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A Critical Review of Consciousness-Raising Approaches: Applied Linguistics vs. Systemic Functional Linguistics

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Abstract

This paper is a critical review of the notion of consciousness-raising approach in the mainstream Applied Linguistics (AL) and Systemic Functional Linguistics (SFL). It reviews the development of this approach from traditional grammarian perspectives to the recent developments in AL, and compares and contrasts this approach in AL with the notion of grammatical metaphor (GM) in SFL as a compatible resource for consciousness-raising. The paper concludes that SFL introduces new and developmental resources of consciousness at different times and spaces, which is subject to further linguistic investigations. It has also implications for the English language teaching and learning in EFL contexts.

Keywords: Grammatical consciousness-raising, Applied linguistics, Grammatical Metaphor (GM), Systemic Functional Linguistics (SFL)

1. Introduction

The consciousness-raising approach has long been deployed for teaching and learning English language under different theoretical frameworks and methods. According to Nassaji and Fotos (2004), the traditional grammarians are the pioneers who have noticed the importance of conscious grammar instruction in language pedagogies. Their focus, however, was confined to teaching and learning grammar for the sake of grammar. Corder (1973) is one of the pioneers who cast doubt on the efficacy of traditional grammar instruction in enabling the learners to acquire the language. He redefined the notion of grammar-based teaching from the "object to the aids of studying". (p. 331)

In the late 1980s and under the hegemony of Chomsky's syntactic theory of language, the applied linguists such as Rutherford (1987a, 1987b) and Sharwood-Smith (1981) reintroduced a new version of consciousness-raising in which the pedagogic and contextual importance of conscious grammar instruction was taken into account. Rutherford (1987b) argues that in spite of some ongoing disputes over the inclusion or exclusion of consciousness-raising from the theories of second language acquisition and classroom language teaching and learning, the idea is still supported and has a place in the language-teaching curriculum. However, he highlighted two important barriers: language theories and the role of learners. Rutherford (1987b) challenges language theories which consider the language as a product and language learners as uniformed participants—'tabula rasa'. He refutes the notion of language as an accumulation of linguistic entities in which the role of teacher is to clarify them to the learners. He rather argues that further research will clarify this notion with regard to grammatical processes and the learners' restructuring of earlier knowledge.

SFL as one of the leading linguistic theories investigates the importance of grammar not just through noticing the structure and forms or suggesting ways of integrating grammar and meaning, but in analysing grammar from social perspectives and within a given context. More specifically, SFL concentrates on the role of grammar in construing meaning-making which starts early in childhood and develops into different functional layers, i.e. the ideational, interpersonal and textual meta-functions as the child moves from infancy to school children and beyond to adulthood (Halliday 1975, 1993). Halliday (1994) and Halliday and Matthiessen (1999, 2004) identify GM as the main element for developing such consciousness across the three different time scales in Phylogenetic, Ontogenetic and Logogenetic in the English language. The arguments are based on collective findings from the case studies. However, in highlighting the role of contextual studies, Halliday and Matthiessen (2004) explain the mechanism of GM in bridging between text and context as—"transgrammatical semantic domain" (p. 597). Halliday and Matthiessen (1999) explain it through the options which GM creates at the level of lexicogrammar and correspond qualitatively and quantitatively with the external registerial complements. Martin (1997) extends the complementarities to a level beyond the register to genre in the context of culture.

For further explanation of the notion of consciousness-raising with regard to the recent theoretical progression in the mainstream AL and SFL, first their similarities and differences

will be addressed. Second, a brief overview of the notion of consciousness in SFL will be presented from the ideational, interpersonal and textual meta-functions. Third, an overview of the studies will be presented in relation to Phylogenetic in the history of scientific English; Ontogenetic in the native English child language acquisition, and Contextual in relation to GM and the development of academic writing in the native English language, ESL and EFL contexts.

2. Similarities and Differences between Consciousness-Raising in AL and SFL

There are similarities and differences between GM in SFL and consciousness-raising approach in the mainstream AL. Halliday's (1985) notions of GM as "a system of above" in "discourse semantics" (p. 342) has similarities and differences with what some prominent figures in the mainstream AL such as Rutherford (1987a, 1987b) describes as calling for the learners' attention to the target language features. However, unlike consciousness-raising in the mainstream AL, which has mostly concentrated on L2 language learners, SFL applied this notion to both native and non-native speakers and to different language functions. In order to find out what GM is and how it incorporates with and distances itself from the mainstream AL, first I shall review the sources of consciousness modelled by AL. Then I shall focus on the progressive definition of GM from its introduction by Halliday (1985, 1994) to its present status. This will be followed by explaining different functionalities of GM with reference to the ideational, interpersonal and textual metafunctions.

