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An empirical perspective on the contact between English and French: a case study on substitutive complex prepositions

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Abstract: Historical language contact has generally been approached qualitatively through the examination of different linguistic and extralinguistic factors. By contrast, frequency patterns, although widely acknowledged in other linguistic fields, have not received a great deal of attention in the contact linguistics literature. This paper attempts to bridge this methodological gap through the application of an experimental procedure borrowed from the field of learner corpus research and areal linguistics. In a pilot study on the well-known case of language contact between English and French, the potential contact effects of French on English with regard to the use of substitutive complex prepositions of the PNP type are investigated, using probabilistic multifactorial modeling. The goal is to show in what ways and to what extent English conforms to French in the use of *in lieu of* and *in place of*, but also the extent to which it deviates from the Romance language, assuming from the outset that French served as the model language. This approach to historical language contact methodologically enriches an ever-growing paradigm and also illustrates empirically what has been conceptualized as frequency effects in usage-based Construction Grammar.

Keywords: historical language contact, complex prepositions, construction grammar, statistical modeling.

1 Introduction

Complex prepositions (henceforth CPs) of the preposition-noun-preposition (PNP) type have received a great deal of attention in recent literature and for a variety of languages (Di Meola 2000; Hoffmann 2005; Fagard 2009; Vranjes 2012, among others). Compared to simple prepositions, they typically add semantic specificities to the more general meanings of their paradigms (Brems and Davidse 2010), and they tend to show intricate behavior with regard to syntactic alteration (Quirk and Mulholland 1964). More interestingly, they represent one of the greatest convergences in European languages (Hüning 2014), and their source of cross-linguistic diffusion is probably language contact (Hüning 2014), a view that is advocated here as well.

English is one of the best examples we have of a language with a "touch of foreignness" as regards complex structures, given the significant number of grammatical elements it has borrowed. Quite strikingly, a considerable number of CPs in English have cognates in French (Lebenstedt 2015: 2). Table 1 illustrates a tiny sample of such cognates. Original forms no longer in use are indicated with the superscript †.

Although French has arguably played a major role in the production of CPs in the history of the English language, literature about this topic is limited. As Hoffmann (2005: 174) points out in his seminal book, "the existence of grammaticalized PNP-constructions in French may have facilitated the rise of (lexically unrelated) parallel constructions in English [,] [but] [t]he verification of such a hypothesis would require a quantitative, cross-linguistic investigation on a larger scale". This ambitious enterprise begins on a smaller scale by taking up Schwenter and Traugott's discussion of substitutive CPs (1995) in a cross-linguistic corpus-based study. I start off the discussion in Section 2 with a description of two functionally similar constructions

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Table 1: English PREP (DET) NOUN PREP-CONSTRUCTIONS and their French cognates.

English	French
in virtue of	en vertu de
in favor of	en faveur de
in spite of < in despite of†	en dépit de < en despit de†
to the detriment of	au détriment de

in English and their relationship to their French counterparts. The notion of contact-induced change is elaborated on in a constructional approach to language contact in Section 3. In Section 4 the data and the methodology used in this pilot study are described, introducing a novel approach to language contact in a statistical design. The results of the analysis are presented in Section 5 and further discussed in Section 6. The last section is devoted to concluding remarks and suggestions for future research.

2 Substitutive complex prepositions: distributional features

Schwenter and Traugott (1995) study the semantic and pragmatic shifts undergone by three substitutive CPs in the history of the English language, that is, *instead of*, *in place of* and *in lieu of*.[1] The latter two forms, whose first attestations postdate those of the former, cannot be used interchangeably with *instead of* in all contexts. In Present-day English, *instead of*, besides substitution, can express an adversative relationship between objects and events (see Talmy 2000: Ch. 6 on event-relating structures). The use of the other two constructions, on the other hand, seems to be more constrained by lexico-syntactic and sociolinguistic factors: Today, *in place of* is generally followed by NPs and rarely complemented by gerunds, and *in lieu of* is rarely used outside highly formal contexts (Schwenter and Traugott 1995: 258).

In Present-day written French, *au lieu de* and *à la place de* are in complementary distribution: *à la place de* can only express a cross-object relationship of substitution, whereas only *au lieu de* can introduce non-finite clauses and typically expresses contrastive cross-event relationships.

