

## Translating Diminutives: A Corpus-Based Analysis of the Gravitational Pull Hypothesis

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### **Abstract**

*The use of diminutive suffixes is very common in Spanish. However, translators tend to underuse them when translating from languages in which diminutives are scarcer or less used. In this paper, we seek to identify this underuse in literary texts translated from English and French into European Spanish, by focusing on the morphological aspects of diminution, but also adopting a semantic approach. To this end, the theoretical framework proposed by Halverson's Gravitational Pull Hypothesis (GPH; 2003, 2010, 2017) was employed. Drawing on cognitive linguistics and bilingualism research, the GPH constitutes an attempt to account for different hypotheses about translated language. The reason for selecting diminutives is that diminutive suffixes in English-Spanish and French-Spanish language pairs may be regarded as unique items (Tirkkonen-Condit 2004), that is, target language items that are specific to a particular language and without a direct counterpart in the source language. In English and French, diminutiveness is mainly expressed through semantic diminutives, e.g., 'adjective + noun' analytic forms, with diminutive suffixes infrequently used. To carry out the analysis, COVALT parallel and comparable corpus was used. Where appropriate, the results were subjected to the log-likelihood test for statistical significance and the Unidirectional Translation Correspondence testing (Marco 2021), which is a formula for operationalising the degree of connectivity between items across the two components of a parallel corpus. Our findings show that Spanish diminutive suffixes were underrepresented in translations compared to non-translated texts, whereas semantic diminutives were overrepresented.*

**Keywords:** translation studies, diminutives, Gravitational Pull Hypothesis, COVAL corpus, Unique Items Hypothesis

### **1. Introduction**

Diminutiveness is a universal grammatical feature conveyed in different ways in different languages. This study will focus on a translational analysis of diminutive suffixes in three languages: European Spanish as the target language (TL), and English and French as the source languages (SL). Diminution does not behave in exactly the same way in these three languages. English and French diminutives follow a word-formational pattern. In English, *-let* and *-y*, as in *booklet* and *kitty* (Schneider 2003: 85), are the most common diminutives, whereas French contains derivative affixes such as *-eau/elle*, *-et/ette*, *-ot/otte*, *-in/ine*, *-on*, and *-illon* (Klett 2015: 176), as in *ruelle* or *gouttelette*. However, none of these suffixes are commonly used in either of the languages. Although French diminutives, in their prototypical form, are somewhat more productive than in English (Schneider 2003; Grandi 2011; Bidaud 2012), both languages prefer anteposition of adjectives (*petit* in French and *little/small* in English). Conversely, Spanish features a very frequent use of diminutive suffixes, and we find very productive ones such as *-ito* or *-illo*, as in *perrito* and *dinerillo* (Real Academia Española 2010). This paper is set in the field of corpus-based translation studies, and analyses diminutives within the

theoretical framework of the Gravitational Pull Hypothesis (Halverson 2003, 2010, 2017), which aims to provide a cognitive basis for various translational effects, and Tirkkonen-Condit's Unique Items Hypothesis (2004), which predicts the underrepresentation of those TL items that are specific to a particular language and do not have a direct counterpart in the SL. With that in mind, the research questions we set out to answer at the end of this study, and which may particularly contribute to translation didactics and contrastive studies, are:

- RQ 1: Do translations into Spanish from English and French contain fewer diminutive suffixes than can be found in non-translated Spanish texts?
- RQ 2: If so, is the frequency differences between translations and non-translations in Spanish due to source language influence?

## 2. Theoretical foundations

The idea underlying Tirkkonen-Condit's Unique Items Hypothesis (UIH) is that typical TL items are underrepresented in translation, rather than overrepresented, as previously suggested by Baker (1993). Thus, the UIH will be harnessed to search for the so-called 'translation universals', which can be defined as the inherent features of translated texts that original texts do not possess. Tirkkonen-Condit proposed a counter-thesis to this idea, based on the fact that translated Finnish texts had a lower frequency of certain typical elements than non-translated Finnish texts. "A unique item is not untranslatable" (Tirkkonen-Condit 2004: 177), but it is an element that lacks a direct equivalence in another language because, for example, there is no formal correspondence between this item and its corresponding element in the SL. Tirkkonen-Condit (2002) considers that the presence of this type of item can make readers think that a text is the original, rather than a translation because they perceive it as a spontaneous and natural use of their own language. The author recommends contrastive studies as the best way to test the UIH, such as those conducted by Gellerstam (1986) and Mauranen (2000). Contributions to the empirical study of the UIH can be found in Eskola (2004) and Vilinsky (2012).

As for the Gravitational Pull Hypothesis (GPH), it is Halverson's (2017: 15) cognitive grammatical model of semantic structure, the main point of which is "that specific characteristics of schematic bilingual networks are hypothesized to have translational effects, more specifically aggregate patterns of over- and underrepresentation in translated language". In her attempt to explain the characteristics of translated language, a central role is played by semantic networks of related meanings, i.e. the meanings (or conceptualisations) of linguistic items that have been used enough to become entrenched. Within these networks, "the features (...) that are of current interest are two: first, the relative prominence of specific elements within a network, and second, connectivity within the network, i.e. the existence and strength of the links between network elements" (Halverson 2017: 12). Saliency (or prominence) is a key term in Halverson's thesis. It is understood as "the idea that some patterns of activation within schematic networks will be more prominent than others, due to their higher frequency of use over time" (Halverson 2017: 13). Determining the saliency of the items under consideration will constitute the first step in the process of testing this hypothesis, even if saliency could depend on a variety of factors like author, time, work, the translator, among others.

The GPH identifies three different potential sources of translational effects, two of which are based on salience, while the other is based on the entrenchment of translation pairs (2010):

1. Prototypical TL patterns, which lead to overrepresentation of TL items in translations. In a later study, the concept was described as *magnetism* (2017).
2. Conceptual structures or representations of SL items, which also leads to overrepresentation. This phenomenon was later termed *gravitational pull*.
3. Patterns of connectivity that reflect the relationships between the SL and the TL items and may lead to either overrepresentation or underrepresentation.

