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An Analysis of the Discourse Domain Hypothesis and Its Adequacy in Explaining Topic-Based Interlanguage Variation

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ABSTRACT

This type of discourse is informed by the Discourse Domain Hypothesis (DDH) which arose from topic-based interlanguage (IL) variation focused by the learners of L2. This work appraises critically how DDH is formulated in a theoretically adequate manner by applying the applicable rules of theory construction in science and guidelines for the SLA. It is established that the DDH has been studied and written about extensively; however, our firm critique of these investigations reveals the serious challenges posed in the absence of definitional clarity of core concepts like 'discourse domain', the methodological barriers of operationalization, and the lack of the detailed specification of causal mechanisms. The journey of DDH can be traced across three significant concepts: it began with Selinker and Douglas, the integration of schema-theory proposed by Whyte to Douglas's further sociocultural-based modification, which demonstrates both theoretical advancements and constant challenges. Even though all revisions made in this study were able to cover some of the previous caveats, the central concerns of construct validity, empirical test validity, and the ability of the model to explain a phenomenon still persist. The discussion points to the clear, postulated gaps in the current research which comes down to the need for further refinements on topic-based IL variation between SLA learners, better focused research directions, and no less potential inclusion of existing SLA models that are aimed at the same phenomena.

Keywords: Discourse Domain Hypothesis; Interlanguage Variation; Second Language Acquisition; Theoretical Adequacy; Sociolinguistics

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1. Introduction

Analogized to the way native speakers (NSs) learn their mother tongues, Selinker[1] put forward interlanguage (IL) theory: that when people learn a second language (L2) a latent cognitive structure is activated which acts as a separate linguistic system and results in the L2 learner developing a unique idiolect unlike the target language in idiosyncratic, but systematic ways. This 'incomplete' and 'defective' language system is the learner's IL which tends to be different from the L2 norms and is influenced by several psycholinguistic factors. Thus, only about 5% of L2 learners are expected to possess native-like proficiency whereas the rest may keep improving but never be totally successful. Hence, it is proposed that IL explains the fact that there is much variation in the ways that learners use their L2.

The proposal of IL has resulted in heated discussion in the field of second language acquisition (SLA). The majority of the studies focus on the description of L2 learners' variability in IL performance and its psycholinguistic causes[2–4] because Selinker defines the linguistic system as a psychological concept. It has, however, gradually been realized that sociolinguistic factors also have a great impact on one's IL[5–8]. According to Tarone[6], the appropriate social context is critical to the development and use of IL because it is not only a mental activity but also a product of social activity.

Advancements in study approaches and IL variation research have grown drastically because of the introduction of new methodologies, as noted by newer scholars. Regarding the issue of IL variation, more attention is now focused on cognition and linguistics. For example, Saito et al.[9] describe the importance of the domain-general auditory processing for L2 listening and speaking in different circumstances, indicating that all IL interdependencies may stem from cognitive components that are more critical than previously comprehended. In addition, Chantal et al.[10] showed by meta-analysis in bilingual children that cross-linguistic influence has some complex language domain interaction that subsumes other interwoven factors, informing us that more attention has to be directed to the mediating cognitive and linguistic factors for IL growth.

The study of IL variation has greatly gained from technological advancements and improvements in research methods. Montrul[11] provides new information by analyzing the speaking abilities of heritage language speakers since it pro-

vides insight into the participation of different contexts for IL development. Moreover, Donaldson[12] makes important links between change of language and L2 learning, suggesting that patterns of IL variation may contain more general principles of linguistic change. All of these recent works have certainly made it easier to understand the intricacies of IL variation and the different dimensions of variation across different discourse contexts.

Building on these insights, one of the attempts to explain IL variability from a sociolinguistic perspective is the Discourse Domain Hypothesis (DDH). The kind of variability DDH tries to explain is different IL performance of an individual between varying topics of discussion. Selinker and Douglas were the first ones to use the term 'discourse domain', which originally referred to one's 'internally created contexts'[13] or a 'slice of one's life'[14], based on which one's ILs develop and vary. In the following years, DDH has been discussed and reformulated in order to deal with various criticisms, and empirical work has been done to verify its existence (for example,[13–20]).

Despite the attention it has received, studies of DDH were popular some decades ago, hence some scholars may think it insignificant to explore it anymore. It is our view, however, that as long as the phenomenon of IL variation exists, the necessity of exploration and explanation is self-evidently needed. Moreover, DDH, as an explanation of topic-based IL variation, is not perfect. There was some degree of variance in the completeness of the concept of 'discourse domain', the theory as presented, and the hypotheses as specified[21–23]. Ellis[21] is right in his query regarding the validity of the construct 'discourse domain.' Both Preston[22] and Skehan[23] did diagnose the need for some work to be done.