3 Theoretical background

3.1 The contact hypothesis

In the contact linguistics literature, the structural borrowing of adpositions is symptomatic of more intense contact in case of language maintenance, i.e. category 3 borrowing on the scale established by Thomason and Kaufman (1988: 74–75) (see Matras 2009: 156–157 for alternative suggestions). As suggested in the introduction, the English-French language contact has potentially triggered the emergence of some CPs in English, and *in place of* and *in lieu of* are seemingly choice candidates. As regards these substitutive prepositions, arguments in favor of the contact hypothesis are the form-meaning correspondence between them and their French cognates *à la place de* and *au lieu de*, but also the fact that the English noun *lieu* rarely occurs outside of the fixed expression under examination. Therefore, the coinage of such CPs cannot be fully accounted for by language-specific mechanisms of analogy along the model of *instead of*. The question then arises as to what the share of language contact is, but also what can be explained by analogy and idiosyncrasy.

3.2 A Construction Grammar approach to the borrowing of CPs

An integrated model of contact-induced change can arguably be constructed within the framework of usage-based Construction Grammar (henceforth CxG), which assumes that the whole of grammar can be captured

1 For reasons of space, we will not detail the different stages leading to the present-day usage of the substitutive constructions. The subject has been extensively treated in Schwenter and Traugott (1995), Tabor and Traugott (1998) and Traugott (2003).

by a network of conventionalized form-meaning pairings, i.e. constructions. At this stage, two views can be suggested with respect to the constructional status of the three English substitutive prepositions: The formation of substitutive CPs with Romance material was made possible through generalization of the pattern over pre-existing material in English, the nouns *place* and *lieu* having much in common with *stead*. The three CPs would instantiate a construction of the partially schematic form X [*in* N_{LOC} *of*] Y[2] associated with the meaning 'X substitutes for/replaces Y'. The expression itself is the instantiation of a more schematic pattern PNP which has been productive for generating new coinages to express relationships between objects and states of affairs. Regardless of the outcome synchronically, it is important to highlight the fact that historically speaking CPs, like any other constructions, are prone to changes in terms of form, function, frequency and/or distribution, a process termed constructional change in CxG (Hilpert 2013: 16). In addition, such changes may lead to the emergence of new form-meanings pairings, i.e. constructionalization (Traugott and Trousdale 2013). However, under certain circumstances, constructionalization may occur abruptly without prior constructional changes, e.g. in the case of lexical borrowing (Traugott and Trousdale 2013: 29–30). The other view, in this respect, would abandon the idea of a common schema for the three substitutive CPs through constructional change in favor of the hypothesis that *in place of* and *in lieu of* emerged as new constructions in their own right. This process, termed contact-induced constructionalization for the sake of simplicity, differs substantially from Hilpert's (2013: 205) unestablished definition of contact-induced constructionalization as "an influx of borrowed [elements] that eventually triggers the emergence of a productive construction". Nonetheless, Hilpert's conception of contact-induced constructionalization is still valid if English CPs are described at the highest schematic level: Given the abundance of CPs with Romance material, we can argue that English speakers are likely to have borrowed a set of CPs wholesale from French from Middle English onwards to subsequently generalize over their common pattern and develop new instantiations.

Fairly recently, a new strand in CxG, Diasystematic Construction Grammar (Höder 2012), has offered more complex heuristics to integrate the dimension of contact in a CxG approach to language change. More specifically, the speakers' linguistic *repertoire* is assumed to include both language-specific constructions and constructions which are not immune to cross-linguistic generalization, that is, "diaconstructions" (Höder 2012). Given the pervasiveness of CPs in many European languages, CPs of the type discussed here can arguably be considered as diaconstructions at a high level of schematicity, but the development of *in place of* and *in lieu of* is expected to be triggered by the establishment of diasystematic links between English and French at a less abstract level.

In the next sections, the analysis of corpus data shows how such mechanisms of constructional borrowing can be apprehended, albeit with some reservations. In such a constructionist approach, the isomorphic features of CPs do not have sufficient explanatory power.[3] Many parameters and their interactions have to be accounted for at the same time (Hilpert 2013: 17). Given the flexibility of CPs synchronically and historically, the task of examining all the defining form-meaning aspects of substitutive CPs is all but trivial. In fact, variation can touch any aspect of a grammatical expression, and changes in one aspect can be accompanied by changes in other aspects in a relationship of mutual dependence (Hilpert 2013: 6). The cross-linguistic dimension of CPs also adds to the complexity of the picture. If substitutive CPs are potential diaconstructions, i.e. language-unspecific constructions, they are nonetheless likely to show idiosyncrasies which have to be accounted for. Moreover, discrete similarities between constructions may actually hide continuous discrepancies, and the latter, as argued by Hilpert (2013), are likely to remain unnoticed if the philological analysis of linguistic constructions is not supplemented by quantitative accounts.