The salience of TL items (magnetism) and of SL items (gravitational pull) would explain causes (or factors) 1 and 2 above, or overrepresentation, as there would be some asymmetry in cognitive networks, causing some nodes in the network to be more salient than others. Moreover, Halverson's indicators to measure the effects of the strength of links (connectivity or factor 3) between SL and TL items are called source concentration and target concentration. Source concentration refers to the "percentage of all occurrences of a TL item that are translations of a specific SL item", while target concentration is "the percentage of a set of translations of a SL item that is comprised by a given TL item" (Halverson 2017: 30). This study brings those indicators together within the concept of Unidirectional Translation Correspondence (Marco 2021), a formula adapted from Altenberg (1999) and created to operationalise the degree of connectivity between items across the two components of a parallel corpus. Other resources could also be employed, such as the regression analysis used by Lefer & De Sutter (2022) to test for strength of connectivity.

The starting point of this study is the consideration of diminutive suffixes in Spanish as unique items with respect to English and French. As stated in reference works and confirmed by queries in the comparable module of our corpus (see sections below), Spanish diminutive suffixes might be underrepresented (less used in translations) because 1) they respond to the lack of formal correspondences in the source languages (English and French), which could have served as stimuli, and 2) the use of *pequeño* ('little') + noun and noun + *pequeño* in Spanish is also possible, even very frequent, in non-translated texts.

### 3. Diminutiveness

Diminutive suffixes are morphological elements that, placed after a root, modify a word's base meaning. In addition to expressing objective qualities – small size – they convey the speaker's affective evaluation of a reality. In many cases, these two functions occur together, i.e. size and emotion might both be present, and the two cannot always be kept apart within the same structure (Sicherl 2018: 284).

This study does not intend to include a thorough description of English and French diminutives but will instead seek to identify the grammatical and lexical resources in these languages that might serve as the leading candidates for translating diminution into Spanish. We will adopt a semantic, rather than formal, definition of diminutives. A semantic approach will allow us to consider diminutives that are formed by a noun + a diminutive suffix, but also analytical expressions made up of *pequeño/little/petit* + a noun in Spanish, English and French, and a noun + *pequeño* in Spanish. Choosing this approach allows us to focus either on diminutives expressing small size or on diminutives conveying a combination of small size and

a certain amount of emotional load/the speaker's particular attitude towards something. Those diminutives strictly showing affective valuation will not be considered.

### 3.1. Diminutives in Spanish

According to Real Academia Española (2010) and authors such as Lázaro Carreter (1999: 145), Iannotti (2016: 138) and Martín García (2016: 420), in Spanish, diminutive suffixes are admitted mainly for appending to nouns and adjectives. To a lesser extent, they are also added to adverbs (*despacito* 'slowly'), gerund forms (*corriendito* 'quickly'), some interjections (*ojito* 'be careful'), and certain quantifiers (*nadita* 'not a single thing'). Words with diminutive suffixes are divided into transparent words, whose meaning is deduced from the combination of the root and a suffix, such as *casita* ('little house'), and opaque or lexicalised words, whose meaning is not obtained via this procedure and instead convey a different meaning from that of their base. These words have their own dictionary entry (*estribo* 'stirrup' > *estribillo* 'the chorus in a song') and are not part of our study.

The most widely used diminutive in Spanish today is *-ito/-ita/-itos/-itas*, although during the Middle Ages and in the classical stage of the language, *-illo/-illa/-illos/-illas* was predominant. The following diminutives are also used in Spanish, with preference for one or the other depending on the geographical area: *-ico/-ica/-icos/-icas*, *-uco/-uca/-ucos/-ucas*, *-ín/-ina/-ines/-inas*, *-iño/-iña/-iños/-iñas*, *-ejo/-eja/-ejos/-ejas*, and *-ete/-eta/-etes/-etas*. Suffixes can also possess variants depending on the configuration of the base to which they are attached. Thus, *-ito*, and its gender and number inflections, can also appear as *-cito*, *-ecito*, or even *-ítar* (*Dolorcitas* 'little Dolores', *hierbecita* 'a little herb', *azuquítar* 'a little sugar'). Diminutives are added to the lexical base after deleting the final vowel when it is unstressed: *mes(a) + ita* > *mesita* ('little table'). In this case, *-ecito* is very common in European Spanish (*nuev(o) + ecito* > *nuevecito* 'brand new'). When words end in a stressed vowel, the vowel is usually kept and the variant *-cito* (*sofá + cito* > *sofacito* 'little sofa') is more common. Words ending in a consonant alternate the addition of the suffixes *-ito*, *-cito* and *-ecito* depending on the case. This formal variation also occurs with other diminutive suffixes: *bes-ico* > *besico* ('little kiss'), *sol-ecico* > *solecico* ('sun'); *pajar-illo* > *pajarillo* ('little bird'), *doctor-zuelo* > *doctorzuelo* ('petty doctor'), *joven-cete* > *jovencete* ('young boy'). Diminutives usually end in *-o* or *-a* depending on the gender of their base. However, if the base is a masculine noun ending in *-a* (*el problema*) or a feminine ending in *-o* (*la foto*), the same final vowel is kept (*el problemita* 'a little problem', *la fotito* 'little picture'), although the solutions vary depending on the suffix (*un problemita* versus *un problemín*), the particular word itself (*la fotita* is not correct, but *la manita* is), and the geographical areas.

Regarding function, diminutive suffixes are used to express affection, small size, attenuation, increase in price, closeness, importance, courtesy, irony, contempt, and other meanings which are not always easy to demarcate from each other (Real Academia Española 2010). According to Iannotti (2016: 143), "the diminutives' semantic function is aimed at expressing affectivity rather than size, i.e. the emotive function of the language prevails over the one indicating small size". This same opinion is shared by Monge (1988). Among the affective connotations expressed by diminutives, there can be positive but also negative nuances: *este librito* ('this little book') can suggest modesty if used by the author of the book, but contempt if used by a critic. Intonation is often decisive in determining these connotations.

