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Revisiting the Interface Positions in Second Language Acquisition: Towards a Continuum-interface Model

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Introduction

Although there has been a consensus on the contribution of these two knowledge types on language proficiency, debates on whether explicit knowledge can be converted into implicit knowledge continues at a theoretical level (R. Ellis, 2006). Three interface positions have been proposed to explain the relationship between explicit and implicit knowledge: *non-interface*, *strong interface*, and *weak interface* positions. These interface positions continue to be of interest both theoretically to the field of second language acquisition (SLA) and practically to language pedagogy. With recent developments in instructed SLA, there is a need to revisit these interface positions and incorporate essential elements that can help deepen our understanding of L2 acquisition.

As such, this paper sought to develop a continuum-interface model which presents an alternative view of how the interface between explicit and implicit knowledge may occur. The first section briefly reviews explicit and implicit knowledge as well as the different interface positions. It is followed by the methodology and the detailed discussion of the continuum-interface position. The main arguments of this model are as follows: (1) that a combined form-focused instruction and meaning-focused instruction has additive effects on improving students' language performance, (2) that explicit knowledge can be directly or indirectly converted into implicit knowledge, and (3) that both explicit and implicit knowledge, as well as intentional and unintentional noticing run in a continuum.

Explicit and Implicit Knowledge

SLA scholars believe that language learners internalise two types of knowledge: *implicit* and *explicit knowledge*. Explicit knowledge refers to learners' "knowledge of grammatical metalanguage and the ability to understand explanations of rules" (R. Ellis, 2006, p. 95). Although explicit knowledge plays a facilitative role in the development of implicit knowledge (Swain & Suzuki, 2008), Lightbown (2000) cautioned that knowledge of rules does not guarantee that such knowledge will be used for communicative activities. To call on explicit knowledge, tasks must not be time pressured and should be form-focused; otherwise, learners may produce more inaccurate utterances because they primarily draw from their implicit knowledge with very minimal opportunity for monitoring.

Unlike explicit knowledge, implicit knowledge refers to procedural and unconsciously held knowledge that can only be verbalised if made explicit (R. Ellis, 2006). It is a highly systematic and a more stable

and structured type of knowledge which is often inconsistent, imprecise, and inaccurate (R. Ellis, 2006). To call on implicit knowledge, tasks must be time pressured, meaning-focused, and defocused from any metalinguistic knowledge. Learning implicit knowledge entails unconscious processing of input, is independent of awareness (Hulstijn, 2005), and involves the absence of conscious effort to learn linguistic forms (Robinson, 1997).

The Three Interface Positions

The interaction between explicit and implicit knowledge has led to several propositions as regards interfacing. These are the non-interface, strong interface, and weak interface positions (R. Ellis, 2006; Rahimi & Zhang, 2016). In the non-interface position, explicit knowledge is completely distinct from and cannot be converted into implicit knowledge (Krashen, 1981). Krashen finds support from Hulstijn (2002) who contends that implicit and explicit knowledge are acquired differently. There is also some empirical evidence at a neurocognitive level that implicit and explicit processes are frequently dissociable. This can be seen from a range of literature in the areas of neuropsychology (Reber, Knowlton & Squire, 1996) and from psycholinguistic and neurolinguistic research (Ullman, 2016).

The strong interface position, on the one hand, claims that explicit knowledge can be converted into implicit form through ample communicative practices (R. Ellis, 1994). Mclaughlin (1987) argued that Krashen's assertion of learning-acquisition distinction is not tenable because there is no way to determine whether a process involved in SLA is subconscious or conscious. He further explained implicit knowledge is acquired through communicative language use and functional practice while explicit knowledge is learned through practicing the forms. One study that may have provided empirical support for these claims was that of DeKeyser (1997) whose findings suggest that constant language practice could lead to proceduralisation and automaticity of declarative knowledge.

