

Uniformity, Economy, and Simplicity in Minimalism

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Abstract

The researchers in the domain of language and linguistics have had great efforts in different aspects of principles and parameters which were the results of over thirty years of research in generative grammar (Boeckx, 2006). These efforts later resulted in the emergence of minimalism. The effect of this notion on language learning/acquisition has been a concern for years. As confirmed by Yang & Roeper (2010) Minimalist approach to the language faculty in a broad context of cognition and evolution has led to new conceptions of learning, which may provide a more complete explanation of child language acquisition. The simpler and the more uniform the syntactic rules of language, the easier it would be to learn or acquire. This paper focuses on the issues related to syntax which changes due to what minimalism brought about. It provides evidence to show how different factors like simplicity, uniformity, economy can facilitate language acquisition.

Keywords: Syntax, minimalism, language acquisition, simplicity, uniformity, and economy.

I. INTRODUCTION

As mentioned by Algadi (2013) minimalism account can be implemented to specify what language features and operations are least accessible to the learner. Lvanoff (2014) claimed that minimalism functions well in different fields of linguistics, music and art. She claimed that Minimalism is mostly about extreme simplification of forms. The MP (Minimalist Program) aims at the further development of ideas involving economy of derivation and economy of representation. Economy of derivation is a principle stating that movements only occur in order to match interpretable features with uninterpretable features. Economy of representation is the principal that claims grammatical structures must exist for a purpose, that is, they must be simple and not larger than necessary. Another aspect is that

syntactic structures should be uniform, applying not only at arbitrary points, rather throughout derivations.

II. UNIFORMITY

A. Uniformity in language acquisition

An acquisition theory of language must explain how children acquire grammar of their native language. A child utters his first recognizable words at the age of 12 months. Then for the next 6 months there is little evidence of grammatical development in speech production, although the child learns about 5 words each month. During this single-word period, finding immediately visible evidence of the acquisition of grammar is not so easy. At around the age of 18 months, the first visible signs of grammar acquisition emerge and a sudden spurt of multiword speech starts. Grammatical development takes place extraordinarily over the next 12 months. Any theory of language acquisition must, therefore, explain this uniformity and rapidity in the patterns of children's linguistic development (Radford, 2009).

A biologically endowed innate faculty of language (FL) within the brain is considered as the most plausible explanation for the uniformity and rapidity. Chomsky (2005) maintains that there are three factors that enter into the growth of language in an individual:

- I. Genetic endowment, apparently nearly uniform for the species (UG)
- II. Experience, which leads to variation (E-language)
- III. Principles not specific to the faculty of language.

Child's experience is input to language faculty and a grammar of the acquired language is the output. The apparent uniformity in the types of grammar developed by different speakers of the same language shows the existence of genetic guidance in constructing a grammar of their native language. Another aspect of language acquisition is that children acquire language based on degenerate data, degeneracy of data is a further fact that makes uniformity and rapidity more remarkable (Radford, 2009).

Richards (2008) asserts that since factor I is the domain of UG (which must be as small, simple, and empty as possible), and factor II is the external data (E-language), factor III distinguishes minimalism from other approaches to FL and goes beyond explanatory adequacy.

According to Sigurðsson (2004), UG is maximally minimal; hence early internal language (I-Language) is largely uniform across individuals, language variation being mainly or entirely confined to externalization. The third factor was considered as principles of language in P&P approach.

Uniformity of narrow syntax is a central tenet of MP. As Chomsky put it forward:

Uniformity Principle:

In the absence of compelling evidence to the contrary, assume languages to be uniform, with variety restricted to easily detectable properties of utterances (cited in Sigurðsson, 2004:236).

Boex (2008) clarifies this principle under Strong Uniformity Thesis (SUT). According to SUT, principles of narrow syntax are neither subject to parameterization nor affected by lexical parameters. Parameters are point of variation which is confined to margins of narrow syntax, especially the morpho-phonological component (PF). Richards (2008) mentions “Borer-Chomsky Conjecture” (BCC; “Lexical parameters”) in which variation is restricted to the properties and features of functional categories: lexical micro-parameters. Distinction between overt and covert movement determined by strong versus weak categorial features on functional head is a simple illustration of this approach.

B. Uniformity Conditions and Hypothesis**Categorical Uniformity Principle**

Categorical information is about the category of any item. A categorical property associates with members of a particular grammatical category. Based on this principle, which was suggested by Rizzi (2000), *all expressions of the same type belong to the same category (Radford, 2009)*. So all clauses (no matter finite or infinitive) are CPs which have an overt or null complementiser (C). This complementiser marks the force in finite clause and marks the clause as nonfinite in infinitival clause.

