# Morphological Awareness and Vocabulary Acquisition. The contribution of Explicit Morphological Instruction in the acquisition of L2 vocabulary

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## ABSTRACT

The aim of the paper is to examine, through a literature review, how explicit morphological instruction can benefit the learning of morphologically complex words in L2 Italian.

In the work, the mental lexicon of learners is presented as a network of words based on morphological links. From this premises, it discusses the benefits of explicit morphological instruction on vocabulary acquisition for L2 learners, such as improving reading comprehension, increasing motivation to investigate words, and developing vocabulary knowledge in depth and size.

Furthermore, this paper proposes teaching activities for L2 Italian learners to tap into Morphological Structure Awareness and analysis, focusing on the suffix -*ino*, which adds a range of connotative and pragmatic meanings. The authors suggest that explicit morphological instruction should engage students in problem-solving and inquiry-based activities to produce novel complex words. By teaching students how to recognise and analyse the structure of morphologically complex words, students can increase their vocabulary knowledge and autonomy, resulting in the ability to independently learn new words and reflect on their structure.

**Keywords:** *Meta-analysis; Morphological Awareness; Morphological Explicit Instruction; Second Language Acquisition; Vocabulary Acquisition*.

## INTRODUCTION

In the last two decades there has been a growing interest in the role of Morphological Awareness in literacy acquisition and vocabulary development: research on different languages (Anglin, 1993; Burani, 2009; Carlisle, 1988, 2000; Dal Maso & Giraudo, 2014) has proved that both L1 and L2 speakers are sensitive to the morphological structure of complex words and that, therefore, morphology is a factor of lexical organisation which can also be used to facilitate the development of morphologically complex lexicon (Angelelli et al., 2017; P. N. Bowers & Kirby, 2010; McCutchen & Logan, 2011; Verhoeven & Perfetti, 2011). This hypothesis of a facilitating role of morphological sensitivity in literacy acquisition is based on pieces of evidence that indicate an automatic decomposition of complex words in learners' mental lexicon during reading. Furthermore, we also have extensive evidence from masked priming studies that support the claim for automatic morphological segmentation of complex words (Marslen-Wilson et al., 2008;). In addition, research on the organisation and lexical access of the mental lexicon (Pedrazzini, 2016; Schmitt, 2000; Vitevitch, 2008) has shown that words' networks are -also- morphologically organised, meaning that lexical entries are connected at the morpho- lexical level with similar words.

For clarity, studies' results can be summed up as follow:
- the mental lexicon is morphologically organised (Nagy et al., 1989);
- morphological information is systematically utilised when processing complex words (Clahsen et al., 2003);
- morphological processing help compute words meaning from their constituents' elements (Schreuder & Baayen, 1995).

Thus, we can hypothesise that morphological knowledge may serve as a framework to efficiently store words and master vocabulary knowledge. In this paper, we focus on how to

make learners aware of the morphological structure of the L2 vocabulary, through explicit morphological instruction.

## MORPHOLOGICAL AWARENESS

Morphological awareness falls under the umbrella notion of Metalinguistic Awareness, which is the explicit knowledge about a language that gives a speaker the ability to attend to and reflect upon the properties of a language and to check the linguistic form and structure underlying the meaning of the utterances. Metalinguistic Awareness comprises three types of other awarenesses -orthographic, semantic and phonological, respectively- which intertwine with each other, forming other subtypes of awareness.

Morphological Awareness, in turn, includes other sub-dimensions which have received different classifications through the ages (Deacon et al., 2017). Carlisle (2000) delineated two possible morphological dimensions, namely i) Morphological Structure Awareness and ii) Morphological Analysis; on the other hand, Kuo and Anderson (2006) put forward a third dimension called Morphological Decoding.

### Morphological Structure Awareness

Carlisle (2000) defined it as the awareness of the morphological structure of complex words. Developing this type of awareness is fundamental for L2 learners, given that structural analysis alone can be misleading, as in the case of synformy (Carlisle, 2000). Morphological Structure Awareness has at its basis the ability to parse words into constituent morphemes and to analyse them in order to construct meaning and pronunciation. At the time of Carlisle's (2000) study, there were already pieces of evidence supporting the claim that Morphological Structure Awareness was related to meaning inferencing and reading accuracy (Schreuder & Baayen, 1995): nonetheless, to gather more direct evidence of such suggestions, Carlisle (2000) included in her research study both tasks of structural analysis (i.e. decomposition and derivation of forms) and definition.