3.3 The role of statistical pre-emption

This subsection concerns a cognitive process that leads speakers to choose among a set of constructional variants in a given context. This process, termed statistical pre-emption (Boyd and Goldberg 2011), has

2 N_{LOC} are internal localization nouns.

3 Isomorphism, in this case, should be understood as morpheme per morpheme intertranslatability.

been defined as follows: "If a potential innovative expression would be precisely synonymous with a well-established expression, the innovation is normally pre-empted by the well established term, and is therefore considered ungrammatical" (Clark and Clark 1979: 798). In a nutshell, this concept rests on the premise that speakers, aside from forming generalizations over seemingly comparable constructions (Hilpert 2013: 138), learn arbitrary distributional restrictions that reflect usage constraints on the set of possible alternatives. Applied to the study of substitutive CPs, it implies that speakers are likely to keep track – in a probabilistic fashion – of the preferences of one CP over the others given a lexical-syntactic context. Moreover, speakers cognitively internalize frequency aspects of each alternative construction with respect to its usage contexts so as to avoid overgeneralizations where the incompatibility between the context and the construction is too great. If *in place of* and *in lieu of* are instantiations of the same construction without being constructions in their own right, statistical analyses of their contexts of occurrence should provide evidence that the two variants are equally frequent in those contexts.

A relatively novel perspective emerges from the implications of statistical pre-emption in language contact. Depending on the speaker's degree of familiarity with the donor language in the use of alternative constructions, but also on their ability to internalize these constructions and their usage constraints, some usage constraints of each alternative from the donor language are likely to be reflected in the recipient language. As a result, the degree to which the mapping of form, meaning and distribution in the recipient language conforms to the constraints in the donor language should inform us on, or at least shed light on, the mechanisms of constructional borrowing at play.

4 Data and methodology

4.1 The MuPDARF approach from the perspective of language contact

In the situation where French serves as a model language and English as a replica language, measuring the strength of the French influence in the borrowing of *in lieu of* and *in place of*, keeping in mind all their intricacies and usage constraints, amounts to determining how the English speakers' choices conform to/differ from the French speakers' choices in identical contexts. Such a question can take the shape of a statistical procedure that seeks to model the deviation of English from the French model in probabilistic terms. Such a procedure, called multifactorial deviation analysis with regression/random forests, hereafter MuPDAR(F), has been applied successfully in learner corpus research to determine how and why choices made by non-native speakers differ from those made by native speakers (Gries and Adelman 2014; Deshors and Gries 2016; Wulff et al. 2018),[4] but also to explore cross-varietal differences in syntactic alternations (Heller et al. 2017), and was adapted for the purpose of this study as follows:

1) model the English speakers' choice between *in lieu of* and *in place of* in terms of probabilities of occurrence, using random forests;
2) model the French speakers' choice between *au lieu de* and *à la place de* in the same way;
3) apply the French model on the English data, assuming constructional correspondence between *au lieu de* and *in lieu of* as well as between *à la place de* and *in place of*, and retrieve the probabilities of *au lieu de* and *à la place de* for the English data;
4) compute a deviation score (*DEV*) on the basis of a reference construction, so that $P(\textit{à la place de}) - P(\textit{in place of}) = \textit{DEV}$;
5) explore the deviations visually and qualitatively.

Conceptually, the implementation of the first two steps elaborates upon the notion of statistical pre-emption. Steps 3 and 4 are the operationalization of the concepts of constructional conformity in terms of deviations: concretely, if $\textit{DEV} < 0$, English deviates from French by using *in place of*. Conversely, if $\textit{DEV} > 0$, English

4 For reasons of space, detailed information on the statistical method is unavoidably omitted.

Table 2: Overview of the variables used in the annotation of the observations.

Type	Variable	Levels
Metadata	Language	English, French
	Year	1507, 1515, 1522, ..., 1719
Syntactic	Article + N	Yes, No
	Complement	DetPoss, NP, PronPers, NFClau, SubClau, ...
	Clausal position	final, medial, initial
Semantic	Complement semantics	human, animal, plant, concrete object, abstract entity, abstract action
	Cx semantics	replacive, contrastive
Morphological	Variant	1 (*au lieu de*, *in lieu of*)
		2 (*à la place de*, *in place of*)

deviates from French by using *in lieu of*. Values centered around 0 reflect cases where the English choices conform relatively well to the French model.

