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The Semantic Fields of German Loanwords in Polish

Abstract
This study is dedicated to the relationship between lexical meaning and lexical borrowing. It presents an analysis of the semantic fields of all documented German loanwords in the history of Polish written/standard language, following a classification scheme which was originally used for typological comparison (Haspelmath and Tadmor 2009c). Firstly, the results are compared to a hierarchy of borrowing probability which was developed on the basis of typological studies (Tadmor 2009). The apparent differences to that hierarchy underline the need for both onomasiological and semasiological approaches in studying the connection between meaning and borrowing. Secondly, the results are compared to impressionistic judgments on the semantic fields of German loanwords in Polish. Although most of the traditionally mentioned semantic fields are well attested, there are other prominent fields as well, which shows that German loanwords are not limited to specialized terms of professional fields. The analysis is furthermore divided depending on: a) the time period and b) how well the loanwords are documented. It will be demonstrated that some semantic fields are typical for certain time periods while the contribution of other fields remains stable. Some semantic fields have a high quantity of poorly documented loanwords, suggesting that some fields are prone to extensive, but less intensive language contact.

Keywords
lexical borrowing, Polish-German language contact, semantic fields, cultural contacts and language

Streszczenie
Tematem artykułu jest związek znaczenia leksykalnego i procesu zapożyczania leksykalnego. Prezentuje on analizę pól semantycznych wszystkich poświadczonych zapożyczeń niemieckich w historii pisanej/standardowej (literackiej) polszczyzny na podstawie klasyfikacji używanej pierwotnie do porównania typologicznego (Haspelmath and Tadmor 2009c).

W artykule dokonano, po pierwsze, porównania wyników z klasyfikacją prawdopodobieństwa zapożyczeń opracowaną na podstawie studiów typologicznych (Tadmor 2009). Widoczne różnice w stosunku do niej wskazują na potrzebę skorzystania w analizie związku znaczenia i procesu zapożyczania zarówno z podejścia onomazjologicznego, jak i semazjologicznego. Po drugie, rezultaty porównano z impresjonistycznymi sądami na temat pól znaczeniowych niemieckich zapożyczeń w języku polskim. Chociaż większość tradycyjnie

wyróżnianych pól semantycznych jest dobrze poświadczona, nie brak również innych ważnych pól, które są dowodem na to, że niemieckie zapożyczenia nie ograniczają się wyłącznie do specjalistycznych terminów fachowych. Analizę będącą przedmiotem tego artykułu podzielono ponadto ze względu na: a) różne okresy czasowe zapożyczeń oraz b) lepsze lub słabsze ich udokumentowanie. Badania wykazały, że niektóre pola semantyczne są typowe tylko dla pewnych okresów czasowych, podczas gdy występowanie innych należy uznać na przestrzeni czasu za stabilne. Dla niektórych pól znaczeniowych charakterystyczna jest wysoka frekwencja słabo poświadczonych zapożyczeń, co sugerowałoby, że niektóre z pól semantycznych są podatne na bogatsze ilościowo, ale mniej intensywne kontakty językowe.

Słowa kluczowe
zapożyczenia leksykalne, polsko-niemieckie kontakty językowe, pola semantyczne, kontakt kulturowy a język

1. Introduction

Lexical borrowing has recently become a focus of language typology. One important field of interest within this typological approach is the connection between borrowing and lexical meaning, which can be addressed in two different ways. One is represented by the impressive *Loanword Typology Project* led by Martin Haspelmath and Uri Tadmor, its database (Haspelmath and Tadmor 2009b) and in the resulting volume (Haspelmath and Tadmor 2009a), which includes case studies in 41 languages and overall results (Tadmor 2009). This is the onomasiological approach, which is manifested in the question, "How likely is it that a word with a given lexical meaning would be borrowed from one language into another?" (Haspelmath and Tadmor 2009c: 1). Starting with a fixed list of lexical meanings, the question is asked whether or not these meanings are expressed in a certain language by forms (phonological material) borrowed from another language.

Alternatively one could look at the problem from the semasiological angle: starting with a fixed list of borrowed forms, the question can be asked which semantic fields the meanings expressed belong to. This is the approach that is chosen in this study. It requires that the loanwords in a given language, including their meanings, are already identified. This is the case with the long-lasting language contact situation between German and Polish, namely due to the recently published WDLP (2010). The WDLP contains all documented German loanwords in Polish (according to a certain definition, see below) from the earliest Polish written records up to the middle of the 20th century.

The aim of this paper is twofold. Firstly, it has a descriptive component. It has frequently been noted that many German loanwords in Polish belong to certain semantic fields, such as the mining industry, crafts and manufacturing, law, military, construction, clothing, administration, and food (see for example Klemensiewicz 1985: 136–137, 342–344 and 645–646; Lehr-Spławiński 1947: 199–200 and 269; Mazur 1993: 114, 236 and 299; Lipczuk 2001; Czarnecki

2001). However, such statements are issued mostly ad hoc and unsystematically. This paper aims at a systematic quantitative overview over the semantic fields of German loanwords in Polish. The analysis will be divided according to two parameters. First, I will compare different time periods of borrowing, aiming at a description of the chronological development of German loanwords. Second, I will compare parts of the sample that differ in their sustainability, that is, in their depth of integration in the Polish lexicon, by differentiating between better and worse documented loanwords.

Furthermore, the study has more theoretical aims, with implications for methodology. On the basis of the findings I will address the need for both an onomasiological and a semasiological approach in order to understand the relation between meaning and borrowing. I will also address the use of a classification scheme developed for typological purposes in an analysis of the long contact situation between the two Central European languages. If the vast majority of loanwords were to fall into only one or even several large categories, the informative value of the loanword's membership to these categories would be rather low.[1] Furthermore, the paper will also demonstrate the use of some simple quantitative methods in the investigation of the linguistic reflexes of cultural contact.