When used to convey smallness, three main kinds of connotations can be distinguished:

- Connotations of smallness, most often applied to inanimate objects (*vasito* ‘little glass’). With nouns relating to actions and events, the suffix can convey brevity (*paseíto* ‘short walk’).
- Attenuating or moderating connotations, which reduces the importance of people or things (*mediquito*, *maestrilla* ‘third-rate doctor/schoolteacher’). This nuance also attenuates the effect of words that may be perceived as uncomfortable (*braguitas* as opposed to *bragas* ‘panties’), or simply diminishes the degree of some adjectives (*rojito* ‘a bit red’). The suffix *-ete* adds connotations of irony, benevolence, or complicity (*golfete* ‘little rascal’).
- Intensifying connotations. In this case, suffixes are added to adjectives, adverbs, or adverbial phrases (*grandecito* ‘relatively big’).

Nevertheless, when adopting a semantic approach to diminutiveness, the commonly used analytical structures, such as *pequeño/-a/-os/-as* + noun (*pequeña mesa* ‘little table’) and noun + *pequeño/-a/-os/-as* (*trozos pequeños* ‘little bits’), need to be taken into account, since they are employed both to express the small size of things or people and to convey other connotations as well. Other similar adjectives are used besides *pequeño*: *diminuto* ‘tiny’ and *enano* ‘very small’, and even *corto* or *bajo* ‘short’. Emotional values would be more accurately expressed through adjectives like *joven* ‘young’, *pobre* ‘poor’, *ridículo* ‘ridiculous’, among others.

Regarding whether the adjective *pequeño* is positioned before or after the noun, there are some usage differences. Mostly, adjectives before nouns are used to highlight a characteristic of nouns. By contrast, adjectives placed after nouns are intended to differentiate the noun from other nouns, so they have an explanatory or descriptive function; that is, they particularise nouns (Alonso Raya et al. 2021: 26). Spanish adjectives are more frequently positioned after nouns (Hernando Cuadrado 1995: 82), with the most commonly used ones in this position relating to colour, nationality, religion, ideology, and physical qualities, the last of which would include the quality of smallness. From a translational point of view, some translation manuals, and quantitative studies (Oster 2020) state that it is more common to find the adjective placed before the noun in texts translated into Spanish than in original Spanish texts. Some of these works suggest that the cause of this phenomenon lies in the influence of the source language, especially English (Vázquez Ayora 1977; Molina Plaza 1997).

### 3.2. Diminutives in English

Unlike the morphological process by which diminutive suffixes in Spanish are formed (Iannotti 2016: 146), the English language predominantly resorts to an analytic (or syntactical) process (Sicherl 2018: 295). As in Spanish, there is a clear dependence between the functions of smallness and evaluation, but in English formal diminutives are radically less productive, the analytic pattern *little/small/tiny/etc.* + noun being the most frequently used to express the size and/or emotional connotations conveyed by diminutive suffixes. Suffixes are attached to the base of words – often nouns, but other categories such as adjectives also admit diminutive suffixes – to produce a diminutive form: *book-let* > *booklet*, *gos-ling* > *gosling*, but they are also attached to a reduced form of the base, as in *handkerchief* > *hank-y* > *hanky* (Trask 2000). Schneider (2003: 85) identified fourteen diminutive suffixes, though some are barely used or

restricted to informal and dialectal use: *-a*, *-een*, *-er*, *-ette*, *-ie/-y/-ey/-ee*, *-kin*, *-le*, *-let*, *-ling*, *-o*, *-peg*, *-poo(h)*, *-pop*, *-s*.

Aside from the size and affection values, English diminutive suffixes are often used with names or with abbreviated names in informal contexts, as with *Matthew* > *Matt-y* > *Matty*. When the speaker's aim is to be imprecise, or to express approximation or attenuation, the suffixes *-y* and *-ish* are often used: *blue* > *blue-y* > *bluey* (Carter et al. 2011: 322). Diminutive suffixes also have the function of shortening longer words (*bourgeois* > *boug-ie* > *bougie*), and as in Spanish, they are also used to show undervaluation, and soften an uncomfortable use of certain words (*underwear* > *undies*). Diminution, according to Sicherl (2018: 287) and Schneider (2003: 8), can also be obtained through prefixation, compounding, and reduplication, though such forms are less frequent (e.g. *minicab*, *baby lion*, *Annie-Pannie*).

As previously mentioned, diminution in English is generally conveyed through adjectives + nouns. While the adjectives *little* and *small* might be the most frequently used, others including *tiny*, *short*, *minuscule*, and *young*, *poor*, *ridiculous*, and more are also used to express emotional connotations. Therefore, and in line with the studies stating the common use of adjective + noun to express diminution in translations into Spanish, we could expect this form in English to act as a usual trigger.

### 3.3. Diminutives in French

Nowadays, diminutive suffixes are not as frequently used in French as they were in the past. Some authors have highlighted their low productivity (Bidaud 2012; Martín Zorraquino 2012). Although a few suffixes can be used creatively, as occurs with *-ette*, most suffixed words in French are lexicalised. The list of French suffixes, nonetheless, is not short: *-et/-ette*, *-on*, *-eau*, *-ule*, *-elle*, *-elette*, *-aut*, *-in*, *-ot*, *-ille*, *-iche*, among others, as in *fillette* ('little girl') and *monticule* ('little mountain'). But as Bidaud (2012: 52) states, "d'un point de vue strictement quantitatif, la vitalité de la suffixation diminutive française est quasi nulle par rapport à l'espagnol" 'from a strictly quantitative point of view, the vitality of French diminutive suffixes is almost non-existent compared with Spanish'. Suffixes in French and Spanish are used in similar ways, but in French, their scope is reduced to expressing familiarity and affection (Klett 2015: 180). According to Martín Zorraquino (2012: 559), French diminutive suffixes tend to semantic specialisation, which explains that they often give rise to lexicalisations. That is why in French, in the daily use of language, the word most often used, not only to indicate diminution but to express subjectivity, is the adjective *petit*.

In addition to placing the adjective *petit* before nouns, it is also possible to find *court* used to express the quality of being small. To convey lower intensity, adjectives such as *fin*, *menu*, or *mince* are used; low value is expressed through *insignifiant* or *mediocre*; and a small quantity is expressed through "*passager*, *léger*, *extrait*, *morceau*, etc." (Franco Arias 1980: 482). According to Kerbrat-Orecchioni (2004, as cited in Martín Zorraquino 2012: 560), besides to convey the meaning of smallness, *petit* is also used as a symbolic minimiser of the items it accompanies. This meaning is found in other Romance languages (e.g. Spanish, Italian, and Portuguese), and is related to politeness, as these suffixes are softening elements of whatever they describe. As in translations from English, the common use of *petit* + noun in French makes us think that, in translations from French, it might be expected to pull towards the use of this pattern in Spanish.

