

To Be *In-Situ* or *Ex-Situ*? The Morphosyntax of WH-Questions in Brazilian Portuguese and French Acquisition

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The acquisition of interrogative sentences in natural languages presents a fascinating domain of inquiry, particularly regarding the (im)possibility of movement of the interrogative phrase. Languages are generally classified into three groups based on the position of the WH-element at the Phonetic Form (PF): those with mandatory overt movement (e.g., English), those where the WH-element remains *in situ* (e.g., Chinese), and languages where WH-movement is apparently optional, such as Brazilian Portuguese (BP) and French. In both BP and French, either the WH-element appears *in situ* (1a, 2a), or in the left periphery of the sentence (1b, 2b) – which we will call WH-*ex situ*¹.

- (1) a. Você viu quem? (BP)
you saw who
b. Quem você viu?
who you saw
- (2) a. Tu as vu qui? (French)
you AUX-see who
b. Qui tu as vu?
who you AUX see
“Who did you see?”

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¹ Since the goal of this paper is to compare the morphosyntactic aspects in WH-questions across both languages, we will categorize these structures into two groups: with movement (WH-*ex situ*) and without apparent movement (WH-*in situ*). Although we acknowledge that WH-movement can be accompanied by overt complementizers, other expressions or, in the case of French, inversion, these variations will be grouped under the WH-*ex situ* label to focus our analysis on displacement itself.

- (i) Quem_i (que/é que) você viu t_i? (BP)
who (that/is-that) you saw
- (ii) Qui_i est-ce que tu as vu t_i? (French)
who ESK you AUX-see
- (iii) Qui_i as-tu vu t_i?
who AUX-you see
“Who did you see?”

This apparent optionality poses theoretical challenges for minimalist approaches, where movement is not free but driven by feature checking (Chomsky, 1995). Furthermore, the acquisition literature has highlighted a significant asymmetry between these two languages. While in BP, children almost never produce the *in situ* construction in spontaneous speech (Sikansi, 1999; Grolla, 2000, 2009), despite it being productive in adult speech (Lopes-Rossi, 1996; Oushiro, 2012), French children produce it massively (Hamann, 2006), even though adult data suggests a more balanced or even disfavored usage in certain registers (Zuckerman, 2001; Becker & Gotowski, 2015).

This paper aims to investigate the morphosyntactic aspects of WH-questions in these two languages, comparing the production of adults and children. We analyze spontaneous speech data to investigate how morphosyntactic factors (such as the specific WH-word, syntactic function, constituent complexity, and verbal type) influence the choice between WH-*ex situ* and WH-*in situ*.

1. Brazilian Portuguese: syntactic constraints on movement

BP is characterized as a language that exhibits optional WH-movement. However, closer inspection reveals that this “optionality” is constrained by a complex set of morphosyntactic restrictions. Hornstein, Nunes, and Grohmann (2005) provide a comprehensive description of these restrictions: WH-movement is optional with a phonetically null complementizer, but obligatory if an overt interrogative complementizer is present; in indirect interrogatives, WH-movement is mandatory; movement of arguments from an embedded clause is optional if no island is crossed. Beyond these known restrictions on movement, Figueiredo Silva and Grolla (2015) highlight contexts where WH-*in situ* is strictly obligatory. One such case involves sentences with null deictic or anaphoric subjects, which, according to Figueiredo Silva (1996), is ungrammatical because the referential null subject in BP interferes with the WH-operator chain, possibly due to competition for the same syntactic position or feature-checking requirements (3). We call interrogatives like (3b) “Requests for Clarification”², as they are constructed from fragments of discourse, aiming to clarify information.

- (3) a. Falou o quê?
 said what
 b. *O que falou?
 what said
 “What did you say?”

² Following Badan & Crocco (2021), we named these questions Requests for Clarification. They are responding to an immediately preceding antecedent and carry an “echo flavor” (Ambar, 2000) by seeking to fill a missing argument from the prior utterance (cf. example 3). They are often fragments lacking a high functional projection, featuring null deictic or anaphoric subjects, or verbs in the gerund, infinitive, or imperative.

Our analysis also identified the so-called “Probe Questions”³ (Nguyen & Legendre, 2021), used to access the interlocutor’s knowledge or memory rather than request new information (4):

- (4) Aunt: você escolheu o vestido e deu pra ela.
 “you chose the dress and gave (it) to her”
 Mãe: você disse que o vestido era muito **o quê**?
 “you said that the dress was too **what**?”
 Criança: muito grande.
 “too big” (corpus Túlio, 3;03.15)

Examples (3) and (4) illustrate contexts where WH-*in situ* is obligatory due to the absence of a functional target for movement, as in fragment questions (3) or structural gap-fillers like “*muito o quê*” (“very what”).