4.2 Corpora and explanatory variables

As regards the chosen corpora, precedence was given to *qualitative* genre representativity and size rather than balance, given the sparseness of CPs in general compared to more frequent patterns such as, say, argument structure constructions. The procedure described above was applied to Early Modern English data from three British English corpora, that is, the *Early English Books Online* corpus (EEBO) (+750M words), the *Lampeter Corpus of Early Modern English Tracts* (LCEMET) (c. 1.1M words), and the *Parsed Corpus of Early English Correspondence* (PCEEC) (c. 2.2M words). For the sake of comparability, texts from the 1510s up to the 1710s were queried for the French substitutive constructions in *Frantext* (+250M words), the largest database of literary, philosophical, and scientific texts in French. It stands to reason that the corpora in the two languages were designed with different purposes in mind, but they are still comparable in that the distribution between literary and non-literary genres is unbalanced for both English and French: Literary texts are overrepresented. The most substantial difference comes from the English corpora, which needed to be larger due to the expectation that *in lieu of* and *in place of* were underused compared to *instead of*, whereas their French cognates are highly frequent in French. From these corpora, observations of the substitutive CPs were exhaustively extracted, and after an automatic random selection and a manual inspection of the hits, the final dataset consisted of 1800 observations equally distributed among the French and English pairs of alternate constructions. These were annotated for a small set of semantic and syntactic variables (see Table 2) discussed in Schwenter and Traugott (1995) in their explanation of the development of the substitutive CPs in English, and which are available to explain their development in French as well. In addition, a variable of time in numeric form was added, i.e. Year, to check if the patterns found in the data are stable over the whole Early Modern English period (see Appendix for annotated examples).

The choice for the Early Modern English period was motivated by two major factors. The first one is the emergence of new formatives of the PNP-construction from Early Modern English onwards (Hoffmann 2005: 86; Lebenstedt 2015: 32), which coincides with the emergence of the borrowed substitutive constructions. The other reason is the pivotal role of Early Modern English for the contact between English and other languages, French included. With the diffusion of printed texts across Europe, language contact was facilitated via written sources. Therefore, Early Modern English was a sensible choice to find traces of both borrowing and analogy in CPs.

5 Statistical evaluation

The general trend of the English constructions with regard to the French model can be visualized in boxplots as in Figure 1, which displays the distribution of the deviation scores for each English variant when the

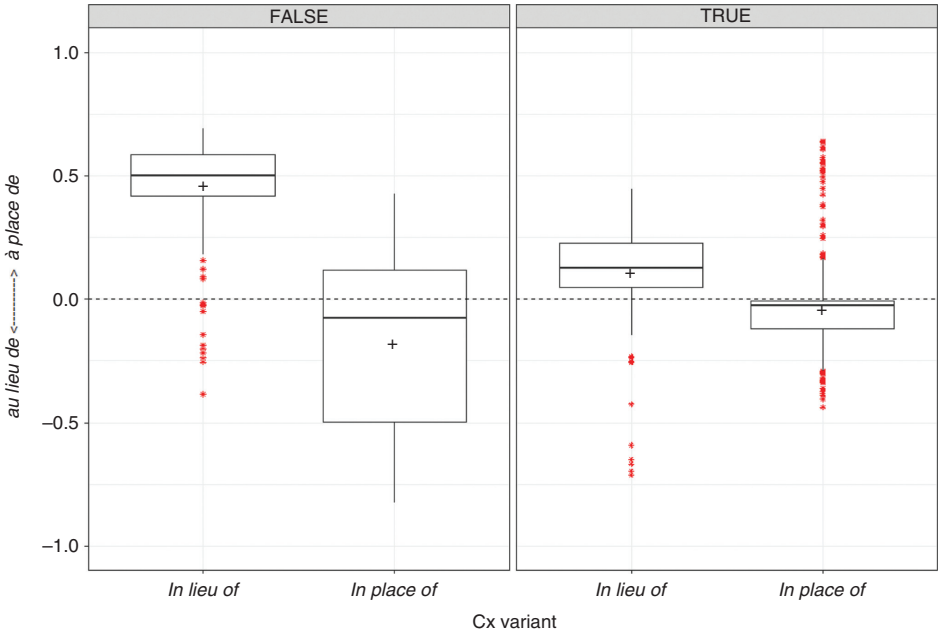

Figure 1: Distribution of the deviation scores obtained for matched (TRUE) and unmatched (FALSE) choices.