#### **4. Methodology**

In order to address our research questions, our methodology involved several steps. The first step consisted of searching for diminutives in the original component of the COVALT corpus (i.e. the Spanish component ES-OR), and in the English and French original text modules to determine salience in the non-translated texts in the respective languages. This allowed us to posit two hypotheses related to the salience results. When required, the results were thinned and then manually sifted. The query results needed to be normalised as the three sub-corpora are not of the same size. Secondly, the Spanish translations of both parallel corpora, English-Spanish (EN-ES) and French-Spanish (FR-ES), were queried for diminutives, the results of which were then compared with the results of queries for diminutives in the non-translated Spanish texts. After the three sets of occurrences were thinned and manually sifted to remove false positives, the results were quantified, and log-likelihood was applied to search for statistical significance. Once again, the query results needed to be normalised as the three sub-corpora are not of the same size. Thirdly, we searched for bilingual concordances in order to determine to what extent the differences observed between translations from French and translations from English were due to the occurrence of diminutive suffixes in English and French texts. After thinning, triggers in the English and French source texts were extracted and classified, after which their source concentration was determined. Then, we took the most frequent triggers of Spanish suffixes and searched for their equivalences in EN-ES and FR-ES translations to find their target concentration. The last step of the methodology involved applying the Unidirectional Translation Correspondence (Marco 2021) to find out the degree of connectivity between the suffixes and their triggers across the EN-ES and FR-ES components of the COVALT parallel corpora. Finally, we derived conclusions from the results.

This study drew on the methodology implemented by Hareide (2016, 2017) testing the GPH and the UIH, as well as on other recent studies using the COVALT corpus to test the GPH (Marco and Oster 2018; Marco 2019, 2021; Oster 2020). The COVALT corpus is a multilingual parallel corpus of narrative works originally written in English, French and German and translated into Catalan and Spanish. It is also a comparable corpus since it includes two sub-corpora of Catalan and Spanish non-translated works. The size of each translated subcorpus is 1,242,852 tokens in the EN-ES translated component (36 texts) and 565,481 tokens in the FR-ES translated component (21 texts). The size of the two comparable sub-corpora of Catalan and Spanish original literary works is 1,551,521 and 4,170,178 tokens respectively. Data analysis was carried out using COVALT and the Corpus Query Processor (CQP).

#### **5. Source and target language salience and hypotheses**

Salience is key when testing the GPH to gauge magnetism and gravitational pull. Before formulating hypotheses, it is essential to determine the salience of items in both the TL and the SL. Comparing the frequencies of diminutive suffixes vis-à-vis the adjective + noun / noun + adjective constructions (both in ES-OR and in the source components of EN-ES and FR-ES in our corpus), could give us more information to be able to state whether or not the use of diminutive suffixes is in fact salient in expressing diminution. To determine the salience of Spanish diminutives, we needed to find out which form of diminutive (with or without a suffix) was more frequent in our corpus. Salience is understood here as onomasiological salience, or

the prominence of an item in relation to other similar items within its category. According to Halverson (2017: 13), salience “may be impacted by a number of factors, including type of meaning, recency of activation, and various elements of the unfolding discourse representation”. If we consider the salience of items as possessing “a particular status in the human linguistic representation” compared with other similar forms (Data-Bukowska 2021: 12), we may assume that Spanish diminutive suffixes are good candidates for salience.

The queries for diminutives in ES-OR, after thinning to 2,000 random occurrences of *-ito*, *-illo*, *-ico* and *-ete*, showed that suffix *-ito* had a much higher frequency than the rest of the suffixes. The suffix *-ito* is very often associated with the expression of emotional and subjective values, which somehow prevents it from evolving towards lexicalisation. This sets it apart, therefore, from the autonomy achieved by the suffix *-illo* in creating new words (Monge 1988), as in *mujercilla*, which has its own entry in the dictionary and often refers to a woman leading a bad life. We did not consider lexicalised diminutives in this study, which also accounts for the lower number of *-illo* occurrences in these results.

Queries for other Spanish suffixes such as *-ico* or *-ete*, whose use is more restricted to certain areas of Spain and Latin America, only produced a few matches. However, there was a high frequency of the analytic form used to express diminution, i.e. noun + *pequeño*, and *pequeño* + noun. *Pequeño* is the most common adjective used to describe smallness in Spanish. We searched both word orders, including their genre and number inflections *pequeña*, *pequeños*, and *pequeñas*, and found that the *pequeño* + noun pattern was much more frequent than its inversion, which may be surprising if we consider that placing adjectives before nouns in Spanish is deemed “a minoritarian option against the postposition, often considered stylistically marked” (Oster 2020: 116). Nonetheless, these results may be explained due to the literary nature of the corpus texts, all of which contained narrative literature aimed at adults and young adults. As style plays an important role in such writing, many adjectives may act as epithets.

In summary, the corpus results confirm that the suffix *-ito* is the most frequent suffix in non-translated Spanish to express diminutiveness, and thus the most salient indicator of formal diminutiveness. The next most commonly found form is *pequeño* + noun. It is also interesting to note that *-ito* is more frequent than the most natural form of expressing diminutiveness without a suffix in Spanish, that is, noun + *pequeño*. Table 1 shows the results of the above analysis.

Table 1: Spanish diminutives in ES-OR

SPANISH DIMINUTIVES in ES-OR	Query matches	Thinning	Proper diminutives after thinning	Estimation of proper diminutives in query matches	Normalised frequency per 1,000 words
<i>-ito</i>	7,468	2,000	768	2,868	0.69
<i>-illo</i>	8,823	2,000	122	538	0.13
<i>-ico</i>	6,502	2,000	2	7	0.0016
<i>-ete</i>	4,982	2,000	6	15	0.0036
<i>-uco</i>	385	385	0	0	-
<i>-ín</i>	9,551	2,000	3	14	0.0034
<i>-iño</i>	3,411	2,000	0	0	-
<i>-ejo</i>	4,304	2,000	0	0	-

noun + <i>pequeño</i>	201	201	194	194	0.046
<i>pequeño</i> + noun	1,266	1,266	1,264	1,264	0.30

The same frequency searches were performed on the most common English and French diminutive suffixes and on analytic patterns *little/small* + noun and *petit* + noun. There were almost no occurrences in the EN-ES and FR-ES source components of the corpus of nouns with diminutive suffixes that were not lexicalised (hence, not salient), whereas occurrences of *little/small* + noun and *petit* + noun were very frequent as shown in Table 2 and Table 3.

