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A Modular Representation of Interlingual Errors: The Causes of Crosslinguistic Influence

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Abstract:

The influence of the mother tongue on the processing and production of the target language has spilled a lot of ink inasmuch as it represents the epitome of multi-linguistic competence. Understanding the niceties of such influence helps provide a learned account of the generative and cognitive features of second language learning and sketch a more adequate model for the mental representation of two languages in the mind of a multilingual. The present study has the goal of providing an exhaustive theoretical discussion of interlingual errors resulting from the interplay between the learners' knowledge of their mother tongue and the newly lateralized forms of the target language. The study shows that while there seems to be a lack of scholarly consensus with regard to the modularity of the second language acquisition, there seems to be an accord with regard to the factors that cause the surfacing of interlingually-induced production errors. The recognition of learner-related and language-related causes of errors help sketch more descriptive theoretical models that serve as a purveyor for prescriptive language pedagogy plans.

Keywords: interference; crosslinguistic influence; modular acquisition.

1. Introduction:

The scientific investigation of the nature and the process of acquiring languages subsequent to the mother tongue developed as an independent field of inquiry which could offer insight into linguistic processing that even research in first language acquisition could not offer (Flynn, Foley & Vinnitskaya, 2004). A significant share of SLA validity and conceptual meticulousness is owed to its analysis of crosslinguistic influence. How languages in the mind interfere in the conceptualisation and manifestation of structures is crucial to a better understanding of any linguistic phenomenon related to second language acquisition (Santos, 2013). SLA is distinct from FLA in the sense that, while methodological designs are very comparable, it analyses how second language acquisition is affected by factors that are generally uncharacteristic of first language research. In this regard, SLA gained a growing interest in age-related research, cognitive development and processing maturity, markedness and transferability of structures in line with language universals, parametric variation and structural principles. SLA research also draws significance from the fact that it analyses instances of multilinguistic rather than just bilingual competence. Here, the nature of crosslinguistic competence is more intricate inasmuch as more than two linguistic systems are in activity ensuing more variation in acquisition patterns and linguistic behaviour. Questions of acquisition in light of imbalanced

competence (in case of learners having rudimentary knowledge of one of the languages) and mono-channelled acquisition (in case of learners knowing one of the languages through one medium such as reading only) add more significance to SLA research, which calls for more research dexterity (Santos, 2013).

2. Development of Terminology

Crosslinguistic Influence, commonly abridged to CLI, refers to any form of influence occurring between one's knowledge of the mother tongue and other subsequently learnt languages. The exact definition of CLI seems to be a source of disagreement among scholars as it is viewed differently. However, it is without a shadow of doubt that the analysis of relations between linguistic systems in the mind and performance of learners is a central area of inquiry in SLA research (Odlin, 1989). While there seems to be no terminological consensus in the scholarly community, researchers are in complete accord about the fact that previously acquired linguistic skills are bound to interfere in the learning of new languages (Cook, 2002; Ellis; 1999; 2003; Odlin, 1989), with the degree of interference being remarkably variable.

The examination of the literature dealing with linguistic interrelations in SLA contexts shows different terms used to refer to these interrelations. Perhaps, the scholars differing approaches translate to different terms used. In this regard, Murphy (2003, p. 03) argues that "the difficulty in pinning down the phenomenon of language contact is reflected in the evolution of the term used to designate the process". That is, the high diversity of terms used in the scholarly literature to refer to linguistic relatedness is a perfect indicative of the level of meticulous and theoretical uncertainties surrounding it. To Start with, Weinrich's seminal book *Languages in Contact* (1953) is acknowledged to be the first to refer to the phenomenon of linguistic interrelations in the mind and performance of a bilingual. In the very beginning of his book, Weinrich (1953, p. 01) uses the term interference to refer to "instances of language deviation from the norms of either language which occur in the speech of bilinguals as a result of their familiarity with more than one language". Weinrich's use of interference is limited to cases where knowledge of previous languages hampers language learning, resulting in deviated language use. However, consequent research indicated that such knowledge can be turned to good avail and, thus, helps learners.

In view of that, Odlin (1989, p. 27) uses the term *transfer* to refer to "the influence resulting from similarities and differences between the target language and any other language that has been previously (and perhaps imperfectly) acquired". Odlin's definition allows for the recognition of two types of transfer:

positive and negative. The fashion with which the terms positive and negative transfer are used is substantially influenced by behaviourist views of language learning as a mechanical process of habit formation. This is very imminent in the introductory section of Lado's book (1957) where he makes the claim that:

The student who comes into contact with a foreign language will find some features of it quite easy and others extremely difficult. Those elements that are similar to the learner's native language will be simple for him and those that are different will be difficult. (p. 01)

