

# Complexity of Noun Phrase: An Analysis of Noun structure in Corpus of English novel

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#### **Abstract**

This study aims to analyze the complexity of noun phrases in a novel 'Ice candy man' written by Bapsi Sidhwa. Four aspects of noun phrases were included namely the types of noun, adjectives, determiners and post modifiers (prepositional phrases, relative clauses, and infinitives). This is a qualitative research. 'AntConc' was utilized to identify the features used by Bapsi Sidhwa in the novel. The results revealed that all the four aspects of noun phrases were utilized except the infinitives from the post modifier class. In addition, the complexity of noun phrases is beneficial because it is helpful for adding descriptive details and characterization. However, this complexity of noun phrases may be challenging in terms of comprehension difficulties for some readers who are not proficient in English language. Further research is needed to explore the complexity of noun phrases in terms of the needs target audience, writing style and narratives goals of the author.

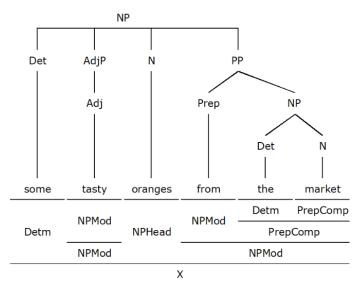
*Keywords:* noun phrases, complexity, ice candy man, Bapsi Sidhwa **Introduction:** 

According to Oxford dictionary, the well-formed structure of words and phrases in sentences refers to Syntax. Whenever, Syntax is the matter then it's the obligatory subject to deal with structures and grammar is the key for the set rules of the structure. According to Jesperson (1909), complex syntax is a traditional ideology in the field of linguistics. Noun phrases are basically the group of words in which in addition to noun there are adjectives, modifier, article or adverb. The complexity of noun phrases is not measureable but explainable when there are other parts relating to it, then, defining the structure for it is comprehensible. The challenging sentence is the way where noun phrase (NP) is also challenging to understand. NP is creative element of any kind of text for referring or demonstrating something it can be a place, person or thing. The common and proper factor for the noun is also a characterisation of this to attain the specific goal for the perception of creating diversity in the reference.

In the field of language, whenever the communication is about the conveying then we take the language as a matter of choice but when the talk is about the accuracy and format of correctness or incorrectness so here talk come to the syntax and grammar. The manifestation of NP for this purpose to deal or present the complexity is basically the pattern hidden behind the utterance.

The functionality of the NP is in the manifestation of the factor which it plays in sentence. As a chunk, because it is smaller than the clause or sentence but still its importance is recognizable of its own. According to many syntacticians, the NP structure has shown many distinctions in giving the purpose. Here, structure of NP is taken from the source of Grammar of English as shown below:





The focus of this study is to deal with noun phrases complexity in reference to syntax and grammar. This study is also dealing with the explicit and implicit factors of the complexity of NP structure and also a detail analysis of novel 'Ice-Candy Man' written by BapsiSidhwa for the representation of NP phrases will be shown.

#### Literature review:

Maestre (1998) investigated noun phrase complexity. The aim was to find out the variation in simple and complex noun phrases. The headlines from the *The Times* newspaper were selected for investigation. Headlines were taken from 1970-1990. Noun complexity in terms of style was investigated using a theoretical framework given by Quirk et al. This framework was given in A Comprehensive Grammar of the English Language (1985). Two types of headines were considered namely verbal and nominal. Significant differences were identified in verbal and nominal headlines, distinctions that highlighted how susceptible this variety of language's complexity is to stylistic and situational elements of the context of the situation.

Gordon et al. (2004) conducted a study regarding the effects of noun type on the complexity of the sentences. In order to found out that how the characteristics of noun phrase (NP) contribute to the difference in understanding subject- and object-extracted relative clauses, a series of self-paced reading time studies were conducted. The study used three different types of corpora including Brown corpus, Switchboard, and Childes. Trained evaluators were hired to code the NPs from the RCs in the sentences. Although corpus analysis showed a strong correlation between these NP classes and the type of relative clause, the structural semantic properties of the NP in the embedded sentence (definite vs. indefinite and definite vs. generic) had no influence on the degree of processing difficulties. When a quantified pronoun got appearance as the NP in the embedded phrase, there was less difference in processing difficulties. These results are in favor of the previous findings.

Johnson et al. (2011) investigated common noun phrases verses unusual noun phrases and how the processing of complex sentences dependent on them. Two experiments were conducted consisting of forty students at the University of North Carolina at Chapel Hill. A method called eye tracking while reading methodology was used by the authors to notice the differences regarding common noun phrases verses unusual noun phrases. Results showed that there was less



processing difficulty in case when head NP was unusual relative to the embedded NP. When both common and unusual NPs were tested, there was no interaction but a strong effect could be seen regarding the effects of commonness. In another case, when there was 1 common and 1 Unusual NP, critical interaction was seen. This study provided evidence to a research well documented regarding memory which showed that differences existed regarding recall pattern of common versus unusual items.

Schilk and Schaub (2016) investigated noun phrases across different varieties. For investigating a comparative study based on different regional varieties, five different regional varieties were taken. These regional varieties were investigated against four types of texts. The data was based on the International Corpus of English. A multinomial regression approach was taken keeping in view the three potential predictors namely syntactic function, variety and text type. The results revealed that there is a need to understand the phenomenon the syntactic contact in the context of different varieties of English. The marked differences regarding the predictive power of the variables were found out. The results also showed the contributions of syntactic function, variety and text type regarding the systemic description variation in noun phrases.