Similar to the strong interface position, the weak interface position claims that explicit knowledge can be converted into implicit knowledge, but only if learners are developmentally ready to learn target features and if noticing and noticing the gap become part of the acquisitional processes (N. Ellis, 2005, 2007). N. Ellis (2005, 2007) further posited that explicit and implicit knowledge are more cooperative rather than dissociative. Unlike the strong interface and the non-interface positions, the weak interface advocates for 'noticing' and 'noticing the gap' (R. Ellis, 2006). 'Noticing' refers to the conscious cognitive effort of detecting linguistic features and allocating attention to some stimuli as a prerequisite to language acquisition while 'noticing the gap' refers to occasions when learners notice a mismatch between what they say/know and what native speakers say (Schmidt, 1990). As many scholars have argued, noticing is a necessary condition for uptake and L2 acquisition (Rahimi & Zhang, 2016; Schmidt, 1990; Swain & Suzuki, 2008).

Methodology

Research Design

This study used an exploratory-interpretative design which is a nonexperimental method that employs interpretative analysis for qualitative data. Specifically, the process of developing the continuum-interface model was anchored on the grounded theory which allows a model to emerge from data. The data include field notes and memos, artefacts and art work, diaries, transcripts, images, and scholarly literature (Birks & Mills, 2015).

Literature Eligibility Criteria

A principled search for scholarly literature in the field of applied linguistics was performed using the available databases such as Proquest, Science Direct, Taylor and Francis, Google Scholar, and JSTOR. The focus of the literature search was from 1994 to 2018. The primary references used in this study were journal articles because they provide the most updated information about the topic (Citrome, 2007). A total of 306 primary references were surveyed from the top journals in the field of language and linguistics (Egbert, 2007) using the key words *second language acquisition*, *interface position*, *input*, *explicit knowledge*, *implicit knowledge*, *affective factors*, *sociocultural factors*, *noticing*, *form-focused instruction*, and *meaning-based instruction* among others. These top journals include *TESOL Quarterly (*n = 48), *English Language Teaching Journal* (n = 16)*, Applied Linguistics* (n = 45), *Language Learning* (n = 62)*, Modern Language Journal* (n = 50)*, Studies in Second Language Acquisition* (n = 73)*,* and *Journal of Second Language Writing* (n = 12)*.* However, it should be noted that not all of these preselected articles provided direct information about the intended model. Other articles published in these journals prior to 1994 and other publications directly related to the study were also surveyed and served as secondary references. A total of 135 journal articles, reports, and books were further analyzed based on the initial codes gathered from the primary references.

Data Analysis and Coding

The coding scheme used in this study was anchored on the procedure proposed by Birks and Mills (2015) when using grounded theory. This procedure was divided into three major phases: initial coding, intermediate coding, and advanced coding and theoretical integration. During the initial coding, relevant codes were identified, labelled, and categorised. Thereafter, concurrent data collection was performed. This step involved the collection of additional data from scholarly literature and then labelling and categorizing them with initially purposive samples. During the analysis of additional data, properties and dimensions of subcategories were explained. This continuous interplay between data collection and analysis allowed the researcher to further enhance the initially coded data. During the intermediate coding, the subcategories that are conceptually related were linked to one another to produce fully developed individual categories. The fully developed individual categories were then linked again through deductive and inductive thinking resulting in a core category. The last stage of data analysis is the advanced coding and theoretical integration. At this stage, the core category and the concepts that emerged from the iterative cycle were described and delimited. Also, codes from other existing theories were analysed, and if relevant, drawn and incorporated into the final model or theory. This process added explanatory power to the final product which explains a scheme associated with acquisition of language.

Results and Discussion

Table 1 presents the subcategories, categories, and core category drawn from the various stages of coding. The initial coding for the continuum-interface model generated 39 different subcategories which were conceptually linked to one another to produce the 11 individual categories. These 11 individual categories were used as a basis for the framing of the continuum-interface model. Relevant codes from other existing theories were also identified and integrated into the developed model. These theories include transfer appropriate process (TAP) theory (Franks, Bilbrey, Lien, & McNamara, 2000), interactionist theory (Pica, 1994), information processing theory (VanPatten, 2007), interlanguage theory (Selinker, 1972), constructivism theory (Vygotsky, 1980), teachability hypothesis (Pienemann, 1985), skill acquisition theory (DeKeyser, 2007), and sociocognitive theory (Atkinson, 2002; Gardner, 2010).