Negative transfer, also referred to as *proactive inhibition* (Ellis, 2000, p. 299), occurs when learners make inferences about the second language structures with direct projection upon their L1's. In such cases, differences in the structural and typological configurations are believed to be a probable cause of learning apprehension. Corder (1973) avers that most learning errors are attributable to, although not directly stated, negative transfer. Corder's view is also shared by preceding scholars such as Lee (1968, p.180) who argues that "the prime cause, or even the sole cause of difficulty and error in foreign language learning is interference coming from the learner's native language". Hemaïdia (2016, p. 64) offers some examples from Algerian learners' English where he argues that structures such as "the man whom I spoke to him is a doctor" are exemplary of negative transfer. The use of the accusative object pronoun *him* in the appositive relative clause is inferred from its Arabic counterpart. One main issue in the discussion of Hemaïdia is that it considers structural patterns of MSA as the Algerian learners' L1 while, in fact, it is only after six years that most Algerian learners are introduced to Standard Arabic. Instead, Algerian Arabic is what should be taken into account in the analysis. Positive transfer, on the other hand, occurs when knowledge of L1 help monitor better learning outcomes. Some linguists argue that areas where the two languages are similar are more likely to be easier to learn. In this regard, Ellis (2003, p. 300) reports the mainly behaviourist view that "where the two languages were identical, learning could take place easily through *positive transfer* of the native-language pattern".

The concepts of negative and positive transfer soon were discredited with the decline of behaviourist psychology in human and social science and the emergence of linguistics as a humanistic and cognitive area of enquiry. The tenets of positive and negative transfer as main purveyors of second language learning were contingent on developments in the linguistic theory of description with reference to accounts for linguistic sameness and difference. The criticism levelled against this rigidly circumscribed perspective on L1-L2 interrelation had

other researchers, namely Sharwood Smith and Eric Kellerman (1986), revisit the terminological use. The term *Transfer* became restricted to instances where there is a direct deployment of structural patterns from one language to another. In other words, transfer is “restricted to those processes that lead to the **incorporation** of elements from one language to another” (Smith & Kellerman, 1986, p. 01). This view acknowledges the intricate relation between the linguistic knowledge of the two languages and transcends the rigidly circumscribed view of linguistic interrelation as mere cross-projections of structural patterns. Instead, the two researchers propose that “terms like ‘interference’ and ‘facilitation’, with their negative and positive connotations respectively, are best abandoned altogether” (p. 01).

The search for an adequate term to refer to any processes involved in L1-L2 interrelation was concluded with Smith and Sharwood’s suggestion of the term *Crosslinguistic Influence* (1986). The term is believed to be comprehensive and “theory-neutral, allowing one to subsume under one heading such phenomena as ‘transfer’ ‘interference’, ‘avoidance’, ‘borrowing’ and L2-related aspects of language loss” (p. 01). The new term allows for the discussion of aspect of relatedness in bilateral fashions without excluding aspects of language misuse and non-use, i.e., avoidance. The present research makes use of the different terms, mainly *transfer* and *crosslinguistic influence*, to refer to cases of learners direct reliance on L1 structures and any other instances of L1-L2 interrelation respectively.

3. The Role of L1 in L2 Acquisition:

While the more recent literature acknowledges the critical importance of L1 knowledge in the process of L2 acquisition, earlier research seems to involve cases of disagreement among researchers with reference to whether or not L1 knowledge is actively involved in the development of L2. Some researchers reject the contention that first and second language acquisition should be told apart vis-à-vis the cognitive processes involved. Corder (1967), for instance, makes the claim that there is no empirical antecedence for the discussion of L1 and L2 acquisition processes antithetically. He (1967, p. 164-165) argues that “the strategies adopted by the learner of a second language are substantially the same as those by which a first language is acquired”. Such a stance, however, acknowledges that, while being uniform process-wise, the course and the outcome are not necessarily the same in the two languages.

Corder (1967) further implies that any noticeable differences in the course and outcome of acquisition between the mother tongue and all other subsequently

learnt languages are attributable solely to exposure and motivation criteria. Corder's proposals suggest that the same strategies are present in both acquisition processes and that "the procedures or strategies adopted by the learner of the second language are fundamentally the same. The principal feature that then differentiates the two operations is the presence or absence of motivation" (1967, p. 164). This proposal suggest that errors in first language and second language be accounted for equally, given the similar processes and strategies involved in either. This claim, which Corder (1967) refers to as the most important aspect of his proposal, indicates that errors in L2 are by no means partly consequential to L1 knowledge as they are part of a hypothesis-testing strategy that is essentially "a strategy employed both by children acquiring their mother-tongue and by those learning a second language" (p. 167).