2. French: Morphosyntactic constraints and the “Intervention Effects” debate

Like BP, French is traditionally classified as a language with optional WH-movement. Despite this apparent flexibility, the distribution of WH-*in situ* in French has been the subject of intense debate regarding its syntactic restrictions. While some researchers claim strict constraints are operative, empirical data from colloquial French (*français familier*) suggests a much more permissive grammar.

There are, for example, morphosyntactic constraints on specific WH-pronouns. First, the pronoun corresponding to *what* exhibits allomorphy based on its position. The weak form *que* appears in moved positions (usually with inversion or *est-ce que*), whereas the form *quoi* appears *in situ*. Second, the adverb *pourquoi* (“why”) is generally resistant to the *in-situ* position. Bošković (1998), following Rizzi (1990), argues that *pourquoi* is generated directly in Spec,CP, preventing it from appearing in lower position. Becker & Gotowski (2015) suggest *pourquoi in situ* might be possible with “purpose” interpretation.

Aside from these morphosyntactic restrictions, literature from the late 1990s and early 2000s (e.g. Bošković, 1998, Chang, 1997, Cheng & Rooryck, 2000, a.o.) heavily emphasized specific syntactic restrictions on the *in situ* strategy. WH-*in situ* was considered ungrammatical in embedded clauses; and blocked by interveners such as negative particles, modals, and quantifiers. However, recent

³ Based on English data, Nguyen & Legendre (2021) call our attention to the “Probe Questions”, which occur primarily in contexts such as classrooms, quizzes, or interrogations. Although very similar to Requests for Clarification, they differ in that the speaker already possesses the answer and aims to access the interlocutor’s knowledge; whereas, in Requests for Clarification, the speaker lacks the information and seeks to clarify it, as shown in the example below adapted from Nguyen & Legendre (2021, p. 7):

- (i) Teacher: I need to know about displacements. They have a what?
 Student: Distance.

studies (e.g. Adli, 2006, Oiry, 2011, Baunaz, 2011, Zimmermann & Kaiser, 2019, a.o.) have challenged these categorical judgments. Adli (2006), for example, provided evidence that these restrictions are not consistent in colloquial French.

Thus, these more recent findings suggest that the purported ungrammaticality of these structures with interveners is less a matter of core syntactic prohibitions and more a reflection of register differences between standard and colloquial French. More importantly for our purposes, it seems that colloquial French aligns closely with BP regarding the licensing of WH-*in situ*, allowing it across a wide range of syntactic environments, and banning it from indirect questions and when overt complementizers like *est-ce que* are present. Given this syntactic convergence, we will treat BP and French in a unified manner.

3. A unified analysis for WH-*in situ* in Brazilian Portuguese and French

Originally, DeRoma (2011) proposed distinct derivations for BP and French to account for the “intervention effects”. For BP, as the language does not show these effects, she adopted the *Unselective Binding* mechanism (Reinhart, 1998), which allows for a base-generated operator in the left periphery to bind from a distance all *in situ* variables sharing the same function, regardless of any intervening elements. For French, DeRoma assumed the *Selective Binding* mechanism to explain the alleged restrictions found in the literature. By arguing that the WH-operator is base-generated with the WH-phrase and must move to Spec,CP, she derived a dependency that is sensitive to intervening barriers.

However, the data presented in this study, supported by recent evidence (Adli, 2006, Oiry, 2011), challenges the existence of these strict syntactic constraints in colloquial French (*français familier*). Consequently, we reject the distinction proposed by DeRoma (2011) for the two languages. Instead, we propose a unification: both BP and French employ the same derivational mechanism for WH-*in situ*, whereas the WH-element remains *in situ* and is licensed by a WH-operator generated in the left periphery via *Unselective Binding*. Thus, the morphosyntactic behavior of Wh-*in situ* in colloquial French is not structurally restricted compared to BP, but rather stylistic.

Having established a unified derivational framework for BP and French, we now turn to the data. Our goal is to verify whether children acquiring these languages behave similarly, concerning morphosyntactic variables such as WH-word, syntactic function, complexity of the WH-phrase and the verb type.

4. Corpus

Our BP data was collected from the Santana-Santos *corpus* (Santos, 2005), which contains the spontaneous speech from 4 BP-speaking children – Leonardo, Luana, Maria E., and Túlio – from 1;02.28 to 5;06.07 years, and the speech of the adults interacting with them (N=23). The French sample comes from the Paris corpus (Morgenstern; Parisse, 2007), available in the CHILDES database (Macwhinney, 2000), comprising transcripts of spontaneous speech from Anaé, Antoine, Théophile, and Madeleine, as well as their adult interlocutors (N=42).