Table 3: Cross-classification matrix: observed English choices in the rows, expected English choices in the columns (French model).

		EXPECTED		
		in lieu of	*in place of*	TOTAL
OBSERVED	*in lieu of*	247	203	450
	in place of	99	351	450
	TOTAL	346	554	900

observed and predicted choices are the same in the right pane, and when the choices differ from the French model in the left pane.

A visual inspection of the left pane reveals interesting tendencies as regards the use of *in lieu of*. When English speakers use this construction in a particular context, the French model would predict *in place of* more often in the exact same context. This can be observed by the mean (plus sign), the median deviation (the thick line inside the box), and 50% of the observations which are located far above the threshold (straight dashed line). As regards the other variant, the deviation goes in the opposite direction: When English speakers choose *in place of*, French speakers would slightly favor the construction with *lieu*.

The examination of the right pane reveals an otherwise interesting trend. When the English choices match the French ones, there are cases where the confidence in the choice of either variant in French speakers is higher than in English speakers, and cases where the reverse is also observable. What was expected in case of matched choices is a distribution closer to 0. A possible explanation comes from the fit of the French model on the English data, which classifies only 598 out of 900 observations correctly, i.e. 66.4% of all the observations (see the grey cells in Table 3 below). Even if such a fit is quite acceptable,[5] there is room for improvement. It seems that English speakers are more sensitive to other contextual features compared to French speakers in their choice between the two constructions.

Another explanation, which derives directly from the previous one, is to be found in the presence of outliers, i.e. scores with unusually high or low values (Levshina 2015: 44). These are represented by red asterisks in the boxplots. Their presence can be related to a mismatch between the actual outcome and the outcome

5 The model is significant at $p_{\text{binom}} < 1.64 \times 10^{-23}$ against the baseline of 0.5, i.e. the accuracy obtained from random guessing.

predicted by the English model, as in (1). Besides, there are cases where the choice of the variant expected by French is made with a higher or a lower degree of certainty than in English, as in (2).

(1) *I see the Honest Industrious Tradesman loaded with new Taxes, and Impositions, disappointed of the Equivalents, drinking Water* ***in place of*** *Ale*
(LCEMET, 1706, expected$_{EN}$: ***in lieu of***)

(2) *My friends, I wish you would forbear your running*
After this whore; and henceforth show your cunning (Leaving this subject, to no purpose vexed)
To follow ***in the lieu of it*** *your text.*
(EEBO, 1658, expected$_{FR}$: ***in the lieu of***, $P_{\text{English}} = 14.3\%$, $P_{\text{French}} = 81.1\%$)

Outliers can also result from a double mismatch, as in example (3), where *in lieu of* is chosen, even though *in place of* would be statistically more likely in both the English and the French models.

(3) *the Country Militia being made to take up arms, who were put into places least suspicious* ***in lieu of*** *the Soldiers that were drawn thereout, another great body of men was sent to Gheldren.*
(EEBO, 1648, expected$_{EN}$: ***in place of***, expected$_{FR}$: ***en place des***)

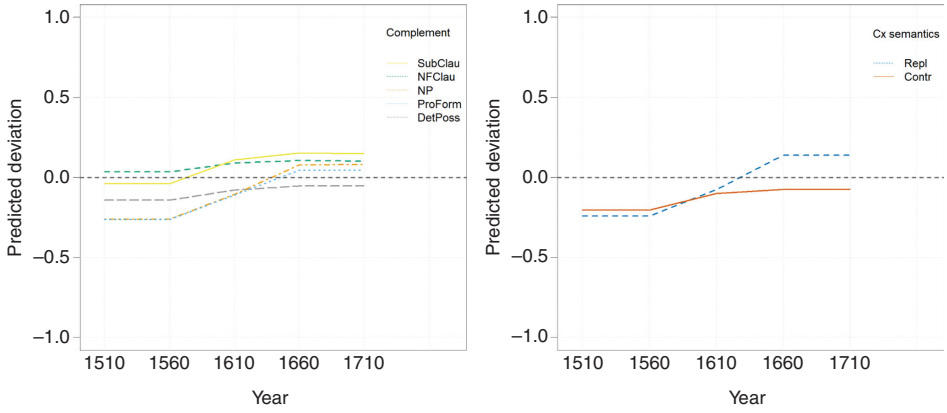

Figure 2: Interaction between time and complement (left panel) and between time and Cx semantics (right panel).