The assumption was that the derivation task would be directly related to learners' ability to define morphologically complex words because "producing derived forms, like defining derived forms, requires knowledge of the grammatical roles and meanings of suffixes, not just relational knowledge" (Carlisle, 2000, p.171): thus, the task also taps processes similar to those learners use when reading unknown morphologically complex words. Results from Carlisle's (2000) study showed that there is a significant link between awareness of structure and the ability to define morphologically complex words and that relational knowledge and the ability to read derived forms are significantly related. Finally, the study also provided evidence that Morphological Structure Awareness contributes to reading comprehension.

### Morphological Decoding

Morphological Decoding is the ability to rely on word structure in order to pronounce a written word accurately (Levesque et al., 2017). The advantage given by Morphology Decoding is linked to the fact that morphologically complex words are inherently longer than simple words; therefore, parsing them in shorter sublexical components reduces the decoding difficulty. Additionally, complex words are also less frequent than their bases; consequently, the recognition of the sublexical components is generally faster than the recognition of the whole word.

It has been shown that Morphological Decoding training may play a key role in facilitating reading fluency of unfamiliar and unknown morphologically complex words, especially in languages with opaque orthographies (Levesque et al., 2017). Furthermore, it also

seems that Morphological Decoding strengthens learners' word reading skills, thereby facilitating reading comprehension: data from Casalis and colleagues (2011)study show that the spelling of French words for which there were several alternatives was more accurate when readers used morphological information; Marcolini and colleagues (2011) research support Casalis and colleagues' evidence, also suggesting that morpheme-based reading helps learners in obtaining reading fluency in transparent orthographies.

However, the ease of Morphological Decoding for complex words varies across languages, depending on the orthographic depth and morphological richness (Verhoeven & Perfetti, 2011). Learning to read in regular transparent orthographies, such as Italian, is easier than learning to read an irregular opaque orthography as English (Burani, 2009). In transparent orthographic systems, generally, graphemes are assigned the same pronunciation, regardless of the context and status, whether they are a morpheme or a syllable. In contrast, in opaque orthographies there are no such grapheme-phoneme conversions rules and, consequently, the same grapheme can correspond to different phonemes and vice versa: thus, given the regular grapheme-phoneme conversions rules, a good level of pronunciation accuracy is easily obtained in transparent orthographies.

**Morphological Analysis**

This M.A. subdimension refers to the ability to infer the meaning of unfamiliar morphologically complex words from their morpheme constituents (Baumann et al., 2002; Deacon et al., 2017). Compared to the previous ability, the emphasis here is on the use of the morphemic structure of words to build word meaning, independently of how the word might sound.

The most famous demonstration of Morphological Analysis for lexical inferencing comes from Anglin (1993), who showed that learners were able to define twice as many derived words as base words and that at least half of these definitions included reference to base forms. More recently, McCutchen and Logan (2011) found that students were more accurate in choosing a definition for morphologically accessible than inaccessible words: participants were asked to identify the correct definition, among three alternatives, for low- frequency transparent words, which afforded Morphological Analysis (e.g., horrific, horror, -ic) and low-frequency opaque words that did not afford such analysis because the constituents were not semantically transparent (e.g., abject) (McCutchen and Logan, 2011). Results of the Morphological Analysis task indicate that participants were more accurate in identifying the meaning of items that afforded Morphological Analysis, both for words and nonwords. Thus, in their final discussion, the authors affirm that "such results are consistent with the hypothesis that learners leverage their understanding of the morphological structure of words when they encounter unfamiliar multi-morpheme words" (McCutchen & Logan, 2011, p. 343).