Table 2: English diminutives in non-translated texts

ENGLISH DIMINUTIVES	Query matches	Thinning	Proper diminutives	Estimation of proper diminutives in query matches	Normalised frequency per 1,000 words
<i>-let</i>	173	173	0	0	-
<i>-y/-ie</i>	16,645	2,000	0	0	-
<i>-ling</i>	460	460	0	0	-
<i>-poo</i>	0	0	0	0	-
<i>-aster</i>	339	0	0	0	-
<i>-oc/-uc</i>	24	0	0	0	-
<i>small</i> + noun	281	281	281	281	0.25
<i>little</i> + noun	829	829	829	829	0.73

Table 3: French diminutives in non-translated texts

FRENCH DIMINUTIVES	Query matches	Thinning	Proper diminutives	Estimation of proper diminutives in query matches	Normalised frequency per 1,000 words
<i>-ette</i>	1,057	1,057	3	6	0.012
<i>-on</i>	33	33	1	1	0.002
<i>-elle</i>	1,172	1,172	0	0	-
<i>-eau</i>	1,124	1,124	0	0	-
<i>-elet</i>	12	12	0	0	-
<i>-aut</i>	85	85	0	0	-
<i>-in</i>	4,036	4,036	0	0	-
<i>-otin</i>	1	1	0	0	-
<i>-eteau</i>	6	6	0	0	-
<i>-ot</i>	700	700	0	0	-
<i>-ille</i>	1,544	1,544	0	0	-
<i>-ole /-erole</i>	184	184	0	0	-
<i>-cule</i>	271	271	0	0	-
<i>-iche</i>	50	50	0	0	-
<i>petit</i> + noun	649	649	649	649	1.20

As stated earlier, diminutive suffixes in Spanish are considered here as unique items with respect to their English and French counterparts. The presumably low connectivity between these counterparts (GPH's factor 3) might lead to their underrepresentation in Spanish translated texts, in line with the UIH. Connectivity reflects "the impact of high frequency co-occurrence of a translation pair [...]. Indeed, the links between translation pairs across languages are also strengthened through frequent activation of one member of the pair" (Halverson 2017: 14). This phenomenon has been noted to be probably related to the Unique Items Hypothesis (Hareide 2016). In theory, patterns of connectivity between diminutive suffixes in Spanish and their equivalents in English and French should be weak due to the almost non-existent frequency of diminutive suffixes in the latter two languages. In other words, as the forms triggering diminutive suffixes in translated Spanish will not include suffixes of this kind, a high degree of connectivity should not be expected.

Considering these results, we might also claim a potential magnetism, or salience in the TL, of Spanish diminutive suffixes if we take into account the low frequency of the English and French suffixes. Hence, magnetism might lead to the overrepresentation of diminutive suffixes in Spanish translated texts from English and French. On the other hand, gravitational pull, or salience in the SL, needs to be attributed to the analytic forms of adjective + noun in English and French, which also would lead to the overrepresentation of these forms in the texts translated into Spanish.

Based on the above, the following hypotheses can be posited:

1. Spanish diminutive suffixes will be underrepresented, in line with the UIH and with factor 3 of the GPH (connectivity), in translations from English and French into Spanish, compared to Spanish non-translations. Conversely, they will be overrepresented if factor 1 of the GPH (magnetism of TL) prevails.
2. Analytic patterns *pequeño* + noun/noun + *pequeño* will be overrepresented, in line with factor 2 of the GPH (gravitational pull of SL), in translations from English and French into Spanish, due to the prominence of *little/petit* + noun in English and French to express diminutiveness.

Four Spanish diminutive suffixes were originally proposed for analysis: *-ito*, *-illo*, *-ico* and *-ete*, including their gender and number inflections (*-ito/ita/itos/itas*, *-illo/-illa/-illos/-illas*, *-ico/-ica/-icos/-icas* and *-ete/-eta/-etes/-etas*). However, the results for *-ico* and *-ete* in the corpus were so scarce that it seemed advisable to discard them from the study.

## 6. Target language results

Following our methodology, the second step involved querying the corpus for the frequency of diminutive suffixes in the translated texts (EN-ES and FR-ES) and comparing the results to their frequency in Spanish non-translations. The results are shown in Table 4.

Table 4: EN-ES, FR-ES, ES-OR results for *-ito/-ita/-itos/-itas*

<i>-ITO</i>	Total number of words	Query matches	Thinning	Proper diminutives	Estimation of diminutives in the whole corpus	Normalised frequency per 1,000 words
Translations from English (EN-ES)	1,122,299	1,444	500	150	433	0.39
Translations from French (FR-ES)	565,481	1,149	500	157	361	0.64
Spanish non-translations (ES-OR)	4,170,178	7,468	2,000	768	2,868	0.69

As can be seen, the diminutive suffix *-ito* is underrepresented in translations from English into Spanish, but less so in translations from French into Spanish. We applied log-likelihood to corroborate these results through statistical significance. The differences between EN-ES and ES-OR were found to be statistically highly significant (LL 144.53,  $p < 0.0001$ ), but the differences between FR-ES and ES-OR were not significant (LL 1.81), which shows that *-ito* is not underrepresented in translations from French. The differences between EN-ES and FR-ES were significant (LL 48.68,  $p < 0.0001$ ). The same analysis performed on the diminutive suffix *-illo* produced the results in Table 5.