Chain Uniformity Condition

“A chain is uniform with regard to phrase structure status” (Chomsky, 1995)

This condition specifies that all links in a movement must have the same structural status. For instance, an interrogative C carries an edge feature which enables C to attract an interrogative word. Where the relevant wh-word is the head of a larger phrase, the Chain Uniformity Condition will prevent movement of the wh-word on its own, and the Economy Condition/Attract Smallest Condition will require movement of the smallest constituent containing the wh-word. If we further suppose that (in consequence of the Chain Uniformity Condition) only a maximal projection can move to spec-C, this condition (taken together with the Interrogative Condition) leads to the generalization that an interrogative C with an edge feature attracts the smallest possible maximal projection containing an interrogative wh-word to become its specifier (Radford, 2009).

Uniform Theta Assignment Hypothesis/UTAH

In passive sentences, there is a claim which states that passive subjects are initially merged as thematic objects. It is implicit in this hypothesis that subjects of passive verbs and the complements of the active verbs have the same thematic function. Evidence for this

hypothesis comes from the traditional observation that the two are subject to the same pragmatic restrictions on the choice of expression which can occupy the relevant position. These restrictions depend jointly on the semantic properties of the predicate and the thematic role of the argument. So it seems reasonable to suppose that thematic structure is mapped into syntactic structure in a uniform fashion, and this is regulated by a UG principle as follows:

Uniform Theta Assignment Hypothesis/UTAH

Constituents which fulfill the same thematic role with respect to a given predicate occupy the same initial position in the syntax.

It follows from the UTAH that if passive subjects and active objects have the same Θ -role, it is plausible that passive subjects originate in the same V-complement position as active objects (Radford, 2009)

C. Uniformity in Syntactic Structures

One aspect of the minimalist thought is the uniformity of syntactic structures; that is, rules do not apply at arbitrary points in derivation, they should apply throughout derivations. Binary merge and unary move are two structures in minimalism and their application to expressions depends on the syntactic categories of these expressions (Kobebe, 2012).

In minimalism the main goal is to utilize only conceptually necessary theoretical apparatus. The operation merge, which builds up phrases and sentences out of words, is conceptually necessary; two structural relations created by this operation are contain(ment) and c-command in that if a head X is merged with a complement YP to form an XP projection, XP contains X, YP and all constituents of YP. So, minimalism leads us to hypothesize that contain (ment) and c-command created by merger are the only primitive relations in syntax. Chomsky (2001) believes that movement is a particular type of merger as well. According to him external merger takes an item out of the lexical array and merges it with some other constituents, while movement operation by which an item contained within an existing structure is moved to a new position within the same structure is considered as internal merge (Radford, 2009).

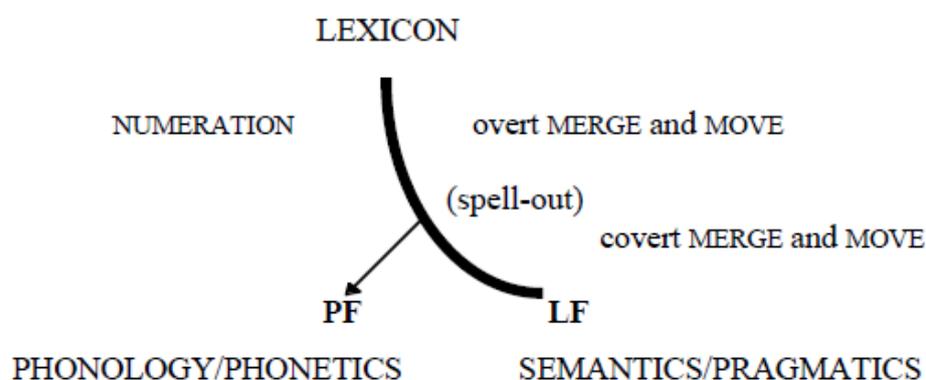
III. ECONOMY

Weinberg (2000) believed that economy conditions which are considered in minimalism allow us to use the shortest path for using the underlying principles. According to Sauerland (2000), there are two types of economy namely: syntactic and interface. According to Nunes (1999), one assumption in the Minimalist Program proposed in Chomsky (1993, 1994, 1995) is that particular things are not overdetermined by linguistic principles and that linguistic system is subject to economy restrictions defined by Universal Grammar, so part of Minimalist approach is devoted to investigating the very nature of this economy conditions. As asserted by Kennedy (2000),

“In pursuing a minimalist program, we want to make sure that we are not inadvertently sneaking in improper concepts, entities, relations, and conventions.” (Chomsky 1995:225)

Later Chomsky (1993) suggested an economy principle known as *procrastinate* claiming that covert movement is less costly than overt movement. That is to say if overt movement doesn't occur, a strong feature will reach the phonological component and the derivation will crash at PF. Coming to the conclusion that Merge and Spell-Out are equally economical. In this regard, Kennedy (2000) discussed minimalism program mostly by considering minimalist grammar through:

1. **Architecture** which included levels of representation, spell- out, numeration, which is summarized in the following figure:



2. **Interface Conditions (“Bare Output Conditions”)** that contains Full Interpretation (FI), Projection Principle, LF Theta Criterion, Convergence LF.

