Possessive (Non-)Anternations in Idioms

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1 Introduction

One possessor expression in English, four alternatives in German.

(1)   I have already put on my make-up, but I still need to powder my nose.

(2)   Ich hab mich schon geschminkt, aber . . .
        (I have already put on my make-up, but . . .)

   a.   ich muss noch die Nase pudern. (Def)
        I   must still the nose powder 'I still need to powder my nose.'

   b.   Ich noch meine Nase pudern. (Poss)
        I   must still   my   nose   powder

   c.   Ich muss mir   noch die Nase pudern. (DatDef)
        I   must myself still the nose powder

   d.   Ich muss mir   noch meine Nase pudern. (DatPoss)
        I   must myself still my   nose poweder

The same within the inventory of idioms.

(3)   keep one's cool, lose one's mind, . . . (Kay & Sag, ms.) (Poss)

(4)   a.   Er hält den Mund. (Def)
           he holds the mouth 'He keeps his mouth shout.'

      b.   Alex tritt in meine Fußstapfen. (Poss)
           Alex steps in my   footsteps   'Alex follows my example.'

      c.   Alex steht mir im   Weg. (DatDef)
           Alex stands me in.the way   'Alex is in my way'

      d.   Sie   haben sich   darüber ihr Maul zerrissen (DatPoss)
           They have   themselves on.this   their mouth torn.apart 'They gossiped about this.'

The same idiom may appear in various of these constructions, but not all idioms behave the same.

(5)   a.   Er hält den Mund. (Def)
           he holds the mouth 'He keeps his mouth shut.'

      b.   Er hält seinen Mund. (Poss)

      c. #Er hält sich den Mund. (DatDef)

      d. #Er hält sich seinen Mund. (DatPoss)

(6)   a.   Da   läuft mir das Wasser im   Mund zusammen. (DatDef)
           there runs me the water   in.the mouth together   'My mouth is watering'

      b. #Da läuft das Wasser im Mund zusammen. (Def)

      c.   Da läuft das Wasser in meinem Mund zusammen. (Poss)

      d. #Mir läuft das Wasser in meinem Mund zusammen. (DatPoss)

Research questions:

- Which patterns of possessive alternations do we find in German idioms?

- How can we model them?

- What is the relation between possessive constructions in the grammar of German and in German idioms?

Structure of the talk

1. Introduction

2. Data overview: German possessive idioms

3. Possessive constructions in German

4. Possessive constructions in idioms

5. Framework for the analysis
   5.1 Syntax-semantics interface
   5.2 The 2-dimensional theory of idioms
   5.3 Analysis of the possessive constructions

6. Analysis of German possessive idioms

7. Conclusion

2 Data overview: German possessive Idioms

Data:

- 145 possessive idioms: Those mentioned in letter "A" of Duden 11, plus idioms that happened to come to my mind.

- Looked for occurrence of the idiom in the four possessive constructions on the internet. "ok" indicates that there had been at least some use with the idiomatic meaning on a website that looked like a natural, non-word play use by a competent speaker.

- ⇒ The data are neither representative nor solidly verified empirically. Nonetheless they represent some tendencies of which patterns of alternation occur and which patterns are more common than others.

#	Def	Poss	DatDef	DatPoss	example idiom
2	ok	ok	ok	ok	(sich) etwas an den Fingern abzählen (können)
2	ok	ok	ok	*	sich etwas aus dem Ärmel ziehen
0	ok	ok	*	ok	—
29	ok	ok	*	*	die Augen schließen
0	ok	*	ok	ok	—
2	ok	*	ok	*	(sich) die Ärmel hochkrempeln
0	ok	*	*	ok	—
5	ok	*	*	*	die Nase voll haben
17	*	ok	ok	ok	jm. das Herz brechen
14	*	ok	ok	*	jm. aus den Augen gehen
0	*	ok	*	ok	—
1	*	ok	*	*	in jms. Fußstapfen treten
35	*	*	ok	ok	sich die Hacken ablaufen
37	*	*	ok	*	jm. im Weg stehen
1	*	*	*	ok	sich seine Gedanken machen

145

First impressions on the data:

1. Most common patterns:

   $$\begin{matrix} \text{DatDef} \\ \text{DatDef–DatPoss} \end{matrix} \quad > \quad \text{Poss–DatDef} \quad > \quad \begin{matrix} \text{Def–Poss} \\ \text{Poss–DatDef–DatPoss} \end{matrix}$$

2. Very large group of idioms which require a dative (73)

3. Large group of idioms which occur without a dative possessor (34)

4. There are only few idioms that allow a dative (DatDef or DatPoss) and a plain definite (6)

5. Whenever DatPoss is possible, so is DatDef (with 1 exception)

6. German idioms can allow for a multiple/redundant exponent of the possessor but never require it. (In DatPoss the possessor is both present in the dative and inside the possessum NP)

7. However, some idioms seem to forbid a redundant marking of the possessor (37 DatDef-only idioms; 14 Poss–DatDef idioms; 5 Def-only idioms)

Task:

- We want to account for the common patterns by generalization.

- We want to capture the uncommon patterns by lexical specification.

3 Possessive constructions in German

3.1 Possessive readings

Generally assumed: "possession" is a cover relation for a set of possible semantic relations.

- Barker (1995) possessor is ambiguous:

  - when combined with a relational noun: no semantic contribution
  - when combined with a non-relational noun: introduction of some possessor relation

- Wunderlich (1996) **Poss**(x, y) means "x has y at x's disposal".