**Morphological Awareness and L1-L2 Literacy development**

Literature on the benefits of M.A. on the processing and comprehension of derivational morphology (Anglin, 1993; Carlisle, 2000; P. N. Bowers et al., 2010 for a review of the literature) points to a reliable connection between M.A. and reading skills, even after controlling for individual variables on vocabulary and short-term memory. For what concerns vocabulary comprehension and acquisition, M.A. assists the learner to retrieve linguistic information related to the morphological structure of the word: when learners come across an unfamiliar word in a text, they can break it apart and use their knowledge of derivational morphology to infer the meaning of the whole word by linking the root of the complex word with its simpler form, which may be more familiar to them (Kieffer & Lesaux, 2012).

Consequently, since Morphological Awareness increases processing efficiency and vocabulary knowledge, more cognitive resources are available to process the text as a whole and thus, as a student gets better at identifying words and their meanings, reading comprehension improves, as the person has more information to make inferences and generate an accurate map of the text (Zeh, 2017).

Given that learners automatically use their implicit knowledge of morphology to process new words, both in context and in isolation, enhancing this ability through morphological instruction should provide them with explicit morphological knowledge that leads to more accurate and quicker learning, strengthening learners' lexical representations (Carlisle & Katz, 2006). Perfetti (2007) argues that explicit morphological instruction also improves reading comprehension by increasing the efficiency of word identification and provides the reader with easier access to semantic information associated with that word. Evidence in support of these suggestions comes from different studies: in Baumann et al. (2002) morphological instruction produced large immediate effects for deriving the meaning of morphologically transparent instructed words, compared to a control group who received no explicit instruction on vocabulary strategies. Specifically, in the morphemic analysis task, students were asked to read and analyse morphemic words for which the experimental group had received explicit instruction while the control group had not. Results from this task indicate that students receiving instruction in morphemic analysis outperformed those students who did not. In Kieffer and Lesaux' (2012) study the findings suggested that students with explicit knowledge of morphology had greater fluency in word reading: to test it the authors used the Test of Silent Word Reading Fluency (Mather et al., 2004), in which students are provided with rows of unrelated words of increasing difficulty with no spaces separating them (e.g., dimhowfigblue) and given three minutes to draw lines between as many words as they can (e.g., dim|how|fig|blue). Results of Kieffer and Lesaux' (2012) study show that learners' M.A. had a positive effect on word reading fluency. Finally, Bowers and colleagues (2010) research data were consistent with Perfetti's (2007) suggestion.

It has to be noted, however, that the goal of morphological instruction is not for students to learn about morphemes, but rather to give them explicit morphological instruction that will increase their understanding of oral and written features of the language at the sublexical level that will influence literacy skills at the lexical and the supralexical levels (P. N. Bowers et al., 2010, p. 145). Explicit morphological instruction should provide learners with strategies to recognise and parse morphologically complex words: for example, teaching L2 learners how to identify and use the meaning of frequent morphemes in conjunction with roots words will provide them with an explicit strategy to infer and learn the meaning of new words. Furthermore, engaging students in active processing tasks of complex words, emphasises their problem-solving skills based on word structure cues and helps them link morphologically complex words to already familiar ones, rather than just memorising them: as Bowers and Kirby (2010, p.519) state, "students who begin to understand morphological structure can find ordered spelling and meaning cues in words that morphologically unaware students could only assume are irregular".

In sum, morphological instruction provides learners with more explicit morphological knowledge, which enhances their Morphological Awareness, leading to the development of students' vocabulary size and depth.

**Morphological instruction in L2 Italian.**

Given the demonstrated interplay of Morphological Awareness in literacy development, in the present paper we developed a teaching proposal for Italian L2 vocabulary, with a specific

focus on Morphological Analysis. We have chosen to work on derived forms because enabling students to recognise and analyse them contributes to expanding their vocabulary, lightening the learning load of complex words while enhancing their explicit morphological knowledge with cascading benefits for the reading process. Specifically, the words that will be targeted in the activities are derivatives obtained by means of suffixation.