Therefore, we propose more work needs to be done. One problem with DDH is that the concept of 'discourse domain' has not been understood or accepted consistently by SLA researchers. The statement of the Hypothesis is not complete as well because it only presents the causal mechanism between the ill-defined 'discourse domain' and one's IL variation, and seems to leave out the discussion of their relationship with the topic change, which is the focus shown in the design of the majority of related empirical research. With all the empirical findings based on such a loose and controversial theory, the foregoing study is considered significant

in analyzing DDH.

To address these concerns, in the proceeding sections, DDH will be assessed against standard and generally accepted criteria for adequate theory construction. In particular, we shall make use of Reynolds'[24] framework relating to the evaluation of scientific theories and Jordan's principles for the construction of theories. From the text, Reynolds[24] maintains that an adequately constructed scientific theory should capture an identifiable classification scheme, provide subsequent event predictions, explain the past, and enhance comprehension. He claims that theoretical concepts need to be abstract enough to be free of patio-temporally induced constraints and that the propositions must be structured in a manner that is amenable to disproof and testing. In addition to this general framework, Jordan[25] articulates a specialized set of criteria to aid in constructing theories in SLA. He points out the need for terminological precision and consistency, empirical accuracy, valuable consequences, broad coverage, and clarity. In combining these two frameworks, we define a full set of criteria for evaluating the theoretical adequacy of the DDH.

According to the proposed method, the DDH will be demystified according to the constellations of criteria which include concept definition, logical structure, and operationalizability. In terms of concept definition, we will analyze the coherence, clarity, and consistency of core components in DDH, especially 'discourse domain', in relation to their different instantiations. In a logical structure context, we will focus on the degree of internal coherence of the claims that the DDH makes, the level of soundness of those claims, and if there is any reasoning given in support of these claims in regards to what is known about SLA, as well as the data that has been collected. Finally, in the context of operationalizability, we will investigate the empirical test and practical usefulness of the DDH in SLA and pedagogy. These metrics will inform and allow us to construct a more robust analysis capable of offering a meaningful and powerful critique of the DDH in all of its theoretical glooms and blooms.

In this way, the following sections will first outline the DDH and its revisions, then provide the critical assessment of each version based on these principles of theory construction. Finally, the study will suggest how the findings may affect the future refinement of DDH and SLA theory and related further research. The aim of this study is, through a thorough

analysis of the DDH in terms of conceptualization and definitional frameworks and structures, to clarify the meaning of 'discourse domain' and solve the persistent issue of defining the concept, assist in the refinement and development of the DDH, and more specifically, aid in tackling the question of 'what explains the variability of IL in the context of SLA theory'. While there have been numerous critiques of the DDH[21–23], it can be said that no systematic form of theoretical analysis has been undertaken. The aforementioned emphasis has been chosen with a view to attempting to fill this void. In light of this, it is important to understand the general paradigmatic rules applicable to the development of scientific theory[24] and the special ones dealing with the theory of SLA[25] to facilitate a comprehensive review of the theoretical aspects of the DDH. This is of great importance because the current formulation is not only inadequate but also offers a number of hypotheses that need to be tested to validate or falsify it. As a result of these alterations, it is suggested that the rigorously developed theory should enhance the deepest pillars of SLA theory which involve the variability/variation of language in terms of explanatory, empirical, and conceptual issues.

2. Literature Review

The DDH is based on the concept of IL[1–3]. One of the most remarkable characteristics of IL is variability. Most L2 learners show great variation not only in certain linguistic forms but also in SLA processes such as learning rate, developmental sequence, avoidance, fossilization, etc.

The first IL studies focused on the psycholinguistic factors[1] because IL is supposed to develop dependent on the cognition of the learner. However, with more observations of IL variation in different interactive contexts, scholars began to pay attention to the sociolinguistic causes and effects[5–8], and thus DDH was proposed by Selinker and Douglas[13, 14] as an explanation of intrapersonal IL variation. DDH has subsequently seen two major revisions by Whyte[16–18] and Douglas[19].

The following will summarize three versions of the Hypothesis in chronological order of first proposal and discuss their insights and shortfalls on the basis of standard guidelines for good theory construction[24, 25].

2.1. Initial Conceptualization of DDH

As some of the first scholars to focus on the issue of IL variation, Selinker and Douglas[13] tried to investigate the extent of the impact of context on one's IL performance. They assume that in the process of IL development, language learners create personal discourse domains based on important and/or necessary 'slices of life'. They define 'discourse domains' as 'internally-created contexts'[13] with which the speaker may show variation in language performance, such as different use of vocabularies and structures, different levels of proficiency, etc. This variation may also be influenced by such external contextual elements as interlocutors, topic order, interactive settings, etc.