- Jensen & Vikner (2004)

  - list a number of possible relations and how they can be linked to the lexical semantics of the possessum.
  - Non-relational nouns can be turned into relational nouns, activating some function from their qualia structure.
  - If no relational meaning of a noun is used, a posssessor expresses a predicate that is similar to Wunderlich's possessor relation.

3.2 Possessor raising

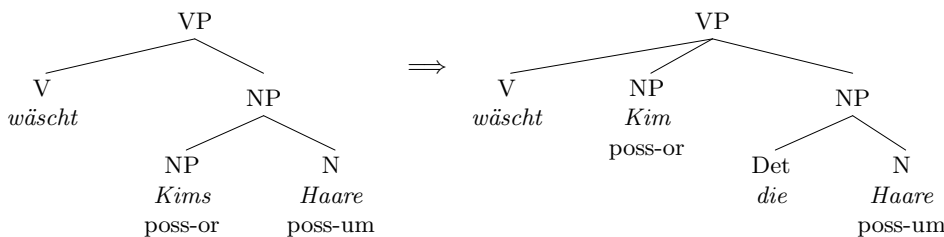Real Possessor Raising:

- Structure:
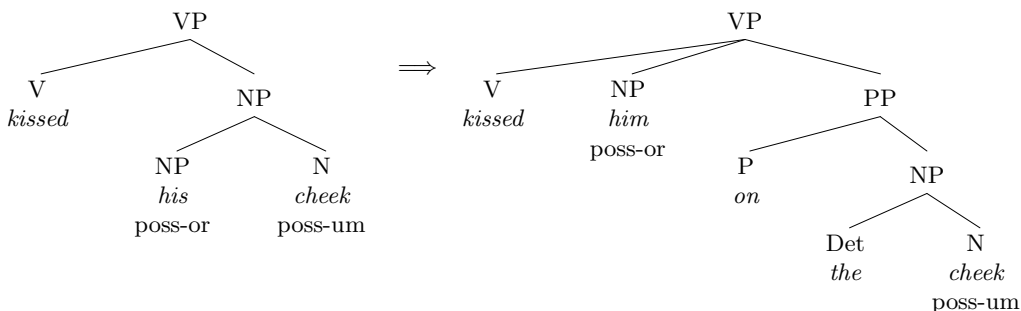
- The raised possessor does not receive a thematic role from the verb.

- Haspelmath (1999): Possessor raising wide spread in the languages of the world.

External dative possessor construction

(7)   a.   Alex wäscht Kims   Haare.
           Alex washes Kim.GEN hair   'Alex is washing Kim's hair.'
     b.   Alex wäscht Kim   die Haare.
           Alex washes Kim.DAT the hair

- The DatDef (and the DatPoss) constructions are not possessor raising in the original sense.

- Structure:

- Possessor appears in obligue case

- Haspelmath (1999):

  - External possessor (EP) construction differs from possessor raising.

  - External possessor is typologically rare, but wide-spread in the languages of Europe, independent of their genetic relationship, i.e., it is an areal feature of "Standard Average European". Present in Dutch, German, Romance, Slavic, Greek, Maltese

  - EP is absent from English and the Scandinavian languages (see also Lødrup (2009) for Modern Norwegian)

  - **Animacy hierarchy:** Possessor is 1st/2nd person $\subset \ldots \subset$ inanimate
    Situation hierarchy: Eventuality is patient affecting $\subset$ dynamic non-affecting $\subset$ stative
    Inalienability hierarchy: Possessum is body part $\subset \ldots \subset$ contextually unique item
    Syntactic relation hierarchy: Possessum is PP $\subset \ldots \subset$ transitive subject

- German EP is relatively low on the hierarchies: Animate possessor, eventive verb, possessum contextually unique, unergative subject
  Dutch: more restricted (Haspelmath, 1999); Modern Hebrew: less restricted (Linzen, 2014)

Predictions for our idiom data

- Since dative external possessors are common in German, we expect to find them in the inventory of idioms, not being more flexible with respect to the hierarchies than what we find outside idioms.

- (Note: Lødrup (2009) observes that external possessors occur in Norwegian only in fixed expressions—they are relics of an earlier state of the language where an external possessor construction had still been productive.)

3.3   Semantics of the German dative external possessor

(8)   Dem   Ede juckt die Kopfhaut. (Hole, 2005, p. 215)
     the.DAT Ede itches the scalp   'Ede's scalp itches.'

Hole (2005): Dative encoded affectee role.

- Dative in EP construction is always affected!

- ⇒ A semantic role can be added, Affectee.

- Proto-role entailments of affectees (Hole, 2005, p. 220):

  - Affectees are consciously/sentiently involved in the eventuality at hand, i.e. they have one property of the Agent Proto-Role.

  - Affectees are causally affected by the eventuality at hand, i.e. they have one property of the Patient Proto-Role.

Hole (2005): The possessum NP has a contextually fillable possessor slot.

- Nouns can be turned into relational nouns productively (see also Jensen & Vikner (2004))

- Definite NP has an open (contextually fillable) possessor slot.

- Affected Dative is introduced with an Affectee role and can control this possessor slot

3.4 Redundant marking of the possessor inside the possessum (DatPoss)

Lee-Schoenfeld (2006): Possible, but not with body-part nouns:

(9)   Data and judgements from Lee-Schoenfeld (2006), p. 105
    a. Mein Bruder hat der Mami   leider   ihr Auto zu Schrott gefahren.
        my   brother has the mom.DAT unfortunately her car   to scrap   driven
        'Unfortunately my brother totaled mom's car.'
    b. ?Ein guter Ehemann massiert seiner Frau   jeden Abend ihren Rücken.
        a   good husband   massages his   wife.DAT every evening her   back
        'A good husband massages his wife's back every night.'