We collected WH-questions from 444 sessions, approximately 265 hours of recordings and ~35,000 WH-questions were analyzed, as described below⁴:

Table 1: distribution of the *corpus*

Name	1 st session	Last session	# sessions	# questions (children)	# questions (input)
Luana	1;07.12	5;06.07	167	2,832	9,186
Leonardo	2;00.14	4;08.27	36	365	1,491
Túlio	2;00.07	4;11.12	70	1,078	2,992
Maria E.	1;02.28	4;02.07	35	141	2,577
Anaé	1;04.13	4;04.10	32	652	4,167
Madeleine	1;04.18	5;10.18	28	312	1,684
Antoine	1;03.15	5;11.18	41	278	4,275
Théophile	1;04.01	4;11.11	35	221	1,979
Total	-	-	444	5,879	28,351

5. Results

The analysis of the spontaneous speech *corpora* reveals distinct profiles for BP and French: while BP speakers show a robust preference for WH-*ex situ* strategies across both age groups; French displays a significant asymmetry, with children overwhelmingly favoring WH-*in situ* despite a more balanced adult *input*. This section details these general distributions and examines how specific morphosyntactic factors modulate these preferences.

⁴ In our analysis, only simple, direct, and grammatical questions were included. We excluded echo, elliptical, rhetorical, multiple, formulaic, and imitated questions. We removed subject questions where the occurrence of movement could not be determined (as in “*Quem vai pra loja?*”/“who is going to the store”), questions with *cadê* (“where-at”) in BP (where no verb is present), and questions with *pourquoi* in French, given that the literature assumes obligatory movement for this WH-word. Finally, we also excluded fragment-questions. By excluding them, we restrict our analysis to contexts of genuine syntactic optionality, where both WH-*in situ* and WH-*ex situ* are viable.

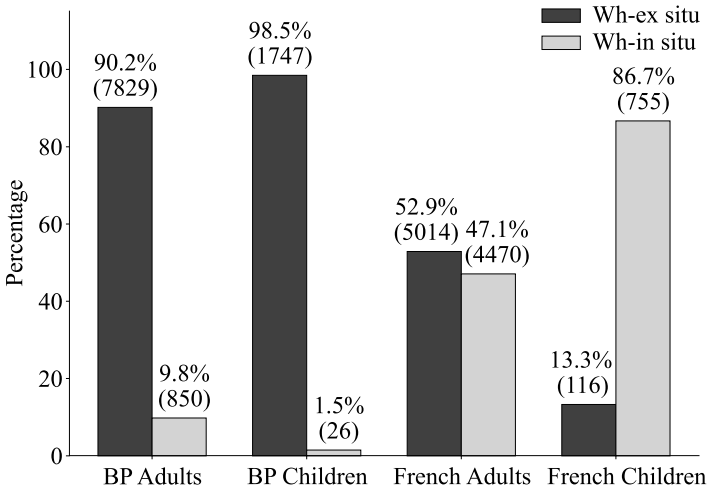


Chart 1: WH-*ex situ* and WH-*in-situ* in BP – adult (N=23) and child data (N=4) – and French – adult (N=42) and child data (N=4).

In BP, there is a clear preference for the *Wh-ex situ* strategy (98.5% for children and 90.2% for adults). Children produced *WH-in situ* in only 1.5% (26) of optional contexts, while adults produced it in 9.8% (850) of questions. In French, children overwhelmingly preferred *WH-in situ* (86.7%), limiting movement to 13.3% of optional contexts. French adults, however, displayed a balanced distribution: 47.1% *WH-in situ* and 52.9% *WH-ex situ*. Thus, there is a clear trend: while BP children follow the adult preference for movement (albeit with lower *in situ* rates), French children diverge from the balanced input they receive, favoring the *in-situ* strategy⁵.

Now we turn to the morphosyntactic aspects driving WH-movement, such as the WH-phrases used, the syntactic function of the WH-phrase, the complexity of the WH-phrase, and the type of verb.

⁵ Regarding intervention effects in French and the alleged restrictions discussed in section 2, which claimed that *WH-in situ* is blocked by interveners or in embedded clauses, our data corroborates recent findings (Adli, 2006) challenging these constraints. We identified *in situ* questions with modals (*tu peux rajouter quoi?* “what can you add?”), quantifiers (*on doit en prendre combien?* “how many of them should we take?”), and in embedded contexts (*tu crois qu’il a quel âge?* “how old do you think he is?”). As for *pourquoi*, typically resistant to *in situ*, we found rare occurrences (0.3% to 5.7%), like Théophile’s question at 2;11 (*et moi j’ai des cadeaux pourquoi?* “and why do I get gifts?”).

