

Clinical Linguistics: Adult Neurogenic Disorders

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1. Introduction

Clinical linguistics has been defined as “the application of linguistic concepts, theories, and methods to the study of language disorders” (Cummings, 2017), or, more broadly, as “the application of the linguistic sciences to the study of language disability in all its forms” (Crystal, 2001, p. 673). It has also been suggested that clinical linguistics can inform linguistic theory, as data from pathological speech can be used to critically evaluate competing linguistic theories (e.g., Ball & Kent, 1987; Perkins & Howard, 1995). In other words, clinical linguistics encompasses a bidirectional relationship between “pathological language” and linguistic theory.

When it comes to linguistic data from adult neurogenic disorders (e.g., stroke-induced aphasia) and linguistic theory, although such a bidirectional relationship exists to some extent, it is safe to claim that linguistic theory has informed the study of pathological language to a greater extent than the opposite (Garraffa & Fyndanis, 2020). This is also the case when considering the relationship between language impairments in adult neurogenic disorders and

the latest version of generative linguistic theory, that is, Minimalist Program (e.g., Chomsky, 1993, 1995a, 1995b, 2000, 2001).

1.1 Goals of the chapter

The primary goal of the present chapter is to illustrate how minimalism has informed adult neurogenic disorders such as stroke-induced aphasia and dementia of the Alzheimer type (DAT) thus far. To this end, I provide a non-exhaustive review of accounts of language impairment in adult neurogenic disorders that have been inspired by notions and constructs from the Minimalist Program. Some of the minimalist constructs that inspired accounts of patterns of (morpho)syntactic performance reported in stroke-induced aphasia include *feature-checking* (e.g., Friedmann & Grodzinsky, 1997), *Merge* and *Move* (e.g., Grodzinsky & Friederici, 2006; Hagiwara, 1995; Thompson & Shapiro, 2007), and the distinction between *Logical Form(LF)-interpretable* and *LF-uninterpretable features* (see, for example, Fyndanis, Varlokosta, & Tsapkini, 2012; Nanousi, Masterson, Druks, & Atkinson, 2006; Varlokosta, Valeonti, Kakavoulia, Lazaridou, Economou, & Protopapas, 2006). It should be noted that both representational and processing accounts of (morpho)syntactic impairment in agrammatic aphasia have employed minimalist notions/constructs. Representation accounts posit total or partial loss of (morpho)syntactic knowledge. Processing accounts argue that, while (morpho)syntactic knowledge is preserved, access to or implementation of such knowledge is impaired (for more details about processing and representational accounts, see section 3). Accounts of impaired (morpho)syntactic processing in production or/and comprehension that will be reviewed here include the *Tree Pruning Hypothesis* (Friedmann & Grodzinsky, 1997), Hagiwara's (1995) and Burkhardt, Avrutin, Piñango and Ruigendijk's (2008) accounts, the *Treatment of Underlying Forms* and the related *Complexity Account of Treatment Efficacy* (Thompson & Shapiro, 2005, 2007; Thompson, Shapiro, Kiran, &

Sobecks, 2003), the *Interpretable Features' Impairment Hypothesis* (Fyndanis et al., 2012), and the *Tense Underspecification Hypothesis* (Wenzlaff & Clahsen, 2004, 2005). All these hypotheses/accounts have employed minimalist notions. Moreover, the vast majority of these accounts have been developed based on the off-line performance (i.e., accuracy data) of individuals with agrammatic aphasia, as the real-time implications of linguistic mechanisms described in generative grammar are unclear (Matchin & Rogalsky, 2023; Lenneberg, 1973)

A second goal of the current chapter is to discuss whether the hypotheses/accounts above are characterized by cross-linguistic validity, as well as to discuss the implications of choosing between contrastive syntactic analyses when testing hypotheses/accounts of (morpho)syntactic impairment in aphasia and related disorders.

2. Minimalist notions/concepts in studies of adult neurogenic disorders

2.1 Feature-checking

Framed within minimalist checking theory (Chomsky, 1993) and following Pollock's (1989) split inflection hypothesis, Friedmann and Grodzinsky (1997) formulated the *Tree Pruning Hypothesis* (TPH), which posits that agrammatic aphasia results from a pruning of the syntactic tree, which usually occurs at the Tense node. According to the TPH, pruning of the syntactic tree at the Tense node renders all nodes above the pruning site (including tense) inaccessible; instead, all nodes below the pruning site (e.g., the Agreement Phrase) remain well preserved. The TPH (Friedmann & Grodzinsky, 1997) is a representational account.