Naturally occurring examples of DatPoss:

(10)   ... dann breche ich ihm   seine verdammte Hand
        then break I   him.DAT his   damn   hand
        'then I will break his damn hand.'

German possessive pronouns can be bound by a clause-mate antecedent ((10), (11)). So, whenever a definite possessum can occur with an affectee, a possessive should be possible inside the possessor NP as well.
(Note: our data point in the opposite direction: Whenever DatPoss is possible, so is DatDef)

(11)   [Die Kinder]$_i$ lesen [ihre$_i$ Lieblingsbücher]
        the children   read their favorite books

3.5 Possessor relations without additional arguments

Possessive interpretation of a clause-mate body part term.

(12)   a. Alex hebt den Fuß.
        Alex lifts   the   foot   'Alex is lifting her foot.'
    b. Alex hebt ihren Fuß
        Alex lifts   her   foot

In German: No real possessor *raising*, only possessor *control* (Deal, 2013). only if the possessor constituent and the possessum constituent can occur with the predicate independently of the possessor construction.

(13)   a. Die Katze kratzt   mich.
        the cat   scratches me.ACC

    b.   Die Katze kratzt   am   Stuhlbein.
           the cat   scratches on.the chair leg
    c.   Die Katze kratzt   mich   am   Bein.
           the cat   scratches me.ACC on.the leg
           'The cat is scratching my leg.'

Lødrup (2009) reports that the possessor need not be an argument of the verb in Norwegian. In German, a dative external possessor construction must be used in such cases.

(14)   a.   Eminem spyr   ham i ansiktet. (Norwegian, Lødrup (2009))
           Eminem vomits him in face.DEF
           'Eminem vomits in his face.'
    b.   *Eminem spuckt ihn   ins   Gesicht. (German)
           Eminem vomits him.ACC in.the face
    c.   Eminem spuckt ihm.DAT ins Gesicht. (German, dative EP)

(15)   a.   Legen   bør   da lyse deg i halsen.   (Lødrup, 2009)
           physician.DEF should then light you in throat.DEF
           'The physician should then shine a light in your throat.'
    b.   Dann sollte der Arzt   dir/   *dich   in den Hals leuchten.
           then   should the physician you.DAT/ you.ACC in the throat light

German does not have a valence changing possessor raising rule. However, there is a special possessor interpretation, living on existing valence patterns.

4   Possessive constructions in idioms

4.1   English

Grammar of idioms: English lacks a dative external possessor construction and is more restricted in its possessive use of definites than German. Therefore, we mainly find idioms with a possessum-internal expression of the possessor.

(16)   keep one's cool; lose one's mind; . . . (Poss)

Sag (2010), Kay & Sag (ms.): Obligatory coreference of the possessive pronoun with the subject is potentially problematic for locality assumptions in Modern phrase structure grammars (Head-driven PSG, Pollard & Sag (1994); Sign-Based Construction Grammar, Sag (2012))

4.2   Modern Hebrew

Grammar of idioms: Hebrew has a very productive dative external possessor construction (Landau, 1999) and means to express a possessor inside the possessum NP. We also find idioms with both types of constructions (Almog, 2012).

- Almog (2012): Quantitative and qualitative study of possessive idioms in Modern Hebrew. Attempt to test predictions of Horvath & Siloni (2009).

- Difference to German possessive constructions:

    – If there is an inalienably possessable noun, the dative is obligatory in core grammar" (Almog, 2012, p. 26, fn. 9)

    – Dative external possessor are more flexible than in German (Landau, 1999; Linzen, 2014)

- Main result: No dative possessives with alienable possession in Hebrew

- Report on some possessive alternations in idioms (Almog, 2012, p. 43)

(17)   a.   šavar et   libo   šel X (Poss)
              broke ACC the.heart of   X 'disappointed X'
        b.   šavar le-X et   ha-lev   (DatDef)
              broke to-X ACC the-heart

(18)   a.   nixnax la-na'alayim šel X
              entered to-the.shoes   of X 'replace X at his job'
        b.   #nixnax le-X la-na'alayim
              entered to-X to-the.shoes

# 5   Framework for the analysis

5.1   Syntax-semantics interface

- Head-driven Phrase Structure Grammar (Pollard & Sag, 1994):

  - surface-oriented syntax, monostratal
  - complex feature structures instead of complex syntactic structures
  - constraint-based

- Lexical Resource Semantics (Richter & Sailer, 2004): linguistically motivated version of underspecified semantics (Pinkal, 1996; Egg, 2011)

1. The "logical form" of a sentence is a semantic representation of its reading (encoded as value of the feature EXTERNAL-CONTENT (EXCONT):

