Short Research Article

Unpacking the Concept of Complexity in the Instructed SLA Research: Towards an Acquisitional Definition

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Over the past few decades, the field of second language acquisition (SLA) has seen a remarkable increase of interest in the study of instructed second language acquisition (ISLA), which "investigates second language (L2) learning or acquisition that occurs as a result of teaching" (Loewen, 2014, p. 2). The importance of this subfield has particularly been emphasized for the sake of adult L2 learners, who, due to biological and cognitive constraints, have difficulty acquiring a target language (TL) solely based on naturalistic input (e.g., Han, 2004; Long, 1990). For this, ISLA research has suggested the utilization of *focus on form* (FonF), a pedagogical approach that attempts to engage learners' metalinguistic attention in an otherwise solely meaning-based environment (Doughty & Williams, 1998; Long, 1991; Long & Robinson, 1998). According to Doughty and Williams (1998), FonF involves an array of pedagogical options, ranging from implicit techniques (e.g., input flood, input enhancement, and recasts) that attempt to *attract* leaners' attention to form, to explicit techniques (e.g., processing instruction, consciousness-raising, and dictogloss) that attempt to *direct* their attention to form.

Recent L2 research (e.g., Ellis, 2002; Spada & Tomita, 2010) shows that the effectiveness of the aforementioned instructional treatments seems to depend largely on the nature (i.e., complexity) of the L2 feature. However, the extant empirical studies (e.g., Ellis, Loewen, & Erlam, 2006; Williams & Evans, 1998) have yielded rather mixed findings on the issue regarding which type of an L2 feature (i.e., complex or simple) benefits more from which type of instruction (i.e., implicit or explicit), rendering it difficult to practically apply them to the L2 classroom. There are several reasons for the disparities, such as research designs, settings, and individual characteristics of the participants, but among anything else, they can primarily be attributed to the varying definitions of *complexity* on the conceptual level.

With a view to enlightening future research in this line of inquiry, the present discussion intends to emphasize a need for a more integral definition of *complexity*. First, some traditional definitions of the

concept are briefly reviewed. Next, a more recent, acquisitional perspective (Han & Lew, 2012) is introduced, and finally, a few key aspects of acquisitional complexity are discussed, which offer critical insights on future empirical studies, particularly related to the internal validity of research designs.

As addressed earlier, the literature (e.g., Ellis, 2002; Spada & Tomita, 2010) suggests that one of the main variables that seem to determine the effectiveness of a certain type of instruction is the level of complexity involved in the L2 feature. The concept of complexity, however, has been defined and operationalized in various ways, including the linguistic, cognitive, and pedagogical perspectives (e.g., Spada & Tomita, 2010; Varnosfadrani & Basturkmen, 2009; Williams & Evans, 1998). Among them, the majority of the existing studies (e.g., Housen, Pierrard, & Van Daele, 2005; White, 1991) have adopted the linguistic conceptualization which focuses on the degree of manipulations of the formal properties, such as the number of transformational or derivational rules that need to be applied to arrive at the grammatically correct form. Accordingly, morphological features or grammatical functors have generally been defined as simple features, despite the extremely complicated meanings and/or functions underlying them (e.g., English in/definite articles), whereas syntactic structures or 'constructions' have almost always been described as complex in nature (e.g., Gass, Svetics, & Lemelin, 2003; Spada & Tomita, 2010). This appears problematic because it contradicts the findings of recent, generative SLA research which proposes that, in fact, it is functional morphemes—not syntax and semantics—that seem to be the 'bottleneck' of L2 acquisition (i.e., the Bottleneck Hypothesis) (Slabakova, 2013).

The psychological perspective, on the other hand, defines complexity in terms of the processibility constraints that determine the order of acquisition (Pienemann, 1989). However, this definition does not speak to the fundamental differences between first language (L1) and L2 acquisition (Bley-Vroman, 1989), such as fossilization (e.g., Han, 2004; Selinker, 1972) and selectivity (e.g., Hawkins, 2000). Lastly, the pedagogical perspective associates complexity with the perceived ease or difficulty of learning an L2 feature (e.g., Robinson, 1996; Williams & Evans, 1998), and hence a rather subjective conceptualization of complexity (Robinson, 2001).

Recently, Han and Lew (2012) offered a more integral definition of complexity, suggesting that the concept should be viewed in light of what *acquisition* entails, that is, form, meaning, and function (Larsen-Freeman, 2001) encompassed in a given L2 feature and the mappings between these aspects (i.e., *acquisitionally complexity*). Consequently, those features which involve complicated meaning and/or function, though seemingly extremely simple (e.g., functional morphemes), are defined as complex features. On the contrary, those with less variable mappings between the form, meaning, and function are defined as simple features, whether they are morphological or syntactic in nature.

As such, acquisitional complexity allows a more nuanced understanding of a given L2 feature, tracing the very source of difficulty of learning derived by the target feature, based on the conception that L2 acquisition develops from form, to form-meaning, and to form-meaning-function mapping (e.g., Han & Lew, 2012; VanPatten, 1996; VanPatten, Williams, Rott, & Overstreet, 2004). Sorace (2005) more

specifically explains in her Interface Hypothesis (2005) that, whereas the aspects of grammar that require only syntactic knowledge are fully acquired by L2 learners, those that require the integration of syntactic knowledge with knowledge from other domains (i.e., semantics and pragmatics) are late acquired, or possibly never completely acquired.

The acquisitional definition of complexity sheds a few significant implications for future ISLA research. First, as previously mentioned, the essence of acquisitional complexity is that acquisition is a multi-dimensional, but unitary process involving form, meaning, and use. Accordingly, the outcome measures utilized in intervention studies to evaluate learners' interlanguage (IL) development need to be created as such. More specifically, acquisitionally complex L2 features (i.e., susceptible to *fossilization*) can be truly identified only in learners' spontaneous production, not in "language-like performance" such as testing conditions (Han & Lew, 2012, p. 200). Second, since acquisitional complexity is determined by "what is ultimately non-acquirable" at a putative end state of learning (Han & Lew, 2012, p. 196), unlike developmental complexity which can be measured at one time point, a longitudinal research design is essential. Third, from this perspective, complexity is construed as a relative, rather than a universal, concept, since it takes account of the interactions between the TL and the L1. In other words, the complexity of a target feature cannot be accurately conceived without considering the learners' L1 (i.e., *markedness*) in connection with the L2 input (i.e., *robustness*) vis-à-vis the linguistic feature (Cf. See Han & Lew, 2012). Thus, future empirical studies in this line of inquiry need to incorporate a more thorough analysis of the L2 features per se, based on not only the multifaceted nature of the target features but also the learners' language background, which will serve to examine the exact source of *complexity*.

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