Liu and Li (2018) conducted a corpus based study on the complexity of noun phrase. It was widely said by Biber et al. (2011) that mostly used Subordination-based complexity measures cannot completely reflect the development of syntactic complexity of noun phrases required of advanced student academic writing. The current study employed two types of corpora including MA dissertations by Chinese EFL learners and published research articles in different journals. The study used an artificial syntactic complexity analyzer for investigating the overall noun phrase complexity. This study specifically focuses on one aspect of complexity. i.e. postmodification. The findings revealed considerable underdevelopments in students' texts as compared to the published ones. It also highlights the circumstances in which the difference is meaningful.

In most of the studies, noun phrase complexity was investigated keeping in view few aspects. So, the present study will investigate noun phrase complexity covering many aspects regarding different types of noun, adjectives, determiners, and post modifiers (prepositional phrases, relative clauses and infinitives).

#### **Research Questions:**

- 1. What type of structures of noun phrases were utilized by Bapsi Sidhwa in novel Ice-Candy Man?
- 2. How the complexity of noun phrases in Ice Candy Man is beneficial in terms of enhancement of descriptive details and characterization?
- 3. How the complexity of noun phrases in Ice Candy Man is challenging in terms of comprehension difficulties for some readers?

#### **Methodology:**

This study follows a qualitative research design as sample of Ice Candy Man novel is taken and as an instrument the software Antconc. is used to analyse the data of novel. This novel contains 32 chapters, written by Bapsi Sidhwa in 1988, first with the name of Cracking India, later it published as Ice-Candy Man in 1991. The novel is analyzed in Antconc. Software and manually analysed the common nouns, proper nouns, determiners, adjectives, prepositional phrases, relative clauses, and post-modifiers.

Later, novel was tagged from CLAWS POS tagger and then again analysed common nouns, proper nouns, determiners, adjectives, prepositional phrases, relative clauses, and post-modifiers,



to check the different factors or scenarios of perception of the NP. This study has also involved the quantitative study for the NP structures.

## **Analysis**

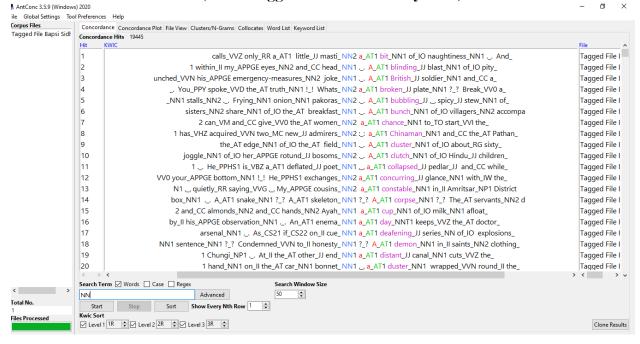
Noun phrase

| Noun phrase                |  |   |          |
|----------------------------|--|---|----------|
| List:                      | Words  |   | Counting |
| Common Nouns tagged        | Plural and singular common nouns               |   | 19445    |
|                            |  |   |          |
| Common Nouns Manual        | mon Nouns Manual The Man The Woman The boy     |   | 15       |
|                            |  |   | 8        |
|                            |  |   | 8        |
|                            | The girl                                       |   | 3        |
|                            | The voice                                      |   | 3        |
|                            | The children The flowers The rooms The village |   | 18       |
|                            |  |   | 3        |
|                            |  |   | 5        |
|                            |  |   | 16       |
| <b>Proper Nouns Manual</b> | The holy-man                                   |   | 7        |
|                            | The horses                                     |   | 8        |
|                            | The Almighty                                   | 7   | 1        |
|                            | The Muslims                                    |   | 15       |
|                            | The Indians                                    |   | 9        |
|                            | The king                                       |   | 13       |
| Determiners tagged         | Determiner:                                    |   | 570      |
|                            | capable of                                     |   |          |
|                            | pronominal                                     |   |          |
|                            | function                                       |   |          |
|                            | DD1  | singular<br>determiner<br>(e.g. this, that,<br>another) |          |
|                            | DD2  | plural<br>determiner<br>( these,those)                  |          |
| Determiners manual         | Article  |   | 1871     |
|                            | (a)  |   |          |
|                            | Article  |   | 5034     |
|                            | (the)  |   |          |
|                            | Article  |   | 237      |
|                            | (an)   |   |          |
|                            | Demonstrative                                  | es  | 22       |
|                            | (that)   |   |          |
|                            | Demonstrative                                  | es  | 24       |
|                            | (this)   |   |          |



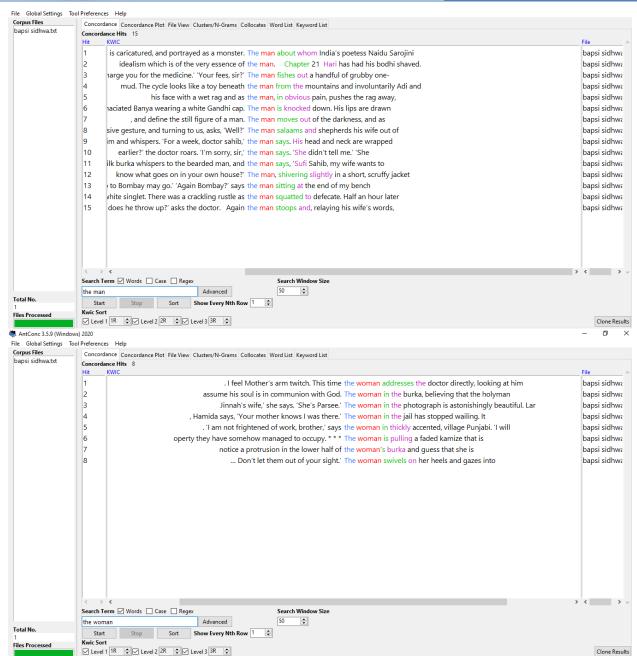
| Adjectives tagged           | General (JJ)                 | 6739 |
|-----------------------------|------------------------------|------|
| Post modifiers: Preposition | for (IF)                     | 56   |
| phrases to add information  | General preposition (II)     | 495  |
| about noun/ noun phrase     | of (IO)                      | 727  |
|                             | with, without (IW)           | 71   |
| Post modifiers: Relative    | Subjective wh-pronoun        | 69   |
| clauses to modify noun      | (PNQS)                       |      |
| phrase                      | Objective wh-pronoun         | 1    |
|                             | (PNQO)                       |      |
|                             | That (Manually)              | 202  |
|                             |                              |      |
| Post modifier: infinitives  | To + base form of verb (TO & | 2    |
|                             | VV0)                         |      |