They further propose seven hypotheses concerning the acquisition of discourse domains in SLA. One of the most relevant ones is that both IL forms and common SLA processes such as transfer, fossilization, avoidance, strategies, etc. vary within, as well as across, discourse domains, and are expected to be dynamic.

In the following year, Selinker and Douglas's definition of the concept is summarized more systematically as a 'personally and internally constructed "slice" of one's life that has importance and over which the learner exercises content control. Importance is empirically shown by the fact that in interaction one repeatedly talks (or writes) about the area in question'[14]. It is supposed to be activated frequently by learners in daily oral and written tasks, and develops with the increase of life experience, which is dynamic and discontinuous. Some domains may be created temporarily to deal with particular purposes and then be dropped or left dormant and taken up again when necessary. Others may become permanent in one's cognitive system once formed. The creation of discourse domains varies learners' IL production in certain contexts which may be advanced in the process of constant use.

Additionally, they propose criteria used for recognizing a discourse domain: 'importance to the learner, interactional salience, discontinuousness, control of content … highly personal … temporariness'[14]. In their original explanation, however, 'importance' is the only influential factor being stressed, while in the later revision, not only is it linked with the frequency of use but also content control is added to it. These three elements are highly agreed upon by the subsequent researchers as critical variables that affect learners' IL

performance.

2.2. Schema-Theory Integration Phase

Whyte[16] attempts to bring schema theory into play in the interpretation of discourse domains. In following studies, she makes systematic critiques of Selinker and Douglas'[13, 14] Hypothesis from conceptual, methodological, and theoretical perspectives[18].

First, the concept of a discourse domain is uncertain, i.e., it is hard to decide what belongs to a discourse domain, and this concept could not be explained by other established psycholinguistic or sociolinguistic constructs. Thus, it is difficult to explain a domain topic's effects on IL variation. Second, it lacks of criteria for the identification of domain topics or the classification of learner speech in these topics. Hence, researchers might not know when the learner has been engaged in domain topics. Third, there were no specific and falsifiable predictions to be tested empirically. Specifically, the Hypothesis did not identify the language features affected nor specify the direction of impact. Therefore, the scope and the understanding of the Hypothesis could have been inconsistently interpreted, which makes operationalizing the concept 'discourse domain' problematic.

Hence Whyte[17, 18] aims at providing a revised version of DDH, elaborating how exactly one's ILs develop based on their discourse domains. She relates 'discourse domain' to the concept of 'schema' and uses the established schemata theory to be the theoretical basis. Schemata refer to one's developing patterns of understanding activated by past experience[26] or information about current discourse combined with past knowledge[27]. Schemata share similarities with the original description of a discourse domain: as an effect of one's life, affecting one's perception of information and being affected by these perceptions in turn, and being dynamic but permanent in one's cognitive system. A schema is the result of general knowledge dealing with everyday experience[18], and 'discourse domain' is regarded as a 'particularly well-developed schema, which is elaborated'[17] because it is created out of specific conditions.

Based on Selinker and Douglas's criteria for recognition of one's discourse domains[14], Whyte[16] assumes that the creation of a domain needs time. When learners invest a topic with emotion (i.e., importance), they tend to increase the frequency of practice (i.e., interactional salience),

which results in greater knowledge (i.e., content control), and thus the topic becomes even more important to them. This relationship between emotional investment and L2 production has been empirically supported by Ebsworth and Starbuck[28], who found that learners' emotional engagement with topics significantly influenced their language output. These features are summarized as three parameters of discourse domains: 1) content elaboration: one contains more information within their domains; 2) stability: domains are less likely to change with new information in a single encounter; 3) personal importance: one's emotional investment facilitates the gradual development of domains. Compared with one's schemata, a discourse domain seems to be more complex, more stable and more personally important. A learner's schema and discourse domain are parallel constructs. The degree of expertise, investment and practice varies along the continuum, linking the topic characteristics and speaker characteristics together. When all the conditions are fulfilled, learners would form their discourse domains gradually, based on which their ILs develop.

Therefore, Whyte[17] defines a 'discourse domain' as a topic area which is characterized by extensive knowledge … by current knowledge … and by important knowledge.' (p. 293).

Compared with Selinker and Douglas[14], Whyte makes the concept clearer. The revised view details the impact of its three component features (i.e., expertise, currency, importance) in a more systematic and explicit way. It thus provides criteria for researchers to distinguish domain topics and non-domain topics and helps the identification of personal domains.