TABLE 1
Results of Coding on Continuum-interface Model

Subcategories	Individual Categories	Core Category
1. Cognitive processes	Sociocultural factors	Continuum-interface Model
2. Cultural factors	Affective factors	
3. Economic factors	Explicit knowledge	
4. Political factors	Implicit knowledge	
5. Social interaction	Input	
6. Motivation	Intake	
7. Personality	Noticing	
8. Psychological Factors	Output	
9. Individual differences	Monitoring	
10. Interlanguage	Form-focused pedagogy	
11. Learned knowledge	Meaning-focused pedagogy	
12. Conscious knowledge		
13. Acquired knowledge		
14. Intuitive knowledge		
15. Weak interface		
16. Strong interface		
17. Non-interface		
18. Psycholinguistic readiness		
19. Critical period		
20. Authenticity		
21. Oral input		
22. Written input		
23. Visual input		
24. Comprehensible input		
25. Fossilization		
26. Intentional noticing		
27. Unintentional noticing		
28. Communicative competence		
29. Negotiation and Interaction		
30. Self-correction		
31. Feedback		
32. Grammar exercises		
33. Tasks		
34. Grammar instruction		
35. Accuracy		
36. Form-meaning connection		
37. Immersion		
38. Meaning-based activities		
39. Fluency		

The Model

Theoretically, the continuum-interface position is anchored on TAP theory which claims that learners access L2 knowledge best in a condition similar to how they were learned or input (Franks et al., 2000). Thus, the continuum-interface position hypothesizes that learners could easily access L2 knowledge learned during form-focused instruction (FFI) and integrated FFI when performing form-focused activities (e.g., grammar tests) and communicative activities, respectively.
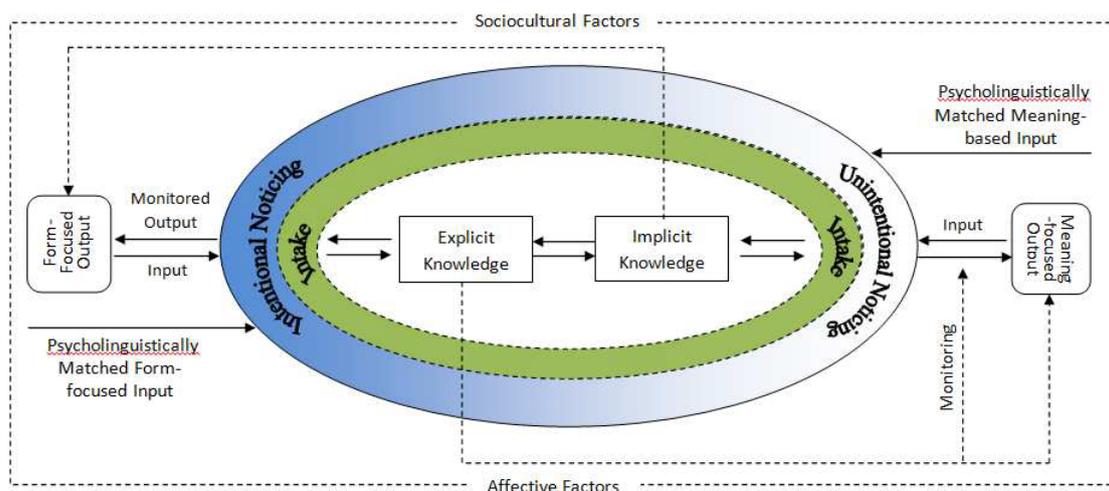
Figure 1. Continuum-interface position in SLA.