   (19)   Pat talked to Chris.
   $$\left[\text{EXCONT} \;\; \exists e(\textbf{talk}(e, \textbf{pat}, \textbf{chris})) \right]$$
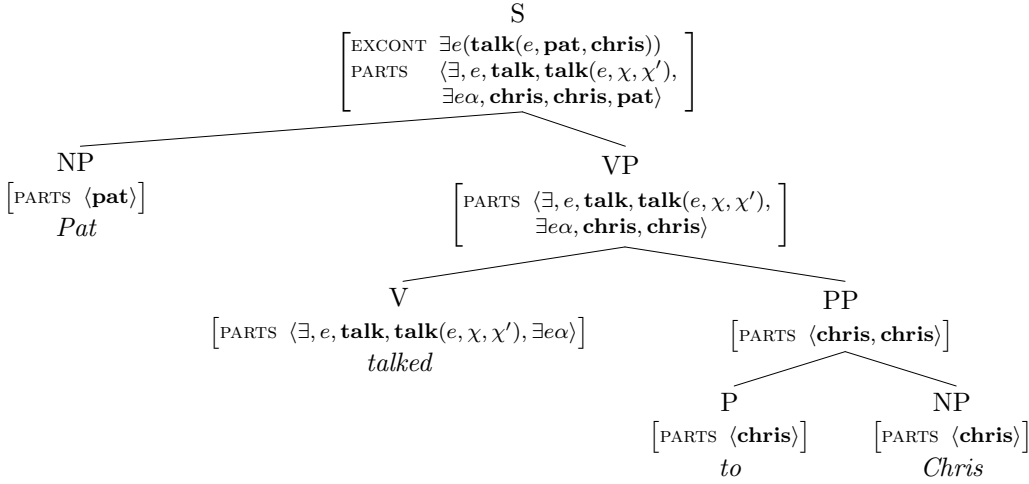
2. All subexpressions of the sem.rep. must be contributed by some lexical elements.

   (20) $\exists e(\textbf{talk}(e, \textbf{pat}, \textbf{chris}))$:
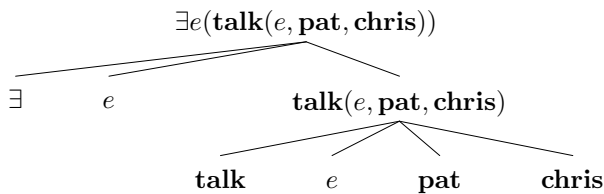
3. Constraint-based lexical semantics: A word says: if I am used in a sentence, the sentence's semantic representation must at least contain the following subexpressions: . . . .

4. For sentences: The sem.rep. of a sentence must consist exactly of the elements of the sentence's PARTS list. (Everything on the PARTS list must be used, nothing else can be used)

5. Words and structures may impose constraints on how the bits of sem.rep. can be combined:

   - *talk*: $\textbf{talk}(e, \chi, \chi')$ is a subexpression of α (short: $\textbf{talk}(e, \chi, \chi') \lhd \alpha$)
   - Linking theory: $\textbf{pat} \lhd \chi$ and $\textbf{chris} \lhd \chi'$

6. Redundant contribution: Several words can contribute the same bit of logical form ($\textbf{chris}$)

7. Mulitple uses: An element that occurs only once on the PARTS list can nonetheless be used several times inside the overall sem.rep. (e)

Figure 1: Semantic constraints contributed by the nodes in the tree

$$
\begin{array}{c}
\text{S} \\
\left[\begin{array}{ll}
\textsc{excont} & \exists e(\textbf{talk}(e, \textbf{pat}, \textbf{chris})) \\
\textsc{parts} & \langle \exists, e, \textbf{talk}, \textbf{talk}(e, \chi, \chi'), \\
& \exists e\alpha, \textbf{chris}, \textbf{chris}, \textbf{pat}\rangle
\end{array}\right]
\end{array}
$$

NP
$\left[\textsc{parts} \ \langle \textbf{pat}\rangle\right]$
Pat

VP
$\left[\begin{array}{l}
\textsc{parts} \ \langle \exists, e, \textbf{talk}, \textbf{talk}(e, \chi, \chi'), \\
\exists e\alpha, \textbf{chris}, \textbf{chris}\rangle
\end{array}\right]$

V
$\left[\textsc{parts} \ \langle \exists, e, \textbf{talk}, \textbf{talk}(e, \chi, \chi'), \exists e\alpha\rangle\right]$
talked

PP
$\left[\textsc{parts} \ \langle \textbf{chris}, \textbf{chris}\rangle\right]$

P
$\left[\textsc{parts} \ \langle \textbf{chris}\rangle\right]$
to

NP
$\left[\textsc{parts} \ \langle \textbf{chris}\rangle\right]$
Chris

Redundant contribution as the norm:

- Multiple exponency, concord, . . . is widely used in natural language: Negative concord (Richter & Sailer, 2006), cognate objects (Sailer, 2010), non-decomposable idioms (Bargmann & Sailer, 2015)

- However: Some expressions do not participate in concord.

  (21)   Standard French:
      a.   Personne n'a   rien   dit.
           nobody   not.has nothing said 'Nobody said anything.'
      b.   Personne n'a   pas parlè.
           nobody   not.has not spoken 'Nobody has NOT spoken'

- Contribution constraint (Penn & Richter, 2004, 2005)

- We can mark if a bit of logical form may only occur once on the PARTS list of a sentence:

  (22)   Negative elements in French:
      a.   *personne* (*nobody*), *rien* (*nothing*): $(\neg\alpha)^+$
      b.   *pas* (*not*): $(\neg\alpha)^1$

- Unless specified otherwise, all semantic contributions are contributed as potentially redundant.
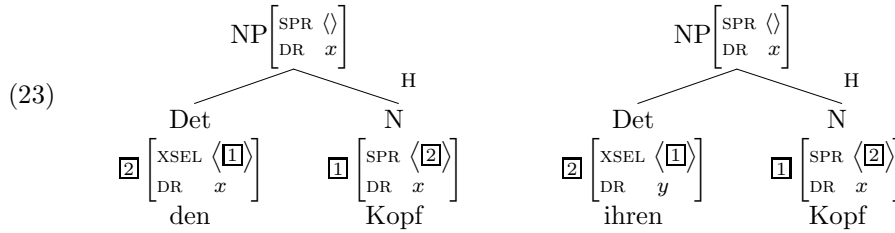
5.2   The 2-dimensional theory of idioms

- Follows the tradition of Wasow et al. (1983), Nunberg et al. (1994), Kay & Sag (ms.)

