

**THE UNIVERSITY OF DANANG
UNIVERSITY OF FOREIGN LANGUAGE STUDIES**



NGUYỄN LÊ THỦY TIÊN

**AN INVESTIGATION INTO THE PRAGMATIC
FEATURES IN THE LANGUAGE PRODUCTS OF HIGH-
FUNCTIONING AUTISTIC INDIVIDUALS: A CASE-
STUDY IN THE USA**

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Supervisor: Võ Thanh Sơn Ca Ph.D.

Examiner 1: Dr. Bảo Khâm

Examiner 2: Dr. Nguyễn Hữu Quý

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Chapter One

INTRODUCTION

1.1. RATIONALE

Language production does not only involve the comprehension of the language itself, but also a good understanding of the context involved in the communication environment, and how to maintain the conversation in a way that lines up with the expectation of the people involved (for example, how to help people save face).

Autistic people are born without this natural ability. They only have the understanding of language's meaning in its most literal sense, without any understanding of how to apply language in a socially appropriate way. This creates several problems for autistic people when communicating with the world. High-functioning autistic people are less affected by autism and are better at developing intelligence

It is very hard, however, for neurotypicals to understand the difficulty that autistic people face, since the ability to understand other people is an innate ability every neurotypical person has. As a result, neurotypicals fail to acknowledge that autistic people have a significant problem with communication.

One extremely peculiar case of high-functioning autism is Christian Weston Chandler (CWC). CWC has several traits of a typical high-functioning autistic person. In addition, CWC's autism was left untreated due to his parents' refusal to seek professional help. This led to one of the purest manifestations of high-functioning autism that can be seen in an autistic person, making CWC a good subject for analysis. Moreover, information about CWC's life is publicly available at the website CWCKi (https://sonichu.com/cwcki/Main_Page). It is rare to see such detailed documentation on an autistic person's life.

For all the above-mentioned reasons, the researcher decided to choose to carry out the research study titled ‘An Investigation into the Pragmatic Features in the Language Products of High-Functioning Autistic Individual: a Case-Study in the USA’.

1.2. AIMS AND OBJECTIVES

1.2.1. Aims

This study aims to analyze the spoken and written language features of CWC in terms of pragmatics, specifically the literal and non-literal utterances in CWC’s speech act compared to those of neurotypicals. In particular, the study analyzes spoken and written discourse between CWC and the neurotypicals with whom he interacted.

1.2.2. Objectives

To achieve the aim of the study, the following objectives have to be accomplished:

1. Identify the features of literal and non-literal utterances in CWC’s spoken language.
2. Identify the features of literal and non-literal utterances in CWC’s written language.
3. Identify the connections between CWC’s spoken and written language in terms of the use of literal and non-literal utterances.

1.3. RESEARCH QUESTIONS

To achieve the aims and objectives mentioned above, the study aims to find the answers to the following research questions:

1. What are the features of literal and non-literal utterances in CWC’s spoken language?
2. What are the features of literal and non-literal utterances in CWC’s written language?
3. What are the connections between CWC’s spoken and

written language?

1.4. SCOPE OF THE STUDY

This study is limited to the analysis of the language products of CWC. This study is limited to a case study of one specific person. Hence, the findings may not be generalized to every high-functioning autistic person. Furthermore, CWC is a high-functioning autistic man. Thus, this study may not be representative of lower-functioning autistic people.

This study also aims to collect data of CWC's language products between the period of 2008 and 2012, since this is the period that saw the most noteworthy interaction between CWC and the neurotypicals he interacted with on the Internet. Data beyond this period is not taken into consideration.

1.5. SIGNIFICANCE OF THE STUDY

This study aims to provide useful and detailed information about the way high-functioning autistic people produce language and, from these findings, explain the misunderstandings in communication between high-functioning autistic people and neurotypicals, from obvious to subtle. The results of the study can provide useful insights for educators, medical staff, social workers and the general public so that they can come up with ways to better interact with high-functioning autistic people and help them integrate into society.

1.6. ORGANIZATION OF THE STUDY

Chapter Two

LITERATURE REVIEW AND THEORETICAL

BACKGROUND

2.1. LITERATURE REVIEW

It has been suggested that high-functioning autistic adolescents speak in monologue tone during interpersonal

conversation such as interviews (Ghaziuddin & Gerstein, 1996; Ramberg, Ehlers, Nyden, Johansson, & Gillberg, 1996) and have problems providing appropriate response to questions and clear references to people and places in conversations (Adams, Green, Gilchrist, & Cox, 2002; Fine, Bartolucci, Szatmari, & Ginsberg, 1994). Surian, Baron-Cohen, and Van der Lely (1996) added that they also have difficulties judging the amount of information to be included in the responses.