2. Background

As outlined by Haspelmath and Tadmor (2009c), the main precondition for any typological study on lexical borrowing is a comparable sample. The authors fulfil this precondition by means of a fixed list of meanings, the so-called *Loan Word Typology Meaning List* (henceforth LWTML). It is a sample of 1460 lexical meanings based on the meaning list of the *Intercontinental Dictionary Series* (IDS), which in turn is based on Carl Darling Buck's *Dictionary of Selected Synonyms in the Principal Indo-European Languages* (Buck 1949). The authors added 150 additional meanings in order to account for cultural and environmental characteristics in non-European languages. These meanings are assigned to 24 different semantic fields (cf. Table 1).[2]

[1] This is of even more importance because of a third goal of this study: In the course of an ongoing research project funded by the "Deutsche Forschungsgemeinschaft" at the home institute of the author, the borrowing path of German words via Polish into Byelorussian, Ukrainian and Russian is investigated. One question that will be addressed within this project is the connection between the spread of loanwords and the semantic fields of the loanwords, and this against the background of cultural-historical developments in this area. For more information on the project "Wörter auf Wanderschaft: Der Weg deutscher Lehnwörter des Polnischen ins Ostslavische," see http://www.uni-oldenburg.de/slavistik/forschung/sprachwissenschaft/drittmittelprojekte/woerter-auf-wanderschaft/ [accessed 13.12.2015].

[2] The entities here and in the following are put in square brackets in order to make clear that they refer to language-independent meanings, not to language-specific (English, German, Polish, etc.) lexical entries.

Table 1: The semantic classification used in the Loanword Typology Project

Semantic field	Number of meanings in the LWTML	Examples
The physical world	75	[sand], [wave], [sun], [to extinguish], [firewood]
Kinship	85	[person], [male], [wife], [son], [you]
Animals	116	[livestock], [stable or stall], [cow], [spider]
The body	159	[skin], [face], [feather], [to breathe], [pregnant], [dead], [strong], [fever], [physician], [drunk]
Food and drink	81	[raw], [to be hungry], [to cook], [kettle], [flour], [mill], [potato], [mead]
Clothing and grooming	59	[tailor], [linen], [needle], [to dye], [trousers], [bracelet], [mirror]
The house	47	[hut], [door], [lock], [fireplace], [bed]
Agriculture and vegetation	74	[field], [to dig], [wheat], [oak], [to smoke], [banana]
Basic actions and technology	78	[to do], [to tie], [to cut], [to break], [to wash], [to paint], [rope], [tool], [glass], [gold], [basket]
Motion	82	[to turn], [to drop], [to catch], [to dance], [to disappear], [to flee], [road], [wheel], [mast], [anchor]
Possession	46	[to take], [to destroy], [money], [beggar], [tax], [to buy], [market], [cheap]
Spatial relations	75	[after], [to put], [to remain], [to open], [high], [edge], [big], [line], [similar], [to change]
Quantity	38	[one], [all], [enough], [part], [alone], [first]
Time	57	[new], [young], [now], [fast], [to finish], [always], [night], [yesterday], [Sunday], [winter]
Sense perception	49	[to see], [salty], [red], [hot], [clean]
Emotions and values	48	[soul or spirit], [good luck], [happy], [to play], [to kiss], [proud], [danger], [mistake]
Cognition	51	[to believe], [idea], [teacher] [to betray], [easy], [need or necessity], [if], [yes], [what?]
Speech and language	41	[voice], [to sing], [to say], [to promise], [to write], [paper], [drum]
Social and political relations	36	[country], [king], [citizen], [enemy], [to invite], [to help], [prostitute]
Warfare and hunting	40	[to fight], [sword], [guard], [tower], [fisherman], [to hunt]
Law	26	[court], [to accuse], [innocent], [prison], [murder], [thief]
Religion and belief	26	[god], [church], [to bless], [demon]
Modern world	57	[radio], [car],[telephone], [coffee], [hospital], [police], [crime], [postcard], [calendar]
Miscellaneous function words	14	[to be], [with], [not], [this], [here]

Source: Haspelmath and Tadmor 2009c.

As can be seen, the semantic classification is not hierarchical, but a flat classification with only one level of differentiation. The items in one category are most often not connected with each other via sharing certain semantic features, but because together they are parts of certain prototypical situations. Although developed much earlier, it is thus more in the spirit of frame semantics (see for example Fillmore 1977) than in the spirit of structural concepts of semantics. To give but one example, the field "Motion" contains motions ([to go], [to fly], [to swim]), actions causing motion ([to throw], [to turn], [to push]), places designated for motion ([path], [road], [bridge]), vehicles ([cart], [sledge], [ship]), and instruments to regulate motion ([wheel], [paddle], [anchor]).

The semantic fields are treated as mutually exclusive (each meaning is assigned to one field only), and as if they covered all possible meanings (all possible meanings could be attributed to one semantic field). This is of course a heuristic dodge, which in practice causes some difficulties. As the author of the original list already states: "Like any other, it [= the classification] will be an easy mark for criticism" (Buck 1989 [1949]: xiii). It therefore goes without saying that for the one or other meaning, the chosen attribution to a semantic field can be considered controversial. Thus, [fast] and [slow] are attributed to the field "Time," and not to "Motion." The meanings [wheat], [rice], [banana] are attributed to the field "Agriculture and vegetation," while [bean], [potato], [nut], [fig] fall into the field "Food and drink." But such cases of doubt do not question the general merit: With the help of the list and on the basis of a worldwide sample of 41 languages Tadmor (2009) comes to the result that the semantic field of a word does matter for the probability of being borrowed. Certain semantic fields are more prone to borrowing than others. The more accessible fields for borrowing are 1) those that are subject to cultural fluctuation and 2) those that are (due to colonialism and/or globalization) dominated worldwide (at least in a historical sense) by just a few cultures/areas, for example "Religion and belief," "Clothing" or "The house." Fields that show a lower number of loanwords are fields that "consist of concepts that are universal and shared by most human societies," and are therefore not subject to major cultural developments, such as "Sense perception," "Spatial relations," "The body," "Kinship" (cf. Tadmor 2009: 64–65).

As described above, in this study the opposite direction is taken to that of Haspelmath and Tadmor. I will not start with a given set of meanings and check whether or not its entries are expressed by a loanword, but take a given set of loanwords and check which semantic fields they belong to. Instead of asking onomasiologically, "[h]ow likely is it that a word with a given lexical meaning would be borrowed from one language into another" (Haspelmath and Tadmor 2009c: 1), I will ask semasiologically how likely it is that a given

loanword belongs to this or that semantic field. After explaining methods and material, the global picture of the semantic fields of German loanwords in Polish will be given. After that, the analysis will be narrowed down to the comparison of three time periods, asking the question whether in different time periods the distribution over semantic fields remains constant or not. Finally, I will compare better integrated loanwords with less integrated ones, asking the question whether certain semantic fields are more prone to superficial language contact than others.