5.1. Influence of WH-Words

In the present section, we investigate whether specific interrogative pronouns play a role in the choice between WH-strategies.

In BP (table 2), there is a preference for WH-*ex situ* across all question types in adult and child speech. In the adult group, overt movement rates range from 75.6% (for *what*) to 100% (for *when*), indicating that the *in-situ* option, although available – especially with items such as *who* (20.1%) and *where* (16.9%) – remains a marked or secondary alternative. Children, however, exhibit an even stronger tendency toward movement, displaying rates exceeding 98% for nearly all *wh*-words. This near-categorical usage suggests that children regularize the input by treating movement to the left periphery as the default rule.

Table 2: WH-questions by WH-word in BP in adult (N=23) and child speech (N=4)

Wh-word	Adult	Adult	Child	Child
	WH- <i>ex situ</i>	WH- <i>in situ</i>	WH- <i>ex situ</i>	WH- <i>in situ</i>
How ‘ <i>Como</i> ’	97.7% (1,116)	2.3% (26)	100% (194)	0% (0)
Where ‘ <i>Onde</i> ’	83.1% (723)	16.9% (147)	97.4% (186)	2.6% (5)
When ‘ <i>Quando</i> ’	100% (18)	0% (0)	100% (8)	0% (0)
How many ‘ <i>Quanto</i> ’	91.7% (111)	8.3% (10)	100% (15)	0% (0)
Which ‘ <i>Qual</i> ’	96.3% (617)	3.7% (24)	99.2% (120)	0.8% (1)
Who ‘ <i>Quem</i> ’	79.9% (402)	20.1% (101)	88% (22)	12% (3)
What ‘ <i>O que</i> ’	89.6% (4479)	10.4% (520)	98.2% (892)	1.8% (16)
Why ‘ <i>Por que</i> ’	94.3% (363)	5.7% (22)	99.7% (310)	0.3% (1)

The French data (table 3) contrasts to BP data, displaying a more heterogeneous distribution. In adult speech, WH-*in situ* is the preferred option for most items, reaching high frequencies for *qui* “who” (94.4%), *combien* “how many” (86.1%), *quel* “which” (79.8%), and *où* “where” (73.5%). However, this trend is not uniform: *pourquoi* “why” almost categorically triggers movement (96%), as we expected, and *comment* “how” also favors the *ex-situ* position (69.2%). The unified *que/quoi* “what” category shows a preference for overt movement (68.3%), although *in situ* (*quoi*) remains a productive alternative (31.7%). Children generally mirror or amplify the *in-situ* preference found in adults for items like *who* (99%), *which* (95.5%), *where* (87.3%), and *how many* (80%). Interestingly, however, children rely heavily on *in*

situ for *what* (87.6%), diverging from the adult preference for *ex-situ* in this category, while maintaining the near-categorical movement for *why* (98.6%) and *when* (100%). This distribution suggests that while *in situ* is the predominant strategy for child speech, its production is sensitive to specific WH-words.

Table 3: WH-questions by WH-word in French in adult (N=42) and child speech (N=4)⁶

Wh-word	Adult	Adult	Child	Child
	WH- <i>ex situ</i>	WH- <i>in situ</i>	WH- <i>ex situ</i>	WH- <i>in situ</i>
How ‘ <i>Comment</i> ’	69.2% (716)	30.8% (319)	39.7% (27)	60.3% (41)
Where ‘ <i>Où</i> ’	26.5% (446)	73.5% (1235)	12.7% (34)	87.3% (234)
When ‘ <i>Quand</i> ’	53.6% (37)	46.4% (32)	100% (2)	0% (0)
How many ‘ <i>Combien</i> ’	13.9% (24)	86.1% (149)	20% (1)	80% (4)
Which ‘ <i>Quel</i> ’	20.2% (98)	79.8% (388)	4.5% (1)	95.5% (21)
Who ‘ <i>Qui</i> ’	5.6% (39)	94.4% (652)	1% (1)	99% (101)
What ‘ <i>Quoi/que</i> ’	68.3% (3654)	31.7% (1695)	12.4% (50)	87.6% (354)
Why ‘ <i>Pourquoi</i> ’	96% (333)	4% (14)	98.6% (68)	1.4% (1)

Comparing the two languages, an asymmetry emerges: while BP behaves as a consistently *ex situ* language, French reveals a strong preference for *in situ* strategies, particularly in child speech. Despite these differences, both languages converge on the item *why*, where speakers overwhelmingly reject the *in-situ* position for this adverb, supporting the proposal that *why* is structurally distinct and generated directly in the left periphery (Rizzi, 1990; Bošković, 1998).