2.1 AL Perspectives on Consciousness-Raising

Similar to Corder (1973), Rutherford (1987b) introduces grammar as a problem-solving tool to identify the grammatical properties of language. In his grammar-based model the syntax has a pivotal role. Rutherford (1987b) has coined the term 'grammaticisation' to show the role of grammatical consciousness-raising in the target English language. Grammaticisation is manifested in improving the learner's ability: (1) to grammaticise topic-comment into subject-predicate; (2) to utilize grammatical devices to express relations between form and meaning; (3) to generate verbs and make argument through verbal nouns; and (4) to produce subordination and coordination between sentences. As it can be observed, the type of consciousness-raising here is mainly hinges on syntactic properties of the target language.

Accordingly, Rutherford (1987b) argues that if consciousness-raising is conducted with audiences whose language is not English, they need to be made aware of such characteristics. He represents this notion through the relationship between the English grammar—syntax and semantics. In this model, grammar is reflected in the syntactic relationship, and the syntax does not refract semantics. That is to say, syntax is situated at the heart of this model and it coordinates between the choices from syntax and semantics. The following figure aims to represent this relationship.

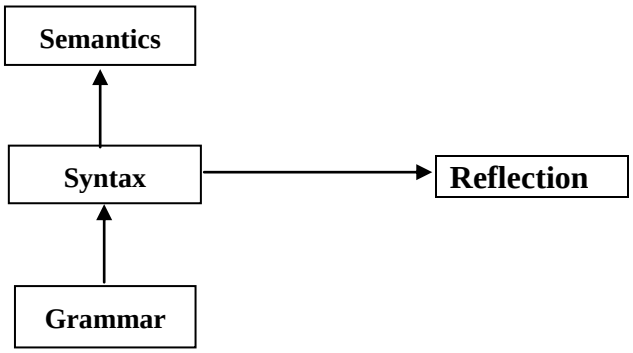

Figure 1. The Relationship between Grammar, Syntax and Semantics

According to Rutherford (1987b), in this case "the syntax is riding roughshod over the semantics" meaning special challenges will be created for L2 adult learners (p. 214). That is, not all items in the mother tongue of an individual will have correspondence in the target language and the learners will need to learn those new features. However, this view of language organisation places the syntax at the centre and renders the semantics as secondary. This model of consciousness-raising, therefore, involves looking 'from below', where the choices are made from the syntax rather than the semantics.

Rutherford's (1987b) introduction of grammaticisation is also extended to contextual domains under the name of "pedagogical exploitation of grammaticisation" (p. 213). To indicate the pedagogical application, Rutherford (1987b) deploys the cluster 'sing-child-song' under two different discourse settings to indicate how new syntactic forms take place under different contexts. The first context is that "a man and a child appear on the stage" and in the second context "a song and a piece of piano is played at the end of a programme" (p. 214). According to Rutherford (1987b), in the first context the most likely form which is predicted for the cluster "sing-child-song" is "The child sang a song" (p. 214), where according to Chafe's (1972) given, new principles, the child is given, which is thematic and it is raised earlier into consciousness than a song which takes the indefinite article as new and is rhematic and comes later to consciousness. While in the latter the most possible syntactic organisation might be "A song was sung by a child" where the passive instead of active or probably an inclusion of embedded clause in between takes place (p. 214). Rutherford (1987b) takes the semantics as shared in both settings and points to the role of discourse as the reinforcing factor for different grammatical choices.

Rutherford (1987b) also argues that the problem-solving activity needs to be derived from the learners' field of activities otherwise they will treat the grammar as something 'objectified' or a 'product' that they must refer to. His best solution is to immerse the learners in the target language situation, wherein different pedagogical experiences coalesce.

2.2 SFL Perspective on the Notion of Consciousness-raising

SFL shares some similarities and differences with the mainstream AL. Although the

investigation of consciousness in both of them is from the grammatical pole, SFL investigates it from the functional point of view and from different time scales at the developmental stages. The notion of consciousness in SFL is equated with the realisation of elemental metaphors, i.e. congruent and metaphoric as well as the realisation of "fractal types", i.e. the collaboration between two motifs of expansion and projection with "phenomenal domains", i.e. element, figure, and sequence (Halliday and Matthiessen 2006, p. 223). In this regard, GM has three developmental definitions and I shall discuss them in the following sections.

2.2.1 The First Phase in Defining GM

Halliday (1985, 1994) in introducing the notion of GM appeals to lexical metaphor and argues that there are similarities between the lexical metaphor and GM, so that in both of them "a similar form of rhetorical transference is taking place" (p. 340). If in GM a meaning which would be realised congruently in a verbal group is realised metaphorically in a nominal group, similarly the same transference of meaning happens in the lexical metaphor at the same grammatical form but with different lexical items. For instance, consider the following example which is taken from Ravelli (1999, p.5);

He's always chasing *skirts*.