- Any syntactically idiosyncratic idom (*kingdom come*) is licensed by a *phrasal lexical entry* [Constructional dimension of idiosyncrasy]

- Any syntactically regular idiom is licensed by the regular combinatorial mechanism. The words in the idiom may have idiom-specific semantics. Their co-occurrence is regulated by collocational specifications [Collocational dimension of idiosyncrasy]

  - decomposable idioms (*spill the beans*, *pull strings*): The words have a clearly identifiable semantics.
  - non-decomposable idioms (*kick the bucket*): some of the words have an empty semantics (Kay & Sag, ms.) *or:* some of the words make a redundant semantic contribution (Bargmann & Sailer, 2015)

5.3 Analysis of the German possessive constructions

- We express lexical generalizations in terms of *lexical rules* (Müller, 2006)

- A lexical rule can change any property of a word. Here: the valence requirements and the semantics.

- External Possessor Lexical Rule: introduces a possessor-possessum relation within the selection domain of a verb.

- Affectee Lexical Rule: introduces an additional dative NP complement with an Affectee role.

5.3.1 Definite article and possessive determiners

(23)

$$\text{NP}\begin{bmatrix} \text{SPR} & \langle\rangle \\ \text{DR} & x \end{bmatrix}$$

Det   N (H)

$$\boxed{2}\begin{bmatrix} \text{XSEL} & \langle\boxed{1}\rangle \\ \text{DR} & x \end{bmatrix} \quad \boxed{1}\begin{bmatrix} \text{SPR} & \langle\boxed{2}\rangle \\ \text{DR} & x \end{bmatrix}$$

den   Kopf

$$\text{NP}\begin{bmatrix} \text{SPR} & \langle\rangle \\ \text{DR} & x \end{bmatrix}$$

Det   N (H)

$$\boxed{2}\begin{bmatrix} \text{XSEL} & \langle\boxed{1}\rangle \\ \text{DR} & y \end{bmatrix} \quad \boxed{1}\begin{bmatrix} \text{SPR} & \langle\boxed{2}\rangle \\ \text{DR} & x \end{bmatrix}$$

ihren   Kopf

(24) Lexical entry of the definite determiner:

$$\begin{bmatrix} \text{PHON} & \langle der\rangle \\ \text{VAL} & \begin{bmatrix} \text{SUBJ} & \langle\rangle \\ \text{COMPS} & \langle\rangle \\ \text{SPR} & \langle\rangle \\ \text{XSEL} & \langle \text{N}\begin{bmatrix}\text{DR} & \boxed{1}\end{bmatrix}\rangle \end{bmatrix} \\ \text{DR} & \boxed{1} \\ \text{PARTS} & \langle \iota, \boxed{1}, (\iota\boxed{1} : \alpha)\rangle \end{bmatrix}$$

(25) Lexical entry of a possessive pronoun

$$\begin{bmatrix} \text{PHON} & \langle ihr\text{-}\rangle \\ \text{VAL} & \begin{bmatrix} \text{SUBJ} & \langle\rangle \\ \text{COMPS} & \langle\rangle \\ \text{SPR} & \langle\rangle \\ \text{XSEL} & \langle \text{N}\begin{bmatrix}\text{DR} & \boxed{1}\end{bmatrix}\rangle \end{bmatrix} \\ \text{DR} & \boxed{2} \\ \text{PARTS} & \langle \iota, \boxed{1}, \boxed{2}, (\iota\boxed{1} : \alpha), \beta \wedge \mathbf{Poss}(\boxed{1},\boxed{2}), \mathbf{Poss}, \mathbf{Poss}(\boxed{1},\boxed{2})\rangle \end{bmatrix}$$
$$\textbf{and } \beta \wedge \mathbf{Poss}(\boxed{1},\boxed{2}) \vartriangleleft \alpha$$

- The definite article has the same DR value as the head noun.
  A possessive determiner has the DR value of the possessor (independently needed for HPSG's Binding Theory).

- A possessive determiner always contributes a **Poss** relation.

- When combining with a relational noun, this **Poss** relation is contributed redundantly.

5.3.2 The External Possessor Lexical Rule

(26) a. Alex hebt die Hand.
    b. $\exists e(\mathbf{lift}(e, \mathbf{alex}, \iota x : (\mathbf{hand}(x) \wedge \mathbf{Poss}(x, \mathbf{alex}))))$

Intution: The possessor relation is introduced by the verb!

(27) a. Basic form of *heben*: $\exists e(\ldots \mathbf{lift}(e, x, y) \ldots)$
    b. External possessor form of *heben*: $\exists e(\ldots \mathbf{lift}(e, x, (\iota y : \ldots \wedge \mathbf{Poss}(x, y))) \ldots)$

(28)   Basic form of the verb

$$\begin{bmatrix} \text{PHON} & \langle heben \rangle \\ \text{VAL} & \begin{bmatrix} \text{SUBJ} & \langle \text{NP} \begin{bmatrix} \text{DR} & \boxed{1} \end{bmatrix} \rangle \\ \text{COMPS} & \langle \text{NP} \begin{bmatrix} \text{DR} & \boxed{2} \end{bmatrix} \rangle \end{bmatrix} \\ \text{DR} & e \\ \text{PARTS} & \langle \exists, e, \exists e\alpha, \mathbf{lift}, \mathbf{lift}(e, \chi, \chi') \rangle \end{bmatrix}$$

and $\mathbf{lift}(e, \chi, \chi') \lhd \alpha$ **and** $\boxed{1} \lhd \chi$ **and** $\boxed{2} \lhd \chi'$