#### 1. COMMON NOUNS (From Tagged File of Ice-Candy Man)



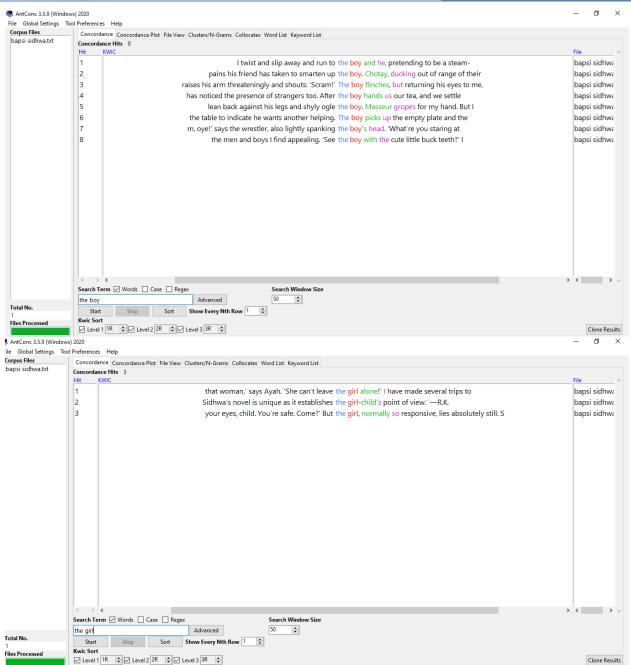
#### A) Common nouns (Manual Search)



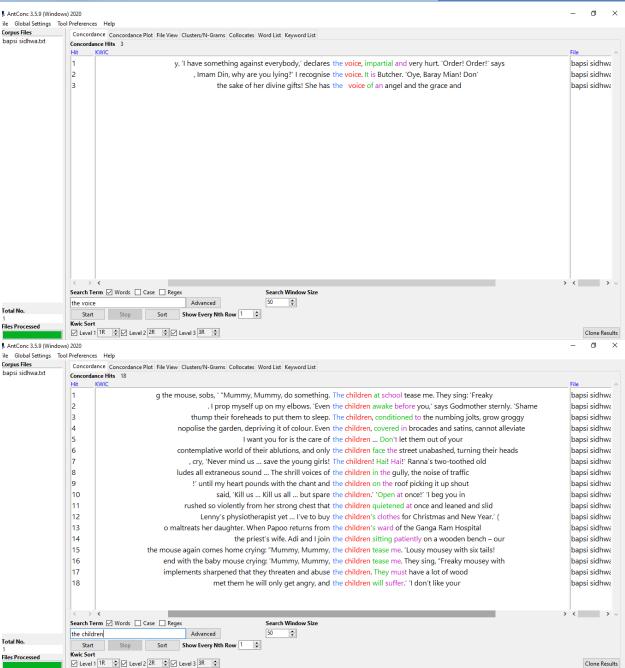






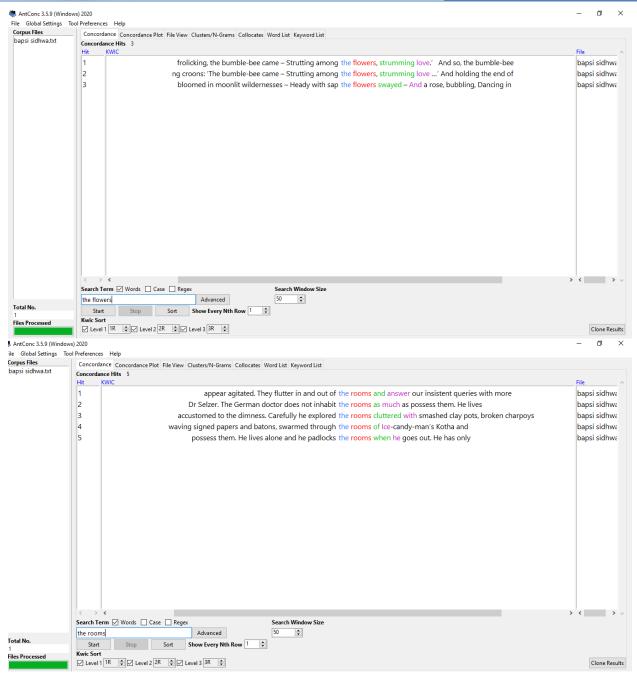














Total No.