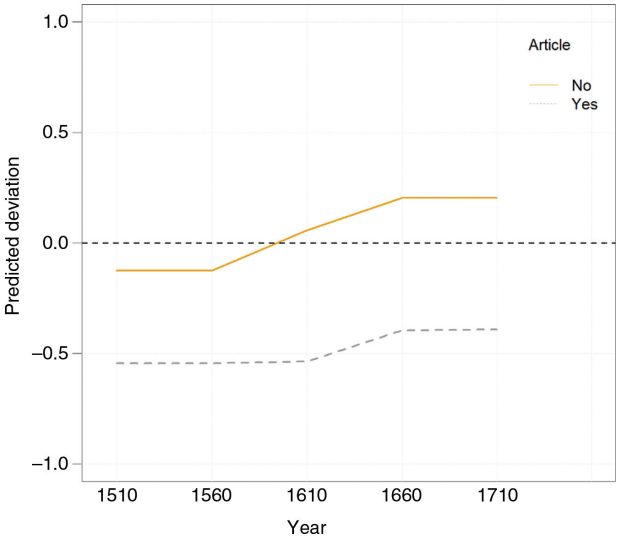

Figure 3: Interaction between time and article.

In order to determine if the chosen variables had enough weight in accounting for the variation of the deviations, a model was fit to predict the deviation scores with the same explanatory variables as in Table 2. Interestingly, the combination of those variables had high explanatory power.[6] To account for the magnitude and the direction of the deviations from the French model, the effects of these variables and their interactions were explored in effect plots. For reasons of space, only two-way interactions between the four most important variables, given in Figures 2 and 3, are discussed: the presence/absence of the definite article, the complement syntactic type[7], the construction semantics, and their interaction with time.

The visualization of the deviations shows that at the beginning of the 16th century, the deviation scores are very close to zero when the complement is a gerund or a subordinate clause. In such contexts, both English and French speakers would favor *in lieu of*. Quite interestingly, two types of subordinate clauses could occur with *in lieu of* in Early Modern English: *that*-clauses, as in (5), and gerundive-type nominalized clauses (Talmy 2000: Ch. 6), as in (6). The former type is restricted to *in lieu* and the whole expression seems to be a loan translation of the French expression *au lieu que*. However, such cases are rare in English. In all other syntactic contexts, the negative deviation scores suggest that English speakers are more likely to use *in place of*, compared to French speakers of that time. The right pane shows that in replacive contexts (blue line), the probability of using *in place of* in English is higher compared to the French model, and English speakers tend to use *in place of* more often than expected in contrastive contexts (orange dashed line). From the mid-16th century onwards, a smooth positive increase on the deviation scale can be observed. Over the course of Early Modern English, *in place of* is steadily losing ground in favor of the other variant when it is complemented by noun phrases and pro-forms. The upward deviation, followed by a stabilization from the 1660s onwards, suggests a convergence of English towards the French model. However, the preference of *in lieu of* with subordinate clauses and gerunds is higher than before, and it is more likely to be used in replacive contexts after the 1650s.

(5) *for her friendship and sweet sake, I would change all the interests that I have in the world,* ***in lieve that*** *she would make an account of this Castle, as her own, and her husbands also.*
(EEBO, 1598, COMPLEMENT: SubClau, $P_{EN} = 89.6\%$, $P_{FR} = 80.29\%$, DEVIATION $= 0.09$)

(6) *Why these six degrees be here putt devvne. because that even of it self (being perfect) it hath them all, and that without them it can not be perfect: though* ***in lieu of*** *their being there implicit or obscurely.*
(EEBO, 1609, COMPLEMENT: SubClau, $P_{EN} = 97.5\%$, $P_{FR} = 82.1\%$, DEVIATION $= 0.15$)

Turning to the last variable of interest, that is, the presence/absence of the article before the locative noun, the strong negative deviation (grey dashed line) in Figure 3 suggests that the form *in the place of* was more likely in English in the early 16th century, compared to the French predictions. From the 1610s, the deviation diminishes, but is still important in the 1710s. The opposite trend was expected, given that *à/en la place de* becomes more frequent than *en place de* over the course of the centuries, and *in lieu of* is the dominant form in English, whereas in French *au lieu de* (= *à le lieu de) prevails over the determinerless form *en lieu de*. When looking at the original data, it can be observed that in many cases where the variant with *place* is chosen with an article, the complement is either a pro-form (e.g. *in the place of that*, *in the place thereof*) or a personal pronoun (*in the place of him*). In French, when such covariates occur, we would rather use the variant with *lieu* (e.g. *au lieu de ça*), a possessive determiner instead of a personal pronoun (*à sa place*), or else the absolute use of *à la place*, with omission of the complement. As far as the determinerless forms are concerned, the deviation stays close to zero until the 1560s, but crosses the threshold afterwards and becomes positive. It is not surprising, given that the majority of the observations with *place* in French occurs with a