2.3. Sociocultural Expansion Phase

In 2004, Douglas reviewed the original collaborative 1985 study and agreed with criticism from Long[29] that it is not appropriate to regard 'discourse domain' as 'context' because it is ill-defined in SLA. In this later revision of DDH, Douglas, like Whyte, also assumes that a 'discourse domain' is similar to a schema, since both are frameworks in one's mind related to content control, affective importance and interactional involvement to varying degrees. However, Widdowson[30] argues that the schema theory cannot explain all idiosyncratic IL performance because 'interpretative procedures' (p. 40) are at work in activating schematic knowledge

and bringing it to practical use. That is, in order to deal with specific contexts, the speaker needs to interpret or apply schematic knowledge, offering their linguistic system different 'directions' within their schemata instead of engaging the whole.

In light of this point, Douglas[19] takes the interactional contexts into serious consideration. He assumes that different discourse domains are developed in response to a different 'situational and linguistic environment' (p. 28). Learners, he claims, observe a communicative situation, activate the corresponding discourse domain, and plan a response and take action[31]. Given this, other problems occur. What kinds of situational elements are concerned in the interaction? How does the learner interpret these contextual cues? How could the researcher know that the learner has recognized or activated the appropriate domain in their minds?

Douglas gives credit to Whyte's definition of discourse domain for its inclusion of dimensions of cognition (as in extent of knowledge), affection (as in importance of knowledge) and interaction (as in currency of knowledge), but he claims that she did not pay special attention to the last element. In a similar line of thought, Young[32] attributes Whyte's lack of validity in the empirical results to her failure to consider the influence of interactional environments, especially that of the interlocutors.

Therefore, Douglas[19] proposes a revised definition of a discourse domain: 'a cognitive construct within which a language is developed and used' (p. 34). It maintains his and Selinker's first opinion and explains the concept from a cognitive perspective. Even though he still thinks that one's discourse domains develop in relation to contexts, the new version does not limit the context to topics but expands it to include other cues like setting, participants, purpose, etc. In addition, he approves of Whyte's framework of the varying degrees of the three characteristics relying on the learner's experience of specific situations, but he emphasizes the position of interaction between external communicative contexts and the internal discourse domains, adding the element of communication strategies to link them together in a two-way relationship. This means that the learner could use different discourse domains to deal with various contexts, and the change of contexts could influence the way the learner develops new domains, or alters the existing ones. Because discourse domains are dynamic, however, it may

become a barrier for research since it is hard to assure that the interactional contexts and the adopted discourse domains show a one-to-one correspondence. Douglas suggests that researchers need to provide abundant contextual cues so that participants can be prompted to interpret the contexts more precisely and confidently.

3. Methods

This research explores the theoretical evolution, implementation issues, as well as the challenges surrounding the operationalization of the DDH model of international sociolinguistic phenomena variation. An analysis that uses Reynolds'[24] framework and is designed around Jordan's[25] principles seeks to understand the gaps in the construct validation and definition of DDH, paying particular attention to changes it has undergone from its original formulation to its more recent ones. By focusing on topic-based IL variation in SLA research, this investigation helps redefine DDH while simultaneously increasing the comprehension of theoretical adequacy.

The methods used to analyze DDH involve elements of scientific theory building and SLA enquiry. Reynolds'[24] framework identifies underlying criteria useful in analyzing the scientific theories which require identifiable classification schemes, the ability to make predictions and the capacity to explain. Propositional theoretical constructs must be abstract enough that they surpass patio-temporal boundaries yet attainable enough for empirical observations and falsification. These foundations are augmented by Jordon's[25] principles where particular focus is placed on SLA theory construction at the level of empirical observation ensuring accuracy and coverage.

The combination of these frameworks provides for three overarching evaluation criteria: concept definition, logical structure, and operationalizability. DDH is a proprietary developed hypothesis. Concept definition analysis investigates the clarity, coherence, and consistency of core DDH components across different iterations. Logical structure assessment examines the internal coherence of the theoretical claims relative to existing SLA knowledge[6, 7]. The operationalizability evaluation seeks to establish the limits of empirical SLA application and operability[21–23].