5.2. Syntactic Function of the WH-phrase

In this section, we see whether specific syntactic functions of the WH-phrases play a role in the choice between WH-strategies.

⁶ In Table 3, we included questions with *pourquoi* to verify their distribution, although they are more acceptable in their *ex situ* version. In the statistical analyses, however, they will not be included since they may bias the data. Questions with *what* were produced in their *ex situ* version as *que* and in their *in situ* version as *quoi*.

Table 4: WH-questions by syntactic function in BP

Function	Adult	Adult	Child	Child
	WH- <i>ex situ</i>	WH- <i>in situ</i>	WH- <i>ex situ</i>	WH- <i>in situ</i>
Direct Object	85.1% (3365)	14.9% (588)	97.7% (424)	2.3% (10)
Ind. Object	77.6% (602)	22.4% (174)	89.4% (42)	10.6% (5)
Prep. Object	50.5% (210)	49.5% (206)	65.2% (15)	34.8% (8)
Predicative	91.9% (1565)	8.1% (138)	98% (589)	2% (12)
Adjunct	92.3% (1993)	7.7% (167)	98.7% (673)	1.3% (9)

Direct objects, *predicatives*, and *adjuncts* follow the general BP trend, with movement rates ranging from 85% to 92% in adults, rising to near-categorical levels (>97%) in children. *Indirect objects* show a slightly higher tolerance for *in situ* in adult speech (22.4%), but are heavily moved by children (89.4%). The most distinctive finding concerns *prepositional objects*, where adult speakers exhibit a balance (50.5% *ex situ* vs. 49.5% *in situ*), indicating that the presence of a preposition (also present in *indirect objects*) may play a role in favoring the *in-situ* strategy compared to other functions. However, children once again regularize this variation towards overt movement (65.2%), although this remains the function where they produce the highest percentage of *in situ* (34.8%), suggesting that the preposition may pose a challenge to movement. We will discuss this result in more detail in the subsequent analysis.

Table 5: WH-questions by syntactic function in French

Function	Adult	Adult	Child	Child
	WH- <i>ex situ</i>	WH- <i>in situ</i>	WH- <i>ex situ</i>	WH- <i>in situ</i>
Direct Object	78.4% (3055)	21.6% (842)	20.7% (37)	79.3% (142)
Ind. Object	27% (142)	73% (383)	8.9% (4)	91.1% (41)
Prep. Object	15.2% (85)	84.8% (476)	1.7% (1)	98.3% (57)
Predicative	29.3% (638)	70.7% (1537)	4.5% (14)	95.5% (294)
Adjunct	46.1% (1097)	53.9% (1283)	20.3% (60)	79.7% (263)

In French, the distribution of WH-strategies varies according to syntactic function. While adults favor movement with *direct objects* (78.4%), children predominantly leave it *in situ* (79.3%). With adjuncts, adults show a balanced distribution (~54% *in situ*), whereas children maintain their preference for WH-*in situ* (79.7%). For all others, the *in-situ* strategy is the preferred one.

The languages diverge sharply. For most functions, BP behaves as a “movement language”, while in French most syntactic functions (except for *direct objects* and adjuncts) are preferred *in situ*. A notable nuance appears in *prepositional objects*: while French adults consistently leave them *in situ* (>84%), BP adults show a 50/50 optionality, and for BP children it is the only productive function with WH-*in situ*, suggesting that the presence of a preposition is a significant factor challenging the default strategy.

5.3. Constituent Complexity

Coveney (1995) argues that longer or “heavier” interrogative phrases favor the WH-*in situ* strategy in French. In the previous section, our results corroborate this trend, where indirect and, specially, objects of preposition, are the only functions where we saw an increase in WH-*in situ* use in BP, a language that, as we have seen, massively favor overt movement. We can speculate that speakers employ the WH-*in situ* strategy to avoid the computational costs associated with complex structures, such as preposition pied-piping.

Now, we are interested in analyzing whether more complex WH-phrases, involving more branching nodes, tend to remain *in situ*. To test this hypothesis, we classified the sentences into three levels of complexity: *low* (bare WH-words – such as ‘what’), *intermediate* (phrases with the WH and an NP – such as ‘which car’ or the WH and a preposition – such as ‘about what’), and *high* (with both – such as ‘about which car’). The results in Chart 2 show a positive correlation between WH-phrase complexity and WH-*in-situ* in both languages. Syntactically “heavier” constituents tend to remain in their base position, likely to avoid the processing cost associated with moving complex constituents to the left periphery.