3. **Lexicon and Features** including: Lexical Entries, Feature Checking, Cross-linguistic Variation.

4. **Structure Building** focuses on Merge and move which were mostly discussed by Radford (2009). And finally by:

5. **Economy of Derivation** including Inclusiveness, Last Resort, Shortest Move, and Procrastinate.

Considering economy principle let's consider the following examples:

Let's look at two sentences:

1. A. *John Mary saw.

B. [_{AgresP}John [_{TP}T [_{AgroP} Mary [_{Agro'} Agro [_{VP} John saw Mary]]]]

2. A. John saw Mary.

B. [_{AgresP}John [_{TP}T [_{AgroP} Agro [_{VP} John saw Mary]]]]

In sentence 1, the overt object movement needs one application of deletion to eliminate the lower copy of *Mary* and is thus more costly than the one in 2 that does not need such an operation. So, the covert should be preferred, and overt movement should be used only if the derivation does not converge.

A. *The Copy Theory of Movement and Deletion of Traces in Minimalism*

Why traces must be deleted in the phonological component is what Nunes (1995) tries to account for. For example, in the sentences below why the NP chain cannot be realized with all the links which are phonetically realized and why deletion targets traces but not the head of a chain is not clear.

3. [John [was [arrested John]]]
4. *John was arrested John.
5. *Was arrested John.
6. John was arrested.

Nunes (1995) believes that two lexical items count as non-distinct if they are not distinctively specified in the initial numeration. The first structure cannot appear like the second one because it cannot be linearized and to yield a PF object, the NP chain in 3 has to undergo the operation Chain Reduction which allows the deletion of either the upper or lower copy of John. And this deletion depends on the elimination of formal features in the phonological component because morphological computations are not interpretable at PF.

According to Bošković (2012) Minimalism focuses on the nature of movement from its inception: In line with the leading idea of economy, movement must happen for a reason, in particular, a formal reason. Case may provide one such driving force. Consider (7).

(7) Mary is certain *t* to leave

Mary cannot be case-licensed in the position of *t*. Raising to matrix Spec IP rectifies its case inadequacy, because the position into which raising has taken place licenses nominative. When *Mary* has been case licensed, it is no longer available for A-movement, to a case or a non-case position. This follows from The Last Resort stating if A-movement is driven by case considerations. Since *Mary* is case-licensed in the position of *t* in (b), Last Resort blocks further movement of *Mary*.

- (8) a. *Mary is certain *t* will leave
- b. *The belief Mary to be likely *t* will leave

Potts (2002) believed that the objects of the MP are derivations. Theoretically, these are partially-ordered sequences of trees with relations defined on them called transformations shown in form of a tree.

Vicentini (2003) declared that the concept of economy in linguistics has lots of different values and meanings and can be considered and studied from many and different viewpoints.

As Radford (2009) asserts Chomsky (1989) believed that derivations and representations should be minimal. It requires that structures be as simple as possible. This was known as Economy Condition claiming that a derivation involves a single movement operation mood (M) which is referred to the one involving both M and an additional movement operation. This condition is implied in the following different conditions too.

1. Attract Smallest Condition/ ASC

A head which attracts a particular type of item attracts the smallest constituent containing such an item which will not lead to violation of any UG principle.

2. Left Branch Condition / LBC

The left constituent of a nominal expression cannot be extracted out of the expression containing it which is in accordance with the Economy Condition.

3. Attract closest condition

A head which attracts a given kind of constituent attracts the closest constituent of the relevant kind.

This principle is related to some other conditions like Locality Principles, Relativized Economy Condition, and specifically to the Economy Condition that requires moving the smallest constituent possible through the shortest distance possible. Looking at the conditions that UG imposes on movement we can find out that wh-movement, for example, is subject to the condition known as:

4. Wh-Attraction Condition

The edge feature on C attracts the smallest possible maximal projection containing the closest wh-word to move to spec-c. This condition is also related to the Chain Uniformity Condition and the Economy Condition.

Another case is using the expletive pronoun *there* rather than *it* in conjunction with an indefinite internal argument. The reason is that the choice of pronoun in an expletive structure is determined by the Economy Condition that is to say the economy considerations asserts that in expletive structures, we use an expletive carrying as few uninterruptable features as possible and since *there* carries only one uninterruptable feature and *it* carries two,

we conclude that *there* is used wherever possible while *it* is only used when using *there* results in ungrammaticality.

