.SG | IIb/A+LEX si PRON REFL.DAT |
| SK*ii* | *John si nechává narásť bradu v zime.* | SVO | John-0 N John-NOM.SG si PRON REFL.DAT.SG | si PRON REFL.DAT.SG nechává V Causative.3.SG narásť V INF | brad-u N beard-ACC.SG | IIb/A+pseudo modal causative AUX+ si PRON REFL.DAT |
| LITH | *Jonas žiemą užsiaugina barzdą.* | SVO | Jonas N.NOM.SG | užsiaugina V REFL.3.SG | barzdą N.ACC.SG | IIb/A + REFL V |
| BG | *Джон си пуска брада през зимата.* | SVO | Dzhon N.NOM.SG si PRON REFL.DAT.SG | si PRON REFL.DAT.SG puska V.3.SG | brada 0ART+N. OBL.SG | IIb/A+LEX si PRON REFL DAT |
| HU | *János télen szakállat növeszt.* | SVO | János N.NOM.SG | növeszt V.3.SG | szakállat N. ACC.SG | IIa/A |
| BASQ | *Johnek bizarra hasten du neguan.* | SOV | Johnek N.ERG.SG -u ERG INFL SUFFIX of AUX under PLRPC | hasten-V d-u -ERG/ABS AUX 3.ABS.SG-3.ERG.SG | bizzarra N.ABS.SG | IXa/B PLRPC u- ERG Subject d- ABS Object(?) |
| GEO | *Džoni zamtarši c'vers izrdis.* | SVO | Džoni N.ABS.SG PLRPC -s- ABS INFL SUFFIX of V | i-zrdi-s V VERS-zrdi-3.ABS.SG | c'ver-s N beard-DAT.SG | III/A LEX -s ABS Subject |

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