The systematic examination process is illustrated in **Figure 1** with the methodological framework showing the different stages of development and a linear construction of the argument.
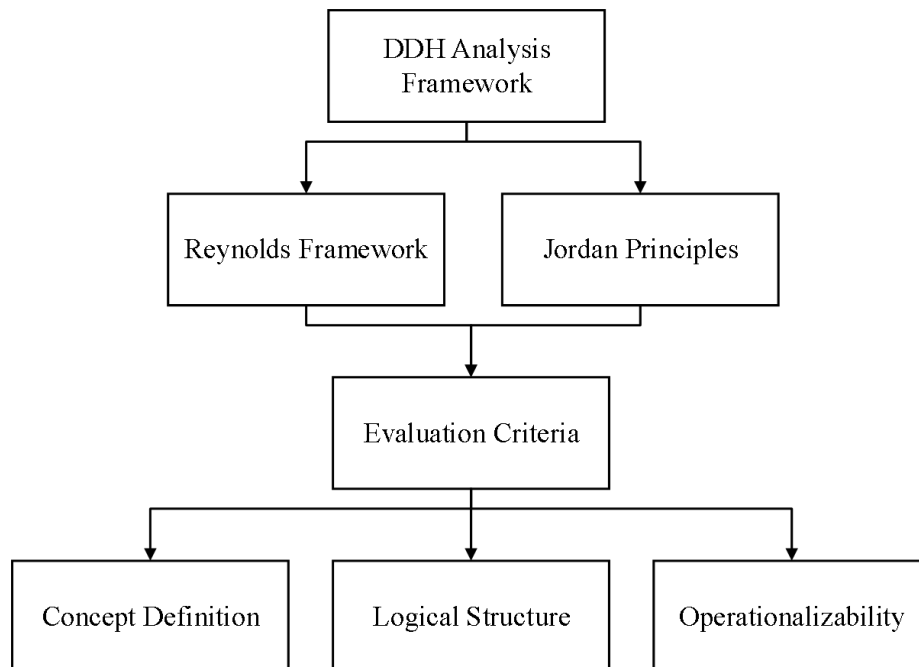

Figure 1. DDH analysis framework.

The provided approach adheres to traditional techniques in the field of theoretical linguistics research [28, 29], allowing scrupulous evaluation of DDH's role in the development of SLA theory.

4. Results

The evolution of DDH as viewed through the lens of its three major versions showed important theoretical advancements and equally important persistent challenges at the definitional and implementational levels. Based on Reynolds' framework and Jordan's principles, the research showed that construct definition, operationalization, and empirical verification remained fundamentally unsolved issues even though each version aimed to address previous shortcomings. Selinker and Douglas's initial version constructed core ideas, but did not possess definitional precision. Whyte's schema-theory integration was of greater novelty in terms of theory, but suffered from poor implementation. While talking about Douglas' version, which is of greater scope, its empirical verification is exceedingly more difficult. This both highlights' weeds of theoretical advancement and the plethora of gaps that still persist within DDH, particularly regarding the operationalization of variables and its verification.

4.1. Assessment of Selinker and Douglas's Original Version

DDH gives an explanation of the observed phenomenon of IL variability in one's performance in domain topics and non-domain topics. Predictions and testable hypotheses could be offered based on it because it presents a causal relationship between the variable of a learner's 'domain' and their IL production. These are points in favor of the original versions of DDH.

However, according to general well-established principles of theory construction [24] and specific guidelines for SLA theory construction [25], a scientific body of knowledge should provide a certain type of typology of the relevant items, help to make predictions of future events and explanations of past events, and achieve a sense of understanding which includes causal mechanisms. Hence the concepts in a theory need to be abstract enough to overcome the spaciotemporal limitations when explaining and predicting a phenomenon; the meaning of the concepts and the statements should obtain intersubjectivity, i.e., to reach a consensus in interpretation; and the theory should allow for verification and falsification by relevant empirical research. On these points, the Hypothesis shows obvious defects.

To begin with, the Hypothesis should be formulated in the clearest terms, but the definition of a 'discourse domain' is rather vague and confusing. It was first regarded as an 'internally-created context within which … IL structures are created differentially' [13]. The 1985 paper aimed at elucidating IL variation related to contexts and claimed that such work could not be considered satisfactory until 'context' was interpreted within a feasible research framework. But not only is 'context' not clearly defined by Selinker and Douglas [13], it is also used to explain the new concept 'discourse domain', which makes the definition of 'discourse domain' circular and vacuous, as it is defined by the very term which it is introduced to explain. Later, 'discourse domain' was defined as a 'personally, and internally created "slice" of one's life' [14]. The researchers tried to use a more everyday expression to explain it which sounded like 'life experience' but this is still vague and it's unclear how it should be operationalized.

Even though the logical system of DDH is easy to understand; in that the change of one variable (one's life/discourse domains) would cause the change of another variable (IL performance), and accounts for the characteristics of dynamicity and discontinuity, the expressions of the fundamental concepts seem to contain a contrast: if the 'slice' of one's life is viewed as knowledge or memory of the objective facts that happened in the past, how is it 'personally and internally created'? Conversely, if such a 'slice' is subjectively invented by the learners, how could we observe or measure it? Or even determine whether one's domain was the result of their imaginary or real-life experience? Do they have the same impact? These are all important questions to which the DDH, as originally stated, gives no clear answer.

Furthermore, a well-constructed scientific theory should contain empirical content. Even though the Hypothesis has empirical content, the operational definition of a 'discourse domain', as discussed above, is not easy to determine. Since it is highly personal and dynamic, who could be the one to decide whether a context belongs to one's domain or not? How do we delineate and validate the distinction between domains? How do we judge whether such context is a

domain at a certain point of time but being dropped, changed or regained at another point of time? There is too much uncertainty with the relevant concepts and, therefore, difficult to replicate the research and hope for similar findings.