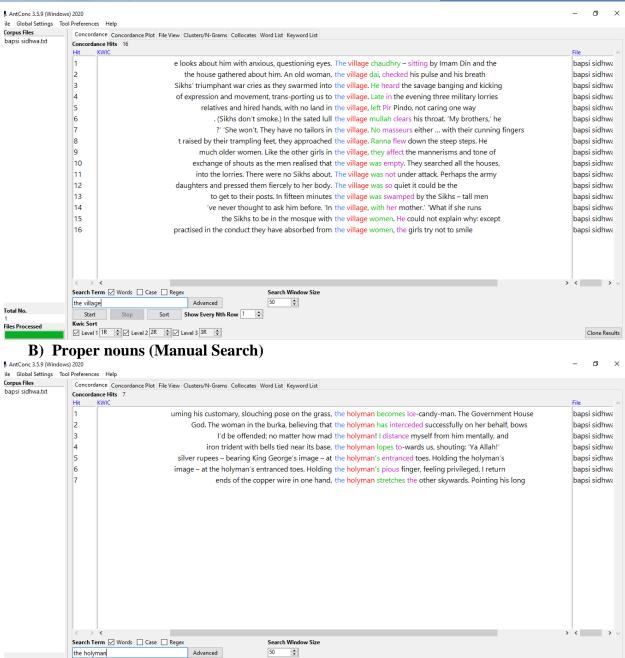
Files Processed

Start

✓ Level 1 1R 🕏 ✓ Level 2 2R 🕏 ✓ Level 3 3R 🕏

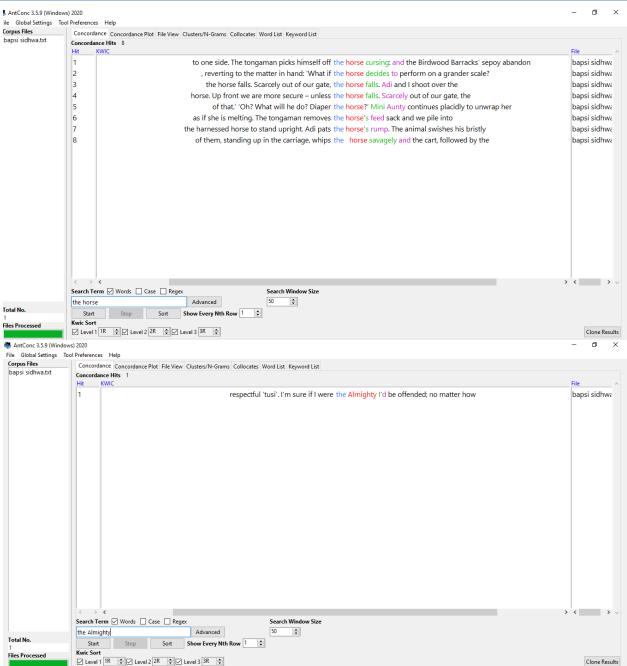
Sort Show Every Nth Row 1

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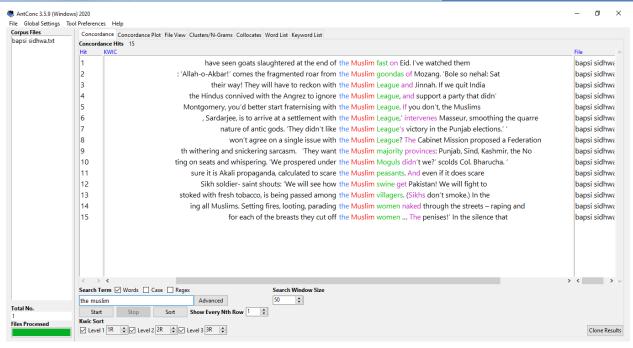
Clone Results



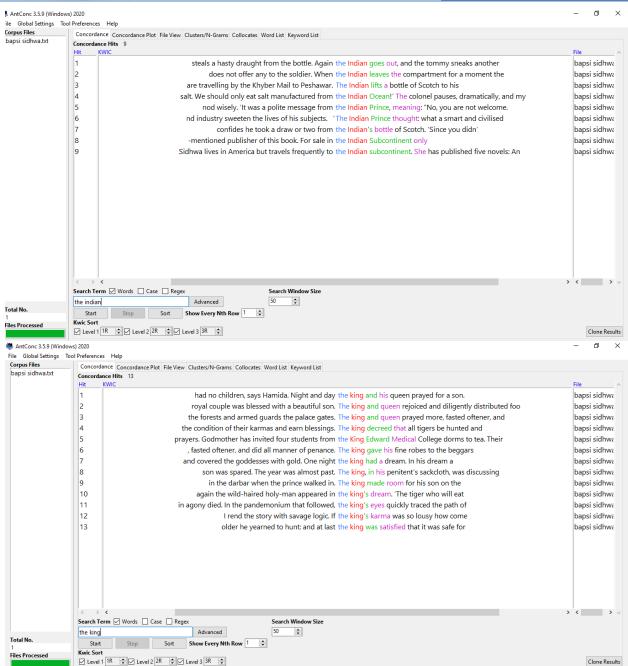












#### 2. DETERMINERS (From Tagged File of Ice-Candy Man)



16

17

18

19

20

Total No.

Files Processed

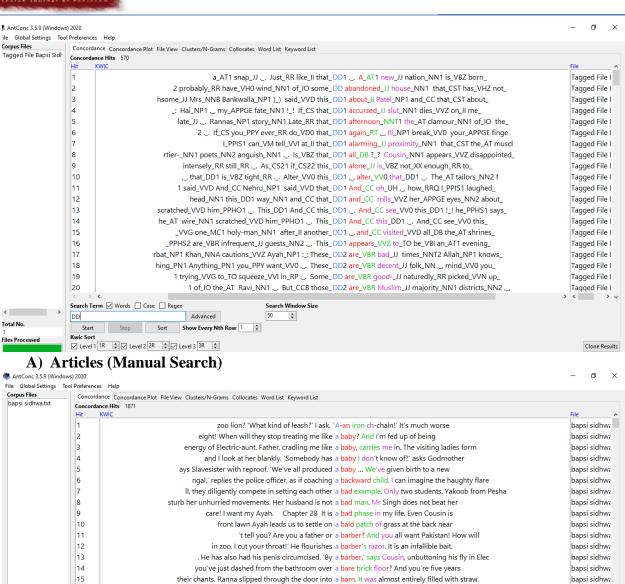
Search Term ☑ Words ☐ Case ☐ Regex

✓ Level 1 1R ♦ ✓ Level 2 2R ♦ ✓ Level 3 3R ♦

Advanced

Stop Sort Show Every Nth Row 1

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they are preoccupied. Ayah hauls me off for a bath. I have to remind her to douse