Corder's subsequent publications seem to take a more moderate stance with regard to the role of L1 in L2 acquisition. He (1983) argues that the claim of L1 having prospective impeding effects on L2 should be abandoned, but still does he acknowledge that some later stages of L2 development can involve more noticeable "roles" of the mother tongue. He states that language distance and linguistic typology can have roles in predetermining the speed at which learners are expected to achieve proficiency in L2. The overall claim made in Corder's paper (1983), *A Role for the Mother Tongue*, is that L1 knowledge can have facilitating effects in L2 acquisition, but, still, absence of noticeable facilitating effects does by no means imply that this knowledge has inhibitive consequences. Krashen (1983) holds a very close stance where he revisits Newmark's *Ignorance Hypothesis* (1966) and makes the claim that negative transfer, i.e., interference, occurs in a fashion that does not involve the mother tongue's structural patterns getting in the way or structural patterns competing in the mind of learners, viz., proactive inhibition, but rather it is indicative of a rule acquisition failure. Learners, here, resort to transfer to fill in knowledge gaps in the second language. This goes in line with Corder's afore-mentioned claims that reliance on L1 in L2 production is a production strategy in case of ignorance. It is not a cognitive process inherent in second language whereby learners' previous knowledge interferes with the new one. Krashen's and Corder's claims, notwithstanding the subtle difference, take no account of L1 being of an influence beyond production-based language processing, namely speaking and writing, as their analysis excludes other comprehension-based language processing skills, such as listening, reading, memorisation and problem-solving. However, it is more often than not the case in SLA research that crosslinguistic influence is viewed as a fundamental area of inquiry at both levels of linguistic representation. For example, Selinker's

discussion of fossilisation (1972) attributes cessation of learning to inhibitions made by first language competence. It is widely accepted, then, that interplay occurs at both the competence and performance levels of linguistic representation between all underway learning and already learnt/acquired languages.

4. Factors Inducing Interlingual Errors:

Many scholars prefer to view second language learning not as a process of acquiring the structural patterns and use norms of a new language but rather as two languages coming into contact in the mind of a bilingual or a multilingual. This is best-illustrated in the seminal work of Weinrich, *Languages in Contact* (1953). Suffice to say that there is more to these languages coming into contact than mere interaction at the structural levels. Indeed, a number of factors are at play whenever a rule is encountered, a structure is produced, an error is corrected, etc. Some of these factors are related to the learning environment with the learner being the locus of discussion. Other factors, however, are related to the inherent features of language and language acquisition as universal principles which, notwithstanding learners' differences, are bound to interfere and set constraints on the route of learning.

4.1. Learner-Related Factors

Crosslinguistic influence is a phenomenon that is commonly discussed as a structure-related aspect of second language learning, through which structural rules of language forms are affected by some cognitive processes. However, in more contemporary contexts of conceptual discussions, learner peculiarities are taken into consideration when accounting for constraints on linguistic production. These non-structural factors are discussed in many scholarly works which identify elements of, inter alia, personality, aptitude, proficiency, literacy, age, linguistic awareness and social context as key factors in determining Crosslinguistic influence (Jarvis & Pavlenko, 2008; Odlin, 1989).

4.1.1. Age

Perhaps the most salient difference between research in first language acquisition and second language acquisition pertains to age. While all children are introduced to their mother tongue at around the same age, learners of a second language vary considerably with regard to their ages. Research in SLA, thus, can examine the linguistic behaviour of children learning a second language as well as that of adults. Children finish the task of language learning within a biological window of six years (Ortega, 2009), a timeframe within which there is a considerable development in cognitive maturity. Research in both L1 and L2

acquisition shows significant differences in the lexical choices made among children of different ages due to cognitive reasons (Jarvis, 1998; Jarvis & Pavlenko, 2008). Semantic precision, syntactic complexity and discursive markers, *inter alia*, are reported to be key aspects of linguistic development vis-à-vis the cognitive maturity (Cenoz, 2002; Weinert, 2004). In her study of Basque and Spanish learners of English, Cenoz (2002) recognises that younger learners have more difficulty in making discursive ties, such as when telling stories, than their older counterparts in the face of the similar levels of proficiency and period of instruction in English.

The variable of age is believed to be almost synonymous with cognitive maturity. However, this is not always applicable to language learning contexts. While cognitive skills are significantly more intricate among older learners, language learning abilities are reported to operate within a genetic calendar, the passing of which may result in a decrease in language learning prospect which, hence, makes impossible the development of L2 competence isomorphically to that of L1. Age seems to set cognitive constraints on the conceptualisation of language, resulting in a remarkable language use in L1 and L2. Expressive capacities and structural patterns are all subject to cognitive maturity, metalinguistic development and, hence, age.

The impact of age on crosslinguistic influence can be ascribable to the genetic endowment of children to base their language learning tasks on universal grammar principle and language input-driven parameters (Selinker & Lakshmannan, 1993). This suggests that, in the context of second language learning, children draw less on their previously acquired knowledge and more on universal grammar principles coupled with the target language input. This suggests that the discussion of crosslinguistic influence among children is peripheral at best. Odlin (1989), however, in his discussion of developmental patterns in second language learning, argues that children generally have fixed structural patterns, which suggests that structures produced in the two languages are likely to be similar. His observation of syntactic conservatism, however correct, does not amount to traces of crosslinguistic influence. Having structures of L2 that are comparable to those of L1 does not suggest that learners have fallen back on their knowledge of L1. Rather, it can be indicative of a universal and inherent feature of the structural development in language learning. The interplay of these two variables makes it rather difficult to discern the exact impact of age on crosslinguistic influence which requires more caution when approached (Murphy, 2003).