6 *Pseudo-*$R^2 = 0.952$, $R^2_{adj} = 0.951$, $MSE = 0.004$

7 Only the five major complement types are displayed because the other possible combinations were rare.

possessive determiner, whereas in English a substantial number of cases with *in place of* followed by a noun phrase can be observed. When followed by a noun phrase, *à la place de* generally occurs with the article. From such tendencies it can be inferred that *in place of* and *in lieu of* continued to develop idiosyncrasies from their emergence to the beginning of the 18th century.

6 A constructional account

Concerning the emergence and evolution of the English substitutive CPs in Early Modern English, the results of the quantitative analysis reflect a complex process of borrowing with subsequent dissimilation. On the whole, the graphical representations of the deviation scores suggest that the English responses mildly deviate from the French model. In fact, much of the variation comes from the choice of *in lieu of* and the use of the definite article. The inclusion of the latter variable was problematic, given the obligation to use a contracted form in French (*au* for *à le) which is not available in English. What we can infer from the data is that speakers borrowed new forms of substitutive constructions from French but did not internalize all their foreign distributional properties. Instead, selective matches at a relatively high level of schematicity can be argued for with subsequent sequences of dissimilation in the course of Early Modern English. Unlike in foreign language acquisition, we cannot speak of a failure in the process of statistical-preemption, since the choice to borrow and use those new forms without all their constructional constraints wholesale may have pragmatic and sociolinguistic motivations in language contact (Höder 2014: 143). At the level of the written text, it is conceivable that parts of the construction's formal and functional characteristics were dropped in the borrowing process because they were not easily accessed or they did not fulfil the writers' communicative needs.

In Diasystematic Construction Grammar terms, *in lieu of* and *in place of* arguably share partial diasystematic links with their French cognates, established subjectively on the basis of perception of equivalence and similarities, and articulated in the formal and semantic features studied so far. In Höder's Diasystematic Construction Grammar, partial correspondence in form and/or meaning allows idioconstructions (here, *instead of*, *in place of*, and *in lieu of*) to be directly linked to a more schematic diaconstruction (here, [*in* N_{LOC} *of*]), but with the systematic study of the dimension of frequency, which remains marginal in current Diasystematic Construction Grammar accounts, we can formulate the more radical conclusion that substitutive CPs do not form a diaconstruction in English: The adoption of the two foreign complex forms has not resulted in the enrichment of a paradigm. Rather, it has led to two functionally different forms through contact-induced constructionalization. Moreover, the shift from negative to positive deviation scores shows that the contextual preferences of the French constructions are not mirrored by those of their English counterparts over the course of Early Modern English. Such cross-linguistic discrepancies suggest that diasystematicity between each pair of cognates should not be overstated.

7 Conclusion

Language contact with French must be acknowledged as an important factor in the diffusion of complex prepositions in English. The motivation to integrate contact as a genuine mechanism of language change in CxG results from the awareness that domain-general cognitive mechanisms are involved in the process of borrowing, such as generalization and statistical learning. Borrowing can be best explained as a socio-cognitive mechanism, as has been advocated in Diasystematic Construction Grammar. Combined with corpus-based methodologies, the framework of CxG provides the researcher with a valuable tool to analyze the division of labor between different mechanisms of language change. Applied to the study of substitutive CPs, this approach allowed us to establish that *in place of* and *in lieu of* emerged and developed in Early Modern English as new separate constructions through contact-induced constructionalization. Moreover, the notion of model language took on a socio-cognitively realistic dimension through the adaptation of the MuPDAR(F) approach. At this stage, improvements are expected at the methodological and analytical level by controlling

for genre and diastratic variation. On a larger scale, more constructions should be studied in other languages in order to capture more general trends in the diffusion of CPs.

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Appendix

Examples (2) and (4) illustrate cases in which English choices are well-behaved observations with regard to both the French and the English models. They are almost perfectly comparable to the French examples (1) and (3).