3. Methods

As already mentioned, the lexical material stems from the "Wörterbuch der deutschen Lehnwörter in der polnischen Hochsprache: von den Anfängen bis in die heutige Zeit" (WDLP 2010). The WDLP contains 2444 entries with mono- or polysemic structure, altogether 4180 monosemic units. It covers the whole time period from the earliest Polish written records in the 13th and 14th century to the middle of the 20th century, and includes all documented German loanwords that fulfil the following criteria:

- The loanword is a "prototypical" loanword, that is, one that has a borrowed phonological form; calques are not included.
- The loanword was borrowed directly from German into Polish, loanwords that were borrowed, for instance, via Czech are disregarded.
- The etymology of the loanword is German, words that are already loanwords in German are not included.
- The loanword is documented in the standard language (the written language in earlier time stages). Loanwords that can be found only in Polish dialects are disregarded.

For our purpose, it is important to make a further restriction. This can be exemplified with the loanword *basarunek*. The WDLP gives the following meaning definitions: 1) [recompense, compensation, compensation money, etc.] (first documented in 1462) and 2) [fustigation, drubbing] (first documented around 1850). The word *basarunek* stems from Middle High German *besserunge* with a meaning similar to the first Polish meaning. The second Polish meaning, [fustigation, drubbing], is obviously a specific Polish development, based on an ironic use of the word, and not a borrowed meaning – at least the WDLP does not connect it with a meaning of the German etymon. This semantic shift may or may not be connected with the lexeme's property of being a German loanword. When the question is to be answered which meanings words have "in the act of borrowing," secondarily developed meanings have to be excluded. Therefore, I restrict the analysis to meanings that the WDLP connects with the meaning of a German etymon. (This of course

is not to say that the Polish meanings are always completely identical with the German ones).

All remaining 3565 single meanings in the WDLP were classified according to the LWTML. Most often this was done per "multiple" analogy. For example, the word *flis* in the meaning [raftsman] was put into the field "Motion," because 1) "Motion" in the LWTML entails the meaning [raft], and 2) occupational titles are put into the field to which their "products" belong ([tailor] for example is found under "Clothing and grooming").

Quite often, two or more fields would be a plausible solution. However, the classifiers (see below) had to choose one "main" field as the only one regarded in the subsequent analysis. The decision between the candidates was guided by the following principles:

- Whenever it was possible, a meaning was classified according to the function or intended purpose of its referent. For example, technical or craft expressions were put into the field "Technology" only when they denoted objects/actions that are common for a lot of items from different subfields, otherwise they were put into the field which fits their use. Therefore, although the meaning of *cyngiel I* [trigger mechanism in firearms] is without doubt a technical object, it was put into the field "Warfare and hunting." The same holds for example for measures (*drelink* [unit of measure for wine of over 1000 litres, wine barrel of this size] was put into "Food and Drink," but *wispel* [unit of measure of capacity] into "Quantity").
- Likewise, professions were put into fields according to their products (for example, *baumistrz* [architect] was sorted into "The house"). However, social institutions like guilds etc., which were specific to certain professional groups, were put into the field "Social and political relations" (for example *auflega*: [Guild meeting at which the contributions of artisans were collected]; *fron*: [Work obligation of serf-peasants in urgent field work in Poland before the Polish divisions]).
- The category "Modern world" was excluded from the list of possible fields. First, the contrast between this category and the other categories is of a different nature to the contrasts between the remaining categories. Its entries in the LWTML (like [car], [telephone], [coffee]) can therefore more or less easily be put into the remaining fields ("Motion," "Speech and language," "Food"). Second, and more important: As one of the aims of this study is a time dependent analysis, the possible categories must of course be defined independently of time. It would not be astonishing to find that meanings from the category "Modern world" predominate in later time periods.
- Apart from this, only one major deviation from Haspelmath and Tadmor (2009c) was unavoidable: The LWTML contains the entries [to sing], [flute], [drum], [horn or trumpet] and [rattle] which are grouped into

the category "Speech and language" (that is 5 items out of 41 in this field are connected with music). In our sample, there are 46 entries that denote entities connected with music (instruments, types of dance, etc.). Grouping them together with the 64 items connected with "Speech and language" would distort the picture. Therefore, I decided to put meanings connected with music (as well as arts, leisure activities, and sport) into the category "Emotions and values." This is of course a little inconsistent, as other biases exist in the sample as well. For example, there is a high number of meanings connected with printing. Following the logic of the LWTML, for this study they were added to the category "Speech and language." Alternatively, one could of course decide to put them into the field "Technology" instead.

- Some "monosemic" entries (or their definitions, respectively) in the WDLP included parts that would have to be attributed to different semantic fields (for example *halc*: [neck, collar]; *hart I*: [capability of psychological or physical resistance]; *pielęgnować*: [to care for sick, elderly people, children; to support the development of plants or animals]). These items – as well as items with a meaning that could not be assigned to one particular field – were disregarded.
- In some cases, the WDLP gives a concrete meaning with the additional comment "also figuratively." In such cases, the meaning was classified according to the concrete meaning. For example, along with several other meanings, the loanword *munsztuk* has the meaning [curb bit], that is, it denotes literally a type of bit used for riding and controlling horses. Accordingly, this meaning was put into the field "Animals," even though the WDLP gives the additional comment that this word can also be used figuratively.

Naturally, different meanings of one lexeme can fall into different fields. For example, the word *brak* has several meanings, such as [difference], and [deficit]. While [difference] was put into the field "Cognition," [deficit] was put into the field "Emotions and values."

The classification was carried out independently by two student research assistants.[3] In cases where they did not agree, the author made the decision whenever possible. Afterwards, the items were ordered by semantic field, and the semantic fields were again checked for inconsistencies by the author. No single choice was possible for 103 monosemic entries, and the items were excluded, reducing the sample size to 3462.

[3] My thanks go to Alessandra Siudym and Berenice von Heereman. All mistakes (or unfortunate choices) are mine.

4. Results

4.1. Overall results

Table 2 shows the overall proportions of the monosemic entries in the WDLP that could be clearly attributed to one semantic field, and their rank (n = 3462). It also shows the rank of the semantic field in Tadmor's (2009) analysis. The rank of the semantic field in Tadmor's analysis was based on the average proportion of loanwords in the semantic fields.