Table 5: EN-ES, FR-ES, ES-OR results for *-illo/-illa/-illos/-illas*

<i>-ILLO</i>	Total number of words	Query matches	Thinning	Proper diminutives	Estimation of diminutives in the whole corpus	Normalised frequency per 1,000 words
Translations from English (EN-ES)	1,122,299	2,602	500	33	172	0.15
Translations from French (FR-ES)	565,481	1,000	500	52	104	0.18
Spanish non-translations (ES-OR)	4,170,178	8,823	2,000	122	538	0.13

Table 5 shows that *-illo* is more used in translations from English and French than in texts originally written in Spanish. Based on this, Halverson's factor 3 (patterns of connectivity, which reflect relationships between the SL and the TL) does not seem to lead here to underrepresentation, but rather to overrepresentation. Once again, we applied log-likelihood to confirm the results. The differences between EN-ES and ES-OR were found to be not significant (LL 3.75); the differences between FR-ES and ES-OR were significant (LL 10.11,  $p < 0.01$ ); and the differences between EN-ES and FR-ES were not significant (LL 2.12). As

none of the differences were found to be really significant, we cannot talk here about either underrepresentation or overrepresentation. At this stage of the study, we would just be entitled to say that Hypothesis 1 is only true for the suffix *-ito*. However, when we combined the results for both the *-ito* and the *-illo*, we were able to look at the bigger picture in Table 6.

Table 6 highlights the underrepresentation of translated diminutives from English and French into Spanish, which is consistent with one of the translation effects posed by Halverson's factor 3 and with the UIH (as well as with the lack of magnetism of formal diminutives in ES and the lack of gravitational pull of formal diminutives in English and French). After applying log-likelihood once more, we found that the differences between EN-ES and ES-OR were statistically highly significant (LL 99.13,  $p < 0.0001$ ) and the differences between FR-ES and ES-OR were significant (LL 6.69,  $p < 0.01$ ). These results confirm that underrepresentation clearly occurs in translations into Spanish from English and French. Therefore, Hypothesis 1 can be confirmed. The differences between EN-ES and FR-ES were also found to be significant (LL 18.85,  $p < 0.0001$ ), which indicates that diminutive suffixes are underused in translations into Spanish from English compared to in translations from French. The lower productivity of diminutive suffixes in English may have caused this result.

Table 6: EN-ES, FR-ES, ES-OR results for *-ito/-ita/-itos/-itas* and *-illo/-illa/-illos/-illas*

<i>-ITO &amp; -ILLO</i>	Corpus size	Query matches	Proper diminutives (out of 500/2000)	Estimation in the whole corpus	Normalised frequency per 1,000 words
Translations from English	1,122,299	4,046	183	1,481	1.32
Translations from French	565,481	2,149	209	898	1.59
Non-translations	4,170,178	16,291	890	7,249	1.74

As for semantic diminutives (i.e. analytic structures formed by adjective + noun), *pequeño/a/os/as* + noun was found to be the most frequent in the ES-OR module. We also performed queries in EN-ES and FR-ES. As frequencies were manageable, thinning was not necessary. We then compared the results with those for the ES-OR module (see Table 7).

Table 7: EN-ES, FR-ES, ES-OR results for *pequeño* + noun and noun + *pequeño*

<i>pequeño</i> + noun / noun + <i>pequeño</i>	Corpus size	Query matches	Proper diminutives	Normalised frequency per 1,000 words
Translations from English	1,122,299	459	459	0.41
Translations from French	565,481	235	235	0.41
Non-translations	4,170,178	1,467	1,458	0.35

Testing these values for statistical significance revealed that the differences between the EN-ES/FR-ES and ES-OR sub-corpora were significant, but not between EN-ES and FR-ES (EN-ES vs. ES-OR: LL 8.35,  $p < 0.01$ ; FR-ES vs. ES-OR: LL 5.80,  $p < 0.05$ ; and EN-ES vs. FR-ES: LL 0.04). This could confirm Hypothesis 2 relating to gravitational pull, as semantic diminutives are overrepresented in the translations compared to the non-translations.

At this point, we sought to address RQ 1, which considered whether translations into Spanish from English and French contained fewer diminutive suffixes than non-translated texts in Spanish. To address RQ 2, which sought to identify whether any frequency differences between translations and non-translations in Spanish were due to source language influence, we needed to look at connectivity patterns between *-ito* and *-illo* and the items from which they originated (i.e. the ST triggers in English and French). Trigger classification and assessment combined the previous quantitative analysis with qualitative analysis.

## 7. Connectivity results

Given the difficulty of foreseeing connectivity between TL and SL items a priori, we can only resort to speculation based on similar studies or reference books such as grammars or translation handbooks. Section 3 presented some perspectives of reference grammar books and related papers on diminution in the languages of the study. While there are a few previous studies that take diminutives and GPH as the object of study, languages differ. When Marco and Oster (2018) tested the GPH with Catalan diminutive suffixes translated from English and German, they found that diminutive suffixes were underrepresented, and that this underrepresentation was less when translating from German. Similarly, Špetla (2018) tackled diminutives as unique items in the English-Czech pair and found a slight underrepresentation in translated Czech. Špetla (2018: 38) suggests that the reason why this underrepresentation is only slight and not more marked is that translators might be aware of the ‘uniqueness’ of diminutives to Czech and thus be more willing to use them.

To look at connectivity patterns between diminutives in EN-ES and FR-ES translations, we first analysed the EN-ES subcorpus, and searched for the source concentration of triggers of *-ito* and *-illo* in English. Firstly, the triggers of *-ito* and *-illo* were classified according to the types of results we obtained from the corpora:

1. Analytic patterns (*little/small/tiny*, etc. + noun; *petit*, etc. + noun).
2. Non-diminutives: occurrences that were not diminutives in the ST.
3. Lexicalised diminutives: those which do not count as diminutives in the study as they have their own entry in the dictionary.
4. Others: words expressing other values, which could imply small size too, i. e., *young*, *short*, *jeune*, *court*, etc.
5. Diminutive suffixes: those listed in grammars and reference works such as *-y*, *-let*, *-ette*, etc.

The results of this analysis are summarised in Table 8. The largest number of English triggers fell into the second category (non-diminutives). The source concentration for both *-ito* and *-illo* in this category was above 40%, which means that this absence of diminutive triggers led to the activation of almost half of the occurrences of diminutive suffixes *-ito* and *-illo* in translated texts. Examples of these are *magic-lantern business* triggered by *negocio de linternitas mágicas* and *rough meadow* triggered by *pradecillo*. The next most common form

of English triggers consisted of analytic forms *little/small/tiny* + noun, with a source concentration of around 30%. These results are consistent with what we initially argued regarding the predominance of analytic patterns, also supported by grammar books. As for lexicalised triggers (e.g. *keg* and *kittens*), they had a low source concentration. There were no occurrences of diminutive suffixes, which means very low connectivity.