Search Window Size

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room serves as kitchen/pantry. And off it, a bathroom with three commodes. I go straight to

s inside, whirling herself into her sari, issuing a battery of instructions to her sweepress and at

polished wood. The stands are held to by a beam which runs six inches above the floor.

a broader lane which has the appearance of a bazaar with rows of shops at the ground

bapsi sidhwa

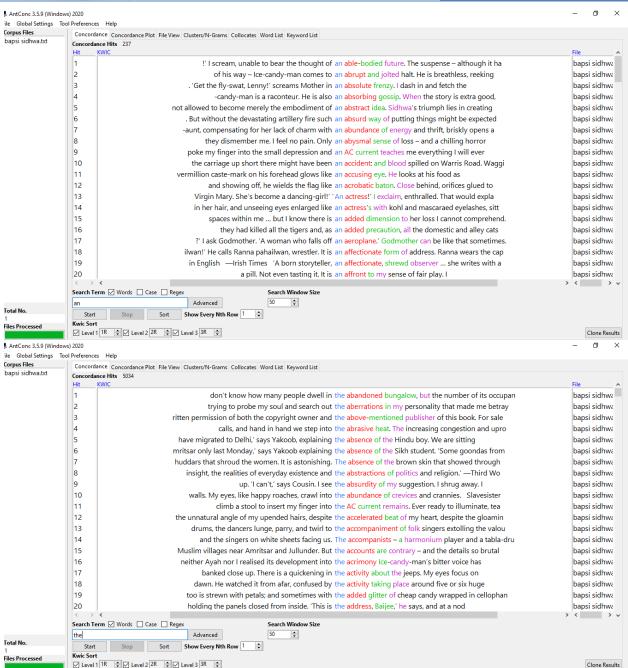
bapsi sidhwa

bapsi sidhwa

bapsi sidhwa

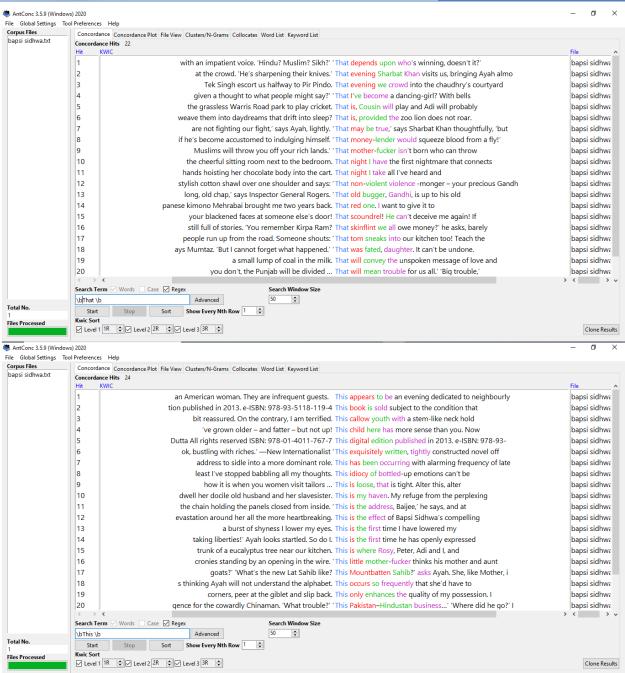
bapsi sidhwa





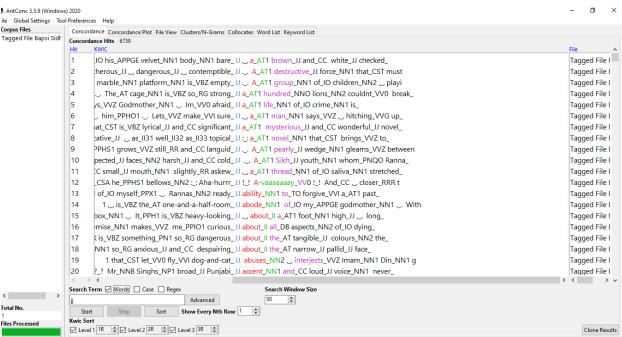
#### **B)** Demonstratives (Manual Search)





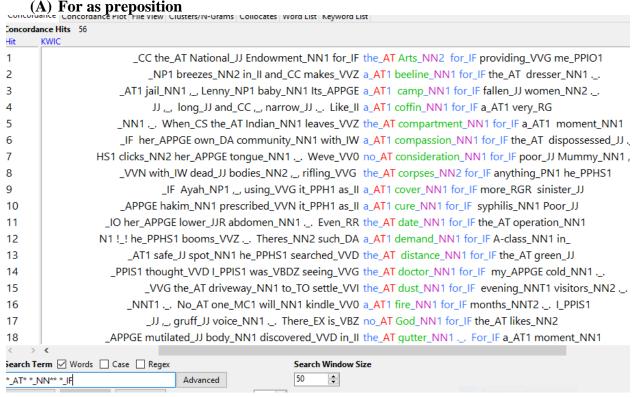
#### 3. GENERAL ADJECTIVES (From Tagged File of Ice-Candy Man)





#### **4- Postmodifiers:**

(1) Preposition phrases (From Tagged File of the novel)