(29)   External possessive form of the verb

$$\begin{bmatrix} \text{PHON} & \langle heben \rangle \\ \text{VAL} & \begin{bmatrix} \text{SUBJ} & \langle \text{NP} \begin{bmatrix} \text{DR} & \boxed{1} \end{bmatrix} \rangle \\ \text{COMPS} & \langle \text{NP} \begin{bmatrix} \text{DR} & \boxed{2} \end{bmatrix} \rangle \end{bmatrix} \\ \text{DR} & e \\ \text{PARTS} & \langle \exists, e, \exists e\alpha, \mathbf{lift}, \mathbf{lift}(e, \chi, \iota\boxed{2} : \beta), \mathbf{Poss}, \mathbf{Poss}(\boxed{2}, \chi), \gamma \wedge \mathbf{Poss}(\boxed{2}, \chi) \rangle \end{bmatrix}$$

and $\mathbf{lift}(e, \chi, \iota\boxed{2} : \beta) \lhd \alpha$ **and** $\boxed{1} \lhd \chi$
and $\gamma \wedge \mathbf{Poss}(\boxed{2}, \chi) \lhd \beta$

Description of the External Possessor Lexical Rule:

- Input is a verb with at least one argument (the designated possessor).

- This argument must be human (at least animate).

- There must be at least one more dependent of the verb (the designated possessum).

- The output contains a possessor relation holding between designated possessor and possessum.

- Further restrictions on verb, poessessor, or possessum can be imposed.

Potentially redundant marking: If the possessum is a relational noun, it may already contributed a **Poss** relation. The Lexical Rule still outputs a verb with a **Poss** relation, which will then be just a redundantly contributed relation.

The Lexical Rule implements a version the control or binding approach to external possessors, as in Hole (2005). This is motivated for German as we do not allow for real possessor raising.
Redundant marking allows for free variation of Def and Poss:

(30)   Alex hebt die/ihre Hand.
        $\exists e(\mathbf{lift}(e, \mathbf{alex}, (\iota x : (\mathbf{hand}(x) \wedge \mathbf{Poss}(x, \mathbf{alex})))))$

   a.   PARTS list of *die Hand*: $\langle \iota, x, \iota x : \alpha, \mathbf{hand}, \mathbf{hand}(x) \rangle$
   b.   PARTS list of *ihre Hand*: $\langle \iota, x, \iota x : \alpha, \mathbf{hand}, \mathbf{hand}(x), \boxed{2}, \beta \wedge \mathbf{Poss}(x, \boxed{2}), \mathbf{Poss}(x, \boxed{2}) \rangle$

   c.   PARTS list of *hebt* (basic form): $\langle \exists, e, \mathbf{lift}, \mathbf{lift}(e, \chi, \chi'), \exists e\alpha \rangle$
   d.   PARTS list of *hebt* (external possessor form):
        $\langle \exists, e, \mathbf{lift}, \mathbf{lift}(e, \chi, (\iota x : \gamma)), \mathbf{Poss}, \mathbf{Poss}(x, \chi), \delta \wedge \mathbf{Poss}(x, \chi) \rangle$

Under identity of the **Poss** relations, the definite and the possessive form of the sentence have identical PARTS lists.

5.4 The Affectee Lexical Rule

Lexical rule to add affectee:

(31)   Alex kratzt Chris den Kopf.
        $\exists e(\mathbf{scratch}(e, \mathbf{alex}), \iota x : (\mathbf{head}(x) \wedge \mathbf{Poss}(x, \mathbf{chris}))) \wedge \mathbf{Aff}(e, \mathbf{chris}))$

(32)   a.   Basic form of *kratzen*: $\exists e(\ldots \mathbf{scratch}(e, x, y) \ldots)$
        b.   Affectee added: $\exists e(\ldots \mathbf{scratch}(e, x, y) \wedge \mathbf{Aff}(e, z) \ldots)$

(33)   Basic form of the verb

$$\begin{bmatrix} \text{PHON} & \langle kratzen \rangle \\ \text{VAL} & \begin{bmatrix} \text{SUBJ} & \langle \text{NP} \begin{bmatrix} \text{DR} & \boxed{1} \end{bmatrix} \rangle \\ \text{COMPS} & \langle \text{NP} \begin{bmatrix} \text{DR} & \boxed{2} \end{bmatrix} \rangle \end{bmatrix} \\ \text{DR} & e \\ \text{PARTS} & \langle \exists, e, \exists e\alpha, \mathbf{scratch}, \mathbf{scratch}(e, \chi, \chi') \rangle \end{bmatrix}$$

and $\mathbf{scratch}(e, \chi, \chi') \triangleleft \alpha$ **and** $\boxed{1} \triangleleft \chi$ **and** $\boxed{2} \triangleleft \chi'$

(34)   Affectee form of the verb

$$\begin{bmatrix} \text{PHON} & \langle kratzen \rangle \\ \text{VAL} & \begin{bmatrix} \text{SUBJ} & \langle \text{NP} \begin{bmatrix} \text{DR} & \boxed{1} \end{bmatrix} \rangle \\ \text{COMPS} & \langle \text{NP} \begin{bmatrix} \text{CASE} & dat \\ \text{DR} & \boxed{3} \end{bmatrix}, \text{NP} \begin{bmatrix} \text{DR} & \boxed{2} \end{bmatrix} \rangle \end{bmatrix} \\ \text{DR} & e \\ \text{PARTS} & \langle \exists, e, \exists e\alpha, \mathbf{scratch}, \mathbf{scratch}(e, \chi, \chi'), \beta \wedge \mathbf{Aff}(e, \chi''), \mathbf{Aff}, \mathbf{Aff}(e, \chi'') \rangle \end{bmatrix}$$

and $\mathbf{scratch}(e, \chi, \chi') \triangleleft \alpha$ **and** $\boxed{1} \triangleleft \chi$ **and** $\boxed{2} \triangleleft \chi'$
and $\beta \wedge \mathbf{Aff}(e, \chi'') \triangleleft \alpha$ **and** $\boxed{3} \triangleleft \chi''$