Table 2: The overall proportions of semantic fields in the WDLP

Semantic field	Number	Percentage	Rank WDLP	Rank Tadmor (2009)
Technology	747	21.6	1	12
Emotion	293	8.5	2	16
Motion	269	7.8	3	18
Warfare	242	7.0	4	8
Clothing	231	6.7	5	2
Food	226	6.5	6	7
Possession	178	5.1	7	9
House	169	4.9	8	3
Social/Political	151	4.4	9	5
Animals	140	4.0	10	10
World	122	3.5	11	17
Body	117	3.4	12	20
Agriculture	102	2.9	13	6
Law	100	2.9	14	4
Cognition	74	2.1	15	11
Speech	64	1.8	16	14
Perception	62	1.8	17	22
Quantity	60	1.7	18	15
Space	52	1.5	19	21
Time	29	0.8	20	13
Religion	21	0.6	21	1
Kinship	13	0.4	22	19
Total	3462	100		

There are two points to discuss here. The first one is the difference between the scale reflecting the proportions in the WDLP and the scale reported in Tadmor (2009). At the bottom of the scale found in the WDLP are not only

those semantic fields which Tadmor (2009) reported to be less prone to influence by language contact ("Kinship," "Time," "Spatial relations," "Sense perceptions," "Quantity"): There are also fields like "Law," and especially "Religion and Belief," which have been found to be among the areas most vulnerable for borrowing. The fields with the highest number of entries in the WDLP – "Motion," "Emotion" and "Technology" – are in the midfield or in the lower half of Tadmor's scale. As is shown by a correlation test, the two hierarchies are not correlated (Spearman's rank coefficient rho = 0.22, p = 0.32).

The substantial differences between the hierarchies are of course due to the different approaches in both studies:

- First it should be kept in mind that in the WDLP, only German loanwords (in a strict definition) are considered. Of course there are many loanwords in Polish in the semantic field "Religion" – but not German ones, at least in the strict definition of German loanwords used in the WDLP (for example *kościół* 'church' [< Czech *kostel* < Old High German *kastel* < Latin *castellum*, cf. Drechsel 1996: 43], which for the above mentioned reasons is not included in the WDLP). Polish translators of the Bible, for instance, were oriented towards the earlier Czech translations of the Bible. If there was contact with German in the field "Religion," it was an indirect kind of contact. The prototypical domain of direct contact, on the other hand, is trading, which contributes to the quantity of loanwords in the domains "Possession" and "Quantity."
- Furthermore, while Haspelmath and Tadmor compare relative frequencies (relative to the whole number of meanings in the given semantic field), I compare absolute frequencies. Are the 100 loanwords in the field "Law" many or few? This question cannot be answered, because the number of lexical entries in this semantic field in the Polish historical vocabulary, or more specifically, in the vocabulary of the sources evaluated by the WDLP, is not known.
- Would the picture look different if we could calculate the relative frequencies? One can only speculate, but it is surely of importance that the LWTML contains only meanings that tend to belong to the core lexicon. In the semasiological approach used in this paper, more peripheral parts of the lexicon play a role as well (see also below).

Comparing the two hierarchies is therefore like comparing apples to oranges, and the question is why the two scales should correlate. But still, it is important to state that they do not. From the perspective chosen in this paper, it is not the case that words denoting for example "Motion" or "Emotion" are unlikely to be borrowed. Finding a high number of loanwords in a fixed sample of meanings from a certain semantic field does not permit the conclusion that a high percentage of the loanwords from a given language into a given language belong to that field. The connection between meaning

and borrowing should therefore be investigated both onomasiologically and semasiologically.

The second point to discuss is whether the results are in accordance with the impressionistic assumptions of "typical" semantic fields for German loanwords in Polish given in the literature. A typical list is given by Lipczuk (2001): "House," "Household appliances," "Craft," "Economy," "Trade," "Architecture," "Building," "Administration," "Religion," "Military," "Seafaring," "Sport," "Mining," "Clothing," "Animals," "Food." Mazur (1993) mentions for Old Polish "Craft," "Building," "Household," "Trade," "Clothing," "Law," "Administration," "Food," "Mining" (Mazur 1993: 114), for Middle Polish furthermore "Warfare" (Mazur 1993: 236), for New Polish "Craft" and "Industry," "Administration," "Military" and "Different fields in colloquial speech" (Mazur 1993: 299). A glance at Table 2 confirms that these impressions are to a high degree in agreement with our findings. First, the dominance of the "Basic actions and technology" is striking. The fields "Warfare," "Clothing" and "Food" are also often mentioned among the "classical" fields of German loanwords. The field "Motion" contains a lot of technical terms, connected for instance with seafaring or railways, and so the high number is also not astonishing.

But there are some surprises as well. One field that is normally not seen as typical for German loanwords in Polish is "Emotions and values," but in our analysis, it ranks second. In connection with this, it should not be overlooked that although the fields "Perception," "Speech" and "Cognition" rank relatively low, one still cannot say that they are poorly attested. And even the fields "Space," "Time," "Religion" and "Kinship" are still represented by a significant number of examples. All this clearly shows that the lexical influence of German is not restricted to more or less specialized registers of language, as is suggested by traditional lists of semantic fields.

As already mentioned, it is not possible to say whether the 100 loanwords in the field "Law" are many or few, because the comparison value (the number of words connected with law in Polish historical vocabulary) is not known. However, whenever the high quantity of German loanwords in the field "Law" is mentioned, it should be kept in mind that in relation to the total number of loaned items, this field makes up only a small group.

4.2. Time periods

Hentschel (2009) shows that in the history of lexical borrowing from German into Polish, the following three quantitatively different time periods can be distinguished:

– a period with a high number of German loanwords from the earliest Polish written records in the 13th and 14th century to approximately 1620 (Stage I);

- a period with a low number of German loanwords from 1620 to 1780 (Stage II);
- another period with a high number of German loanwords from 1780 until the middle of the 20th century, the endpoint of the systematic collection of loanwords in the WDLP (Stage III).