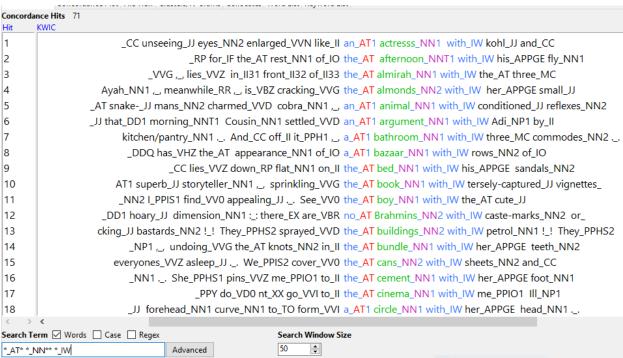
(B) General preposition



```
Concordance Concordance Plot File View Clusters/N-Grams Collocates Word List Keyword List
Concordance Hits 495
       KWIC
                          _APPGE soul_NN1 and_CC search_VVI out_RP the_AT aberrations_NN2 in_II my_APPGE personality_NN1
2
                                _EX is_VBZ a_AT1 quickening_NN1 in_II the_AT activity_NN1 about_II the_AT jeeps_NN2 ._.
3
                            _RR tasting_VVG it_PPH1 ._. It_PPH1 is_VBZ an_AT1 affront_NN1 to_II my_APPGE sense_NN1
                                _VV0 at_II Adi_NP1 dangling_VVG in_II the_AT air_NN1 at_II the_AT end_NN1
4
5
                         _RP ._. Such_DA talk_NN1 helps_VVZ clear_RR the_AT air_NN1 but_II21 for_II22 your_APPGE
6
                       _AT whole_JJ world_NN1 is_VBZ burning_VVG ... The_AT air_NN1 on_II my_APPGE face_NN1
                      _NN2 getting_VVG to_II their_APPGE feet_NN2 ._. The_AT air_NN1 in_II the_AT room_NN1
8
                   _APPGE hands_NN2 jerked_VVD up_RP slashing_VVG the_AT air_NN1 above_II the_AT bleeding_JJ
                   JJ noise_NN1 ,,, sucking_VVG and_CC expelling_VVG the_AT air_NN1 between_II her_APPGE teeth_NN2 ._.
10
                        _PPIS1 try_VV0 desperately_RR to_TO suck_VVI the_AT air_NN1 into_II my_APPGE deflated_JJ
                               _NN1 ,, to_ll his_APPGE seat_NN1 in_ll the AT aisle_NN1 next_ll21 to_ll22 his_APPGE
11
12
                           _AT small_JJ mirror_NN1 hanging_VVG at_II an_AT1 angle_NN1 from_II the_AT wall_NN1
                           _NP1 is_VBZ expected_VVN to_TO make_VVI an_AT1 appearance_NN1 outside_II the_AT Assembly_NN1
13
14
                              _VVN the_AT true_JJ purpose_NN1 of_IO the_AT appointment_NN1 from_II me_PPIO1 ._. No_UH !_!
15
                  lock-cart_NN1 ... Imam_NN1 Din_NN1 stretches_VVZ an_AT1 arm_NN1 across_II his_APPGE bicycle_NN1 ,.,
16
                     Z here_RL , , says_VVZ Yousaf_NP1 , , putting_VVG an_AT1 arm_NN1 round_II Moti_NP1 . . . He_PPHS1
17
                  VG annoyingly_RR complacent_JJ and_CC placing_VVG an_AT1 arm_NN1 on_ll either_DD1 side_NN1
18
                           _NN1 reminds_VVZ us_PPIO2 to_TO rub_VVI the_AT ash_NN1 from_II our_APPGE foreheads_NN2 ._.
Search Term ☑ Words ☐ Case ☐ Regex
                                                        Search Window Size
*_AT* *_NN** *_II
                                  Advanced
                                                              (C)
              Of as Preposition
 Concordance Concordance Plot File View Clusters/N-Grams Collocates Word List Keyword List
Concordance Hits 727
710
                        _NN1 and_CC new_JJ sorrow_NN1 ._. Thats_VVZ the_AT way_NN1 of_IO life_NN1 ._. I_PPIS1
711
                               _TO turn_VVI the_AT wheel_NN1 with_IW the_AT weight_NN1 of_IO their_APPGE bodies_NN2 ._.
                                   _II trying_VVG to_TO find_VVI out_RP the_AT whereabouts_NN2 of_IO Ayah_NN1 ._. He_PPHS1
712
713
                               _AT table_NN1_but_CCB I_PPIS1 get_VV0_a_AT1 whiff_NN1 of_IO something_PN1 frightening_JJ ._.
                   _AT bathroom_NN1 door_NN1 ... We_PPIS2 get_VV0 a AT1 whiff_NN1 of IO Dettol_NP1 and CC , ,
714
715
                   _MD time_NNT1 he_PPHS1 heard_VVD voices_NN2 ._. The_AT whispers_NN2 of_IO women_NN2 comforting_VVG
               APPGE mouth_NN1 open_VV0 ... Papoo_NN1 shows_VVZ the AT whites_NN2 of IO her_APPGE eyes_NN2
716
717
                               _TO do_VDI with_IW fate_NN1 than_CSN the_AT will_NN1 of_IO men_NN2 ._. Kirkus_NN1
718
                              _VDI with_IW fate_NN1 than_CSN with_IW the_AT will_NN1 of_IO men_NN2 ._. Did_VDD
719
                     Y!! I_PPIS1 lobbed_VVD grenades_NN2 through_II the_AT windows_NN2 of_IO Hindus_NN2 and_CC
                       spicy_JJ mustard-greens_NN2 ... I_PPIS1 see_VV0 the_AT wisdom_NN1 of_IO their_APPGE baggy_JJ
720
721
                          _NN1_opened_VVD my_APPGE eyes_NN2 to_II the_AT wisdom_NN1 of_IO righteous_JJ indignation_NN1
722
                  _IO the_AT readers_NN2 consciousness_NN1 With_IW the_AT wonder_NN1 of_IO a_AT1 child_NN1
723
                   ._. Third_MD World_NN1 Quarterly_NN1 Without_IW a_AT1 word_NN1 of_IO protestation_NN1 or_CC
                        _IO their_APPGE feet_NN2 ,_ make_VV0 out_RP the_AT words_NN2 of_IO their_APPGE chants_NN2 ._.
724
725
                          _EX are_VBR other_JJ wounds_NN2 besides_II the_AT wounds_NN2 of_IO love_NN1 Other_JJ
726
                          _NN1 would_VM provoke_VVI , , if_CS not_XX the_AT wrath_NN1 of_IO God_NP1 , , at_RR21
727
                         _NP1 Today_RT Bapsi_NP1 Sidhwa_NP1 is_VBZ a_AT1 writer_NN1 of_IO enormous_JJ talent_NN1 ,_,
Search Term 🗹 Words 🗌 Case 🔲 Regex
                                                         Search Window Size
*_AT* *_NN** *_IO
                                                               +
```