In terms of language reception, autistic people have problems interpreting figurative speech, particularly with idiom, metaphor and irony (Happé, 1993; Kerbel & Grunwell, 1998; Martin & McDonald, 2004). Specifically, autistic people are not good at interpreting the intention behind a speech act of the speakers and tend to interpret utterance literally (Mitchell, Saltmarsh, & Russell, 1997).

In terms of formulaic speech, which is defined as wordsequences that are prefabricated, stored and retrieved from memory (Wray & Perkins, 2000), the speech of autistic people bears distinctive features. Some of the features are: repetitive and stereotyped utterances (e.g. overused phrases such as “and now” or “excuse me”), strange sound-meaning associations (e.g. using “boyfriend-free girl” to refer to a single girl), excessive literal language (e.g. using “slow-in-the-mind” to refer to a mentally handicapped person), difficulty with pronoun (e.g. saying “would you like an apple?” in order to request for an apple), and immediate or delayed echolalia (Tager-Flusberg & Calkins, 1990; Lord & Paul, 1997)

Such abnormalities are proved to occur due to the deficit of theory of mind, which impairs both pragmatic and non-verbal social abilities (Happé, 1994). Deficit of theory of mind impacts autistic people’s ability to understand mental states such as belief, knowledge

and emotion (Baron-Cohen, 1993; Hobson, 1993), leading to abnormalities in language.

In general, those studies have constructed a good profile of language features of autistic people. However, they are more focused on language of autistic children or adolescents than that of adults (the subject of Mitchell et al. (1997) were children. Surian et al. (1996) chose subjects with mean age from 11 to 12. And the mean age of those of Ghaziuddin and Gerstein (1996) was 16.4). Furthermore, those studies were done on the grounds of constructing a general profile of language features of autistic people, and some of them were done in an artificial laboratory environment (For example, Fine et al. (1994) collected their data through 10-minute conversations between their subjects and an examiner; Surian et al. (1996) asked their subjects to watch a play performed by the researchers). How the language abnormalities impact communication between autistic people and neurotypicals in a natural interaction setting has not been thoroughly researched.

2.2. THEORETICAL BACKGROUND:

2.2.1. High-functioning autism and related concepts

2.2.1.1. Theory of mind

2.2.1.2. Autism

- a. Symptoms of autism:*
- b. High-functioning autism:*
- c. Delayed echolalia:*

2.2.2. Speech Act

2.2.2.1. Definition of Speech Act

2.2.2.2. Structure of a speech act

2.2.2.3. Illocutionary Force

2.2.2.4 Explicit performative vs implicit performative:

2.2.2.5. Indirect speech act:

2.2.2.6. *Literal speech act vs non-literal speech act:*

a. *Metaphors*

b. *Metonymy*

c. *Irony*

2.2.3. A description of CWC:

2.3. SUMMARY

Chapter Three METHODOLOGY

3.1. RESEARCH DESIGN

3.2. RESEARCH METHODS

3.3. PROCEDURES

3.3.1. Data Collection

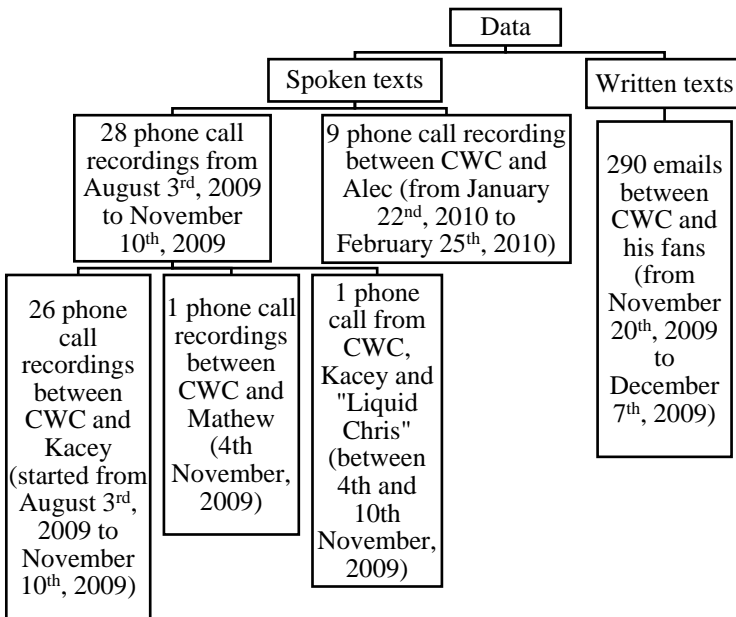


Figure 3.1 Details of the data collected for analysis

3.3.2. Data coding

3.3.2.1. *Coder*

3.3.2.2. Coder training

Table 3.1. Symbols used during the data coding process of CWC's spoken language and their meanings.