(1) *Dieu est la substance vnique et singuliere de tout l'ordre de la grace*, ***au lieu que*** *l'ordre de nature est diuisé et diuersifié en plusieurs sortes de substance*.
(Frantext, 1623, ARTICLE: yes, COMPLEMENT: SubClau, POSITION: final, COMPLEMENT SEMANTICS: abstract activity, CX SEMANTICS: contrastive, VARIANT: 1)

(2) *Moreover, I may say that your Majesty having achieved with glory the affairs of Italy, you may triumph at one time over two enemies; namely, the omesticke and Foreign,* ***in lieu that*** *if you will rather expel the other, then subdue these, you shall lose the present advantages which never had any of all the Kings your Predecessors.*
(EEBO, 1626, ARTICLE: no, COMPLEMENT: SubClau, POSITION: final, COMPLEMENT SEMANTICS: abstract activity, CX SEMANTICS: contrastive, VARIANT: 1)

(3) *Car puisque tels gens sont si hardis que de se mettre* ***en la place de*** *Dieu, c'est-à-dire de juger des cueurs des hommes sans en voir les œuvres*
(Frantext, 1562, ARTICLE: yes, COMPLEMENT: NP, POSITION: final, COMPLEMENT SEMANTICS: human entity, CX SEMANTICS: replacive, VARIANT: 2)

(4) *I shall adde but one character more, They love to domineer over the flock of Christ, and to set themselves* ***in the place of*** *God*.
(LCEMET, 1653, ARTICLE: yes, COMPLEMENT: NP, POSITION: final, COMPLEMENT SEMANTICS: human entity, CX SEMANTICS: replacive, Variant: 2)

Examples (5–8) illustrate the use of all the English and French variants with a possessive determiner referring to a human entity in replacive contexts. These examples show cases where the prepositional phrase occurs clause-finally, except in example (7), where it occurs clause-medially. Over time the number of tokens with a possessive determiner decreases with the French variant *au lieu de* and with all the English variants, except for *in place of*.

(5) *En somme je faiz ce que je desirerois m'estre faict de vous, si j'estois* ***en vostre lieu,*** *et ne doubte pas que ne le preniez de vostre costé de tel cueur qu'il procede*.
(Frantext, 1543, ARTICLE: no, COMPLEMENT: DetPoss, POSITION: final, COMPLEMENT SEMANTICS: human entity, CX SEMANTICS: replacive, VARIANT: 1)

(6) *quant c'estoit le jour qu'elle donnoit congé au premier prisonnier, elle mectoit ung serviteur* ***en sa place***.
(Frantext, 1550, ARTICLE: no, COMPLEMENT: DetPoss, POSITION: final, COMPLEMENT SEMANTICS: human entity, CX SEMANTICS: replacive, VARIANT: 2)

(7) *yet wee shalbe contented that the lord Clifford your sonne shall* ***in your liew*** *and stead repaire unto us to attend upon us dureinge our aboade in those partes accordingly.*
(PCEEC, 1541, ARTICLE: no, COMPLEMENT: DetPoss, POSITION: medial, COMPLEMENT SEMANTICS: human entity, CX SEMANTICS: replacive, VARIANT: 1)

(8) *the tother is that his Grace being therby ridde and discharged of hym myght, as he shortely wold, haue a bettre lerned man* ***in his place***.
(PCEEC, 1528, ARTICLE: no, COMPLEMENT: DetPoss, POSITION: final, COMPLEMENT SEMANTICS: human entity, CX SEMANTICS: replacive, VARIANT: 2)

Finally, as is the case for examples (5) and (7), examples (9) and (10) represent what Present-day speakers would perceive as oddities, since the French variant with *place* would always occur with a definite article, and conversely, the English variants with *lieu* would never occur with a definite article. In fact, the outcome in example (9) was badly predicted by the French model, and example (10) for English is a case where a double mismatch was found, i.e. neither the English nor the French model could predict the outcome correctly.

(9) *se hausse, il fronce le sourcil, crie haut, fait l' emporté; et ne met qu' une grandeur fausse* ***en place de*** *la majesté*.
(Frantext, 1719, ARTICLE: no, COMPLEMENT: NP, POSITION: final, COMPLEMENT SEMANTICS: abstract entity, CX SEMANTICS: contrastive, VARIANT: 2)

(10) *the Musgraves that wee cannot otherwise thinke thence that if you would have conformed yourselves to an honest unity and agreement, beinge there* ***in the liew of*** *heades for the direction of that parte of our said politique bodie*
(PCEEC, 1537, ARTICLE: yes, COMPLEMENT: NP, POSITION: final, COMPLEMENT SEMANTICS: abstract entity, CX SEMANTICS: replacive, VARIANT: 1)