5. Accusative Case Assignment

An unvalued case feature on a goal is valued as accusative via agreement with a transitive probe. Agreement between a transitive verb and its object is invisible in English, but is visible in languages like Swahili with overt object-agreement morphology.

IV. SIMPLICITY

Simplicity is viewed in different ways by efficient authors. Culicover and Jackendoff (2005) try to make syntactic representations as simple as possible, while Boeckx (2006) attempts to minimize the complexity of the principles of syntax proposed by Chomsky in the mid 1990's.

Minimalism is said to be a system which tries to reduce the principles, operations, and constraints applicable to its earlier generative models. It has a flavor of simplicity that other theories lack. "Economy" may have two different interpretations in MP. Firstly, MP assumes that there is less going on in the narrow computational language faculty than other theories do. Secondly, there is the economy of the constraints that makes up the system; operations like merge and movement are postulated to be moderated by universal condition of economy. Economy in the first sense corresponds to simplicity (Parker, 2006).

V. CONCLUSION

Minimalism as a theory of language syntax tries to develop an economical account of the principles which all languages have, and some guidelines that give the minimal representation of innate knowledge. According to minimalism all children are able to acquire languages uniformly because the burden they have to face in language acquisition is minimized because of economy principles (Tavakoli, 2012).

REFERENCES

- Algadi, D. (2013). The Acquisition of Relative Clauses: How Do. *UWM Digital Commons* .
- Boeckx, C. (2006). *Linguistic Minimalism: origins, concepts, methods, and aims*. Oxford Linguistic.
- Boeckx, C. (2008). *Approaching Parameters from below*. Ms., Harvard .
- Bošković, đ. (2012). Last Resort with Move and Agree in Derivations and Representations. *University of Connecticut* .
- Chomsky, N. (2005). *Three Factors in Language*. *Linguistic Inquiry, Volume 36, Number 1* , , 1-22.

- Chomsky, N. (2001). *Beyond Explanatory Adequacy*, unpublished manuscript, MIT. (A published version appeared in A. Belletti (ed.) (2004). *Structures and Beyond: The Cartography of Syntactic Structures*, vol. III, Oxford University Press, pp. 104-31.
- Chomsky, N. (1995). *The Minimalist Program*. MIT Press, Cambridge, MA.
- Chomsky, N. (1994). *The Minimalist Program*. Cambridge, MA: MIT Press.
- Chomsky, N. (1989). *Necessary Illusions: Thought Control in Democratic Societies* Toronto: CBC Enterprises.
- Chomsky, N. (1993). *A Minimalist Program for Linguistic Theory*. Cambridge, Mass. MIT Press.
- Culicover, W. P., & Jackendoff, R. (2005). *Simpler Syntax*. Oxford University Press.
- Kennedy, C. (2000, august). topics in minimalism syntax,. *Linguistic Society of Japan* , Northwestern University.
- Kobebe, G. M. (2012). *Eliding the Derivation: A Minimalist Formalization of Ellipsis*. Retrieved from <http://csli-publications.stanford.edu/>.
- Lvanoff, A. (2014). *design minimalism: what, why, & how?* Retrieved from [www. site point.com](http://www.sitepoint.com).
- Nunes, J. (1995). The diachronic distribution of bare and prepositional infinitives in English. *The diachronic distribution of bare and prepositional infinitives in English* , p. 357.
- Parker, A. R. (2006). *Evolution as a Constraint on Theories of Syntax: The Case against Minimalism*. www.lel.ed.ac.uk/~simon/dissertations/parker_thesis.pdf
- Potts, C. (2002). *Comparative economy conditions*.
- Radford, A. (2009). *Analyzing english sentences: A minimalist approach*. Cambridge University Press.
- Richards, M. (2008). Two Kinds of Variation in a minimalist System. *Varieties of Competition* , 133-162.
- Rizzi, L. (2000). 'Remarks on early null subjects', in M. A. Freidemann and L. Rizzi (eds.) *The Acquisition of Syntax*. Longman, London, pp. 269-92.
- Sauerland, U. (2000, may). *Syntactic Economy and Quantifier Raising*.
- Sigurðsson, H. A. (2004). Meaningful Silence, Meaningful Sounds. *Linguistic Variation Yearbook 4* , 235-259.
- Tavakoli, H. (2012). *A Dictionary of Language Acquisition: A Comprehensive Overview of Key Terms in First and Second Language Acquisition*. Rahnam
- Vicentini, A. (2003). *The Economy Principle*. [http:// ledonline: it/MPw/](http://ledonline.it/MPw/) .
- Weinberg, A. (2000). *A minimalist parser*. The MIT Press. Cambridge, MA.
- Yang, C., & Roeper, T. (2010). *Minimalism and Language Acquisition*. University of Pennsylvania & Umass Amherst.