No.	Symbols	Meanings
1	Yellow highlight	CWC responded to a neurotypical's statement, and his response did not take into account the non-literal meaning of the neurotypical's illocutionary force
2	Blue highlight	CWC responded to a neurotypical's statement, and his response took into account the non-literal meaning of the neurotypical's illocutionary force
3	Purple highlight	CWC responded to a neurotypical statement by repeating the word/phrase the neurotypical used

Table 3.2. Symbols used during the data coding process of CWC's written language and their meanings.

No.	Symbols	Meanings
1	Yellow highlight	CWC responded to a neurotypical's statement, and his response did not take into account the non-literal meaning of the neurotypical's illocutionary force
2	Blue highlight	CWC responded to a neurotypical's statement, and his response took into account the non-literal meaning of the neurotypical's illocutionary force
3	Green highlight	CWC responded to several statements in a neurotypical's email without separating them.

3.3.2.3 Reliability estimate of coding

Table 3.3. Results of two coders from the coding process of CWC's spoken language

	Results	Coder 1	Coder 2
1	Yellow highlight	79	75
2	Blue highlight	19	19
3	Purple highlight	49	51

Table 3.4. Results of two coders from the coding process of CWC's written language

No.	Results	Coder 1	Coder 2
1	Yellow highlight	10	7
2	Blue highlight	3	3
3	Green highlight	11	13

The inter-coder reliability was estimated based on the formula of Cohen's Kappa (Cohen, 1988). For spoken texts, Cohen's Kappa value is 0.93, suggesting that there was a very high agreement between the coders. For written texts, Cohen's Kappa is 0.81, suggesting that the inter-coder agreement was high. These results suggest that the coding of the data was reasonably reliable.

3.3.3. Data analysis

Instances of literal and non-literal utterances, metaphors, metonymy and irony were detected and analyzed, with consideration to the contexts surrounding these instances.

RQ1: What are the features of literal and non-literal utterances in CWC's spoken language?

In order to answer this research question, instances of literal and non-literal utterances, metaphors, metonymy and irony were analyzed. The larger contexts surrounding the phone call were also considered in order to determine the specific context of the particular conversation, and whether CWC's language was also influenced by outside factors (whether CWC was under stress during the conversation, the background information surrounding the conversation, etc).

RQ2: What are the features of literal and non-literal utterances in CWC's written language?

To answer this research question, the features of literal and

non-literal utterances in CWC's spoken language, metaphors, metonymy and irony in email exchange between CWC and neurotypicals. CWC's direct responses to the neurotypical's statement in his reply to each email were analyzed. The larger contexts surrounding the emails were also analyzed.

RQ3: What are the connections between CWC's spoken and written language?

To answer this research question, CWC's spoken language was compared qualitatively with his written language in order to analyze whether there was any connection between the patterns of his spoken and written language. This procedure was conducted after the data of CWC's spoken language and written language were analyzed.

3.4. SUMMARY

Chapter Four

FINDINGS AND DISCUSSIONS

4.1. FEATURES OF LITERAL AND NON-LITERAL UTTERANCES IN CWC'S SPOKEN LANGUAGE

4.1.1. Features of literal and non-literal utterances in CWC's phone calls from August 3rd, 2009 to November 10th, 2009

4.1.1.1. Phone calls between CWC and Kacey (from August 3rd, 2009 to November 10th, 2009)

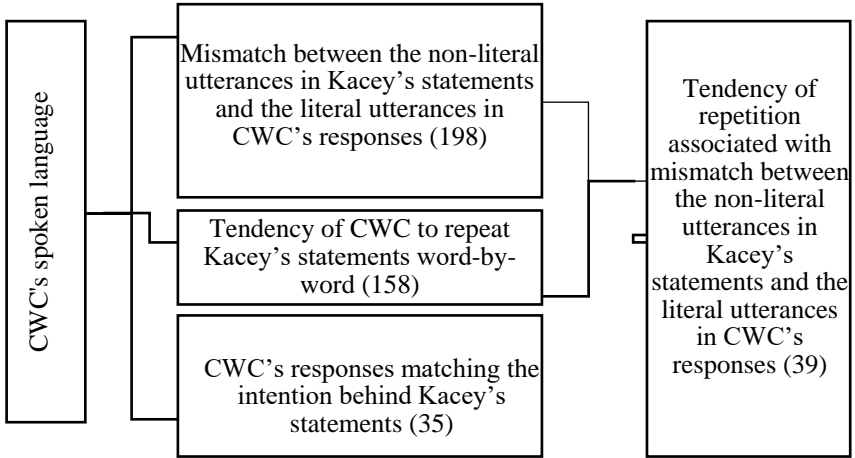


Figure 4.1. Numbers of the three features of CWC's spoken language in the 28 phone calls