In this example 'skirts' is a metonymy for girls and both skirts and girls belong to the same grammatical class of nouns, but they are from different lexical items. In this example, the speaker's meaning is realised metaphorically not through different grammatical forms but different lexis. The core issue, therefore, is that in lexical metaphor the rhetorical transfer of meaning takes place.

Following this distinction, Halliday (1985) concentrates on GM and divides it into two distinct types of the ideational and interpersonal GM. SFL designates different communicative roles to these metafunctions in the English language. The first is related to the content of the message, i.e. what is happening or who or what is involved with this happening, etc., while the second is concerned with the message as interaction, i.e. giving or demanding. As an example of the ideational metaphor, consider the following examples by Ravelli (1985, 1999, p. 2);

1) The bomb exploded at Hiroshima.
2) The explosion of bomb at Hiroshima

In the above examples, while the first one is a complete clause, i.e. consisting of a 'process', 'participant' and 'circumstance', the second one is not a complete clause because there is no constituent acting as a verb. Instead, as a result of the shift from the material process, i.e. exploded to a noun, i.e. explosion the clause has shifted from a 'clause' to a 'nominal group'. Though these two clauses share a common meaning, they are different in grammatical realisations: clause vs. group. In Halliday's (1985, 1994) terms, the second example is the metaphorical realisation and it is the source of new consciousness. That is, the metaphorical mode is extended from the lexical to the grammatical pole of continuum. Therefore, Halliday (1994) introduces the nominal styles as the major type of GM in the English language which is the result of a pre-selection process at the higher stratum available to the speaker or writer.

In SFL, the tri-stratal model from the bottom consists of phonology, lexico-grammar and semantics. In early development of this model, Halliday (1985) identified one meaning realised in different forms: the congruent and metaphoric. This definition indicates the system of choice from "*above*" with one meaning which has two realisations at the lexico-grammar.

Ravelli (1985, 1999) states that there are advantages and disadvantages associated with this model. In this model, the metaphorical meaning is related both to the lexicogrammar and semantics. Therefore, the 'feedback effect' to the system is shared between them. According to Ravelli (1985, 1999), in spite of this shortcoming the separation of meanings in this model is reinforced through its realisation.

The alternative view by Halliday (1985), which is based on the outcome of studies in artificial intelligence, takes a broader perspective. In this model, "the semantic compound" (Ravelli, 1999, p.104) is theorised as a source for the metaphorical realisation and the interpretation of metaphor. According to Ravelli (1999), in this way GM is similar to a 'pun' in which two meaning come together to form another. It is also compatible with the meta-functional theory developed in SFL. That is to say, 'what we say' and 'how we say it' are two different things, but in the meta-functional theory they are treated as inseparable. The demerit of this definition, however, is that the separation of meaning here is not maintained at the lexicogrammar.

In spite of the fact that at that time these two definitions were available, Ravelli (1985, 1999) selected the first definition with one meaning and different realisations. She justifies this selection mainly for its lack of theoretical development and the idea that the separation of meaning through the realisation at the level of lexicogrammar makes it possible to adopt it in the system network.

2.2.2 The Second Phase in Defining GM

Halliday's (1998) second definition cites stratal interaction between the semantic and the lexicogrammar as a source for the emergence of GM. It is based on two salient characteristics of content plane, i.e. stratification and space. Halliday (1998, p.190) argues that "the stratified system is an inherently capable resource for producing metaphoric expressions". He maintains that since the grammar is a functionally stratified system then "[it] has the power of construing, by the same token (that is, by virtue of being stratified) it can also demonstrate, and re-construe along different lines" (Halliday 1998, p.190). That is to say, the stratification of grammar paves the ground for construing congruent and re-construing metaphoric expressions. The mechanism for the generation of GM is "the realignment between the strata and the remapping of the semantics onto the lexicogrammar" (Halliday 1998, p.192). The space between two strata in content plane, i.e. semantic and lexicogrammar, and consequently the dissociation of congruent patterns form a kind of pun which triggers the emergence of GM.

Halliday and Matthiessen (1999) assign the ideational metafunction a place where GM occurs. Accordingly, the experiential metafunction construes our inner and outer experiences and interrelations between them through categories in language. In English language these

categories and the relationship between them are formed through clause complexes, clauses and relators. Halliday and Matthiessen (1999) define this relationship through the notion of Phenomenon:

The phenomena of experience are of three orders of complexity: elementary (a single element), configurational (configurations of elements, i.e. figures) and complex (a complex of figures, i.e. a sequence)… (p. 48)

Therefore, the three categories of elements, figures and sequence are semantic constructs and act symbolically in relating experiential stratum at conceptual level as realised at the lexicogrammatical stratum.