The claim that children demonstrate less instances of observable crosslinguistic influence is supported by empirical evidence. In another study of Basque and Spanish learners of English, Cenoz (2001) investigates crosslinguistic influence among a sample of 90 elementary and secondary school students equally distributed across three groups in accordance with their grade, i.e., age. The findings of her study indicate that there is a direct correlation between age and crosslinguistic influence in the sense that younger students demonstrated less instances of transfer from their L1 to English, and some younger students did not rely on their L1 whatsoever despite the older students being more proficient in the language. One possible explanation for the inverse correlation between cognitive maturity and crosslinguistic influence is that older learners are more metalinguistically aware of the structural patterns of their mother tongue, which results in them having more access to transferable items. The other explanation is related to the inherent nature of the Language Acquisition Device among younger learners, which, as explained above, operates at both the UG level and the target language input, making these learners less dependent on the L1 knowledge.

4.1.2. Proficiency and Linguistic Awareness

Contrary to what is reported in Corder's discussion of the role of the mother tongue (1983), most scholars seem to agree that crosslinguistic influence is more likely to occur at early stages of L2 learning. Many empirical studies among beginner learners of L2 report learners' higher frequency of reliance on their knowledge of the mother tongue to work out structures in the target language (Sikogukira, 1993; Williams & Hammarberg, 1998). One main consideration in the discussion of proficiency in SLA context is that expressed by Odlin (1989) who argues that proficiency as a variable of analysis is of a controversial nature due to inherent difficulties related to the definition and measurement thereof. The lack of highly psychometric tests for proficiency renders it rather of an equivocal nature, and, hence, empirically unquantifiable. However, it is noteworthy that recent developments in the pedagogy of testing resulted in more reliable and valid tests of proficiency, enabling researchers to assess the learners' proficiency with more accurate, yet by no means absolute, measures. What is noteworthy is that Jarvis and Pavlenko (2008), in their discussion of crosslinguistic influence and cognition, voiced similar concerns. Their contention of the lack of any "clear-cut" findings regarding the "recipient-language proficiency" (2008, p. 202) stems from the fact that most studies assess proficiency against criteria related to either years of learning, formal testing or years of residence in the target language habitat. The absence of a widely accepted measure of proficiency is an empirical setback warranting no solid generalisations.

In bilingual and multilingual contexts, many studies report higher levels of transfer from the previously acquired languages among learners with lower levels of proficiency in the target language (Bardel & Lindqvist, 2007; Dewaele, 2001; Foryś-Nogala, 2020; Fuller, 1999; Hammarberg, 2001; Ortega, 2008; Ringbom, 1987; Tremblay, 2006; Williams & Hammarberg, 1998). However, it seems that much of the confusion surrounding the analysis of proficiency is attributable to the fact that it seems to have different impacts on different levels of linguistic analysis. Many studies show that crosslinguistic influence at the lexical and morphological levels of analysis are curvilinear with reference to proficiency (Ellis, 1994; Jarvis, 1998; Odlin, 1989) whereas crosslinguistic influence at the level of word order and pronunciation are reported to be impacted in a more steady fashion (Jarvis & Pavlenko, 2008). What is noteworthy at this juncture is that, notwithstanding the inconsistent findings, there seems to be a general consensus that proficiency is of a critical importance in the analysis of crosslinguistic influence.

The examination of literature amounts to a wealth of knowledge regarding the role of L2 proficiency in determining what cognitive strategies are employed by the learners to iron out difficulties in L2. Navés, Miralpeix and Celaya (2005), for instance, examine the impact of proficiency on linguistic borrowing that is attributable to crosslinguistic similarities. They conclude that there is a statistically significance inverse correlation between learners' proficiency, expressed in terms of formal grading, and the extent to which they make use of borrowing and lexical inventions. On equal footing, a similar line of argumentation is presented in the study of Poulisse and Bongraerts (1994) who examine a group of Dutch learners of English. Their observation of beginner, intermediate and advanced groups of learners indicates that the more advanced learners demonstrate less likelihood of falling back on their knowledge of L1. Among other modes of language use, such as writing (Wang, 2003; Wang & Wen, 2002), proficiency is reported to be inversely correlated with L1 use. Given the general consensus of the literature on the impact of proficiency on L1 use in L2 production, an exhaustive review of other studies dealing with the same issue is beyond the scope of the present study, and it is not of a dire need.

Besides learners' proficiency in the target language, linguistic awareness as a variable can be closely related to learners' linguistic development in the target language. Linguistic awareness is learners' sensitivity to the system of language. Metalinguistic awareness of learners is of a vital importance in the process of language learning inasmuch as it subsumes learners' development of an ability to not only use language but also observe it as a system that can be analysed, which

results in a more conscious exertion of form-meaning mapping (Auer & Wei, 2007). Linguistic awareness, attention to language and metalinguistic knowledge can be found to be used interchangeably in the literature (see Jarvis & Pavlenko, 2008; Odlin, 1989). This awareness involves conscious knowledge of the structural patterns of language as well as knowledge about, inter alia, lexical frequency of use, register variation and contextual requirements.