### The suffix -ino

The text discusses the morphological process of suffixation, emphasizing the distinctive nature of the suffix -ino. Unlike prototypical suffixes, -ino, when used in alteration, alters the denotative meaning without changing the Part of Speech (PoS). This evaluative suffix, considered non-prototypical, introduces a range of connotative and pragmatic meanings, dependent on the communicative context. Primarily a diminutive, -ino creates various forms, including denominal nouns (e.g., bacino), deadjectival adjectives (e.g., altino), deadverbial adverbs (e.g., pianino), and altered numerals (e.g., milioncino). Beyond the diminutive, -ino expresses agentive, instrumental, relational, and ethnic values, selecting different bases. The teaching proposal focuses on diminutive denominal nouns and instrumental deverbal nouns to assess learners' Morphological Awareness and Analysis skills, challenging them with items deducible from morphemic constituents but not fully transparent in meaning.

### Teaching proposal

The activities we present below are thought for adult learners of Italian as a second language with a B1 proficiency level and no specific language impairments.

**ACTIVITY 1: Text reading and noticing target items.**
- Aim: to focus learners' attention on the target forms contained in the following text and activate the corresponding lexical entries in the mental lexicon.
- Materials: pen, printed text

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*LEGGI IL TESTO E SOTTOLINEA I NOMI CHE TERMINANO IN -INO E -INA*

Per realizzare il tortino di cioccolato, per prima cosa sciogliete in un pentolino il cioccolato a bagnomaria insieme al burro. Una volta sciolto, lasciatelo raffreddare. Nel frattempo imburrate e infarinate 4 stampini di alluminio. Quando sarà a temperatura ambiente, immergete nel composto un frullino e, mentre è in funzione, unite lo zucchero, un cucchiaino alla volta, finché sarà ben amalgamato. Poi versate le uova e la fecola, che avrete prima setacciato con un colino.

Continuate a frullare per ottenere un composto liscio e omogeneo. Riempite gli stampini aiutandovi con un cucchiaio o un misurino; il composto dovrà arrivare a circa due terzi dello stampino. Mettete gli stampini in congelatore per almeno 6 ore, meglio se per una notte intera. Quando i tortini saranno congelati, disponeteli in una teglia e cuocete in forno a 200° per 7 minuti. Trascorso il tempo di cottura, sfornate i tortini, usate una presina da forno per non scottarvi.

Toglieteli dagli stampini aiutandovi con un coltellino, poi spolverizzate con zucchero a velo e servite subito!

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**ACTIVITY 2: Focus on the form-meaning relationship**
- Aim: direct learners' attention on the relationship between the noticed form, their meaning and the part of speech of the word they are derived from.
- Materials: pen and paper
- Option: this is a "languaging" activity and, thus, it is originally thought to be done in pairs, giving that a more expert student could scaffold the other and together they can negotiate and build knowledge through the L2. However, the activity can also be done individually by each student.

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*A. OSSERVA LE PAROLE CHE HAI SOTTOLINEATO: INSIEME AL TUO COMPAGNO PROVA A DARNE UNA DEFINIZIONE*

*es. Tortino: una piccola torta*

*B. DA QUALI PAROLE DERIVANO? RICOSTRUITE LA FORMA BASE*

*es. Stampino: stampo + ino*

*D. OSSERVANDO LE PAROLE BASE, SUDDIVIDETE I DERIVATI IN DUE GRUPPI*

*E. CHE CRITERIO STRUTTURALE AVETE UTILIZZATO PER CREARE I DUE GRUPPI?*

*F. CI SONO DIFFERENZE DI SIGNIFICATO TRA I DUE GRUPPI?*

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**ACTIVITY 3:** Production of diminutives and instrumental nouns in context.
- Aim: this activity targets learners' ability to choose the appropriate form of the word depending on the information given by the context: they will be asked to decide whether to use the derived form or the base one, depending on the specific context.
- Materials: pen, printed text.

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*COMPLETA IL TESTO CON LE FORME APPROPRIATE (BASE O DERIVATA) DELLE PAROLE FRA PARENTESI.*

L'aula di Italiano è molto grande, ci sono ventisette banchi e una cattedra. Di fianco alla porta, sul muro, ci sono degli _____ (*appendere*) per i cappotti. In fondo ci sono tre armadi pieni di materiale: matite, _____ (*cancellare*), pennarelli, graffette, _____ (*punta*), cartelloni e molto altro. Di fianco agli armadi ci sono due _____ (*tavolo*) su cui ci sono i libri che usiamo a lezione. Nell'angolo di fianco alla porta c'è un _____ (*cesto*) per la raccolta indifferenziata. Dalla parte che guarda la piazza si affacciano due _____ (*finestre*) sotto le quali, tutti i martedì, si ferma un piccolo _____ (*furgone*) dei gelati. L'aula è illuminata da quattro lampade ma in una di esse le _____ (*lampada*) non funzionano.