Table 8: English triggers of *-ito/ita/itos/itas* and *-illo/illa/illos/illas* (raw frequency and source concentration)

EN-ES	<i>-ito</i>		<i>-illo</i>	
Total of triggers	150	Source concentration	34	Source concentration
1a. <i>little</i> + noun	47	31.3%	10	29.4%
1b. <i>small</i> + noun	10	6.7%	1	2.9%
1c. <i>tiny</i> + noun	1	0.7%	1	2.9%
2. Non-diminutives	64	42.7%	15	44.1%
3. Lexicalised diminutives	15	10%	3	8.8%
4. Other	9	6%	4	11.7%
5. Diminutive suffixes	0	-	0	-
Misalignments	4	2.7%	1	2.9%

However, in order to establish a more complete view of connectivity patterns, we needed to identify the matching translations of the main triggers for *-ito* and *-illo* and their target concentration. This main trigger (leaving apart the non-diminutives category) was found to be *little*. Table 9 shows the results for Spanish translations of *little* + noun in EN-ES.

Table 9: Matches for ‘little’ in EN-ES (raw frequency and target concentration)

<i>little</i> + noun	Raw frequency	Target concentration
1. <i>Pequeño/-a/-os/-as</i>	110	34%
2. Non-diminutives	81	25%
3. Lexicalised diminutives	7	2,2%
4. Other	34	10,5%
5a. <i>-ito</i>	50	15,5%
5b. <i>-illo</i>	16	5%
5c. Other suffixes	8	2,5%
Misalignments	17	5,3%
Total	323	

As the number of results for *little* in the corpus was too high for manual analysis, they were thinned to 500. Manually sifting the occurrences, 177 of them were found to convey meanings other than diminutiveness and were therefore removed. Analysis of the remaining 323 hits showed that *pequeño* + noun got the most matches. This form accounted for a target concentration of 34%, which indicates that *little* was translated into Spanish as *pequeño/-a/-os/-as* + noun or as noun + *pequeño* (the former was more common despite not being the most idiomatic in Spanish). This result may be due to syntactic priming, which is the tendency to repeat a particular grammatical form that has been seen or used before (Hartsuiker et al. 2004: 410) and would prompt translators to choose a similar word order in translations. This category also included a few occurrences of similar adjectives such as *diminuto* ('tiny') + noun and *minúsculo* ('minuscule') + noun.

We found many cases where *little* was removed (non-diminutives, 25%) in Spanish and only the noun affected by *little* was translated, such as in 'little cakeshop' translated as *pastelería*, where the diminution value is omitted. Proper diminutive suffixes such as *-ito* and *-illo* were the third most common, their combined target concentration totalling 20.5%. Within the category of 'others', we included translations of *little* using adjectives referring to age (*little Duke* was *joven duque* 'young Duke') or length (*little laugh* was *risa breve* 'brief laugh'), among others. Other Spanish suffixes found in translations, such as *-uelo/-uela/-uelos/-uelas* and *-ete/-eta/-etes/-etas*, accounted for a low target concentration (2.5%).

In sum, neither the source concentration of EN-ES triggers for *-ito* and *-illo* nor target concentration of target text matches of *little* + noun was high (non-diminutives triggers: 42.7%; and *little* + noun triggers: 31.3%; matching translations for *little* as trigger: below 35%). These percentages hint at the strength of translation relationships, but this may be better observed based on the result of the Unidirectional Translation Correspondence (UTC; Marco 2021). This formula for operationalising the degree of connectivity between items across the two components of a parallel corpus was adapted from Altenberg's (1999) concept of Mutual Correspondence. In Marco's (2021) attempt:

$$\frac{(A_b + B_a) \times 100}{(A_t + B_s)}$$

" $A_b$  and  $B_a$  = The number of times A is the translation of B and B is translated as A (it will be the same figure, of course), and  $A_t + B_s$  = The total number of occurrences of A in the TT and of B in the ST" (Marco 2021: 43).

We applied this formula to *-ito* and *-illo* and its English trigger *little* + noun. The word *little* was translated as *-ito* and *-illo* 66 times (50+16), while *-ito* and *-illo* occur 605 times (433+172, estimation of *-ito* and *-illo* as diminutives in the whole corpus) in the Spanish TT, and *little* occurs 323 in the English ST. Hence, the UTC of *-ito* and *-illo* vs. *little* in the EN-ES sub-corpus was as follows:  $(66+66) \times 100 / (605+323) = 14.22\%$ . This percentage showed that there was a low degree of connectivity, as measured using the UTC, between the Spanish diminutive suffixes *-ito* and *-illo* and their main ST trigger in the EN-ES sub-corpus of COVALT.

The same process was also performed for the FR-ES pairing. In analysing the *-ito* and *-illo* triggers, we found that most of the results fell into the category of analytic patterns, namely *petit* + noun or in the non-diminutives category (both source concentrations were around 40%). In the 'others' category, we found triggers comprising adjectives with appreciative values (*jeune* 'young', *pauvre* 'poor', *courte* 'short', etc.) accompanying nouns: *jeune fille* triggered

*jovencita* ('young lady'); *pauvres oiseaux* triggered *pajarillo* ('little bird'). According to the reference works, as many diminutive suffixes in French have led to lexicalised words, their diminutiveness is inherent. That is the case of such instances in the corpus as *gouttelettes* and *godichon*, which are not included in the diminutive suffixes category. See Table 10 for the results of this analysis.