2.2.3 The Third Phase in Defining GM

SFL as a social-constructivist theory not only looks at language from a semogenetic perspective, but it focuses on context and socio-cultural dimensions as well. Third and the most recent identification by Halliday and Matthiessen (2004) assigns GM as a gateway between linguistic contexts on the one hand and a new horizon for construing various 'discursive events' (Halliday and Matthiessen, 1999) and 'agnate forms' (Ravelli 2003) beyond language on the other. In fact, Halliday and Matthiessen's (2004) third identification of GM follows the principles of previous studies, where stratal remapping within the content plane is regarded as the main factor in the emergence of GM. However, in this identification a step is taken forward and the emergence of GM is seen from complementarities between text and context. This identification is a crucial step in expanding the domain of consciousness on the one hand and justifying the inherent nature of GM in bridging between linguistic and non-linguistic contexts on the other. In this regard, SFL incorporates with the mainstream AL such as Rutherford (1979) who cites that there is "a parallel need for grammar and discourse" and the mechanism of how "grammar encodes discourse" so that they can be included in a language pedagogy (pp. 67-68). However, as discussed, there are fundamental differences in considering the system of 'below' in the mainstream AL approach and the evolutionary system of 'above' in SFL. In the following sections, I shall discuss how SFL incorporates different discourse dimensions in relation to the deployment of GM by focusing at three dimensions of Phylogenetic, Ontogenetic, and Logogenetic case studies.

2.2.4 A Brief Account of Phylogenetic Case Studies in Relation to GM

Halliday (1987) distinguishes between two constructions in the clause style: "attic and doric" (p. 147). The 'doric' style refers to the everyday commonsense discourse which contains high number of verbs. In contrast, the 'attic' style can be found in written discourse, which has high lexical density and structural complexity. Halliday (1985) argues that most of the attic style in English is the result of nominalisation. Halliday (1988) highlights the role of nominalisation in establishing the flow of discourse in Theme, Rheme and Given, New relationship. He argues that nominalisation as Rheme in the thematic structure of the clause will be typically foregrounded as the New in the information structure so that it can be backgrounded as Theme and Given in the following clause. From Halliday's (1988) perspective, the emergence of this new feature in English science writing was a major leap in

the development of science writing since the late 17th century. The off-spring of this view was the investigation of the history of English science writing from a new perspective. Halliday (1988) and Halliday and Martin (1993) investigated the evolution of scientific English from early science discourses up to the late twentieth century. The result of investigations was the recognition of two phases in the history of English science writing. In the first phase, Chaucer's early science writing was detected as an early sign of science language in English. The second stage was Newton's science writing, where Halliday and Martin (1993) identified a huge change in science discourse by the inclusion of mathematical layer in Newton's Treatise on Optiks.

Inspired by Halliday and Martin's (1993) notion of GM in the evolution of science writing, Banks (2003) initiates a new perspective to this evolution. Banks (2003) moves beyond the contextual factors of mode, tenor and field of discourse and investigates the motifs of meaning making in the context of culture. He compares Halliday's (1998) and Ravelli's (1985, 1999) classifications of GM and states that the ideational resource in these categorisations are classified differently. However, Banks (2003) adopts Ravelli's (1985, 1999) categorisation for his studies.

Banks (2003, 2008) looks at socio-cultural impacts of context on the development of GM. First of all, he starts with a critical investigation of Halliday's (1988) and Halliday and Martin's (1993) recognition of Chaucer's and Newton's writings as the initial instances of scientific English. Banks (2008) refers to the role of genre and claims that further examination is required to identify the role of socio-cultural circumstances in the emergence of nominal styles. For instance, he equates Chaucer's text with the modern type, though with some differences, and argues that it is like 'how it works' type of discourse in which Chaucer teaches his young son, Lewis, how to exploit the astrolabe. Among other things, Banks (2003) argues that Newton's style of writing emerged in 1662, an era in which the Royal Society was established. This society appreciated the rhetorical styles in scientific writings which included clarity, simple and straightforward account of experiments in science writing. Furthermore, the analysis of two random extracts from a short period before the emergence of Newton's Optiks reinforced his arguments. The texts belong to Robert Boyle from physical sciences and Power's article on biological sciences in 1660. The number of nominalisations per running words in the former is higher than the latter. Banks (2003), therefore, concludes that other than immediate disciplinary impacts, GM as a rhetorical strategy had already been in practice.