We can apply the External Possessor LR to the output of the Affectee LR:

(35)   Alex kratzt Chris den Kopf
        kratzen $\rightarrow$ Aff(kratzen) $\rightarrow$ Poss(Aff(kratzen)) .
        a.   Basic form of *kratzen*: $\exists e(\ldots \mathbf{scratch}(e, x, y) \ldots)$
        b.   Affectee added: $\exists e(\ldots \mathbf{scratch}(e, x, y) \wedge \mathbf{Aff}(e, z) \ldots)$
        c.   External possessor added:
              $\exists e(\ldots \mathbf{scratch}(e, x, (\iota y : \ldots \wedge \mathbf{Poss}(y, z))) \wedge \mathbf{Aff}(e, z) \ldots)$

Free variation between DatDef and DatPoss by redundant contribution of **Poss**:

(36)   Alex massiert Chris   gerne   den/ ihren Rücken
        Alex massages Chris.DAT with.pleasure the/ her   back
        'Alex likes to massage Chris's back.'

6   Analysis of German possessive idioms

Ingredients of the analysis:

- Some idioms do not allow dative possessors
  $\Rightarrow$ The semantics of the idiom is not compatible with an affectee, i.e., the Affectee LR cannot be applied.

- Some idioms do not allow a possessive pronoun
  $\Rightarrow$ The possessum noun lexically restricts its specifier to have the same DR value as the noun itself.

- In the Poss–DatDef alternation pattern the possessor can be expressed only once
  ⇒ Block redundant possessor marking by a contribution constraint.

- Generalization: Whenever DatPoss is possible, so is DatDef, but not the other way around.
  ⇒ We cannot enforce redundant marking, only exclude it.

- Generalization: There is no real case of an idiom that allows a dative (DatDef or DatPoss) and a plain definite
  ⇒ In such cases there would be no overt realization of the possessor.

6.1 Idiom with Def and Poss alternation

(37)   Alex hat hier die/seine Zelte aufgeschlagen.
        $\exists e(\mathbf{open}(e, \mathbf{alex}, (\iota x : (\mathbf{living\text{-}place}(x) \wedge \mathbf{Poss}(x, \mathbf{alex})))))$

Analysis

- The idiomatic noun does not restrict the determiner's DR value.

- The idiomatic verb looks like the output of the external possessor LR right away, specifying the required **Poss** relation.

- The idiom semantic is incompatible with an Affectee role.

(38)   Lexical entry of the idiomatic noun *Zelte*:

$$
\begin{bmatrix}
\text{PHON} & \langle \textit{Zelte} \rangle \\
\text{CAT} & \begin{bmatrix} \text{VAL} & [\text{SPR} \ \langle \text{DET} \rangle] \end{bmatrix} \\
\text{DR} & x \\
\text{PARTS} & \langle x, \mathbf{living\text{-}place}, \mathbf{living\text{-}place}(x) \rangle
\end{bmatrix}
$$

(39)   Lexical entry of the idomatic verb *aufschlagen*:

$$
\begin{bmatrix}
\text{PHON} & \langle \textit{aufschlagen} \rangle \\
\text{CAT} & \begin{bmatrix} \text{VAL} & \begin{bmatrix} \text{SUBJ} & \langle \text{NP}[\text{DR} \ \boxed{1}] \rangle \\ \text{COMPS} & \langle \text{NP}[\text{DR} \ \boxed{2}] \rangle \end{bmatrix} \end{bmatrix} \\
\text{DR} & e \\
\text{PARTS} & \langle \exists, e, \mathbf{open}, \mathbf{open}(e, \chi, (\iota \boxed{2} : \gamma)), \exists e\alpha, \mathbf{Poss}, \mathbf{Poss}(\boxed{2}, \boxed{1}), \beta \wedge \mathbf{Poss}(\boxed{2}, \boxed{1}) \rangle
\end{bmatrix}
$$

and $\mathbf{open}(e, \chi, \chi') \lhd \alpha$ **and $\boxed{1} \lhd \chi$**   **and $\boxed{2} \lhd \chi'$**
and $\beta \wedge \mathbf{Poss}(\boxed{2}, \boxed{1}) \lhd \gamma$

6.2 Idiom with DatDef and DatPoss alternation

We saw that whenever the DatPoss is possible, so is the DatDef, but not always the other way around. The analysis is similar to the one for the Def/Poss-alternating idioms (Section 6.1, i.e.: The possessum does not restrict the DR of its determiner.
We need to distinguish two cases:

- Case 1: the dative is a reflexive obligatorilly
  Then, the analysis is just like for idioms with a Def/Poss alternation. We just have an additional argument on the verbs's COMPS list, the obligatory reflexive.

- Case 2: the dative is not obligatorilly a reflexive
  The verb is lexically specified for an affectee role and has a corresponding argument on its COMPS list.
  This case also comprises cases where the possessum is the subject:

(40)   jemandem   gehen [die/ seine Augen]   über
        someone.DAT go   [the/ his   eyes].NOM over 'cry'

6.3 Idioms with Poss–DatDef–DatPoss alternation

- The verb is lexically specified with a full possessor semantics, but with no explicit possessor expression.