Table 10: French triggers of *-ito/ita/itos/itas* and *-illo/illa/illos/illas* (raw frequency and source concentration)

FR-ES	<i>-ito</i>		<i>-illo</i>	
Total of triggers	163	Source concentration	54	Source concentration
1. <i>petit</i> + noun	69	42.3%	23	42.6%
2. Non-diminutives	67	41.1%	20	37%
3. Lexicalised diminutives	17	10.4%	8	14.8%
4. Other	9	5.5%	2	3.7%
5. Diminutive suffixes	0	-	0	-
Misalignments	1	0.6%	0	-

Unlike in the EN-ES, in FR-ES translations, *-ito* and *-illo* were almost equally triggered by *petit* + noun and by non-diminutive forms. Even so, their source concentrations are low, never reaching 50%. In fact, in as many as 41.1% of the occurrences of the Spanish diminutives, the ST trigger did not contain the feature 'diminutiveness'. In other words, in FR-ES translations, the Spanish suffixes may be equally triggered by diminutives or non-diminutive forms. As with the EN-ES corpus module, we searched for matching translations of the main French triggers for *-ito* and *-illo* and their target concentration. The main trigger turned out to be *petit* (and its gender and number inflections). Table 11 shows the results.

Table 11: Target text matches for *petit* in FR-ES (raw frequency and source concentration)

<i>petit</i> + noun	Raw frequency	Target concentration
1. <i>Pequeño/-a/-os/-as</i>	146	36.1%
2. Non-diminutives	91	22.5%
3. Lexicalised diminutives	4	1%
4. Other	19	4.7%
5a. <i>-ito</i>	100	24.8%
5b. <i>-illo</i>	33	8.2%
5c. Other suffixes	4	1%
Misalignments	7	1.7%
Total	404	

As the number of results for *petit* in the corpus was too high for manual analysis, they were thinned to 500 instances. These occurrences were manually sifted, after which 96 were discarded because they did not involve diminutiveness. Analysis of the remaining 404 hits showed that *pequeño* + noun / noun + *pequeño* (especially the former) got the most matches, though their target concentration was only 36.1%. The *-ito* suffix and the non-diminutives category had a similar target concentration (24.8% and 22.5%). The *-illo* suffix got significantly fewer matches compared to *-ito*, while a few occurrences of different diminutive suffixes and lexicalised diminutives were also found (*petits yeux* were *ojuelos* ‘little eyes’; *petit carnet* was *cuadernillo* ‘small book’). All in all, the target concentration of FR-ES matching translations for *petit* was low, and the source concentration was a little higher, thanks to the trigger *petit* + noun.

Finally, to shed more light on the strength of translation relationships, we used once again the UTC. We focused on *petit*, as the most frequent trigger of *-ito* and *-illo* in the FR-ES corpus module (133 times: 100+33). As *-ito* and *-illo* were found 465 times in the FR-ES subcorpus (361+104), and *petit* was found 404 times, then  $(133+133) \times 100 / (465+404) = 30.61\%$ . This shows a low degree of connectivity between *-ito/-illo* and their trigger *petit* across the French and Spanish components of the parallel corpus, but it is still higher than the UTC for *-ito/-illo* vs. *little*.

Source concentration values of triggers of *-ito* and *-illo* in the EN-ES and FR-ES sub-corpora were around 30% for *little* and above 40% for *petit*. These values show a relatively high salience, and thus a high gravitational pull of semantic diminutives compared to the non-existent source concentration of formal diminutives. This, together with the results for their matching translations (target concentration of 15.5%/5% for *-ito/-illo* as translations of *little*, and 24.8%/8.2% for *-ito/-illo* as translations of *petit*) indicates generally low connectivity.

The answer to RQ 2 can be found in the source concentration and UTC results, which may confirm that these differences are caused by the influence of SL triggers, that is *little* + noun, *petit* + noun, and non-diminutives.

## 8. Discussion and conclusions

This study aimed to contribute another test of the GPH by formulating hypotheses based on the salience of diminutives in Spanish and their English and French counterparts. We firstly hypothesised that Spanish diminutive suffixes would be underrepresented in translated texts (Hypothesis 1). Our analysis showed that diminutive suffixes in the ES-OR sub-corpus were much more frequent than in the English and French originals, which could exert magnetism and lead to overrepresentation. On the other hand, the high frequency of the analytic form *pequeño* + noun both in Spanish non-translations and in translations showed it is also salient. As *little/small* + noun and *petit* + noun are practically the only forms used in English and French to express diminution, they could exert gravitational pull when rendered into Spanish and thus lead to overrepresentation (our Hypothesis 2).

Our RQ 1 (Do Spanish translations from English and French use fewer diminutive suffixes than Spanish non-translated texts?) was answered based on a testing of Hypothesis 1. The results confirmed that diminutive suffixes in translations, particularly in EN-ES, were underrepresented, which supported the UIH and the factor 3 of the GPH. It must also be said that the underrepresentation of diminutive suffixes in the EN-ES sub-corpus was not as pronounced as might have been expected considering the low productiveness of English proper

diminutive suffixes. Semantic diminutives *pequeño* + noun and noun + *pequeño* were slightly overrepresented in translations compared to in non-translations, which allowed us to confirm Hypothesis 2.

As for RQ 2 (Are frequency differences between translations and non-translations in Spanish due to source language influence?), we found that the main English and French triggers of *-ito* and *-illo* were non-diminutives and the analytic form *little/petit* + noun. These results may well confirm that English and French played a role in the frequency differences between Spanish originals and translations. Moreover, the UTC showed that, despite being low in both cases, there was greater connectivity between adjectives *little/petit* and *-ito/-illo* than between *-ito/-illo* and English and French proper suffixes. In this regard, the UTC could not be determined due to a frequency of almost zero.

All in all, we can conclude that the three languages of the study are similar with regards to their use of diminutive analytic structures, but they differ in their use of diminutive suffixes. Diminutive suffixes in Spanish can be considered prototypical. However, if we think about diminutiveness in general terms, the analytic structure *pequeño/-a/-os/-as* + noun also features prominently. The results should not be deemed definitive. Hence, contrasting them with those from larger corpora (both comparable and parallel) would shed further light on the under- or overuse of these suffixes by translators.

### Data availability statement

The dataset analysed is part of COVALT (Valencian Corpus of Translated Literature) and can be accessed for research purposes upon request (<http://www.covalt.uji.es>).

### Funding information

This publication is part of research project PID2019-103953GB-I00, financed by the Spanish Ministry for Science and Innovation: MCIN/AEI/10.13039/501100011033/.

### Acknowledgements

The author thanks Professor Sandra Halverson for her stimulating comments, criticism, and suggestions.

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