The learners' ability to notice formal and functional aspects of both the mother tongue and the target language are contributing factors that determine other language learning-related phenomena such as psychotypology, which is the perceived linguistic distance between the two languages. It should be noted that formal linguistic distance, as shall be discussed in subsequent sections, being the prime indicator of linguistic distance, is not necessarily congruent with what the learners perceive to be a close/remote language vis-à-vis their mother tongue. The concept of awareness and metalinguistic skills are the basic tenets upon which Cook's (1995) framework of *multi-competence* is built.

Multilingual speakers are generally characterised by higher levels of metalinguistic awareness and cognitive flexibility (De Angelis & Selinker, 2001). However, individual differences can be observed with reference to these skills commonly associated with multilingualism. The general belief is that there is a, whether direct or indirect, interplay between the level of conscious knowledge of language and the degree of crosslinguistic influence. This belief is expressed in Odlin's claim (1989, p. 140) that "whatever the exact nature of the role that linguistic awareness plays, such awareness is a nonstructural factor that interacts with cross-linguistic influences". Empirical data indicate that higher levels of metalinguistic knowledge lead to decreased levels of crosslinguistic influence. In his longitudinal study of a fellow researcher's progress in Swedish, Hammarberg (2001) notes that the informant's linguistic behaviour is determined by the level of conscious knowledge, referred to as *intentionality* (p. 27), in the sense that the intentional linguistic switch is mainly from the speaker's L1 (English) whereas her unintentional switches are mainly from her L2 (German). The mother tongue's influence started to decrease after eight months of learning Swedish while her L2's influence started to decrease earlier. What is noteworthy is that the Hammarberg (2001) reports the cessation of L2-driven switches whereas L1-driven switches decreased but never fully disappeared.

The corpus built for Hammarberg's study (2001) is reported in another study by Williams, who is the self-reporting informant, and Hammarberg (1998). Another interesting observation arises from the earlier analysis of the corpus. It is

reported that there are some pragmatic and locutionary implications to transfer with reference to differing levels of conscious attention to language. Williams' reliance on previously acquired languages in her journey of acquiring Swedish resulted in L1 (English) and L2 (German) being used for different functions. While German is used mainly for lexical constructions, thus being referred to as a *default interlingual supplier language* (p.15), English is used for metalinguistic purposes, such as facilitating communication and making metalinguistic comments about Swedish, thus being referred to as an *instrumental language* (p.33).

Having different types of access to the linguistic systems in accordance with the level of explicit knowledge is attested in many studies. Odlin (1989) makes the claim that explicit knowledge and higher levels of linguistic awareness are associated with a decrease in the rate of transfer and crosslinguistic influence. Jarvis (2002) and Kasper (1997) share the contention that conscious monitoring when using the target language requires more attention to the structural and functional aspects of this language, which, essentially, are the by-products of linguistic awareness. Cenoz (2001, p. 16) study of Basque and Spanish learners of English reports similar observations as “[t]he higher metalinguistic awareness developed by older students could ... explain the fact that they transfer fewer terms from Basque than students in the other groups”. It is noteworthy at this juncture that linguistic awareness and proficiency, being aspect of linguistic competence, cannot be separated from other factors related to the actual use and performance of language.

4.1.3. Linguistic Exposure and Recency of Use

Crosslinguistic influence is a very complex phenomenon that is related to both the cognitive development of learners and their linguistic behaviour. In line of that, the isolation of factors that contribute to the increase or decrease of the rate of transfer is by no means achievable. Variable interplay is acknowledged in SLA research to be of a paramount importance. This is best-illustrated in Selinker and Lakshmanan's *Multiple Effects Principle* (1993), which acknowledges the “tandem” nature of factors in second language acquisition process. This suggests that factors such as linguistic exposure and recency of use cannot be fundamentally separated in research practices unless called for by conceptually explanatory desiderata. The extent to which learners are likely to transfer features from the mother tongue to the target language, or in many cases the other way around, can be affected by the frequency of use and amount of linguistic exposure to the target language. Research shows that there is an inverse correlation between

crosslinguistic influence and exposure in the sense that increased exposure to the target language forms ensues less direct transfer (Dewaele, 2001; Murphy, 2003). This observation further substantiates the contention that learners are cognitively active parties in second language learning process. Target language exposure provides learners with more linguistic data which serves as resources with which learners develop mental grammars.

How recently the target language has been used can also be very crucial in explaining how well the language system is activated (De Angelis, 2007). This is more evident in multilingual contexts. William and Hammarberg (1998) report interesting findings from the analysis of an English speaking learner of Swedish. The learner also speaks German, Italian and French as a second language. Their study reports the more prominent influence of English and German on the Swedish production. One observation made by the researchers is that the participant used English and German more recently than Italian and French. Moreover, in her study of crosslinguistic influence among Spanish learners of English, Duran (2016) makes the claim that frequency of exposure and recency of use seem to override factors that are more language-related, such as crosslinguistic typology. One observation that can be made with reference to the study of William and Hammarberg (1998) is that there seems to be a variable overlap. While it is reported that frequency of use is the prime determinant of crosslinguistic influence in their study, it is noted that Swedish is a Germanic language that is closer to German and English than the other language in their study; French and Italian are Romance languages, and this can be a contributing factor to them not being prioritised as supplier languages in Swedish learning. It is, thus, not made clear whether the impact of English and German is due to recency of use or crosslinguistic typology.