Banks (2003) extends his research at different time spans to reveal the impacts of different socio-cultural contexts at different times. His investigation of the deployment of GM in physical and biological sciences from 1660 to the end of 19th century revealed that compared with the biological science the deployment of GM in the physical science has remained almost static for over 150 years. Banks (2008) extends his investigation to the early and late twentieth century in 1910, 1913 and in 1996 where he finds the continuous increase in the rate of nominalisation in the biological science. Furthermore, he finds that in the late 19th century both the physical and biological sciences were acting in the same way. He relates this phenomenon to two factors: the first one is the change of method in the biological science

from the description to the experimentation; and the second the shift of nominalisation in the biological science from the head noun to modifiers.

2.2.5 A brief Account of Ontogenetic Case Studies in Relation to GM

Based on the findings from a case study, Halliday (1975) divides the ontogenetic into three categories; infancy, transition to mother tongue and transition into dialogue.

According to Halliday (1975), after proto-conversational period the protolanguage is the first stage of child's language progression. This period lasts around six to nine months. By 1 ½ years old the child transforms into the mother tongue (Halliday, 1975; Painter, 1984; Torr, 1997). According to Halliday (1998b), the sources for the protolanguage can be "material, imitations or just plucked out of air" (p. 12). Children have not yet built up their semiotic resources to construe the world. There is no sign of lexico-grammar and child's behaviour is not treated like an adult. At this stage, a child only produces signs and gestures, with no semiotic characteristic connected to the lexicogrammar. However, Halliday (1998b) argues that these signs have the capability of transition onto meanings. Each sign acts as an "instantiation of some meaning potential", which has no link with other instances in the system (p.12). This means that the system network has not developed to the capacity of adult language.

Painter (1984, 2003) finds similar processes happening at the protolanguage. She also finds that at the early stages of child language development there is no duality or transference of meaning at the content plane. As such, the system is premature and for every single meaning there has to be "a new sign-expression", which is carried out through vocalization (Painter, 2003, p.152). In spite of the lack of duality to make the meaning-making possible, Painter (2003) believes that "the behaviours have the potentiality of transferring semiotic gesture" into the metaphoric use of language. (p.153)

According to Halliday (1975), moving to the mother tongue is accompanied by some dramatic changes in the protolanguage. Halliday (1998b) observes that the deconstruction of proto-linguistic signs and the insinuation of grammar between the content and the expression planes take place at two phases. The first one is the stratification of child's language into "content and expression planes and its maturation" so that by the second year child is able to construe formal and abstract things into the system (p.18). The result of this maturation ends in the free play between the semiosis, which is a new dimension in the child language development. Halliday (1975) argues that this free play is not haphazard and there are developmental stages for acquiring the mother tongue.

The second phase is the stratification of content planes into the ideational and interpersonal metafunctions. Halliday (1975) argues that by this stage "the functionality has become intrinsic to the system" (p. 19). That is to say, every instance becomes multifunctional because the system builds up onto the grammar and no longer the one-to-one mode of meaning-making are at work. It changes into a multifunctional mode in the content plane along with the free play between the semiosis, i.e. the glide between the ideational and interpersonal modes. The metafunctions are still in early forms of proto-transitivity and

proto-mood. Halliday and Matthiessen (2004, 2006) classify the ideational as the domain of experiential meaning, which is referential in nature and give a broader spectrum to the interpersonal meaning as a colourful domain.

Halliday (1998b) calls this complex process of incorporation between the expression and content plane as "prosodic features" (p. 21). These features are developed in a one year old child but s/he cannot separate them yet. By the third year, the child has already developed this ability and s/he can both separate and combine them together, along with different voice quality. If it was random in the protolanguage, it is systemic now.

Painter (1984, 2003) also confirms that the meaning transfer from the protolanguage to the mother tongue is not iconic but dialectic. Similar to Halliday (1975, 1988b), Painter (2003) finds this stage of child language acquisition metaphoric. She explains it by using three observations from her case studies. The first one is the glide of expression in different contexts, i.e. the abstract and concrete. For example, she has observed that Hal deploys the word 'cat' by both seeing the animal as 'observation' in the material world and in its abstract and imaginative sense. The second one is likeness. Painter (2003) observed a two year old child comparing the chopsticks to straws, "they like straws" (p. 156). The third is the playing with meaning to create humour and reflecting on feeling and behaviour. Painter (1984, 2003) discovers that Hal at 16 ½ months begins the semiotic expansion of material world. He puts a leaf on his head and calls it as a hat, which in fact is not a hat but a semiotic representation for something which looks like a hat. According to Painter (2003), between 16 ½ to 18 months he uses one expression teasingly for the same and different occasions. For example, he uses expression "oh-my dear" both in its use and in contexts such as "piling up pegs and swashing them down and saying oh-dear" (p. 156).