Additive Effects of a Combined Form-focused Instruction and Meaning-focused Instruction

Input can either be meaning-focused or form-focused and should psycholinguistically match with learners. In fact, several scholars (e.g., Barrot, 2015; Benati, 2017; Pica, 2005; Pienemann, 2015) have claimed that grammar instruction is effective only when learners are psycholinguistically ready to learn the target linguistic items. According to Pica (2005), learners are psycholinguistically ready to acquire certain forms when learners are attempting to use but have difficulties in mastering them. Ideally, meaning-focused and form-focused input should be combined if the aim is to facilitate L2 acquisition (Author, 2014; Spada, Jessop, Tomita, Suzuki, & Valeo, 2014).

Learners' output during form-focused and meaning-focused activities may also serve as an input for their explicit and implicit knowledge respectively. This input will be used again by learners for their subsequent outputs. This cycle continues as learners continue to practice what they have learned. This input-output cycle somehow explains why constant language practice leads to the development of implicit knowledge. This claim is empirically supported by the study of Suzuki and DeKeyser (2017) who found that explicit knowledge contributes to the acquisition of implicit knowledge.

When performing meaning-focused activities, very minimal monitoring occurs immediately before or while the utterances are being produced. However, monitoring increases when learners have sufficient time to use their explicit knowledge, when the activity is form-focused in nature, and when learners know the rule (Krashen, 1981, 2009). As such, monitoring may run in a continuum and increases or decreases as the focus moves from form to meaning. Nonetheless, further studies are needed to confirm this hypothesis.

Unlike the previous interface models, the continuum-interface position incorporates sociocultural and affective factors into the acquisition process and language production. From a sociocultural perspective, language learning is viewed as a social process in which both sociocultural contexts and linguistic forms determine the meaning of utterances (Barrot, 2015; Kramsch, A'Ness, & Lam, 2000). This perspective also treats language use in real-world contexts as fundamental to learning. The sociocultural aspect of the proposed model makes it aligned with sociocognitive theory which claims that language learning is influenced by both cognitive processes and specific social, cultural, economic, and political forces (Gardner, 2010; Toth & Davin, 2016). This means that the continuum-interface model subscribes to the idea that language acquisition is never socially nor politically neutral and is embedded in social interaction (Kramsch et al., 2000).

Another important component of the continuum-interface model is the affect which is the positive and negative feelings one attributes toward an object. Scholars (e.g., Butler, 2017; Dewaele, 2005) believe that the higher the negative affect is, the greater the possibility of inhibiting language acquisition. As shown in Figure 1, the acquisitional process is not purely cognitive; rather, it is significantly influenced by various affective factors. While the sociocultural factors are extrinsic in nature, affective factors are intrinsic to the learners. These intrinsic factors are so crucial that an extensive body of research has proven its impact on language acquisition. For instance, Butler (2017) and Masgoret and Gardner (2003) have confirmed that motivation and attitudes affect success in language acquisition. The more positive the affective state of the learners is, the more likely their language acquisition is facilitated.

At least two studies have provided empirical support for the additive effects of combining form-focused and meaning-focused instruction. Using a pretest-posttest quasi-experimental approach, Barrot (2014) found that combining meaning-focused and form-focused instruction significantly improved the speaking and writing skills of ESL learners. Similarly, Spada et al. (2014) investigated the effects of isolated and integrated form-focused instruction (FFI) on the different types of L2 knowledge. Their findings revealed a significant improvement in grammar and oral performances for both groups over time, but the difference in their posttest gains was not significant. Their findings further indicated that combining FFI and meaning-focused instruction decreases the effect of the timing of FFI on learning.

Direct and Indirect Conversion of Explicit Knowledge into Implicit Knowledge

Similar to the weak interface position, the continuum-interface position claims that explicit knowledge can be directly or indirectly converted into implicit knowledge. Direct conversion occurs through constant use of language which pushes explicit knowledge to become implicit knowledge (DeKeyser, 1997) but only when the learners are psycholinguistically ready to learn the target linguistic items (N. Ellis, 2005, 2007). Explicit knowledge can be indirectly converted into implicit knowledge when learners focus on meaning during form-focused activities. Nonetheless, this model does not suggest that these two types of knowledge are housed in separate or similar memory stores. What the model suggests is that these two knowledge types constitute poles in a continuum rather than in dichotomy. One recent study that supports the idea of direct and indirect conversion of explicit knowledge into implicit knowledge was that of Lindseth (2016). Her findings suggest that form-focused instruction (or explicit learning and practice) somehow contributes to the development of implicit knowledge and might even covert explicit knowledge into implicit knowledge.