2.2 Merge – Move

In a study on functional categories in agrammatic aphasia that discussed production and comprehension data from Japanese, French, Italian and verb second languages, Hagiwara (1995) argued that the lower in the syntactic tree a functional category, the more accessible to individuals with agrammatic aphasia it is, and thus the less likely it is to be impaired.

According to the author, this is attributable to the fact that the lower the position of a functional category in the syntactic hierarchy, the fewer the times that the operation *Merge* has to be implemented. Since implementing *Merge* is computationally costly, and given that individuals with agrammatic aphasia have processing limitations (e.g., Caplan & Hildebrandt, 1988), it is hard for these individuals to produce or comprehend functional categories requiring multiple implementations of *Merge*. As a result, the higher a functional category in the syntactic tree, the more susceptible to impairment it is. Although Hagiwara's (1995) account and the TPH (Friedmann & Grodzinsky, 1997) make similar predictions in that they both expect higher projections to be more prone to impairment than lower projections, the former is a processing account. (As mentioned in section 2.1, the TPH is a representational account.)

Another processing account has been recently proposed by Burkhardt et al. (2008), who attributed the impaired on-line processing of reflexive elements (such as coargument reflexives and logophors) attested in agrammatic Broca's aphasia to a slowing-down of the *Merge* operation, that is, to a delay in syntactic structure building. As a result, "[...] the arguments of a particular predicate become available at a later-than-normal processing moment" (Burkhardt et al., 2008, p. 132) and, thus, "agrammatic patients resolve reflexive-antecedent dependencies *in a protracted manner*" (op. cit.). According to the authors, this temporal delay in the building of syntactic structure reflects a processing limitation that characterizes persons with agrammatic aphasia. In other words, Burkhardt et al. (2008) implicitly assume that, although in agrammatic Broca's aphasia the core language operation *Merge* is available, its implementation is impaired because mechanisms that mediate language processing, such as speed of processing or related cognitive constructs such as working memory (Fry & Hale, 1996, 2000; Salthouse, 1992), are affected (see also Tsimpli, Kambanaros & Grohmann, 2017). Similar implicit assumptions have been made by Hagiwara

(1995). The “slow syntax account” proposed by Burkhardt et al. (2008) is consistent with the notion of *weak syntax*, introduced by Avrutin (2006).

One of the most influential linguistically-informed intervention approaches to agrammatic aphasia, the *Treatment of Underlying Forms* (TUF), has been developed by the group of Cynthia Thompson (see Thompson & Shapiro, 2005, and references therein). The TUF is framed within Generative Grammar and utilises constructs from both the Minimalist Program (e.g., Chomsky, 1995a, 2000, 2001) and the Government and Binding Theory (e.g., Chomsky, 1981). This approach is based on empirical evidence that training syntactically/structurally complex sentences, such as semantically reversible sentences including object-extracted relative clauses (e.g., *The man saw the artist who the thief chased*), results in greater generalisation to untrained but structurally related sentences, such as reversible object cleft sentences (e.g., *It was the artist who the thief chased*) and reversible object wh-questions (e.g., *Who did the thief chase*), as compared with training less complex sentences (e.g., Ballard & Thompson, 1999; Thompson, Ballard, & Shapiro, 1998; Thompson, Shapiro, & Roberts, 1993; Thompson et al., 2003). To account for these findings, Thompson et al. (2003) formulated the *Complexity Account of Treatment Efficacy*, which states that training syntactically/structurally complex sentences results in generalisation to untreated less complex sentences only when the latter involve syntactic processes relevant to the former and when the latter are structurally in a subset relation to the former. As illustrated in Thompson and Shapiro (2007), the structural similarities and differences between sentences differing in syntactic/structural complexity can be explained by utilising two minimalist constructs involved in sentence formation, that is, *Move* and *Merge*. For instance, the sentences *The man saw the artist who the thief chased*, *It was the artist who the thief chased* and *Who did the thief chase?* are similar in terms of *Move* in that all three involve wh-movement (in particular, movement of the object), but they also differ in terms of *Move*, as in

the first two sentences wh-movement takes place within an embedded clause, whereas in the third sentence wh-movement takes place within a matrix clause. These sentences also differ in terms of *Merge*, as this syntactic operation is implemented more times in structurally more complex sentences such as *The man saw the artist who the thief chased* and *It was the artist who the thief chased* than in structurally less complex sentences such as *Who did the thief chase?*.