Lastly, the Hypothesis appears to be a fast solution to a complicated issue in SLA by simplifying variability. The notion of 'discourse domain' is seemingly able to explain all characteristics of one's IL performance, and the influence of factors like L1 transfer, developmental stages, L2 input, motivation, attention, etc. are downplayed. Even though a good theory should be as broad in scope as possible, DDH may be too broad to be useful [21–23].

It is intuitively appealing to believe that one's performance varies across domains, but the problem of 'in what way' is not solved. How do one's domains impact on his/her ILs differently? There are too many domains and too many aspects of ILs that could be tested and assessed. Such a Hypothesis is broad in scope and allows for a lot of possibilities, but at the same time, it is hard to falsify, i.e., it is hard to challenge the theory. For example, it is impossible to observe the existence of a discourse domain. It is difficult to see how, say, observations of frequency of use could be used to falsify the existence of discourse domains, as just because one does not talk about a topic frequently, it does not mean that it is unimportant. There might, for example, be social, cultural, or even legal reasons why people who really care about and have strong views on politics keep quiet on the subject.

4.2. Assessment of Whyte's Revised Version

Whyte's revised version of DDH has solved some problems with Selinker and Douglas' original version. The foremost development is to utilize an existing theoretical framework – the schema theory – which seems to allow the explanation of IL variation from the cognitive dimension in a more rational way. A 'topic area' seems more explicit and accessible than a '"slice" of one's life', which facilitates the methodological design in empirical studies. Moreover, Whyte summarizes three main elements concerning learners' personal domains that impact greatly on their IL performance, i.e., expertise, currency and importance. This provides testable variables and helps make further predictions that could be falsified by any empirical results indicating that these elements have little effect. She also adds a new causal relationship to the statement of the concept, i.e., one's

ILs develop dependent on their discourse domains which are created based on their schemata. Thus, IL variation is explained in a clearer and more concrete way through the continua between speaker and topic.

However, the operational definitions of these variables remain imprecise, and at the same time, hard to falsify. The variable of expertise may be easier to identify since it could be related to one's profession, while the other two elements (i.e., currency and importance) are rather subjective and controversial. How, for instance, could one distinguish the topic's importance to an individual? Whyte suggested that the participants could make the choice, but domains are supposed to be dynamic; That is, a topic may be important at some point in time but not at another. As for currency, without a quantitative approach like extensive observation by researchers in natural settings, it is difficult to see how this could be reliably measured. For instance, daily topics like 'shopping', 'cooking', etc. are supposed to be of frequent practice, but actually many foreign language learners seldom use other languages to deal with problems or interact with others in daily lives for the lack of necessity, so these topics may not be current to them, neither would the domains be activated.

Moreover, in her 1992 study, Whyte based her framework on the schema theory. She regarded 'discourse domain' as 'a particularly well-developed, stable, and personally important schema' (p. 83) and claimed that schemata and domains were parallel in one's cognitive system. Nevertheless, in her later studies, she revised her definition of 'discourse domain' to 'a topic area' [14, 17], the same as her interpretation of Selinker and Douglas' definition, which leads to the same problem seen in Selinker and Douglas' work: failure to express their theory in the clearest terms. Furthermore, if the key concept could be understood in such a simple way as a 'topic', why doesn't she just use 'topic' to explain the phenomenon? We believe it is more easily accepted across researchers because it is more concrete and easier to define operationally. If 'domain' is not equal to 'topic', however, what is the difference between them? This needs to be made explicitly clear.

Finally, based on their respective definitions, Selinker and Douglas only stated that one's IL performance and their discourse domains were related without specifying how they were related to each other, but Whyte speculates that en-

hanced performance was brought about by domain topics. Both hypotheses can be falsified in principle: the former can be disproved by similar performance in different domains, i.e., the speaker shows no significant difference when talking about domain topics and non-domain topics; the latter can be disproved by worse language production in domain topics than non-domain ones, i.e., more knowledge, frequent practice and personal investment do not advance the speaker's performance. It seems that taking the three elements (i.e., expertise, currency and importance) into consideration, Whyte's Hypothesis is not as broad as Selinker and Douglas' original proposal, because it is more directional and restricted. It is not conducive to interpreting irregular IL data or eliciting more predictions. Even her own data[17, 18] showed great variability within the experimental group reduced confidence in this Hypothesis.