What is noteworthy is that one major issue in the study of transfer is the isolation of variables. Unless researchers are able to devise tools or sampling measures that allow for the isolation of variables, the claim that one factor is more overriding cannot be made with certainty. Another issue that is present in learner-related variables investigation is that some variables are inherently symbiotic. That is, an increase in one learner-related variable necessitates the increase in the other. For example, it is not conceivable to assume *Proficiency* varying unless in tandem with *Exposure*. This led some researchers to lump these variables under more all-encompassing groups, such as *cumulative language experience* which involves: frequency of exposure, recency, proficiency, etc, and *linguistic and psycholinguistic factors* which involves: typology, psychotypology, markedness, etc. While this categorisation is theoretically more appealing and conceptually

less problematic, the development of reliable methodological designs is still fraught with all sorts of psychometric limitations inasmuch as this categorisation does not allow for the isolation of any variables.

4.2. Language-Related Factors

The discussion above places the learner as the locus of analysis in the investigation of crosslinguistic influence. This is consistent with the more recent approaches to pedagogy which place more emphasis on the learner as the centre of the pedagogical practices. It is true that this perspective is of an expedience in explaining the observed differences among learners apropos of the nature and rate of crosslinguistic influence. However, the literature offers insight into some universal patterns with which crosslinguistic influence can occur. What is even more common is that certain patterns can be observed to be common among learner groups notwithstanding learner peculiarities such as proficiency, metalinguistic awareness and age. It is conceivable then to assume that crosslinguistic influence transcends learners' variable nature to more fixed patterns that are related to both the system of language and the nature of acquisition as a universal cognitive process. The universals of the cognitive system in language acquisition are approached only through the by-products of this system. It is only through the observation of actual linguistic production universals that we can make generalisations about the nature of cognition.

4.2.1. Universal Grammar

Although generally operating in contexts of first language acquisition, research on Universal Grammar can be found to be of an importance in SLA research. Some attempts were made to understand the rather nebulous nature of L1 and L2 interplay concomitantly to the development of the Minimalist Program (Chomsky, 1995). Albeit not directly interested in the investigation of crosslinguistic influence, researchers within Chomskyan linguistics almost immediately recognise the cogency of the questions arising from crosslinguistic influence research with a particular emphasis on how transfer of features can influence the pattern with which mental grammars of an L2 are formed (Odlin, 2003). Universalist investigations of second language acquisition have the primary objective of determining whether UG principles are accessed by learners of a second language. Answers of this question led to the development of two main hypotheses expressed by Odlin (2003): (1) learners' development of the mental grammar of L2 is heavily influenced by UG principles given the universal route of learning that can be observed among learners of different languages; (2) learners of a second language have little, if any, access to UG principle, and L2

grammar is built upon the marked parametric features of language, which explains the observed differences among learner groups.

What is noteworthy at this juncture is that researchers are yet to determine the level of learners' access to UG principles and the extent to which parametric peculiarities override the more universal patterns. An exhaustive account of all stances is beyond the scope of the current discussion, yet it is of a paramount importance to recognise that researchers hold differing views with reference to the role of UG in constraining crosslinguistic influence. These positions are best-explained in White's (2000) account of second language acquisition. She summarises the positions of scholars in five possibilities where learners have: 1- partial access resulting in full transfer, 2- partial access resulting in no transfer, 3- full access resulting in full transfer, 4- full access resulting in partial transfer, 5- partial access resulting in partial transfer. What is even more interesting is that White (2000) admits that these possibilities do not capture the whole image regarding the diversity in the scholarly opinions in this matter.

Odlin's commentary (2003) on White's account (2000) is primarily limited to the first two positions, namely, 1- learner have partial access resulting in full transfer, 2- learners have partial access resulting in no transfer. He explains that some scholars (e.g., Bley-Vroman, 1989) believe that learners make use of UG principles in the way that is mediated by their first language. This means that UG principles that are accessible to learners of a second language are limited to the extent to which the learners' first language reflects these principles. Other researchers (e.g., Flynn & Martohardjono, 1994), however, believe that access to UG principles in second language learning is not mediated by the learners' L1. Rather, they are "accessible directly through acquisition just as these principles presumably are in the acquisition of the first language" (Odlin, 2003, p. 459). The conflicting findings reported in different scholarly publications amount to uncertainty regarding the role of UG in constraining crosslinguistic influence. This leads White (2000) to uphold the more moderate, yet by no means empirically attested, contention that only some UG principles are accessible to learners. This claim requires a more elaborate discussion of which among the UG principle are accessible and which are not, and how this access can translate to crosslinguistic influence.