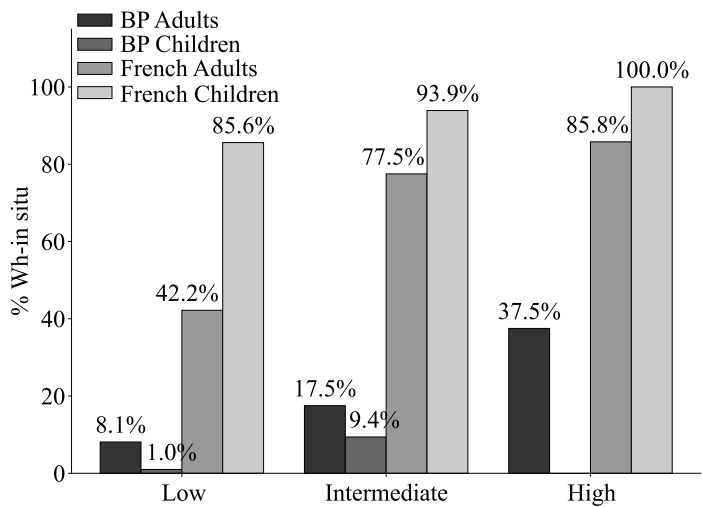


Chart 2: BP and French production of WH-*in situ* grouped by constituent complexity

In BP, although movement is the default, the rate of *in situ* rises progressively with the complexity of the WH-phrase in adult speech, increasing from 8.1% (low complexity) to 37.5% (high complexity). Children, however, continue to prefer overt movement, showing a slight increase in *in situ* for intermediate complexity (reaching 9.4%). No instances of high complexity WH-phrases were found in children’s speech in BP. In French, where *in situ* is already a robust option, complexity reinforces it. Adults double their use of *in situ* from 42.2% to 85.8%

with constituents involving more branching nodes. French children exhibit a “ceiling effect”: starting with a very high preference for *in situ* (85.6%), they reach categorical production (100%) in high-complexity contexts. Thus, complexity effects operate similarly in both grammars favoring the *in-situ* position.

5.4. Verb Type

Hamloui (2009) suggests that copular verbs favor the *in-situ* strategy because they carry less informational weight than lexical verbs. Consequently, WH-*in situ* is preferred when the non-WH part of the sentence is less informative or presupposed. Furthermore, recent studies (Palasis et al., 2019; 2023) heavily associate WH-*in situ* with fixed forms involving the verb *être* (to be), such as “*c’est quoi?*” (“what is it?”), distinguishing them from “free forms” involving lexical verbs. To test this hypothesis, we also analyzed whether copular or lexical verbs were related to an increase or a decrease in the production of WH-*in situ*.

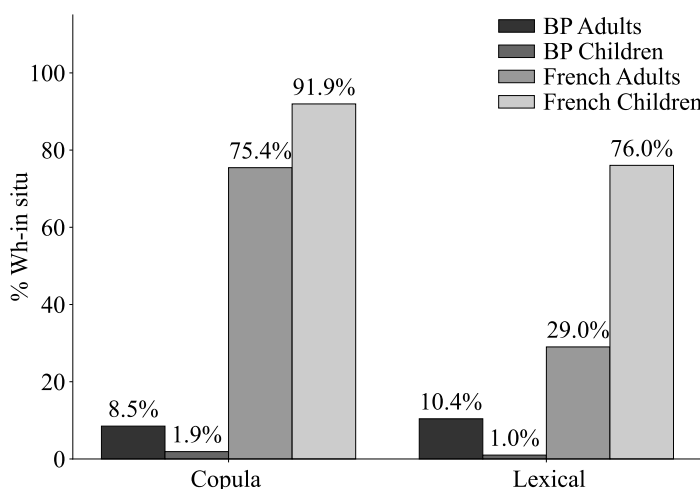


Chart 3: BP and French production of WH-*in situ* grouped by type of verb

In BP, the distinction between copula and lexical verbs appears to be irrelevant. Both adults and children exhibit a uniform behavior, maintaining high rates of overt movement (90-99%) regardless of verb type. In French, by contrast, verb type proves to be a significant variable. Adult speakers show a sharp asymmetry: copula verbs strongly favor the *in-situ* position (75.4%), whereas lexical verbs trigger movement in most cases (leaving only 29% *in situ*). This suggests that ‘light’ verbs like *être* facilitate the *in-situ* derivation. Children mirror this pattern but with a generalized amplification of the *in-situ* strategy: they reach near categorical *in situ* with copulas (91.9%) and maintain a very high rate even with lexical verbs (76%).