4.3. Assessment of Douglas's Updated Version

Even though Douglas' new definition still views a discourse domain as a 'cognitive construct', it enlarges the scope of discussion and explains the IL variation in a more comprehensive way than his and Selinker's initial proposal, because it takes a variety of contextual elements into consideration. It also includes more variables and causal relationships and thus is more fruitful in producing more testable predictions. The addition of communication strategies as the mediation between external contexts and internal interpretation, i.e., discourse domains, describes clearly the way the contexts influence the development of one's domains and how one's domains are activated to deal with the contexts, and thus emphasizes the position of interactive processes. Generally speaking, it illustrates the cognitive, affective and interactive nature of a discourse domain more comprehensively.

The inclusion of more contextual elements could certainly explain more empirical data. For example, the influence of interlocutors, the change of settings, the scope of topics, etc. are all factors that may elicit IL variation.

However, some of the innovations also become its weaknesses. The foremost one is that it is hard for researchers to judge what elements play key roles since language development and use in real-life contexts are supposed to be complex and multi-faceted, as what the definition has listed, and thus in practice, it may be difficult to only focus on one factor by taking the rest under control. If we consider the dynamic nature of one's discourse domains, the factor of timing on a diachronic level also complicates the matter. As per Whyte's criticism of Selinker and Douglas' 1985 Hypothesis, the 'cognitive construct' lacked an accompanying, well-established theoretical framework. This brings the problem to the original position: since no intersubjective agreement has been made on the definition of a 'cognitive construct', which is used to define a 'discourse domain', there is still no precise understanding of a 'discourse domain'. This seems to be a persistent issue.

5. Discussion

The current analysis of DDH employs the theoretical frameworks posited by[24] and[25] as a basis from which systematic criteria for scientific theory evaluation were drawn. This integration allowed evaluation of the components of DDH's concepts, the internal logical consistency, and the possibility of an empirical test within a clearly defined structure. However, while these general measures of construction of theory were insightful, additional measures that are likely more linguistically relevant, particularly to the phenomena of second language acquisition, will be needed. Future theoretical analyses should incorporate additional evaluative frameworks better suited to capturing the intricacies of language learning theories.

From the first to the latest version of the discourse domain hypothesis, we see both major theories and persistent issues. The work of Selinker and Douglas'[13, 14] suffers from definitional ambiguity when the discourse domains are introduced by them. Schemata theory was incorporated, which represented a theoretical advancement in the works of Whyte's[17, 18]. However, there were still operational issues in turning the theoretical constructs to variables that could be measured. Douglas[19] broadens the theoretical context even more, but the increased scope brings forth definitional ambiguity and makes empirical investigation more complicated. Despite its shortcomings, DDH has proven to be beneficial to the SLA research in many ways. It provided groundwork for topic-based IL variation which had previously not been covered in a systematic way and further led to fruitful empirical research and constructive insights about language performance and discourse contexts of learners. Also, DDH aided in drawing attention to the sociolinguistic factors in

the contribution to SLA processes.

It has been shown through new research that IL variation as well as discourse domains are very complex phenomena. Nguyen[33] provides strong data from the Vietnamese ESL learners that aligns with the psycholinguistic theory of IL variability, whereas Zheng[34] exemplifies how internal and external circumstances constrain morphosyntactic variability in the speech of L2 learners. These findings lead one to think that the interdependence of discourse domains and interlanguage variation is constructed in a more sophisticated manner than was previously hypothesised. Additionally, Haristiani and Christinawati[35] explain how the IL pragmatic competence differs in speech act strategies across various discourse domains which aid in deepening the understanding of the effects of the discourse domains from a pragmatic view.

Several crucial problems remain that may affect the development of SLA theory. There have been issues with the theoretical construction and the empirical tests due to the absence of clarity placed on the definitions of certain core terms, especially "discourse domain." The inability to provide clear operational definition has severely constrained the ability of scholars to design and execute rigorous tests of the hypothesis. Furthermore, while the theory's broad scope seems comprehensive, its explanatory power has been diluted, making it difficult to formulate predictions that can be tested. Several avenues are suggested that need consideration in further research. More effort should be placed towards more elaborate research that aims at clarifying the operational concepts and measurements of the discourse domains. There should be concern in making research designs more targeted and maybe looking into the validation of certain aspects of the theory instead of its complete validation. Integration with other SLA theories might also prove fruitful and this may help in constructing a better understanding of IL variation.

The conceptual breakdown of the DDH provides effective advances and some other specific areas for future development. A useful insight for classroom practice remained the importance of relaxation and one's personal investment in context. Language instructors should pay attention to learners' mental and emotional connections to various discourse topics when preparing instructional activities. Meaningful communication begins with curriculums that are already un-derstood and accepted by the learners; hence, in the long term, learners will acquire the language much more easily. As far as language acquisition and performance in various contexts is concerned, this is clearly an area that requires more detailed research work. In this context, it may be necessary to design more elaborate research methods for context variability and to develop theories that explain the interdependence of cognitive, emotional, social processes in SLA at the so-called micro level.

