

# Cross-linguistic Influence (CLI) in Multilingual Learners: Implications for Education

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## ABSTRACT

As multilingualism becomes increasingly prevalent in globalized societies, understanding the cognitive and linguistic mechanisms underpinning language acquisition is essential. This study explores cross – linguistic influence (CLI) in multilingual learners from a theoretical perspective, emphasizing its implications for linguistic theory and educational practice. Drawing upon key frameworks such as Dynamic Systems Theory, the Scalpel Model, and Multicompetence, the paper critically examines how CLI operates across multiple linguistic domains and within complex learner ecologies. Particular attention is paid to factors mediating CLI – such as language typology, proficiency, language dominance, and acquisition context – and how these factors shape multilingual development in both predictable and variable ways. The article argues for a reconceptualization of CLI not as a source of interference, but as a fundamental aspect of multilingual competence that reflects the dynamic interconnectivity of linguistic systems. The findings support a shift away from monolingual instructional models toward pedagogies that recognize and leverage the linguistic resources of multilingual learners. This theoretical inquiry lays the groundwork for future empirical research and provides valuable insights for linguistic, educators, and policymakers in the multilingual education landscape. CLI should be seen not as a hindrance but as a valuable resource, offering multilingual learners cognitive flexibility and enhanced language proficiency

## **Introduction**

In today's increasingly globalized world, the phenomenon of cross – linguistic influence (CLI) occupies a central position in the study of multilingualism, offering critical insights into the cognitive, structural, and developmental dynamics of language interaction. As multilingual competence becomes more widespread and normatively significant (Aronia & Singleton, 2012; Cenoz, 2013), the need to reconceptualize how multiple linguistic systems coexist and interact within the multilingual mind has become more urgent.

CLI -broadly defined as the influence of one language on another within an individual's linguistic repertoire (Jarvis & Pavlenko, 2008) -extends beyond simple instances of transfer to encompass a complex, bidirectional, and often asymmetrical interplay. This interplay is shaped by factors such as typological proximity, language proficiency, dominance, and acquisition context (Rothman, 2010; De Angelis, 2007).

In multilingual contexts, the study of CLI reveals patterns that challenge and refine traditional models of second language acquisition, particularly those based on monolingual norms (Cook, 1992; Herdina & Jessner, 2002). Unlike in bilingual acquisition, multilingual learners operate within a network of three or more linguistic systems, where influence is no longer unidirectional but multilateral, dynamically shifting across domains and over time (Jessner, 2008).

This article critically examines the theoretical implications of CLI in multilingual learners by drawing upon contemporary models such as Dynamic Systems Theory (Larsen – Freeman & Cameron, 2008) and the Scalpel Model (Slabakova, 2016). It explores how CLI serves not merely as a source of interference or facilitation but as a window into the underlying architecture of multilingual competence.

While earlier studies often characterized CLI in terms of interference or error, contemporary perspectives now recognize it as a dynamic, context-sensitive process shaped by cognitive, linguistic, and environmental factors. Theoretical models like Cook's (1992) multicompetence framework and the cumulative-enhancement model challenge the notion of languages as isolated systems. Instead, they propose that learners possess a uniquely integrated language faculty.

By foregrounding the linguistic and cognitive dimensions of CLI, this article aims to contribute to a more nuanced theoretical understanding of multilingual development. It also examines the factors that modulate CLI's effects and discusses implications for language education, particularly in multilingual settings. Furthermore, the paper interrogates the implications of these insights for educational linguistics, advocating pedagogical approaches that align with multilingual cognition and challenge deficit- oriented perspectives on language transfer (Ortega, 2009; Cummins, 2007).

Understanding CLI is essential not only for advancing theoretical insights into multilingualism but also for informing educational practices. Multilingual learners routinely navigate multiple linguistic systems, and their classroom experiences are often shaped-consciously or unconsciously- by the ways in which their languages interact. Educators can harness CLI's potential while minimizing its drawbacks. Thus, investigating CLI offers both explanatory power and pedagogical relevance.

## **2. Theoretical Background**

### **2.1 Defining Cross-Linguistic Influence (CLI)**

Cross-linguistic influence (CLI) constitutes a central construct in multilingualism research, referring to the influence exerted by one language on another within a multilingual individual's linguistic repertoire (Jarvis & Pavlenko, 2008; Odlin, 1989). Far from being a mere synonym for transfer, CLI encompasses a broader spectrum of interactions, including facilitation, interference, convergence, and innovation. It reflects the cognitive and structural permeability of the multilingual language faculty and has implications for the development of all linguistic

subsystems- phonological, morphosyntactic, lexical, and pragmatic – while being influenced by both internal (e.g., cognitive control, metalinguistic awareness) and external (e.g., instructional context, language dominance) factors.