(D) with, without as preposition:





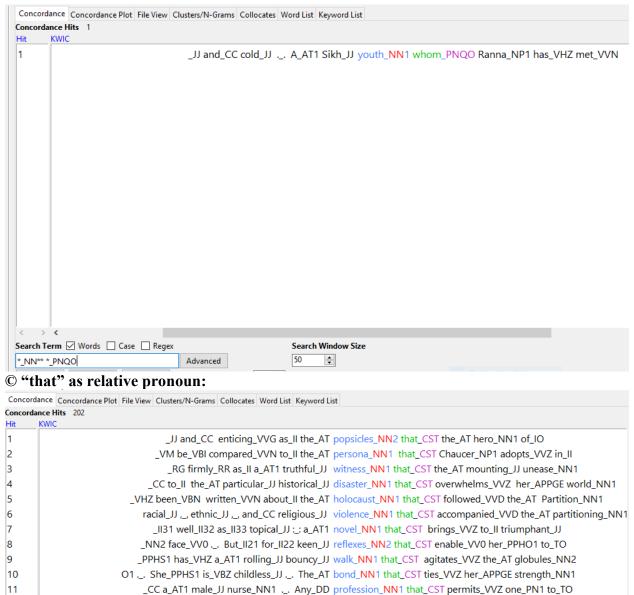
#### (2) Relative clauses (Using Tagged file of the novel):

(A) Subjective wh-pronoun (Who)



(B) Objective wh-pronoun (Whom)





\_AT hard\_JJ and\_CC treacherously\_RR narrow\_JJ table\_NN1 that\_CST is\_VBZ covered\_VVN only\_RR

\_APPGE target\_NN1 with\_IW such\_DA lightning\_NN1 speed\_NN1 that\_CST I\_PPIS1 hear\_VV0 of\_IO NN1 and\_CC gratitude\_NN1 ,\_, bijli\_NN2 :\_: a\_AT1 word\_NN1 that\_CST in\_II the\_AT various\_JJ

Search Window Size

-

50

Indian\_JJ politics\_NN1:::the\_AT Quit-India\_NP1 sentiment\_NN1 that\_CST has\_VHZ fired\_VVN the\_AT

\_CC grass\_NN1 and\_CC the\_AT other\_JJ fragrance\_NN1 that\_CST distils\_VVZ insights\_NN2 ... I\_MC1

\_NNT1 I\_PPIS1 have\_VH0 the\_AT first\_MD nightmare\_NN1 that\_CST connects\_VVZ me\_PPIO1 to\_II
\_IO loss\_NN1 and\_CC a\_AT1 chilling\_JJ horror\_NN1 that\_CST no\_PN121 one\_PN122 is\_VBZ

(3) Infinitives:

Search Term ✓ Words ☐ Case ☐ Regex

Advanced

12

13

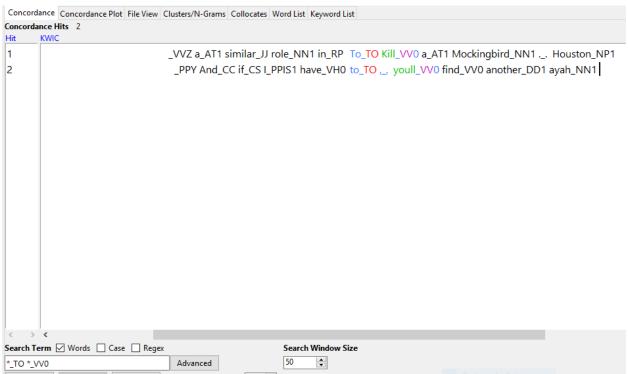
14

15

16 17

\*\_NN\*\* that





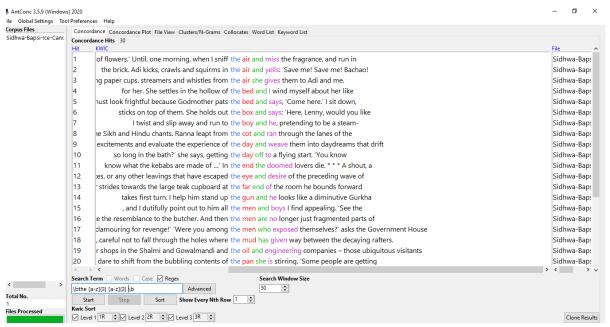
#### **Results and Discussion**

Noun phrase structure is a matter of concise detailing for the majority differences a structure face in a sentence as an NP.