It is obvious that these time periods correlate with external historical, sociological, political and cultural facts (Hentschel 2009: 162; cf. also Czarnecki 2001). The first period encompasses a period of immigration of German-speaking farmers and craftsmen into Poland in the 14th/15th century, which also involved the foundation of settlements according to German law. Polish cities were often German-dominated, until a phase of polonization began in the 15th century. This period also contains the so-called "golden age" of Polish writing in the 16th century, which still witnessed high immigration, and the propagation of typography. The intermediate period from the 17th century to the end of the 18th century is a period with less immigration from German-speaking territories on the one hand, and a high integration of people of German origin on the other. Moreover, it is a period of wars. Most of the so-called Nordic Wars including the "Swedish Deluge" took place in this period, causing terrible population losses, economic decline, and the loss of the status as a great power by the Polish-Lithuanian Commonwealth. The third period from the end of the 18th century onwards is characterized by the Polish partitions, in the course of which large parts of Poland came under the control of two German-speaking states.

It is obvious that the first and third periods witnessed intensive and extensive contact between German-speaking and Polish-speaking parts of the population. This is reflected by the high number of loanwords in these periods. However, there are differences when it comes to the sustainability of the loanwords. Hentschel (2009: 164–165) shows that in the latter time period a high number of only weakly documented and accordingly less frequently used, less widely distributed, and less integrated loanwords are found. He conceptualizes this finding by means of the distinction between "intensive" and "extensive" language contact: In the third time period, the lexical contact between both languages – one of them the invader's language – seems to be quite extensive, but less intensive, that is, more superficial than in the first period.

In the following I will analyze whether apart from the above mentioned quantitative and qualitative differences there are also differences in the distribution of loanwords over semantic fields. The absolute numbers, the proportions, the rank and the standardized residuals (see below) of the different fields for the three time periods are given in Table 3.

Table 3: The proportions of semantic fields in the three time periods

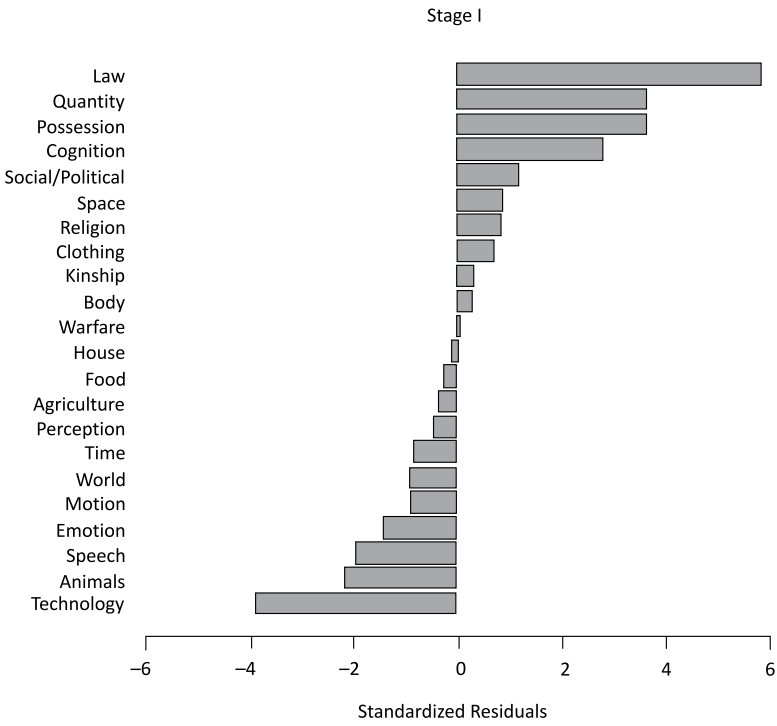
	Absolute			Row percentage			Rank			Standardized residuals			
Stage	I	II	III	I	II	III	I	II	III	I	II	III	Mean magnitude
Kinship	5	2	6	0.42	0.42	0.34	1	1.5	1	0.28	0.17	−0.39	0.28
Religion	9	3	9	0.75	0.63	0.50	3	3.5	2	0.79	0.08	−0.80	0.55
Time	8	2	19	0.67	0.42	1.06	2	1.5	4	−0.81	−1.07	1.51	1.13
Space	21	9	22	1.75	1.89	1.23	6	6	5	0.86	0.76	−1.35	0.99
Quantity	34	13	13	2.83	2.74	0.73	7.5	8	3	3.60	1.80	−4.67	3.36
Perception	20	17	25	1.66	3.58	1.40	5	11	6	−0.41	3.16	−1.79	1.79
Speech	15	3	46	1.25	0.63	2.58	4	3.5	9	−1.91	−2.12	3.28	2.44
Cognition	37	11	26	3.08	2.32	1.46	9.5	7	7	2.79	0.29	−2.86	1.98
Law	62	6	32	5.16	1.26	1.79	15	5	8	5.81	−2.28	−3.97	4.02
Agriculture	34	18	50	2.83	3.79	2.80	7.5	12.5	10	−0.30	1.17	−0.52	0.66
Body	42	18	57	3.49	3.79	3.19	12	12.5	11	0.27	0.53	−0.63	0.48
World	38	14	70	3.16	2.95	3.92	11	9.5	12	−0.84	−0.73	1.31	0.96
Animals	37	26	77	3.08	5.47	4.31	9.5	15	14	−2.10	1.70	0.83	1.55
Social/ Political	59	14	78	4.91	2.95	4.37	14	9.5	15	1.15	−1.62	0.02	0.93
House	58	28	83	4.83	5.89	4.65	13	17	16	−0.11	1.10	−0.65	0.62
Possession	84	22	72	6.99	4.63	4.03	17.5	14	13	3.59	−0.54	−3.05	2.39
Food	77	27	122	6.41	5.68	6.83	16	16	19	−0.21	−0.80	0.75	0.59
Clothing	85	29	117	7.07	6.11	6.55	19	18	18	0.69	−0.53	−0.29	0.50
Warfare	84	52	106	6.99	10.95	5.94	17.5	21	17	0.00	3.64	−2.50	2.05
Motion	87	37	145	7.24	7.79	8.12	20	20	20	−0.85	0.02	0.80	0.56
Emotion	91	36	166	7.57	7.58	9.30	21	19	21	−1.38	−0.75	1.82	1.32
Technology	215	88	444	17.89	18.53	24.87	22	22	22	−3.85	−1.74	4.87	3.48
Sum	1202	475	1785	100	100	100							

Does the distribution over the semantic fields change in the three periods? The answer is not straightforward. On the one hand, the ranks – and the percentages – of the semantic fields in the three periods are highly correlated (Stages I and II: Spearman's rho = 0.85, $p < 0.001$; Stages II and III: Spearman's rho = 0.90, $p < 0.001$; Stages I and III: Spearman's rho = 0.90, $p < 0.001$). "Technology," for example, is always the best represented field. On the other hand, this is certainly connected with the overall width of the field: A broad field like

"Technology" has a higher chance of reaching a high number of items than a narrower field such as "Kinship." A χ^2-test then shows that the time stages differ in the distribution of semantic fields ($\chi^2 = 153.08$, df = 42, $p < 0.001$).