CLI includes both positive transfer - where knowledge of one language facilitates learning another - and negative transfer - where interference causes errors. These processes are dynamic, influenced by the learner's experience, learning context, and the structural relationship between languages. Cognitive mechanisms underlying CLI involve activation of multiple language systems, competition between forms, and strategic management by the learner.

## **2.2 Theoretical Models of CLI in Multilingualism**

The shift from monolingual-centric paradigms to multilingual competence has prompted the development of several key theoretical models to conceptualize CLI. Cook's (1992) **Multicompetence** theory reconceptualizes the multilingual mind as an integrated, co-activated system, challenging the notion of native-like proficiency as a universal benchmark.

**Dynamic Systems Theory** (DST) views language development as a non-linear, self-organizing process shaped by multiple interacting variables over time (Larsen-freeman & Cameron, 2008). Within this view, CLI is emergent behavior, not predictable transfer.

**The Scalpel Model** (Slabakoba, 2016) argues that CLI selectively targets learnable or transparent domains, such as morphosyntax or semantics, rather than transferring language globally. This explains why areas (e.g., syntax) are more susceptible to CLI than others.

The **Cumulative- Enhancement Model** (CEM) (Flynn et al., 2004) posits that all prior languages positively influence new ones. It supports the idea that multilinguals are cognitively advantaged, offering a framework of enrichment rather than interference.

These models collectively highlight the complexity of CLI and position it as a central element in understanding multilingual competence.

## **3. Factors Influencing Cross-Linguistic Influence**

### ***3.1 Language Proficiency and Dominance***

Language dominance and proficiency are strong predictors of CLI (De Angelis, 2007; Schmid & Köpke, 2017). Dominant languages often influence weaker ones due to accessibility, but influence can flow in both directions depending on context and proficiency. Higher proficiency enables more conscious control over transfer and supports better error correction, while lower proficiency may lead to greater susceptibility to unintended transfer effects.

### ***3.2 Typological Proximity and Linguistic Similarity***

Languages that are typologically close (e.g., Spanish – Italian) tend to experience more CLI due to structural overlap. This can result in both positive transfer (facilitation) and negative transfer (false cognates, overgeneralizations) (Javis, 2000). However, typological proximity should not be interpreted in isolation- learner-specific factors, such as cognitive strategies and learning goals, mediate how CLI manifests.

### ***3.3 Age and Order of Acquisition***

Early- acquired languages tend to be more stable and exert stronger influence on later-learned languages. However, recency of use and functional dominance can override acquisition order (Flynn et al., 2004). CLI is not confined to L1→L2→L3 flow; influence can be multidirectional, including L3→L2, especially in fluid multilingual environments.

### ***3.4 Context of Learning: Instructed vs. Naturalistic***

Formal instruction supports metalinguistic awareness and contrastive analysis, enabling

learners to recognize and regulate CLI. In contrast, naturalistic learning fosters implicit transfer and greater automaticity. CLI in these contexts may manifest differently, depending on how much learners are encouraged to activate and reflect on their full linguistic repertoires (Cenoz & Gorter, 2011).

### ***3.5 Cognitive Control and Metalinguistic Awareness***

Bilinguals and multilinguals often exhibit enhanced executive function, allowing for greater cognitive control in monitoring language use and managing CLI (Bialystok, 2009). Metalinguistic awareness (Jessner, 2008) empowers learners to manipulate language strategically – choosing when to transfer and when to inhibit influence across systems. This flexibility is a hallmark of advanced multilingual competence.

## **4. CLI and the Architecture of the Multilingual Mind**

### ***4.1 Language Co-activation and Non-selective Access***

Psycholinguistic research shows that multilingual speakers often activate multiple language systems simultaneously, even when using only one (Kroll & Bialystok, 2013). This **non-selective access** leads to competition between lexical and syntactic forms, creating fertile ground for CLI. Such co-activation supports the idea of an **integrated mental lexicon**, where language boundaries are flexible rather than rigid.

For instance, partial semantic overlap across languages may lead to **conceptual transfer**, while syntactic constructions can be shaped by competing word order patterns. These interactions can result in both **innovation and interference**, illustrating the dynamic nature of CLI in real-time processing.

### ***4.2 Multilingual Representations and Mental Organization***

There is ongoing debate over whether multilinguals maintain separate or integrated language systems. While some models suggest compartmentalization (e.g., De Bot, 1992), others advocate for shared or overlapping systems, especially among highly proficient multilinguals. Evidence from CLI supports the integrated view: prior knowledge **reshapes** how new languages are acquired and used.

The **Scalpel Model** supports this by showing that CLI selectively affects **cognitively salient** domains – like morphosyntax – while sparing others. Neurocognitive studies further reinforce this, revealing **differential brain activation** depending on the task, language, and context, pointing to CLI as a **systematic**, not random, process.