Transition from mother tongue into dialogue and its expansion throughout mid-childhood at primary school is a complex process. According to different ontological studies carried out by Halliday (1975, 1998b) and Derewianka (1995, 2003), GM develops around the ages of 9 to 10 years old. Halliday (1998b) argues that the transition from the mother tongue to dialogue happens by deploying the existent sub-systems to serve new functions. Halliday (1998b) calls this step in child language development as 'semantic blend'. It is the mixture of 'semantic simplex' and 'semantic complex'. The former relates to literal language, while the latter is concerned with the metaphorical deployment.

Following Halliday (1975, 1998b), Derewianka (1995, 2003) also asserts that the acquisition of GM occurs around nine or ten years old. Derewianka's (1995, 2003) longitudinal study of her son's language extended from the age 5 to 14. She collected Nick's written materials and categorized them according to genre and the deployment of GM. She then analysed the whole number of clauses produced at certain age within a particular genre. The taxonomy of GM developed by Halliday and Matthiessen (1999) is deployed to show the ontological trend in the development of different types of GM. Derewianka (1999, 2003) distinguishes certain steps in the development of GM. She discovers that certain steps are precursors for later development. These steps are 'transcategorisation, rank-shifting, embedding, faded metaphors including Process plus Range, and be/go plus circumstantial element' (for further

details refer to Derewianka 1995, 2003).

2.2.6 A Brief Account of Contextual Case Studies in Relation to GM

Ravelli (1985, 1999) is pioneer in the application of GM in contextual studies. Ravelli (1985, 1999) adopted Halliday's (1978) registerial factor of mode and his first definition of GM for her study. This was because at that time the theory had not developed to its present status. Ravelli (1985, 1999) investigated the impacts of mode of discourse in eight English texts. The result of her investigations indicated that the mode of discourse, i.e. spoken vs. written has a direct impact in the development of complexities in texts. She found that if in spoken texts this complexity was through the repetitive use of verbs, in written form it appeared in lexical density and structural complexity such as long nominal groups. Ravelli (1985, 1999) found the integrity of metaphor between the lexical and grammatical poles of lexicogrammatical continuum, in a sense that metaphoricity involves both lexis and grammar. At the same time, Ravelli (1985, 1999) suggested that there is a need to go beyond the register to genre and ideology to find more appropriate socio-political motivations for the identification of the role of context.

Martin's (1993) cross disciplinary comparison between science and humanities in GM deployment is another early example of contextual studies. Following Halliday's (1993) proposition that the deployment of ideational metaphor comes from the language of science, Martin (1993) compared GM deployment across two disciplines: science and humanities. The findings revealed that GM is used for different purposes in each discipline. While in science it was deployed for the technical taxonomy, the same resource was employed for pursuing 'a reasoned argument' in historical discourses.

Ravelli (2004) related the technicality and reasoning to the appropriate construction of hyper-Theme in the academic writing of the undergraduate management and history students. By appealing to Halliday's (1998a) notion of stratified content plane as the potential linguistic resource for referring and expanding in science discourses, Ravelli (2004) identified a dual functionality of hyper-Themes across the disciplines. This duality was in the development of basic frameworks for the argument through "anaphoric", "cataphoric" "referencing", and "distinctive lexicogrammatical and colligational patterns" (Ravelli, 2004, p. 105). Through the former it was found that the hyper-Theme not only develops a framework for the argument, but it has also the connective role throughout the text by referencing forwards and backwards. The latter is the deployment of discipline-specific lexicogrammatical resource for making the argument. Ravelli (2004) emphasises the role of conscious exploration of such differences from both pedagogic and analytic point of views for meeting the required academic literacy of students. Pedagogically, she argues that the explicit teaching of hyper-Themes can help learners to develop the basic framework for making arguments. Analytically, along with "semiotic abstractions and meta-discursive labelling" (Ravelli, 2004, p. 124), she refers to the role of GM in enabling the referring and rationalising across the disciplines.

Halliday and Matthiessen (2006) make a finer distinction between the language of science and technology as separate ideational resources. However, White's (1998) investigation

suggests that the relationship between the language of science and technology is mutually exclusive. White (1998) observes that "the one serving both as the other's servant and as the other's beneficiary" (p. 267). That is to say, these categories are dependent on each other and one provides the basis for the production of the other and vice versa. The language of science created through theories ends in the production of technocrat language, and this language in turn acts as a background for the realisation of the language of science. According to White (1998), this duality of construence in the ideational base also exists in Halliday's (1993) phylogenetic study of Chaucer's Treatise on the Astrolabe, where the construence of lexical resources and technicality appear to be the same but their inclinations in mobilizing lexicon and grammar are different. White (1998) argues that in lexicon science prefers Greek and Latin prefixes, whereas in modern technology the orientation is to use "long pre-modified nominal groups built from items drawn from the vernacular lexicon and the acronyms derived from these complex groupings" (p. 267). Likewise, in grammar, science favours modes of definitions in 'taxonomic spacing' while in technology the move is towards 'functionality of items' than their mapping into the system. White (1998) calls the role of the former as "lexicon revaleurisation" and the role of the latter as "lexicon extension", respectively. (p. 269)