The question now is where the main differences occur: is one of the periods typical (or atypical) for a certain semantic field, or respectively, are certain semantic fields typical for a certain time period? To clarify this, I will look at the standardized residuals, i.e. the deviation of the observed values from the expected values divided by their estimated standard error (cf. Agresti 2007: 38–39). The values show which fields are overrepresented in a given time period (positive values) and which are underrepresented (negative values). As a rule of thumb, residuals with a magnitude greater than 2.00 can be said to play a major role for making the time periods significantly different.[4] The standard residuals are given above in Table 3. We will go through the standard residuals period by period in order to see which fields are "typical" for a given time period. After that we will discuss which fields remain fairly stable over the time periods, and which are subject to high fluctuation.

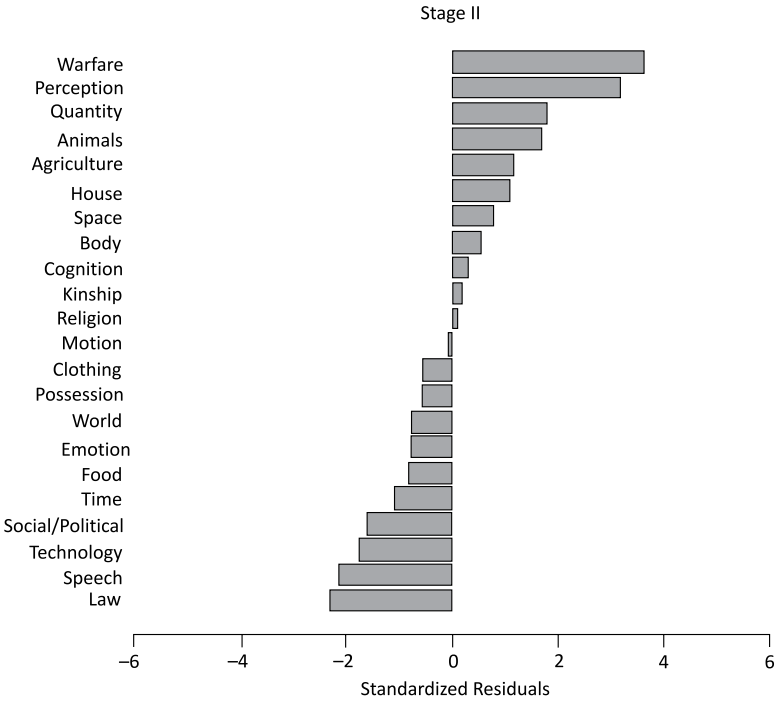
Figure 1: Stage I (from the beginnings to 1620)



[4] If the distribution of the semantic fields were independent of the time periods, by chance about 5% of the standardized residuals would be expected to be further away from 0 than ±2.

Figure 1 shows that in the first time period, the areas "Law," "Quantity," "Possession" and "Cognition" are overrepresented. For the first three, this is certainly not surprising: It is precisely the period in which cities were founded according to German law, including their own jurisdiction. On the other hand, Germans played a major role in trade, which accounts for the importance of the fields "Possession" and "Quantity." As for the field "Cognition," it is not immediately clear why the first epoch should play a major role here, but upon further consideration, it becomes evident that many words are connected with actions like counting, calculating, choosing, comparing, etc., which are related to trade as well. Particularly underrepresented are expressions in the fields "Speech and language," "Animals," and especially "Technology and basic actions." There are also some surprising revelations to be observed: one might assume that loanwords in the field "Agriculture" are found mostly in the first time period, due to the high immigration of German farmers in this time. However, this is not the case.

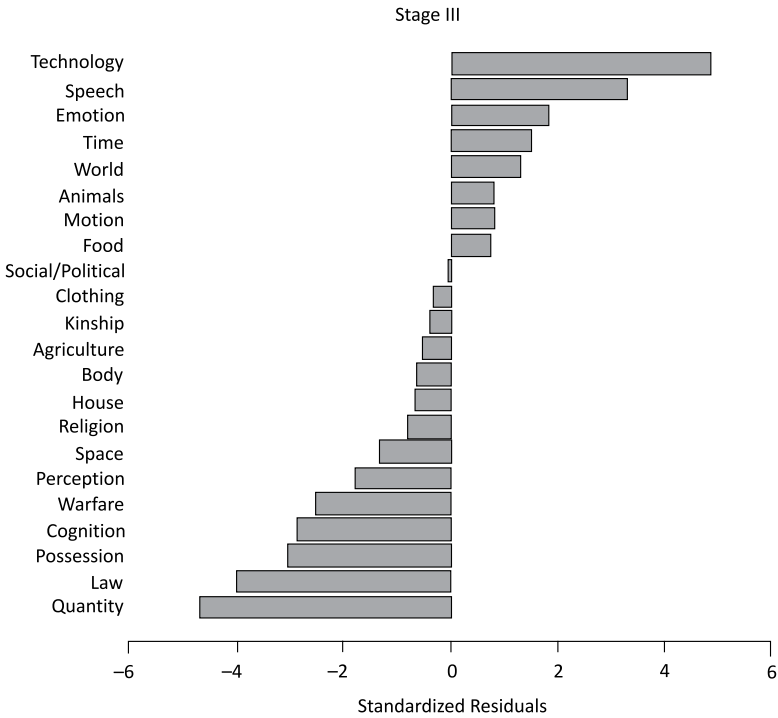
Figure 2: Stage 2 (from 1621 to 1780)



As was predicted by Mazur (1993: 236) and Czarnecki (2001: 296), Stage II is highly affected by loanwords in the field "Warfare and hunting." The reigns of the Saxon Kings August II (1697–1733) and August III (1733–1764) fall into this period; under their influence, German military terminology came into

use. The field "Warfare" is followed by "Perception." A closer look reveals that in Stage II, 11 out of the 18 words in this field denote or are connected with colours (for example *sowgryn* [a green colour]; *blik* [a bright colour applied thickly on an image in order to imitate reflected light]). The fields "Speech and language" and "Law" are underrepresented during this time period.