- The semantics of the idiom is compatible with an affectee. So, the Affectee LR can freely apply.

- If the Affectee LR has not applied, there possessor must be lexically expressed, in this case we can only do this with a possessive inside the possessor.

- If the Affectee LR has applied, there is free alternation whether the possessum contains a redundant possessive or not.

(41)   Alex pustet Chris das Licht aus.
$\exists e(\mathbf{end}(e, \mathbf{alex}, \iota x(\mathbf{life}(x) \wedge \mathbf{Poss}(x, \mathbf{chris}))) \wedge \mathbf{Aff}(e, \mathbf{chris}))$

(42)   Lexical entry of *auspusten*:

$$\begin{bmatrix} \text{PHON} & \langle auspusten \rangle \\ \text{VAL} & \begin{bmatrix} \text{SUBJ} & \langle \text{NP} \begin{bmatrix} \text{DR} & \boxed{1} \end{bmatrix} \rangle \\ \text{COMPS} & \langle \text{NP} \begin{bmatrix} \text{DR} & \boxed{2} \end{bmatrix} \rangle \end{bmatrix} \\ \text{DR} & e \\ \text{PARTS} & \langle \exists.e, \exists e\alpha, \mathbf{end}, \mathbf{end}(e, \chi, \iota\boxed{2}:\beta), \mathbf{Poss}, \mathbf{Poss}(\boxed{2}, \chi'), \gamma \wedge \mathbf{Poss}(\boxed{2}, \chi') \rangle \end{bmatrix}$$

and $\mathbf{end}(e, \ldots, \ldots) \vartriangleleft \alpha$ and $\boxed{1} \vartriangleleft \chi$
and $\gamma \wedge \mathbf{Poss}(\boxed{2}, \chi') \vartriangleleft \beta$

6.4 Idioms with Poss and DatDef alternation

In these idioms the possessor can either be overtly present inside the possessum-NP or appear as an additional argument. While German is usually flexible with respect to redundant marking of possession, in this cases only one possessor marking is allowed.

(43)   a.   Alex küsst Chris   Füße.
            Alex kisses Chris.GEN feet
            $\exists e(\mathbf{obey}(e, \mathbf{alex}, \iota x(\mathbf{will}(x) \wedge \mathbf{Poss}(x, \mathbf{chris}))))$

        b.   Alex küsst Chris   die Füße.
            Alex kisses Chris.DAT the feet
            $\exists e(\mathbf{obey}(e, \mathbf{alex}, \iota x(\mathbf{will}(x) \wedge \mathbf{Poss}(x, \mathbf{chris}))) \wedge \mathbf{Aff}(e, \mathbf{chris}))$

- The possessum noun is compatible with a possessive or a definite.

- The verb is lexically specified in such a way that a possessor semantics must be present, but this semantics is not fully contributed.
  $\Rightarrow$ Another element in the clause needs to contribute it.
  But: There is some possessive semantics in the verb's PARTS list.
  Ergo: The External Possessor LR cannot be applied.

- Contribution requirement: We also require that the possessor semantics may be contributed only once in the structure ($\underline{\mathbf{Poss}(\boxed{2}, \boxed{3})}$[1])

(44) Lexical entry of the idiomatic *Füße*:

$$\begin{bmatrix} \text{PHON} & \langle F\ddot{u}\beta e\rangle \\ \text{VAL} & \begin{bmatrix} \text{SUBJ} & \langle\rangle \\ \text{COMPS} & \langle\rangle \\ \text{SPR} & \langle\text{DET}\rangle \end{bmatrix} \\ \text{DR} & \boxed{2} \\ \text{PARTS} & \langle\boxed{2}, \textbf{will}, \textbf{will}(\boxed{2})\rangle \end{bmatrix}$$

(45) Lexical entry of *küssen*:

$$\begin{bmatrix} \text{PHON} & \langle k\ddot{u}ssen\rangle \\ \text{VAL} & \begin{bmatrix} \text{SUBJ} & \langle\text{NP}\begin{bmatrix}\text{DR} & \boxed{1}\end{bmatrix}\rangle \\ \text{COMPS} & \langle\text{NP}\begin{bmatrix}\text{DR} & \boxed{2}\end{bmatrix}\rangle \end{bmatrix} \\ \text{DR} & e \\ \text{PARTS} & \langle\exists.e, \exists e\alpha, \textbf{obey}, \textbf{obey}(e, \chi, \iota\boxed{2}:\beta), \gamma \wedge \underline{\textbf{Poss}(\boxed{2}, \boxed{3})}^1\rangle \end{bmatrix}$$

and obex$(e, \ldots, \ldots) \lhd \alpha$ **and** $\boxed{1} \lhd \chi$

and $\gamma \wedge \underline{\textbf{Poss}(\boxed{2}, \boxed{3})}^1 \lhd \beta$

Case 1: The dative is not realized: Then, the only way to include a possessor is by realizing it inside the possessum.

Case 2: The dative is realized: In this case, a possessive may not occur inside the possessum NP, because a possessive pronoun would contribute the **Poss** relation a second time.

7 Conclusion

- Possessive alternations of idioms interact with the possessive constructions available in a given language.

- For German: no real possessor raising; affectee interpretation of dative external possessors.

- LRS allows to capture redundant marking directly.

- More detailed look at subcases within the alternation patterns.

- Extension to other languages? Also: microvariation

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