Explicit-implicit Knowledge Continuum

Another hypothesis that the continuum-interface position advocates is that learners use both their explicit and implicit knowledge and that these two knowledge types run in a continuum. This means that learners' use of implicit knowledge increases as they shift their focus to meaning. However, when learners engage in a form-focused activity, learners draw more extensively on their explicit knowledge. This claim is supported by recent findings which found that different types of tests tap separate pools of knowledge (see Bowles, 2011). Again, these two knowledge types are used complementarily rather than separately. In fact, explicit knowledge plays a facilitative role in the development of implicit knowledge (Swain & Suzuki, 2008) and vice versa (Sun, Merrill, & Peterson, 2001). This facilitative role of explicit knowledge occurs by speeding up the establishment of links between meaning and form (R. Ellis, 1994), by assisting learners in linguistic problem solving when implicit knowledge is inadequate (N. Ellis, 2005), and by using explicit knowledge as a tool for conscious production of output which in turn leads to the development of implicit knowledge (N. Ellis, 2011). Serafini (2013) provided empirical support for the explicit-implicit knowledge continuum based on the split factor loadings for ungrammatical items on the implicit knowledge measure and grammatical items on the explicit knowledge measure.

Intentional-unintentional Noticing Continuum

Unlike the previous interface positions, the continuum-interface model claims that learners may either intentionally or unintentionally notice the target linguistic features and that these two types of noticing run in a continuum. It means that when learners' focus on meaning increases, so does their use of unintentional noticing (indicated by the fading shade in the outermost circle of Figure 1). Conversely, when their focus shifts from meaning to form, their use of intentional noticing increases. Note that the relationship between intentional and unintentional noticing is cooperative rather than dichotomous. In short, unintentional noticing cannot be totally isolated from intentional noticing and vice versa. As earlier mentioned, these two are necessary to convert input into intake. During intentional noticing, learners are aware in attending to and noticing the linguistic features of the input they are exposed to (Schmidt, 2012). Unintentional noticing, on the other hand, refers to the unplanned way of noticing linguistic forms in the input and the gap between the input and the learners' interlanguage. The possible existence of unintentional noticing is supported by the connectionist model which claims that learning occurs even without conscious attention and intention to learn and by several scholars (e.g., Krashen, 1981; Leow & Donatelli, 2017; Litman & Reber, 2005). As for N. Ellis (2005), he proposed that since learners possess a neural capacity, they can subconsciously count elements of language they are exposed to. He further explained that language processing and tallying in L1 are typically subconscious. The same position is shared by Hulstijn (2015) who hypothesized a possible occurrence of awareness (or noticing) on a continuum.

Conclusion

This paper sought to present an alternative view of the relationship between explicit and implicit knowledge via a continuum-interface position. In summary, the proposed interface position advances that a combined FFI and MFI has additive effects on improving students' language performance and that explicit knowledge can be directly or indirectly converted into implicit knowledge. It also argues the possible existence of an explicit-implicit knowledge continuum and an intentional-unintentional noticing continuum.

Although the proposed model can be a viable option in interpreting the relationship between explicit and implicit knowledge, this report does not suggest its superiority over other interface models. Much remains to be settled as regards the interface issue. It needs to be acknowledged that the claims advanced by the proposed Continuum-Interface Model have limited support from existing empirical studies. As such, there is a need to demonstrate that these claims are valid. For example, instructed SLA scholars may explore the additive effects of a combined isolated FFI (form-focused instruction) and integrated FFI (meaning-based instruction) and how these two types of knowledge contribute to explicit and implicit knowledge. Along with this, scholars may further investigate whether an increase in focus on meaning during communicative tasks decreases the amount of intentional noticing.

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