Figure 3: Stage 3 (from 1781 to ca. 1950)



As can be seen in Figure 3, the field "Technology and basic actions" stands out in the last time period, which historically encompasses the Industrial Revolution. Surprisingly, it is the fields "Speech" and "Emotion" that immediately follow. The field "Speech" includes a high number of terms connected with printing (21 out of 46), but also words in the domains of writing and speaking. "Emotion" includes expressions connected with leisure activities and music, but also words denoting emotions in a strict sense.

In conclusion, the three different time periods demonstrate different numbers of lexical borrowing in the various semantic fields. These tendencies correlate with historical circumstances. However, there are some semantic fields which do not appear among the ones that stand out in one of the time periods. In the following, I will check which fields remain stable over the time periods, and which are subject to the greatest fluctuations. For this purpose, the average

magnitude of the residuals in the three time periods for a given semantic field is calculated. The results are given in Figure 4 (as well as above in Table 3).

Figure 4: Stability of semantic fields

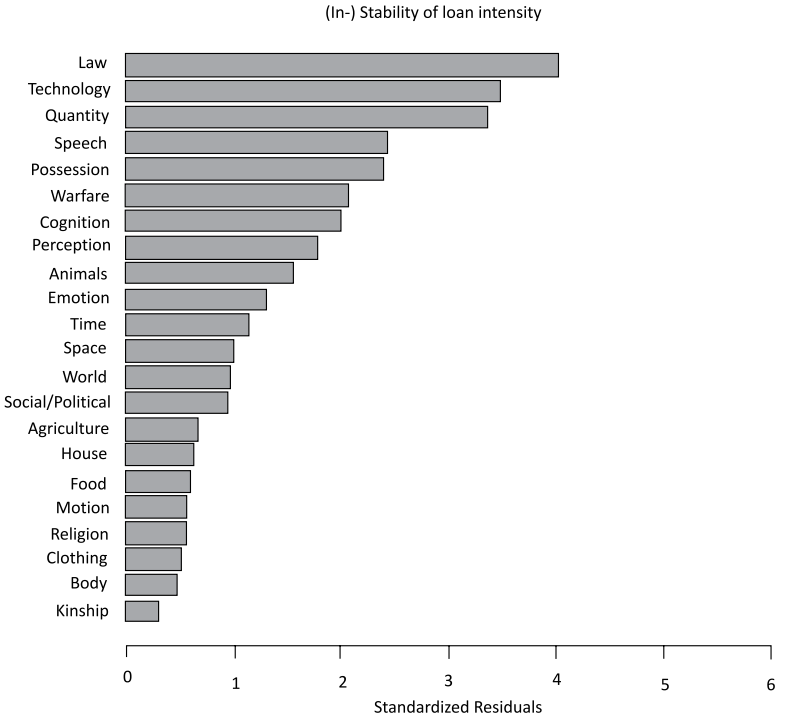


Figure 4 is to be interpreted as follows: The longer the bar, the higher the fluctuation in the proportion of loanwords in a given semantic field over the three time periods. The shorter it is, the more evenly the shares are distributed over the three epochs. In the upper part of the figure are the fields which in one period or another were overrepresented (and therefore underrepresented in other periods) in the analyses above: "Law," "Technology," "Quantity," "Speech," "Possession," "Warfare," "Cognition," "Perception." This is of course of little surprise. More interesting are the fields at the lower end of the scale, that is, the more stable categories, which so far have not been mentioned explicitly. The proportions of "Kinship," "Body," "Motion," "Agriculture," and "Clothing" remain stable over time. This stability can have different reasons. While in the field "Kinship" and "Body," the shares are consistently low, they are consistently high in "Clothing," "Motion," and "Agriculture." While "Body" is a field that is not subject to cultural changes, "Clothing" certainly is a prototypical field of cultural changes. But obviously the cultural changes and German influence

are of a rather permanent nature, and are not connected with specific historical events.

As a summary, a last look at the data is given in Figure 5, which shows the standardized residuals of the 22 semantic fields (starting with "Law," which shows the most fluctuation, in the upper left) in the three time periods (with the earliest time period at the top).

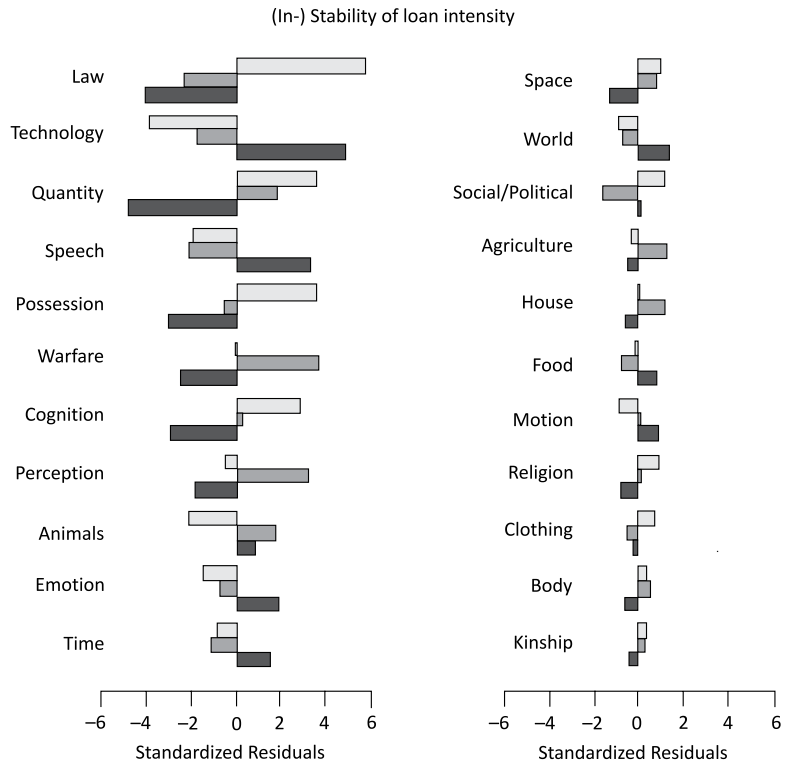


Figure 5: Variation of the semantic fields over time

4.3. Differences between well-integrated and poorly-integrated loanwords

The following analysis compares loanwords that are poorly documented with those that are better documented. The question is whether certain semantic fields are more likely to be affected by superficial contact, while others are more deeply rooted in the Polish language. Following Hentschel (2009: 164), loanwords are understood as "poorly documented" when they meet one of the following criteria:

– They are documented in historical records only once (hapax legomena).
– They are documented only in one source.
– They are documented only in dictionaries, not in non-lexicographic sources.