There are other contextual studies which have investigated the deployment of GM from different perspectives. For instance, in investigating the role of field knowledge in IELTS task 2 written module development by native English and non-native students, Mickan (2000) and Mickan and Slater (2003) discovered that the native students have had better control over GM deployment than non-native students. Melrose's (2003) investigated GM deployments from the ideological perspective, and Thibault (1991; 2004) and Ravelli (1996, 2006) from intertextuality. From Thibault's (1991, 2004) point of view, the driving force behind GM deployment is the process of socialization at home, school, etc. where the child comes across other experiences through playing and doing. Ravelli (1996, 2006) also likens her model of modern museum as a kind of intertextual practice through which students are encouraged to attend this social event by means of fun and learning—creating their own specific 'semantic junction'.

Martin's (2006, 2009) investigation of the role of GM in mobilizing 'the reasoned arguments' and the creation of field knowledge is a new perspective in humanities and social sciences. In fact, Martin (2009) relates Halliday's (1998a) and Halliday and Matthiessen's (2006) notion of elemental metaphor and its realisation at the syntagmatic order to Bernstein's (1996, 2000) and Muller's (2000) notion of 'vertical knowledge' in science and academic writing. Among the three metaphorical realisations of elements, figures and sequences, the last category is identified as an important resource in shifting the reasoning from the inter-clause to the inner clause position. In English, the conventional way of reasoning takes place through conjunctions such as 'if, why, so, as, etc' (Halliday and Matthiessen, 2006). There are also other means of reasoning and the smooth flow of discourse such as "moves in dialogue and shift in register" (Halliday, 1998a, p. 204). However, in Halliday's (1998a) and Halliday and Matthiessen's (2006) notion of elemental metaphor the collaboration between 'fractal types' and 'phenomenal domain' at the syntagmatic order opens up a new justification for reasoning

in disciplines such as humanities and social sciences.

According to Halliday (1998a), if the construal of experience is congruently realised within a clause as a Theme, Rheme unit and acts as "a primary mapping of textual and ideational meanings", the metaphoric, the technical and nominalised clause act freely in the form of Given, New at discourse level (p. 203). The nominalised clause carries 'grammatical construence' and the produced technicality to the flow of discourse. The systemic representation of experience in Theme, Rheme units works collaboratively with the flow of information in Given, New. Therefore, two layers are active in relating the flow of information into discourse: Theme, Rheme units directly at clause level and Given, New implied though the whole or a stretch of discourse. These two constitute a system which any change in each pair co-varies with the others (Halliday and Matthiessen, 2004). That is, in the unmarked case, for instance, Given locates with Theme and New with Rheme. In marked cases, however, they change their role so that Given, for example, acts as Rheme, whereby Theme acts as New (Halliday and Matthiessen, 2004).

From the ideational point of view, the effect of this shift is the creation of field knowledge. From the interpersonal perspective, the deployment of GM changes the tenor of discourse (Martin, 1993, 2009). Halliday and Matthiessen (1999, 2004) also confirm that GM deployment affects the tenor and mode of discourse. Martin and White (2005) propose a framework for the investigation of the evaluative aspect of such nominalisations.

Consequently, a brief survey of three areas of linguistic development, i.e., phylogenetic, ontogenetic, and logogenetic demonstrates different trends in developing consciousness. For example, if this shift in phylogenetic and ontogenetic development is gradual, in logogenetic it is mostly context specific and different discourse dimensions have been influential in the emergence of specific textual resources. GM as an influential factor in such deployment shows the complementarities in lexicogrammatical realisation of nominal styles specific to academic writing on the one hand, and the change in the mode of meaning making on the other. It can, therefore, be claimed that GM as a developmental procedure is at work at different stages of language development and it is worthy of investigation at different linguistic layers for teaching and learning purposes.

3. Critics of GM

Halliday's (1985) notion of GM not only has been the focus of attention by educational linguists, it has absorbed other linguists' attention as well. Goatly (1996), for instance, has largely taken philosophical and psychological perspective in defining GM in which he argues that nominalisation is in harmony with ecology. In fact, Goatly's (1996) argument is against Halliday and Martin's (1993) stance on the role of nominalised language in science discourses in which nominalisation has been viewed both as 'functional' and 'dysfunctional' (Schleppegrell 2001). In the functional sense, nominalisation has been sought as the basis for the evolution of experimental science, enabling the development of technical taxonomies in science and as a tool for developing argument in humanities. In dysfunctional sense, nominalisation has been viewed as a violator of relativistic view of the world, since it construes a world of Things which sounds objective. Contrary to the latter, Goatly (1996)

argues that the deployment of GM in English language is consonant with the relativistic view or what he names as 'green grammar'. This argument stems from an ontological and ideological outlook rather than the social perspective proposed in SFL. In fact, Goatly (1996) marginalises linguistic analysis within a specific context for ontological, philosophical and psychological ends.