The discussion of the role of UG in constraining crosslinguistic influence can be summarised in Odlin's (2003, p. 459) statement that: "research both in and outside the UG tradition suggests that there are some kinds of constraints on cross-linguistic influence, even though specifying the nature of the constraints has

proven very difficult”. Given the obscure nature of the answers offered by the literature, it is only plausible to assume that, while an utter boycott of UG discussion in SLA contexts is counterproductive, it is more theoretically yielding to discuss aspects that are often liaised with Universalist and Generativist discussions.

4.2.2. Crosslinguistic Typology

The historical and philological studies of language yield in some objective measures to classify languages on the basis of crosslinguistic similarities and differences. Genetic relationships and structural diversities among languages constitute solid materials for a very well-established linguistic inquiry method commonly referred to as *Linguistic Typology*. Classifying languages into families and nodes in family trees is an independent field of inquiry that feeds into more applied research, particularly SLA, with a focus on enabling linguists not only to establish norms of measuring linguistic distance but also to export ideas that can serve explanatory functions in intercultural communication and language learning contexts. The study of linguistic typology, though being an epistemologically independent field of enquiry, can be valuable to the applied research of crosslinguistic influence. Odlin (1989) highlights three main ways in which typological studies can be of an interest to SLA. First, they provide structured criteria for the quantification of linguistic distance, a process which can be influenced by subjective intuitive judgement. Second, such typological studies add validity to the study of transfer as a systematic phenomenon. Odlin (1989) offers examples of Japanese learners of English facing difficulties in the acquisition of canonical English word order and relative clause, which he attributes to inherent typological differences. Third, typological studies can offer more insight into our understanding of developmental sequences in language learning. Here, the knowledge obtained from contrastive studies can draw clear lines of linguistic universals which are attested to be central to language acquisition.

Empirical research alludes to the prospective capacity of typological features to be the prime determinant of crosslinguistic influence. In his *bilingual production model*, DeBot (1992) argues that crosslinguistic typology can have an impact on crosslinguistic influence to the extent that it overrides proficiency related factors. This suggests that inherent structural features of language can be equally important, or even more important, than learner-related factors. On equal footing, Poulisse’s (1990) analysis of the use of compensatory strategies among Dutch learners of English concludes that linguistic typology has a more

compelling force on crosslinguistic influence than the amount of exposure to the target language. In contexts of multilinguals learning a new language, Empirical data from applied research (e.g., Ortega, 2008; Ortega & Celaya, 2013) amount to the conclusion that languages which are typologically closer to the target language constitute the supplier language and are the source of a larger portion of crosslinguistic influence instances. In the context of second language acquisition, the discussion of form-informed objective judgement of linguistic typology is often coupled with the discussion of other psychology-informed subjective judgements about the learners' perception of both their L1 and the target language structures.

4.3. The Interplay of Language and Learner-Related Factors

The assumption that linguistic uniqueness is purely consequential to the formal assessment of linguistic structures led to conflicting findings. It has been mentioned earlier that part of the failure of contrastive analysis hypothesis to offer consistent predictions is attributable to the failure of the linguistic theory to offer reliable criteria that judge sameness and difference in linguistic contrasts. Subjecting tokens of language in isolation to the principles of descriptive linguistic meant that the study of transfer is essentially a theoretical field of enquiry. However, the recent developments in SLA required a more applied approach to the study of all aspects of language acquisition, including crosslinguistic influence. This required that language learners be put into the equation of every research query, including the seemingly formal study of structural patterns.

4.3.1. Psychotypology and Transferability

The objective and highly structured analysis of linguistic distance can be a reliable measure for the a priori prediction and a posteriori explanation crosslinguistic influence. However, it has been reported that, in many instances, formal distance between languages can yield conflicting results when tested against actual data from multilingual learning settings with regard to crosslinguistic influence (Bardel & Lindqvist 2007; Cenoz 2001; De Angelis 2005). In many cases, it is the learners' subjective judgement about the perceived linguistic distance that factors in the discussion of crosslinguistic distance. In this regard, many researchers opt for the use of *psychotypology* rather than typology to refer to the perceived distance between languages as opposed to the actual formal distance between them (Kellerman, 1983). The mental standards set by the

learners regarding what language is closer to the target language can determine not only what language, among the learner's previously acquired languages, is likely to be the source of structural analogies, i.e., crosslinguistic influence, but also the frequency at which certain structures are likely to surface (Gass & Selinker, 1984).

Kellerman's discussion of psychotypology (1983) gives an interesting insight into the not necessarily congruent nature of linguistic distance between what is empirically determined by actual formal analyses of language structure and what is purely the outcome of the learners' perception of distance. This is illustrated in Kellerman's statement (1983, p. 113) that "not everything that *looks* transferable *is* transferable". The transferability of items from the mother tongue refers to the likelihood of certain structures to be transferred compared to other items. This involves learners' intuitive judgement, whether consciously or unconsciously, about what items in a given language can be transferred to the target language (Ortega, 2008). Javris and Pavlenko (2008) make the argument that the subjective judgement of structural (and perhaps also functional) proximity between the target language and the other languages from the linguistic repertoire of the learner is divided into two types: perceived proximity and assumed proximity. The perceived proximity refers to the learner's conscious and conscious judgement that the formal patterns and functional correspondences encountered in a given target language input are similar to ones that are found in the source language. On the other hand, the assumed proximity refers to the learner's conscious and conscious hypothesis that a given formal and functional pattern in the source language has a counterpart in the target language regardless of whether or not the pattern is encountered in the target language input. While this dichotomy can be useful in explaining conceptual differences between the learner's informed judgement which reflects their analytical approach to the structure of language and their hypotheses regarding linguistic patterns, no empirical data substantiate such a distinctive measure as a factor that can affect the outcome of crosslinguistic influence.