Out of the 3462 meanings, 1458 are poorly documented. A χ^2-test tells us that the distribution over semantic fields differs between better and worse documented loanwords ($\chi^2 = 230.35$, df = 21, $p < 0.001$). The standardized residuals are shown in Figure 6.

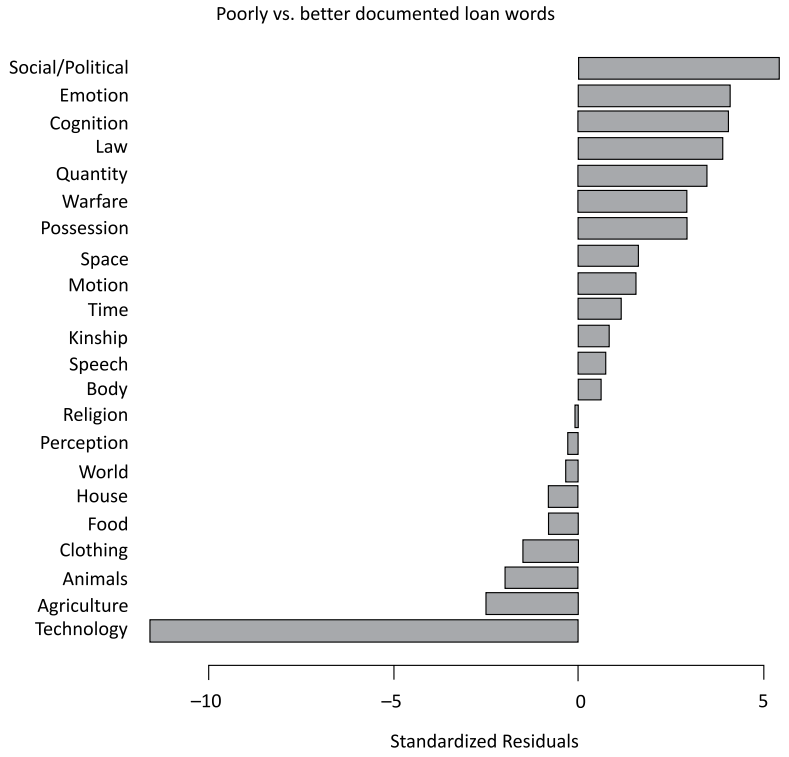


Figure 6: Semantic fields of poorly and better documented loanwords

It appears that the field "Technology" is highly underrepresented within better documented loanwords. There are a lot of German loanwords in this field, but a lot of them are not well-integrated in the Polish lexicon. "Agriculture" is also below the critical value of –2.00. There is obviously a discrepancy between the high intensity and the comparatively low extensity of German lexical impact in these semantic fields, particularly in "Technology." On the other hand, the fields "Possession," "Warfare," "Quantity," "Law," "Cognition," "Emotion," and especially "Social and political relations" are overrepresented in the better documented loanwords. These are fields where the German loanwords

are "unusually" well integrated, showing a high intensity of language contact in these domains.

5. Conclusion

This article dealt with the connection of lexical meaning and lexical borrowing for German loanwords in Polish. Based on a semantic classification of all documented German loanwords in the history of Polish according to a classification scheme proposed by Haspelmath and Tadmor (2009a), two statements were verified in this study. Firstly, German loanwords in Polish are often said to belong mostly to a restricted set of semantic fields, like "Law," "Warfare," or "Craft and industry". Secondly, from an onomasiological point of view, certain semantic fields are said to be cross-linguistically more likely to be borrowed, and as a consequence to contain more borrowed lexemes than others.

As to the first statement, it was shown that the distribution of German loanwords over semantic fields follows the assumptions to a great degree. A large number of loanwords fall into the fields connected with "Technology," but also "Motion," "Warfare and Hunting" and "Possession," which can be connected with the "classic" fields of German loanwords mentioned above. But some additional fields like "Emotions and values" play a role as well. Other fields, such as "Law," play only a minor role when it comes to the proportion of the semantic field to the total number of German loanwords in Polish.

A comparison of the hierarchy based on the contribution of each semantic field to the total number of German loanwords in Polish with the hierarchy of semantic fields found by Tadmor (2009) on onomasiological grounds showed that the two hierarchies do not correlate. Although the two approaches also differ in the fact that in this study only German loanwords are considered, whereas in Haspelmath and Tadmor (2009a), all loanwords were counted, this difference implies that both a semasiological and an onomasiological approach are necessary in order to fully understand the relationship between meaning and borrowing. Finding a high percentage of loanwords in a fixed list of meanings within a semantic field does not permit the conclusion that a high percentage of the loanwords in a language fall into that field.

A comparison of different periods of German-Polish language contact showed that the distribution of the semantic fields differs in different periods. These variations can be explained by historical circumstances like the social characteristics of the population of the "donor" language or overall social developments ("industrialization"). However, the proportion of loanwords within some semantic fields stays very stable over time.

In a second step, it could further be shown that the semantic fields are not evenly distributed when it comes to the intensity of language contact. Some fields are overrepresented in better-documented loanwords, some underrepresented, and vice versa. This is also another hint that the informative value of results based on a fixed list of meanings are limited to the parts of the lexicon this list is representative of.

Furthermore, the question must be asked to what degree the semantic classification used here is an adequate instrument for the investigation of the long history of contact between the two large Central European languages. Within the classification scheme, certain particularities of the borrowing situation might be overlooked, for example the high quantity of (often very specialized technical) items connected with printing in the field "Speech and language," the high quantity of items connected with shipping in the field "Motion," or with mining in the field "Technology." For another language, the items in a given semantic field could be of very different subfields than in the Polish example. Does this mean that an individual classification scheme should be developed ad hoc for any language pair? That way one would rob oneself of the possibility to compare the semantic fields of loanwords to each other in different language pairs. I would therefore argue that the analysis of the semantic fields of the loanwords in a given language should include two steps: The first step should be the deductive one, that is, the application of an established classification scheme to the given language contact situation. Within the established classification scheme, in a second, inductive step, the language specific peculiarities of the composition of the semantic fields should be analysed. While the first step is demonstrated in this study, the second could only be indicated on occasion, and should be further expatiated.

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