### ***4.3 Cognitive Advantages and Multilingual Flexibility***

Managing CLI involves ongoing regulation of multiple linguistic systems – a cognitive demand linked to **enhanced executive functioning** and **attentional control** (Bialystok, 2009). Rather than being a hindrance, CLI reflects **cognitive flexibility**, enabling multilinguals to navigate complex linguistic environments.

Jessner's (2008) **M-system model** highlights how multilingual learners develop increased **metalinguistic sensitivity** and the ability to strategically engage or inhibit different language systems. CLI, in this framework, is a **hallmark of multilingual adaptability** rather than a flaw.

## **5. Educational Implications of CLI**

### ***5.1 Rethinking Monolingual Instructional Models***

Traditional language instruction often treats CLI as interference to be avoided, promoting the artificial separation of languages. However, CLI research shows that language systems interact

naturally and dynamically. A **multilingual-inclusive approach** acknowledges this interconnectedness and enables learners to draw on their full linguistic repertoire.

The **Cumulative-Enhancement Model** (Flynn et al., 2004) supports the idea that multilinguals have an advantage in acquiring new languages. Thus, **language instruction should foster cross – linguistic awareness**, enabling learners to use prior linguistic knowledge as a resource rather than suppressing it.

### 5.2 Pedagogical Strategies for Leveraging CLI

Teachers can use **contrastive analysis** to highlight similarities and differences between learners' languages and the target language (Cenoz & Gorter, 2011). This practice builds awareness of potential transfer issues and facilitates positive transfer.

Promoting **metalinguistic awareness** empowers learners to reflect on language use and consciously regulate transfer. Encouraging students to compare grammatical structures, vocabulary usage, or pragmatic norms strengthens both **cognitive flexibility** and **strategic competence** (Jessner, 2008).

### 5.3 Multilingual Pedagogies and Curriculum Design

Effective curricula move beyond monolingual standards. Tools such as **bilingual glossaries**, **multilingual journals**, and **code-switching activities** allow learners to explore and activate CLI in structured ways. These strategies enhance both linguistic proficiency and **higher-order thinking skills**.

Inclusive pedagogies frame each language as part of a broader system of meaning-making. When students feel their home languages are respected and utilized, it boosts both **academic confidence and social integration** (Cummins, 2007).

### 5.4 Teacher Training and CLI Awareness

Many educators lack the training to identify or support CLI constructively. **Teacher education programs must include content on multilingualism, CLI mechanisms, and pedagogical applications**. Teachers should be equipped to both **recognize beneficial CLI** and address problematic forms with sensitivity.

This shift will help teachers create **linguistically responsive classrooms**, where transfer is not viewed as error, but as evidence of cognitive engagement.

### 5.5 Policy Implications for Multilingual Education

CLI has implications not just for classroom practice, but also for **language policy**. Educational systems must move beyond monolingual paradigms to support **multilingual frameworks**, including curriculum design, teacher development, and resource allocation.

Policies that **validate minority and heritage languages**, support cross-linguistic pedagogy, and foster inclusive assessment systems contribute to greater **equity, achievement, and linguistic empowerment**.

## 6. Conclusion

Cross-linguistic influence (CLI) is not a peripheral phenomenon – it lies at the heart of multilingual learning and language use. This article has demonstrated that CLI is a **dynamic, context-sensitive**, and cognitively rich process that reflects the interconnectivity of linguistic systems within the multilingual mind.

By integrating frameworks such as **Multicompetence, Dynamic Systems Theory**, and the **Cumulative Enhancement Model**, this study repositions CLI as a **source of strength**, not a deficit. These models challenge traditional, monolingual-based perspectives and affirm the

**flexibility and adaptability** that define multilingual cognition.

In practical terms, recognizing CLI as a valuable resource opens the door to **more inclusive and effective teaching practices**. Language educators can design curricula that leverage students' prior linguistic knowledge, foster metalinguistic awareness, and validate their multilingual identities.

To fully realize this potential, **teacher training and educational policy must evolve**. Educators need to be equipped with the theoretical understanding and practical tools to harness CLI in the classroom. Likewise, policies must support multilingual pedagogy and foster environments where linguistic diversity is celebrated – not suppressed.

Future research should continue exploring the **cognitive, developmental, and pedagogical dimensions of CLI**, with particular focus on **longitudinal studies** and **neurocognitive methods**. Investigating how CLI shapes learning outcomes across diverse educational settings will deepen our understanding and enhance classroom practices.

In embracing CLI, we not only gain insight into how languages interact, but we also create educational spaces that **are more equitable, intellectually enriching, and aligned with the multilingual reality** of today's learners.

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