Finally, we submitted the data in this study to a Multiple Logistic Regression (Generalized Linear Model with a Logit Link function)⁷. In BP, WH-word is the strongest predictor for adults: specific items like *what*, *where*, and *who* significantly increase the likelihood of *in situ* (OR 5.95, $p < 0.001$) compared to the *intercept how*. For children in both languages, no individual WH-word reached statistical significance, reflecting the categorical nature of their productions. Furthermore, structural weight plays a decisive role, with both Intermediate and High complexity favoring the *in-situ* strategy in adults (OR up to 8.35, $p < 0.001$) and children (OR 6.23, $p = 0.015$). Syntactically, *prepositional objects* also emerge as a significant favorable context (OR 3.06, $p < 0.001$) for BP adults. In French, the scenario is dominated by structural rather than lexical factors. For adults, the strongest predictors for *in situ* are syntactic function – *direct objects* (OR 8.95, $p < 0.001$) and *predicatives* (OR 8.00, $p < 0.001$) – and the presence of a *copula verb* (OR 5.57, $p < 0.001$). This copula effect is robust across generations, being a primary predictor for French children (OR 4.15, $p = 0.006$). Thus, while BP speakers are sensitive to WH-word they use, French speakers are more sensitive to the verb type. Crucially, both groups converge regarding complexity, as constituents involving more branching nodes favor the *in situ* strategy cross-linguistically.

6. Final remarks

The investigation into morphosyntactic factors shows that the choice between WH-*ex situ* and WH-*in situ* in BP and French is not completely optional but constrained by morphosyntactic factors. While in both languages the same derivational mechanism is involved, the specific morphosyntactic triggers that favor this derivation differ between the languages. BP favors WH-movement across all lexical items (although significant variation exists in adults), a preference that becomes categorical in child speech. However, French displays a split system where WH-*in situ* is the default for arguments (e.g., *who*, *where*), especially in children, while *why* triggers obligatory movement. Regarding syntactic function, both languages show a tendency to use WH-*in situ* for prepositional objects, suggesting a cross-linguistic preference to avoid the computational costs associated with pied-piping or preposition stranding.

A converging point between the two languages is the influence of constituent complexity. In both BP and French, as the internal structure of the WH-phrase becomes more complex, the odds of the constituent remaining in its base position increases significantly. This indicates that when the WH-phrase carries greater syntactic weight, speakers of both languages tend to avoid the processing cost

⁷ The dependent variable was the presence or absence of WH-movement, while the independent variables comprised the morphosyntactic factors analyzed: WH-word, syntactic function, constituent complexity, and verb type. The values reported represent the Odds Ratio (OR), where values > 1 indicate an increased likelihood of WH-*in situ* and values < 1 indicate a decreased likelihood (favoring WH-*ex situ*).

associated with overt movement, favoring the *in situ* strategy. Another asymmetry emerges regarding verb type. In French, the presence of the copula is the strongest predictor for WH-*in situ* in child speech and a significant factor for adults, corroborating recent findings (PALASIS et al., 2019; 2023).

Ultimately, our findings suggest that while both languages share the underlying derivation for WH-*in situ*, the morphosyntactic constraints governing its use diverge fundamentally. The Brazilian child acquires a grammar oriented towards WH-*ex situ*, regularizing movement as the default operation that overrides most morphosyntactic variations. In contrast, French children generalize the *in situ* strategy for most arguments while still respecting specific structural constraints (such as the obligatory movement of *pourquoi* “why”). Thus, the choice between strategies appears to be determined not merely by optionality, but systematically regulated by the specific morphosyntactic properties of each language.