In response to Goatly's (1996) argument, Schleppegrell (2001) clarifies the social perspective proposed in SFL. She highlights the role of modern society in destroying the relativistic view and its realisation in the English language through the creation of nominalisation. First, by referring to the educational context, Schleppegrell (2001) argues, textually speaking, congruent form is prior to GM and in explaining nominalisation one needs to appeal to its congruent forms, without which students will be frustrated. Second, by referring to van Leeuven (1996), she argues that even when linguistic agency is specified, the social agency may be obscured. Schleppegrell (2001) by analysing some middle school students' texts on environmental issues indicates that how students' deployment of generic agents such as "people, humans and we" or nominalised form such as "habitat loss, ozone destruction and depletion of the rain forests" serve to distance the agents from their actions—destroying the planet (p. 227). Therefore, Schleppegrell (2001) concludes that the problem of language and ecology is in the lack of information in nominalised phrase and diffusion of responsibility from specific persons to a larger institution or community through the agents such as 'people' in transitive clauses.

Goatly (2011) revisits the above perspectives again in the new edition on the topic. Although he has tried to fill the gap by adding a chapter on the linguistic analysis of metaphor and the function of metaphor in social context, still the discussion hinges on the ideological, philosophical and cognitive aspect of metaphor.

Hengeveld and Mackenzie's (2008) theory of Functional Discourse Grammar (FDG) is another criticism of the notion of GM. Although there are many similarities between SFL and FDG, the language, notation, scope and the aim of the theory differs from SFL. A part of this theory generalises on the notion of nominalisation and claims that nominalisation and its lowering status from transitivity structure in the form of a clause to a nominal group takes place through two processes—'de-verbalisation' and 'substantivisation'. The former is the process of nominalisation which ends in 'de-clausification' and the later is the formulation of nominal form just out of structural properties of some languages. The heart of the debate between FDG and SFL lies in differentiating between these two types of nominalisation. Although Halliday's (1994) and Halliday and Matthiessen's (2004) notion of GM is largely investigated in the English language, FDG extends it across different languages and claims that the process of substantivisation in some languages is the only option for expressing 'complementation', 'relativisation' and 'surprise' (Mackenzie, 2011). This was a centre of the debate between Professor Matthiessen and Professor Martin on the one hand and Professor Mackenzie as a presenter in the 38th SFL Congress in Lisbon, Portugal on the other. As a participant in this plenary session, I found Professor Matthiessen's remarks complementary to the notion offered by FDG. He affirmed that this notion is likely to be different across other languages and it requires further typological studies. At the same time, he emphasized that

the consequence of nominalisation in the English language and other similar languages has ended in lowering the 'challengiblity'. He stated that the remapping of transitivity structure to the modal in the interpersonal is equal to the notion of de-verbalisation in FDG. He contended that the change in the environment from a transitivity clause-type to a nominal group reduces the interpersonal challenges. However, Professor Martin was still suspicious of the distinction between the process of de-verbalisation and substantivisation. The suspicion was further reinforced when it was found that the presented examples were only de-verbalised forms and not specifically substantivisation—they were processes which were transformed into nouns.

4. Conclusions

In this paper a comparison was made between the notion of consciousness-raising in the mainstream AL and GM in SFL. It was assumed that in spite of some similarities, SFL has moved beyond different domains. While the mainstream AL extended the domain of consciousness-raising from traditional approaches to language teaching and learning from grammar for the sake of grammar to grammar as an aid for learning and how different discourses can be effective in such consciousness, SFL extended the domain of consciousness not only linguistically across different layers but at different domains such as language development throughout the history of English science writing, child language acquisition, and discourse practices across different disciplines. If the focus of consciousness-raising in the mainstream AL was only on syntactic properties of language and mostly in L2 contexts, SFL moved it beyond syntax at the level of lexicogrammar to discourse semantics from historical, infants' language acquisition, and contextual domains. However, there are still some attempts to broaden the domain of GM to ontological, philosophical and psychological domains (Goatly, 2011). These developments have implications not only for linguists and language teachers and learners, but for psychologists and language therapists who are studying language developments and language disorders, respectively.

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Glossary

AL: applied linguistics.

GM: grammatical metaphor.

SFL: systemic functional linguistics.