Kellerman's work (1983) is not restricted to the holistic analysis of the system of language to determine psychotypological proximity; he offers insight into the discussion of linguistic structures as isolated segments from the overall pattern of the language. This more particular scope of analysis is predicated upon the belief that languages, however psychotypologically assessed distant, include structural tokens that are similar.

4.3.2. Markedness and Prototypicality

The intuitive judgement of psychotypology, however seemingly subjective, is highly principled inasmuch as it is substantially informed by markedness criteria. In this context, some linguistic items are believed to be more peculiar to the learners' L1, and are, hence, referred to as marked features. Other items, however, are perceived by the learners to be common across languages and are not specific to the learners' language, thus, being referred to as unmarked features. Markedness is very central to almost all queries of SLA research. Empirical data suggest that the acquisition of marked features in L2 is cognitively more demanding than the acquisition of unmarked features (Anderson, 1987; Andria, 2014; Eckman, 2004). Researchers (e.g., Ellis, 2003; Gass and Selinker, 1984; and Ortega, 2008) believe that marked features are less likely to be transferred. This is best-illustrated in Kellerman's hypothesis (1983, p. 23) that "transfer will be constrained: (1) when L1 and L2 are perceived as sufficiently unrelated (2) when a particular L2 structure is perceived as sufficiently 'marked'".

It should be noted that the learners' judgement of markedness is not necessarily congruent with the outcomes of descriptive linguistics. Much like psychotypology, conscious and unconscious judgement of markedness are a subjective, although highly principled, process. In view of that, Jarvis and Pavlenko (2008) make use of the term *prototypicality* to refer to the learner's perception regarding how *prototypical* (unmarked) or *aprototypical* (marked) a given structure is in the target and source languages. Jarvis (1998) conducted a study on conceptual transfer in interlingual lexicon where he concluded that learners' choice of L2 words is heavily contingent upon prototypicality and markedness as learners transfer meanings that are nonfigurative and literal meanings which are believed to be more prototypical and are not language-specific. Another example of the impact of markedness and prototypicality on crosslinguistic influence is preposition stranding and pied-piped structures illustrated in the following structures respectively: "who did John give the book to?" which is a marked structure in English and "to whom did John give the book?" which is an unmarked structure in English. Evidence shows that preposition stranding is rarely transferred by learners of English to any language English speaking learners are learning (see Zobl, 1984; Jarvis & Pavlenko, 2008). This shows that learners have an understanding about what structures are more specific to their language and which are more universal.

More recent discussions of crosslinguistic influence in multilingual settings make use of Kellerman's concept of psychotypology. An example of this is

Rothman's *Typological Primacy Model* (2015) where he argues that the prime determinant of the choice of the language serving as a supplier for crosslinguistic influence is the perceived level of typological proximity between the target language and the other languages a given learner knows. More evidence on the subjective and not necessarily systematic judgement of proximity can be found in RingBom's discussion (2007) who makes the empirically supported claim that, while speakers of a given language can find another language to be closer to their, the speakers of the latter language can judge the former to be distant.

It is now clear that concepts such as: *psychotypology* and *prototypicality* are more often used in lieu of their counterparts: *typology* and *markedness* respectively. This is motivated by the fact that, while the latter are purely the outcome of the objective analysis of language as informed by the development in descriptive formal linguistics, the former take heed of the learners as being central to the analysis of linguistic phenomena with attention to not only what is empirically validated to be reliable but also what is believed by the learner to be true regardless of the congruence thereof. The humanistic nature that such a terminological use adds to SLA makes it more approachable to the applied practices of pedagogy which are, principally, very social and humanistic in nature.

5. Conclusion:

The present study provides a theoretical discussion of crosslinguistic influence where learners' knowledge of one language, particularly the mother tongue, monitors their conceptualization and production of the target language and vice versa. The discussion shows that models of second language acquisition provide conflicting models with regard to the modularity of the process and the accessibility to universal grammar principles. Moreover, it is shown that the discussion of crosslinguistic influence, notwithstanding the development in theoretical perception and terminology, provides data that warrant the understanding of multilinguistic competence. The factors that induce such linguistic interplay can be purely linguistic and cognitive as universal grammar and linguistic typology can be prime determinants for the surfacing of interlingual errors. Other factors, however, are shown as being purely language independent and learner-related such as age, proficiency and awareness. Other factors, on the midrange of the spectrum, represent an interplay between purely linguistic features and learners' perception of these features. The learners' perception of linguistic difference and markedness, psychotypology and prototypicality respectively, help account for residual data that are left unaccounted for.

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