References

- Adli, Aria. French wh-in-situ questions and syntactic optionality: Evidence from three data types. *Zeitschrift für Sprachwissenschaft*, 25(2), 163-203, 2006.
- Ambar, Manuela. How do wh-exclamatives and in situ wh-questions correlate? Comunicação apresentada ao XXVI Incontro di Grammatica Generativa, Roma, 2000.
- Badan, Linda; Crocco, Claudia. Italian wh-questions and the low periphery. *Linguistics*, vol. 59, no. 3, 2021, pp. 757-784.
- Baunaz, Lena. The grammar of French quantification. *Springer Science & Business Media* vol. 83., 2011.
- Becker, Misha; Gotowski, Megan. Explaining children’s WH-*in situ* questions: Against economy. *Proceedings of the 39th annual Boston University Conference on Language Development*, 2015.
- Bošković, Željko. LF movement and the Minimalist Program. *Proceedings of NELS 28*, Pius N. Tmanji & Kiyomi Kusumoto (eds.), University of Massachusetts, Amherst: GLSA Publications, pp. 43-51, 1998.
- Chang, Lisa. Wh-in-situ phenomena in French. Master’s thesis, University of British Columbia, 1997.
- Cheng, Lisa L. S.; Rooryck, Johan. Licensing wh-in-situ. *Syntax*, 3(1), pp. 1-19, 2000.
- Chomsky, Noam. The Minimalist Program. Cambridge, Mass: MIT Press, 1995.
- Coveney, Aidan. The use of the QU-final interrogative structure in spoken French. *Journal of French language studies* 5.2, pp. 143-171, 1995.
- DeRoma, Cynthia L. Z. Divide et Impera—Separating Operators from their Variables. Doctoral dissertation, University of Connecticut, 2011.
- Figueiredo Silva, Maria C. A posição sujeito no português brasileiro: frases finitas e infinitivas. Campinas: Editora da Unicamp, pp. 119-138, 1996.
- Figueiredo Silva, Maria C.; Grolla, Elaine. Some syntactic and pragmatic aspects of WH-in-situ in Brazilian Portuguese. *The Morphosyntax of Portuguese and Spanish in Latin America*, pp. 259-285, 2015.
- Grolla, Elaine. Aquisição da periferia esquerda da sentença em português brasileiro. Dissertação de mestrado, Campinas: UNICAMP, 2000.

- Grolla, Elaine. Speculations about the Acquisition of Wh-Questions in Brazilian Portuguese. *Minimalist Inquiries into Child and Adult Language Acquisition: Case Studies across Portuguese*, Acrísio Pires & Jason Rothman (eds.). Mouton deGruyter (Studies on Language Acquisition (SOLA)), 2009.
- Hamann, Cornelia. Speculations about early syntax: The production of wh-questions by normally developing French children and French children with SLI. *Catalan Journal of Linguistics*, 5(1), pp. 143-189, 2006.
- Hamlaoui, Fatima. A prosodic study of wh-questions in French natural discourse. *Proceedings of the LangUE*, pp. 27-38, 2009.
- Hornstein, Norbert; Nunes, Jairo; Grohmann, Kleanthes K. Introduction to Minimalist Program, Cambridge University Press, 2005.
- Lopes-Rossi, Maria A. G. A sintaxe diacrônica das interrogativas-Q do Português. Tese de Doutorado, Departamento de Linguística, Unicamp, 1996.
- Macwhinney, Brian. The CHILDES Project: Tools for analyzing talk. Third Edition. Mahwah, NJ: Lawrence Erlbaum Associates, 2000.
- Morgenstern, Aliyah; Parisse, Christophe. Codage et interprétation du langage spontané d'enfants de 1 à 3 ans. *Corpus n°6 "Interprétation, contextes, codage"*, pp. 55-78, 2007.
- Nguyen, An D.; Legendre, Geraldine. The acquisition of wh-questions: Beyond structural economy and input frequency. *Language Acquisition*, pp. 1-26, 2021.
- Oiry, Magda. A case of true optionality: Wh-in situ patterns like long movement in French. *Linguistic Analysis*, 37(1), pp. 115-142, 2011.
- Oushiro, Livia. Análise sociolinguística da posição variável do constituinte interrogativo. *Revista da ABRALIN*, v.11, n.2, pp. 43-87, 2012.
- Palasis, Katerina; Faure, Richard; Lavigne, Frédéric. Explaining variation in wh-position in child French: A statistical analysis of new seminaturalistic data, *Language Acquisition*, 2019.
- Palasis, Katerina; Faure, Richard; Meunier, Fanny. Wh-in-situ in child French: Deictic triggers at the syntax-semantics interface. *Journal of French Language Studies*, pp. 1-26, 2023.
- Reinhart, Tanya. Wh-in-Situ in the Framework of the Minimalist Program. *Natural Language Semantics* 6, pp. 29-56, 1998.
- Rizzi, Luigi. Relativized minimality. Cambridge: MIT Press, 1990.
- Santos, Raquel S. Projeto de Aquisição do Ritmo em Português Brasileiro. FAPESP 2003/13565-4, 2005.
- Sikansi, Nilmara. As interrogativas-Q na gramática infantil do PB. Caderno de Estudos Linguísticos, Campinas (36), pp. 85-103, 1999.
- Zimmermann, Michael; Kaiser, Katharina. Refining current insights into the wh-in-situ interrogative construction in French: the case of Contemporary Hexagonal French. *Romanistisches Jahrbuch*, 70(1), pp. 123- 157, 2019.
- Zuckerman, Shalom. The Acquisition of "Optional" Movement. Doctoral Thesis. Boston, Massachusetts, 2001.

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