6. Conclusions

6.1. Overview of DDH Development

Since its inception, DDH has undergone serious examination and cautious changes. The theory has inspired numerous empirical studies, despite containing theoretical challenges including inconsistent definitions of 'discourse domain', unclear expressions, and unresolved questions regarding the precise effects of variables and lack of common recognition criteria.

The evolution of the main concept 'discourse domain' reflects the theoretical development. Initially, Selinker and Douglas[13, 14] describe it as one's 'slice of life' that keeps changing with experience. Later, Whyte[18] conceptualized it as a 'topic area' paralleling schema theory, characterized by extensive, current and important knowledge. Douglas[19] further elaborates it as a 'cognitive construct' created as a kind of communicative competence in interaction with social contexts. While these versions share the view that learners' ILs develop dependent on discourse domain formation and that domains are highly personal and dynamic, the varying interpretations have led to implementation challenges.

6.2. Theoretical and Methodological Challenges

Makoni[36], for instance, mentions that there is a lack of consistent understanding of the concept of 'discourse domain'. It is sometimes used synonymously with 'topic' and 'genre', or even could be interpreted as 'a stretch of talk' (p. 92) based on Cornu & Delhaye's[15] study which found that the participant's language use demonstrated similarities at the end of one subject matter and at the beginning of another one. He considers that the concept 'discourse domain'

should be abandoned by applying the principle of Occam's Razor, and that the main issue lies in its vague definition which causes the problems for theory construction as well as experimental design.

Furthermore, there are three acknowledged discourse domains in the related studies: major/job, life story, native cultures[13, 14, 18], from which great IL variation has been detected. However, such classification exposes serious problems.

Firstly, there is no clear way to categorise discourse domains, which blocks the way of forming a theory in the first step. One could not actually distinguish 'major/job' from 'life story' since the former is a part of the latter. All aspects of one's 'major/job' and 'life story' are bonded with their 'native cultures' closely. If there is no certain typology of the concept, the predictions of future events and the explanations of past events cannot be made and the sense of understanding cannot be achieved[24].

Secondly, 'major/job' may be a relatively restricted discourse domain, but topics of 'life story' and 'native cultures' are too broad as a basis to design empirical research and find patterns. For instance, the topics of 'hobby'[15] and 'food'[13, 36–38] were not non-domain topics in the strict sense if they were classified into the 'life story' domain, so variation seemed to not result from a domain topic versus a non-domain topic but two different domain topics. Better performance found in the 'major/job' topic but not in the 'hobby'/'food' topic was paradoxical to DDH that learners' IL would be enhanced when talking about domain topics.

Lastly, even though there may possibly be clear boundaries between discourse domains, the learners' speech cannot be controlled. Their IL production may not be shaped only by the topic itself but also by the questions asked. For example, an informant linked his answer in a non-domain topic about a folk tale to his domain topic 'job' as a psychiatrist by describing the psychological reactions from children when listening to the tale[16]. Hence the intention of eliciting non-domain production may invoke domain talk[17].

Therefore, due to the blurred boundaries between one's discourse domains and the difficulty of explaining their existence, it is suggested that the term 'discourse domain' falls out of use.

Since discourse domains are highly personal and dynamic, it is hard for researchers to draw a consistent global conclusion on its causes. It may be more reasonable to resort to a less ambitious hypothesis that the contextualisation cues such as topic, interlocutor, setting, etc. are analysed independently, based on which better predictions and higher possibility of generalisation may be guaranteed[22]. Whyte[18] also suggests that the Discourse Domain Hypothesis could be abandoned when investigating the relationship between topic and IL variation. Separate evaluation of the components of contexts may shed more lights on SLA.

6.3. Future Directions

As Whyte claims, the amount of research done regarding DDH as compared to its peak level in the last two decades of the previous century has manifestly decreased, but the phenomenon itself is worth studying. It remains evident that topic-based IL variation must be further examined, especially concerning questions on the reasons as well as processes within one's cognition. These do still indeed warrant thorough inquiry.

While previous research may have reported a lack of interest in DDH, recent work has started incorporating neurolinguistic and cognitive approaches to IL variation, which significantly revitalizes concern in the field. Miller et al.[39] investigate the activation of particular neural networks corresponding to different discourse domains during L2 processing using neurolinguistic techniques. This new line of research implies that discourse domains may have neurological correlates which affect one's ability to use a language. Furthermore, Gray and Nuttall[40] analyze the impact of disciplinary discourses on L2 studies, thus offering additional explanations on IL variation in a particular area of study. These developments suggest that even if the original DDH has a flawed conception, its essence still in its primary perceptions of the interplay between discourse conditions and language performance offers valuable avenues for inquiry.

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