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**CONCLUSION**

This study focused on exploring the impact of explicit morphological instruction on the learning of morphologically complex words in L2 Italian. The investigation delved into the organization of learners' mental lexicon, emphasising networks of words interconnected through morphological links. The concept of Morphological Awareness was introduced, highlighting its benefits on vocabulary acquisition for L2 learners. Notable findings from

existing literature underscored that explicit teaching of L2 morphology enhances reading comprehension, boosts motivation for word investigation, and augments vocabulary knowledge both in depth and breadth.

The authors argued that equipping L2 learners with morphological strategies, particularly focusing on the suffix -ino in this instance, empowers them to infer word meanings by analyzing morphemic constituents. The selected suffix was deemed suitable due to its ability to assume different values, influencing both the selection of bases and the nuanced meanings of derived items. The study proposed teaching activities leveraging Morphological Structure Awareness and Morphological Analysis, emphasizing problem-solving and inquiry-based approaches to generate novel complex words. The authors advocated for the integration of explicit morphological instruction into the curriculum for L2 Italian learners, asserting its potential to positively impact Morphological Awareness and vocabulary learning.

The conclusion highlighted the significance of not only analyzing word-internal structures but also engaging students in activities that foster autonomy, problem-solving, and independent learning of new words. Overall, the study endorsed the idea that explicit morphological instruction contributes significantly to vocabulary knowledge, enabling learners to make inferences and reflect on word structures autonomously.

## REFERENCES

Angelelli, P., Marinelli, C. V., De Salvatore, M., & Burani, C. (2017). Morpheme-based Reading and Spelling in Italian Children with Developmental Dyslexia and Dysorthography. *Dyslexia*, *23*(4), 387–405. https://doi.org/10.1002/dys.1554

Anglin, J. M. (1993). Vocabulary Development: a Morphological Analysis. In *Monographs of the Society for Research in Child Development*, *58*(238), 1–170.

Baumann, J. F., Edwards, E. C., Font, G., Tereshinski, C. A., Kame'enui, E. J., & Olejnik, S. (2002). Teaching morphemic and contextual analysis to fifth-grade students. *Reading Research Quarterly*, *37*(2), 150–176. https://doi.org/10.1598/rrq.37.2.3

Bowers, P. N., & Kirby, J. R. (2010). Effects of morphological instruction on vocabulary acquisition. *Reading and Writing*, *23*(5), 515–537. https://doi.org/10.1007/s11145-009-9172-z

Bowers, P. N., Kirby, J. R., & Deacon, S. H. (2010). The effects of morphological instruction on literacy skills: A systematic review of the literature. In *Review of Educational Research*, *80*(2), 144–179. SAGE Publications Inc. https://doi.org/10.3102/0034654309359353

Burani, C. (2009). Fluidez en la lectura y procesamiento morfolexical: Estudios de desarrollo en Italia. In *Revista de Logopedia, Foniatria y Audiologia*, *29*(2), 97–103. Grupo Ars XXI de Comunicacion, S.L. https://doi.org/10.1016/S0214-4603(09)70147-0

Carlisle, J. F. (1988). Knowledge of derivational morphology and spelling ability in fourth, sixth, and eighth graders. *Applied Psycholinguistics*, *9*(3), 247–266. https://doi.org/10.1017/S0142716400007839

Carlisle, J. F. (2000). Awareness of the structure and meaning of morphologically complex words: Impact on reading. *Reading and Writing*, *12*(3), 169–190. https://doi.org/10.1023/A:1008131926604

Carlisle, J. F., & Katz, L. A. (2006). Effects of word and morpheme familiarity on reading of derived words. *Reading and Writing*, *19*(7), 669–693. https://doi.org/10.1007/S11145-005-5766-2

Casalis, S., Deacon, S. H., & Pacton, S. (2011). How specific is the connection between morphological awareness and spelling? A study of French children. *Applied Psycholinguistics*, *32*(3), 499–511. https://doi.org/10.1017/S014271641100018X

Clahsen, H., Sonnenstuhl, I., & Blevins, J. P. (2003). Derivational morphology in the German mental lexicon: A Dual Mechanism account. In H. Baayen & R. Schreuder (Eds.), *Derivational morphology in the German mental lexicon: A dual mechanism account,* 125–155.