The minimalist construct of *Move* has also been utilised by Grodzinsky and Friederici (2006), who argued that the receptive abilities of individuals with Broca's aphasia are selectively impaired, as they are deficient in *Move_{XP}*, but not in *Move_V*. That is, while persons with Broca's aphasia are able to link distinct positions that a verb may occupy (for example, in English yes-no questions), they have difficulty linking phrases XP (usually determiner phrases) to silent but syntactically active positions (for example, in passive structures). Moreover, based on evidence from lesion, PET and fMRI studies (e.g., Ben-Shachar, Hendler, Kahn, Ben-Bashat, & Grodzinsky et al., 2003; Ben-Shachar, Palti, & Grodzinsky, 2004; Bornkessel, Zysset, Friederici, von Cramon, & Schlesewsky, 2005; Caplan, Vijayan, Kuperberg, West, Waters, Greve, & Dale, 2002; Stromswold, Caplan, Alpert, & Rauch, 1996), Grodzinsky and Friederici (2006) argued that the neural basis of *Move_{XP}* is the left inferior frontal gyrus and the superior temporal gyrus bilaterally.

2.3 Distinction between interpretable and uninterpretable features

The distinction between *LF-interpretable* and *LF-uninterpretable features* (Chomsky, 1995a, 2000, 2001) has been mostly exploited by studies on Greek aphasia and DAT. Varlokosta et al. (2006), Nanousi et al. (2006), Fyndanis et al. (2012) and Fyndanis, Arcara, Christidou and Caplan (2018) investigated the production and/or comprehension of functional categories in Greek aphasia. All four studies found that categories bearing interpretable features, such as

grammatical aspect and tense, are more impaired than categories bearing uninterpretable features, such as subject-verb agreement. Building on previous work on aphasia by Avrutin (2000) and Kok, van Doorn and Kolk (2007), Fyndanis et al. (2012) put forward the *Interpretable Features' Impairment Hypothesis* (IFIH), which states that functional categories bearing LF-interpretable features are more demanding in terms of processing resources than categories bearing uninterpretable features, because the former require processing and integration of grammatical knowledge and conceptual/extralinguistic information, whereas the latter only involve implementation of grammatical knowledge. The distinction between *interpretable* and *uninterpretable features* has also been employed in research on DAT. Fyndanis, Manouilidou, Koufou, Karampekios and Tsapakis (2013) found that Greek-speaking individuals with DAT are more impaired in the production of grammatical aspect and tense than in the production of subject-verb agreement, and suggested that the IFIH (Fyndanis et al., 2012) can also capture data from DAT. Based on Greek and Italian data from DAT, however, Fyndanis, Arfani, Varlokosta, Burgio, Maculan, Miceli et al. (2018) revised the IFIH proposing that functional/morphosyntactic categories bearing interpretable features (and thus requiring integration processes) are more demanding than those bearing uninterpretable features (and thus not requiring integration processes) only if they are instantiated through bound morphemes/verb inflection. Both the original IFIH (Fyndanis et al., 2012) and the revised IFIH (Fyndanis, Arfani et al., 2018) constitute processing accounts.

The distinction between *LF-interpretable* and *LF-uninterpretable features* is also relevant to the *Tense Underspecification Hypothesis* (TUH) (Wenzlaff & Clahsen, 2004, 2005), which was formulated to account for the pattern of performance exhibited by a group of German-speaking persons with agrammatic aphasia. The TUH is framed within the minimalist program (Chomsky, 1995a, 2000), which states that the Tense/Inflection (T/INFL) node hosts interpretable tense and (grammatical) mood features and uninterpretable

agreement (person and number) features. This hypothesis focuses on these features and states that, in persons with agrammatic aphasia, the mood and agreement features are well preserved, whereas the tense feature is underspecified. This underspecification leads to impaired performance in the production and comprehension of tense. Tense has been found to be more impaired than mood and subject-verb agreement not only in German (Wenzlaff & Clahsen, 2004, 2005) but also in English agrammatic aphasia (Clahsen & Ali, 2009). In contrast to the IFIH (Fyndanis et al., 2012), the pattern of performance predicted by the TUH (Wenzlaff & Clahsen, 2004, 2005) is not based on the distinction between *LF-interpretable* and *LF-uninterpretable features*. Instead, the predictions that the TUH makes largely rest on the following two assumptions:

- 1). According to Chomsky (2000), “[...] Agree is an operation that serves to check (or value) the uninterpretable person and number features of T/INFL against the interpretable person and number features of the subject. Under this view, subject–verb agreement presupposes the presence of T/INFL as the host of the uninterpretable features for Agree. Hence, the fact that agreement is largely preserved in agrammatics must be taken to imply that their grammars generate T/INFL.” (Wenzlaff & Clahsen, 2004, p. 66).
- 2). The mood distinction between realis and irrealis (i.e. the distinction between indicative and subjunctive mood) is primary, whereas the distinction between past tense and non-past tense is secondary.

Thus, the TUH (Wenzlaff & Clahsen, 2004, 2005) and IFIH (e.g., Fyndanis et al., 2012) make different predictions. Moreover, as noted by Garraffa and Fyndanis (2020, pp. 912–913), “unlike the TPH (Friedmann & Grodzinsky, 1997) or Hagiwara’s (1995) account, the TUH (Wenzlaff & Clahsen, 2004, 2005) attributes agrammatic speakers’ Tense deficits to morphosyntactic processes, not to impaired projection of the syntactic hierarchy. Importantly, the selective impairment within the T/INFL node does not directly affect other structural

layers, such as that of the Complementizer Phrase (CP). Therefore, the TUH does not rule out the possibility that persons with agrammatic aphasia may be impaired not only in Tense but also in (morpho)syntactic categories or structures associated with nodes located higher or lower than the T/INFL node”. Finally, unlike the IFIH (Fyndanis et al., 2012; Fyndanis, Arfani et al., 2018), the TUH is a representational account (see Wenzlaff & Clahsen, 2004).

3. Processing vs. representational accounts and minimalist constructs

Processing accounts usually attribute the various patterns of morphosyntactic impairment exhibited by persons with agrammatic aphasia to cognitive impairments (e.g., working memory limitations, slow processing speed, etc.) commonly present in this neurological condition. For instance, the IFIH (e.g., Fyndanis et al., 2012; Fyndanis, Arcara et al., 2018) assumes that some morphosyntactic categories (e.g., grammatical aspect, tense) are more demanding in terms of processing resources than others (e.g., subject-verb agreement), and the processing demands of the “difficult” categories often exceed the available processing resources – or the related working memory capacity – of persons with agrammatic aphasia, which results in impaired performance on the production and/or comprehension of computationally demanding morphosyntactic categories. Hence, the IFIH employed the minimalist construct of LF-interpretability as a theoretical tool that explains why some morphosyntactic categories pose more demands on the processing system than others do. This also holds for Hagiwara’s (1995) account, which used the minimalist construct of Merge — the implementation of which was considered to be computationally costly — to explain why individuals with agrammatic aphasia have difficulty producing and comprehending functional categories located high in the syntactic hierarchy (see section 2.2). The use of minimalist notions, therefore, does not imply the endorsement of a representational account (but see Matchin & Rogalsky, 2023). Accounts such as the IFIH (e.g., Fyndanis et al., 2012) and

Hagiwara's (1995) account successfully integrates (implicitly or explicitly) syntactic theory with psychological constructs such as working memory and processing resources. Another recent proposal linking different aspects of language impairment in agrammatic aphasia to working memory (in particular, to phonological working memory or morpho-syntactic working memory) has been put forward by Matchin and Rogalsky (2023). However, they have not attempted to relate these two working memory systems to minimalist constructs.

4. Are the hypotheses/accounts above cross-linguistically valid?

In section 2, I illustrated how minimalist constructs informed various accounts of (morpho)syntactic performance in agrammatic aphasia or treatment programs targeting individuals with agrammatic aphasia. The hypotheses/accounts reviewed above were the TPH (Friedmann & Grodzinsky, 1997), Hagiwara's (1995) and Burkhardt et al.'s (2008) accounts, the TUF and the Complexity Account of Treatment Efficacy (see, e.g., Thompson & Shapiro, 2005), the IFIH (e.g., Fyndanis et al., 2012) and the TUH (Wenzlaff & Clahsen, 2004, 2005). Although all these hypotheses/accounts were formulated to explain specific data sets collected in specific languages, they are expected to have cross-linguistic validity. But are they cross-linguistically valid indeed? For some of the hypotheses/accounts above, the data speak against their cross-linguistic validity, while for some others more cross-linguistic data are needed to address this question.