**First research question** dealt with the aspects that contribute to the complexity of noun phrases. Data was tagged using C7 and searched using Antconc. Results revealed that adjectives and determiners were mostly used to add complexity. In addition, post-modifiers as preposition phrases have been used less than adjectives and determiners. However, in post modifiers, prepositional phrases have higher frequency than relative clauses. Infinitives have been used twice but do not act as post modifiers.

For the common factors of common nouns, NP is all the way searched for the most common nouns as the novel contains word token of 183581 so it's a huge number for the expectation for appearance of common nouns, so tagged common nouns showed a frequency of 19445 while when common NP structure is manually analysed from the Antconc. Software searching and it is shown that surprisingly the most common phrases like the man, the woman,the boy, the girl, the voice, the children, the flowers, the rooms and the village showed frequency of 15, 8, 8, 3, 3, 18, 3, 5, 16, as very less these NP common structures are followed. As similarly the proper noun NP structure is also seen very less as shown in the analysis so its clear that the novel follows a complex pattern as created a regex \bthe [a-z]{3} [a-z]{3} \b for the search of complex pattern of NP structure as:





As according to Jackendoff (1997) the complexity of NP structure falls in following states as:

| 4      | 3     | 2       | 1     | 0      |
|--------|-------|---------|-------|--------|
| the    | three | exotic  | chess | boards |
| John's | many  | large   | book  | bags   |
| those  | few   | Chinese | store | owners |

The syntacticians also states that the complexity pattern turns into following situation as position '4' is often taken by possessive phrases, articles, and demonstrators, position '3' is taken by numerals or quantifiers, position '2' is taken by adjectives and finally the position '1' is taken by nouns. The statement and our analysis both shows that complex NP structure is followed in the novel Ice Candy Man as structures of common and proper NP structure with the simple pattern is very few in number in comparison to word tokens.

**Second research question** dealt with how complex noun phrases are beneficial in terms of the enhancement of descriptive details and characterization. Following examples of pre modifiers regarding the enhancement of descriptive details are as follows:

This idiocy of bottled-up emotions can't be a symptom of growing up, surely! More likely I'm reverting to infancy the way old people do. I feel so sorry for myself – and for Cousin – and for all the senile, lame and hurt people and fallen women – and the condition of the world – in which countries can be broken, people slaughtered and cities burned – that I burst into tears. I feel I will never stop crying.

The above examples show that to refer to the manner of aged people, to describe the people, and condition for it, the writer referred to the pre-modifiers as in a complex pattern to make the pattern simplify for the readers as in a fluent reading.

In addition, few examples from the text have been taken to show how complexity of noun phrases adds information about characterization.



'Were you among the men who exposed themselves?' asks the Government House gardener. His tone implies more a mild assertion than a question.

The above examples show that characterization or description for any place or person is incomplete without the complex pattern of NP.

Complex NP structure is helpful in following things as:

- 1. Expressing relationships
- 2. Vocabulary expansion
- 3. Subjective description

Author has also used post-modifiers to add descriptive details. Examples are given below:

When Indians leave the compartment for a moment

The back of his neck is stretched in a long, shallow arch...

No one will kindle a fire for months

They sprayed the building with petrol.

A girl who tries to wrench

A Sikh youth whom Rana has met

In the above examples, it is prominent that prepositional phrases and relative clauses act as post modifiers. These phrases and clauses help in providing descriptive details.

**Third research question** dealt with the challenges that many readers have to face due to the complexity of noun phrases. These challenges are related to the text comprehension. Some readers may not be proficient readers of English or they may have just started learning English, so it becomes difficult for them to tackle with complex noun phrases and in result it acts as a hindrance in their understanding of the text. Examples for pre-modifiers are given below:

Squatting atop the cement wall of the garden tank they hold their feet out beneath the tap and diligently scrub between their toes. They wash their heads, arms, necks and ears and noisily clear their throats and noses.

Examples of post modifiers extracted from the text are given below:

Mr Phailbus, **who** has the power to heal and calm in his hands, strokes Mother's head and shoulders and Mother's rage subsides somewhat.

As is Papoo, the sweeper's daughter, **who** comes galloping and whooping from the servants' courtyard, an infant wobbling dangerously on her hip, and brandishing a long broom.

These examples are of relative clauses. As it is evident in the examples, the extensive use of relative clauses may make it difficult for some readers to understand the text. The examples provide rich details but the complex noun phrases may distract the readers' attention.



As the complexity of vocabulary and the NP structure of pre-modifiers/post-modifiers is clearly referring to the difficulty a reader faces due to it. Following key objectives are the main issues for the reader due to complex NP structure as:

- 4. Parsing and processing
- 5. Cognitive accessibility
- 6. Reader Fatigue
- 7. Ambiguity

These all issues a reader faces due to intricate NP structure as taking that things as a perception then processing them and relating to the context is another big task a reader faces. So, there are advantages for the context relevance too but disadvantage in the form of reader challenges.

#### Conclusion

The complex NP structure is one of the distinctive features in syntax and grammar, whenever these structures are observed, so there are also some complications. As the analysis of Ice-Candy Man written by Bapsi Sidhwa showed that there are very few structures for simple common and proper noun phrase so, the numerical data showed that the novel contained the complex NP structure of pre- and post-modifiers. These structures play a major role in language building, bridging the description and enhancing the explanation. There are limitations too for the complex NP structure and that is the challenging phase a reader faces, and that is the challenging phase a reader faces also the ones who aren't expert in grammar and syntax of a language.

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