Dal Maso, S., & Giraudo, H. (2014). Morphological processing in L2 Italian. *Lingvisticae Investigationes*, *37*(2), 322–337. https://doi.org/10.1075/li.37.2.09

Deacon, S. H., Tong, X., & Francis, K. (2017). The relationship of morphological analysis and morphological decoding to reading comprehension. *Journal of Research in Reading*, *40*(1), 1–16. https://doi.org/10.1111/1467-9817.12056

Grossmann, M., & Rainer, F. (2004). *La formazione delle parole in italiano* (M. Grossmann & F. Rainer, Eds.). De Gruyter.

Kieffer, M. J., & Lesaux, N. K. (2012). Development of morphological awareness and vocabulary knowledge in Spanish-speaking language minority learners: A parallel process latent growth curve model. *Applied Psycholinguistics*, *33*(1), 23–54. https://doi.org/10.1017/S0142716411000099

Kuo, L. J., & Anderson, R. C. (2006). Morphological awareness and learning to read: A cross-language perspective. *Educational Psychologist*, *41*(3), 161–180. https://doi.org/10.1207/s15326985ep4103_3

Levesque, K. C., Kieffer, M. J., & Deacon, S. H. (2017). Morphological awareness and reading comprehension: Examining mediating factors. *Journal of Experimental Child Psychology*, *160*, 1–20. https://doi.org/10.1016/j.jecp.2017.02.015

Marcolini, S., Traficante, D., Zoccolotti, P., & Burani, C. (2011). Word frequency modulates morpheme-based reading in poor and skilled Italian readers. *Applied Psycholinguistics*, *32*(3), 513–532. https://doi.org/10.1017/S0142716411000191

Marslen-Wilson, W. D., Bozic, M., & Randall, B. (2008). Early decomposition in visual word recognition: Dissociating morphology, form, and meaning. *Language and Cognitive Processes*, *23*(3), 394–421. https://doi.org/10.1080/01690960701588004

Mather, N., Hammill, D. D., Allen, E. A., & Roberts, R. (2004). Test of silent word reading fluency. *Journal of Psychoeducational Assessment*, *23*, 182–188.

McCutchen, D., & Logan, B. (2011). Inside incidental word learning: Children's strategic use of morphological information to infer word meanings. *Reading Research Quarterly*, *46*(4), 334–349. https://doi.org/10.1002/RRQ.003

Nagy, W., Anderson, R. C., Schommer, M., Scott, J. A., & Stallman, A. C. (1989). Morphological Families in the Internal Lexicon. In *Source: Reading Research Quarterly*, *24*(3), 262–282.

Pedrazzini, L. (2016). *Il lessico dell'inglese: strumenti per apprendimento* (First Edition). Carrocci editore.

Schmitt, N. (2000). *Vocabulary in Language Teaching*. Cambridge University Press.

Schreuder, R., & Baayen, H. (1995). Morphological Processing. In L. B. Feldman (Ed.), *Morphological aspects of language processing*, 131–154. Erlbaum.

Verhoeven, L., & Perfetti, C. A. (2011). Morphological processing in reading acquisition: A cross-linguistic perspective. In *Applied Psycholinguistics*, *32*(3), 457–466. https://doi.org/10.1017/S0142716411000154

Vitevitch, M. S. (2008). What can graph theory tell us about word learning and lexical retrieval? *Journal of Speech, Language, and Hearing Research*, *51*(2), 408–422. https://doi.org/10.1044/1092-4388(2008/030)

Zeh, N. (2017). *Teaching Morphology to Improve Literacy A Guide for Teachers*. https://www.pburgsd.net/cms/lib04/NJ01001118