Evidence against the TPH (Friedmann & Grodzinsky, 1997) and Hagiwara's (1995) account comes from several studies, including studies on Greek and English agrammatic aphasia. As mentioned above, the TPH states that morphosyntactic impairment in agrammatic aphasia is due to the "pruning" of the syntactic tree at a particular node, usually Tense, which results in the inaccessibility of all nodes above the pruning site; all nodes below the pruning site are spared. In a similar vein, Hagiwara (1995) predicts that the higher the position of a

functional/morphosyntactic category in the syntactic hierarchy, the more vulnerable to impairment in agrammatic aphasia it is, because processing it (in either production or comprehension) requires more implementations of the syntactic operation Merge, which is a computationally costly process. There is consensus among syntacticians that grammatical aspect is located low in the Greek syntactic hierarchy (in particular, right above the Verb Phrase), and certainly lower than subject-verb agreement (e.g., Alexiadou & Anagnostopoulou, 1998; Philippaki-Warbuton, 1998; Tsimpli, 1990). However, it has consistently been found that Greek-speaking persons with agrammatic aphasia perform significantly worse on grammatical aspect than on subject-verb agreement, in both production and comprehension (e.g., Fyndanis et al., 2012; Fyndanis, Arcara et al., 2018; Nanousi et al., 2006; Varlokosta et al., 2006; but see Protopapas, Cheimariou, Economou, Kakavoulia, & Varlokosta, 2014, who found this pattern in grammaticality judgment only). This suggests that both the TPH (Friedmann & Grodzinsky, 1997) and Hagiwara's (1995) account fail to explain the dissociations between verb-related morphosyntactic phenomena observed in Greek agrammatic aphasia, and thus these two hypotheses/accounts are not valid cross-linguistically. Moreover, some studies on English and Greek agrammatic aphasia reported impaired functional/morphosyntactic categories encoded in verb inflection (e.g., grammatical aspect and tense) in the face of well-preserved structures involving high layers in the syntactic hierarchy such as the CP (Dickey, Milman, & Thompson, 2008; Fyndanis, Varlokosta, & Tsapkini, 2013; Thompson, Fix, & Gitelman, 2002; Wang, Yoshida, & Thompson, 2014). Again, the findings reported in these studies provide evidence against the cross-linguistic validity of the TPH (Friedmann & Grodzinsky, 1997) and Hagiwara's (1995) account.

Neither the TUH (Wenzlaff & Clahsen, 2004, 2005) nor the IFIH (e.g., Fyndanis et al., 2012) have been tested adequately thus far. The TUH (Wenzlaff & Clahsen, 2004, 2005), for example, has been tested only by Clahsen and Ali (2009) who investigated the ability of

English-speaking persons with agrammatic aphasia to produce and comprehend tense, subject-verb agreement, and mood. Their pattern of performance was consistent with the predictions of the TUF (Wenzlaff & Clahsen, 2004, 2005). However, to address whether the TUF is cross-linguistically valid, this hypothesis should be tested in more languages and ideally by different research groups. The same holds for the IFIH (e.g., Fyndanis et al., 2012). It should be noted, however, that some evidence against IFIH's cross-linguistic validity is provided by Wenzlaff and Clahsen's (2004, 2005) and Clahsen and Ali's (2009) studies. The pattern of performance of German- and English-speaking individuals with agrammatic aphasia (Tense < Mood/subject-verb Agreement) reported in these two studies are not consistent with the IFIH (e.g., Fyndanis et al., 2012), as this hypothesis would expect mood to pattern with tense, given that both categories bear interpretable features.

Finally, the bulk of evidence for the TUF (Thompson & Shapiro, 2005) comes from treatment studies with English-speaking participants (e.g., Ballard & Thompson, 1999; Jacobs & Thompson, 2000; Murray, Ballard, & Karcher, 2004; Murray, Timberlake, & Eberle, 2007; Thompson et al., 1993; Thompson & Shapiro, 1995; Thompson, Shapiro, Ballard, Jacobs, Schneider, & Tait, 1997; Thompson, Shapiro, Tait, Jacobs, & Schneider, 1996; Thompson, Ballard, & Shapiro, 1998; Thompson et al., 2003). To the best of my knowledge, there are only a few published studies that used the TUF in a language other than English, in particular German (Adelt, Hanne, & Stadie, 2018; Schröder, Burchert, & Stadie, 2015; Stadie, Schröder, Postler, Lorenz, Swoboda-Moll, Burchert, & De Bleser, 2008). These studies lent some support to the cross-linguistic validity of this treatment approach, but clearly, the TUF should be used in more languages.

5. Choosing between contrastive syntactic analyses?

It is important to note that some of the existing hypotheses that have been formulated to account for the observed patterns of (morpho)syntactic impairment in aphasia make different predictions for a given language, depending on the theoretical view adopted. This has been illustrated by a recent cross-linguistic study on sentential negation in stroke-induced nonfluent aphasia (Fyndanis, Miceli, Capasso, Killmer, Malefaki & Grohmann, 2023). As shown in Fyndanis et al. (2023), the revised version of the IFIH (Fyndanis, Arfani et al., 2018) makes different predictions for the ability of Italian-speaking individuals with nonfluent aphasia to produce sentential negation, which bears an LF-interpretable feature, depending on whether one adopts Belletti's (1990, 1994) or Zanuttini's (2001) syntactic analysis of sentential negation in Standard Italian. According to Belletti's analysis, which posits that the negative marker *non* has an affixal status and is therefore a bound morpheme, the revised IFIH (Fyndanis, Arfani et al., 2018) would expect Italian-speaking individuals with nonfluent aphasia to be impaired in the production of sentential negation. However, under Zanuttini's (2001) analysis, according to which the negative marker *non* does not have an affixal status, the revised IFIH would expect production of sentential negation to be relatively well preserved in Italian nonfluent aphasia. The results from Italian-speaking participants with nonfluent aphasia reported in Fyndanis et al. (2023) are consistent with the revised IFIH (Fyndanis, Arfani et al., 2018) only if Zanuttini's (2001) syntactic analysis is adopted.

Choosing between the above contrastive syntactic analyses of the Italian negative marker *non* also has implications for the predictions of Hagiwara's (1995) and Friedmann and Grodzinsky's (1997) hypotheses. Following Zanuttini's (2001) analysis, which states that the Negative Phrase (NegP) is located high (above the Tense Phrase) in the Italian syntactic hierarchy, Hagiwara (1995) and the TPH (Friedmann & Grodzinsky, 1997) would expect Italian-speaking individuals with nonfluent aphasia to be impaired in the production of

sentential negation. In contrast, on Belletti's (1990, 1994) analysis, which posits that the NegP is below the Tense Phrase, Hagiwara (1995) and TPH (Friedmann & Grodzinsky, 1997) would predict no impairment in the production of sentential negation in Italian nonfluent aphasia. The results of the Italian-speaking participants with nonfluent aphasia reported in Fyndanis et al. (2023) are consistent with Hagiwara's (1995) and TPH's (Friedmann & Grodzinsky, 1997) predictions only if one adopts Belletti's (1990, 1994) view.

The above examples suggest that, to minimize potential implicit or explicit biases, contrastive theoretical views should always be considered when testing accounts of (morpho)syntactic impairment in aphasia and other adult neurogenic disorders.

6. Conclusion

The aim of this chapter was to illustrate how minimalism has informed adult neurogenic disorders, and especially stroke-induced aphasia and DAT. To this end, I provided a non-exhaustive review of hypotheses/accounts of language impairment in stroke-induced aphasia and DAT that utilized minimalist notions/constructs. At least for some languages, the predictions that these hypotheses/accounts make vary as a function of the syntactic analysis adopted (see Fyndanis et al., 2023). Furthermore, these hypotheses/accounts are assumed to hold cross-linguistically. Nevertheless, the existing evidence either does not support the cross-linguistic validity of some hypotheses/accounts (e.g., TPH; Friedmann & Grodzinsky, 1997; and Hagiwara 1995's account) or is not sufficient for adjudicating on the cross-linguistic validity of other hypotheses/accounts (e.g., TUH; Wenzlaff & Clahsen, 2004, 2005; IFIH; Fyndanis et al., 2012; Nanousi et al., 2006; Varlokosta et al., 2006; TUF; Thompson & Shapiro, 2005). It should be noted, however, that the descriptive and explanatory power of the minimalist constructs that have informed studies on adult neurogenic disorders such as stroke-

induced aphasia and DAT is orthogonal to whether the hypotheses/accounts proposed thus far are valid cross-linguistically.

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