4.1.1.2. Phone calls between CWC and Matthew (27th phone call, November 4th, 2009)

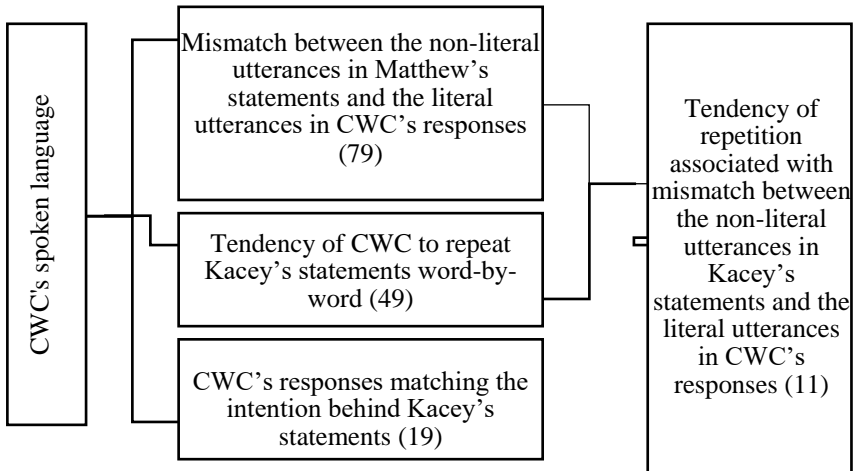


Figure 4.2. Numbers of the three features of CWC's spoken language in the phone call with Matthew

4.1.1.3. The 28 phone calls from August 3rd, 2009 to November 10th, 2009

Table 4.2. Distribution of the instances of the three features of CWC's spoken language in the 28 phone calls from August 3rd, 2009 to November 10th, 2009

Features Phone calls	Literal - non- literal utterances mismatch	Statement repetition	Literal – non- literal utterances agreement
1 st	5	10	3
2 nd	9	3	0
3 rd	2	0	0
4 th	33	6	2
5 th	23	16	1
6 th	14	14	3
7 th	6	3	1
8 th	9	12	1
9 th	4	4	2
10 th	4	4	3
11 th	2	3	0
12 th	3	2	0
13 th	0	0	0
14 th	1	1	0
15 th	3	1	1
16 th	11	10	3
17 th	1	5	0
18 th	1	0	2
19 th	1	6	0
20 th	1	1	1

Features Phone calls	Literal - non- literal utterances mismatch	Statement repetition	Literal – non- literal utterances agreement
21 st	1	3	1
22 nd	0	1	0
23 rd	15	12	0
24 th	5	3	1
25 th	7	5	0
26 th	79	49	19
27 th	23	15	6
28 th	14	18	4

4.1.2. Features of literal and non-literal utterances in CWC's phone calls from January 22nd, 2010 to February 25th, 2010

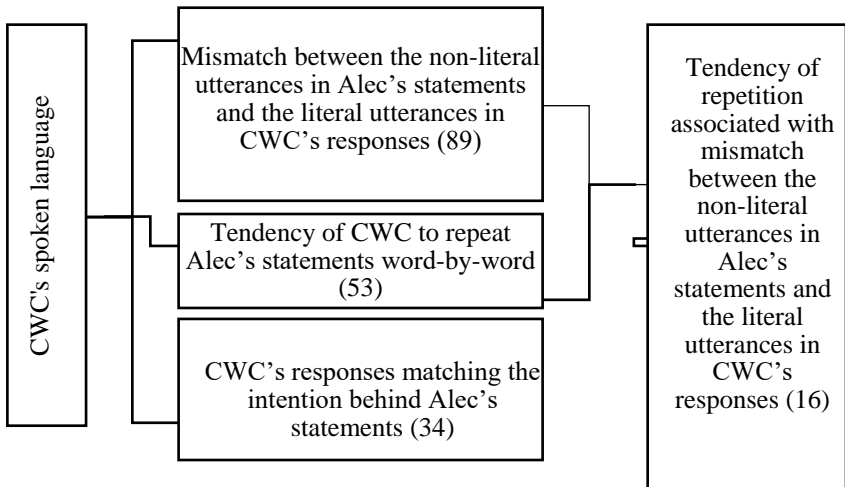


Figure 4.3. Numbers of the three features of CWC's spoken language in the phone call with Alec

4.1.3. Features of literal and non-literal utterances in CWC's 38 phone calls

From 2009 to 2010, although there was no significant change in the frequency of the mismatch, the tendency of repetition dropped in frequency (21.1%) while the conformation saw a rise in frequency (48.9%).

Usually, when there are more than 10 instances of the mismatch, the number of instances of the repetition is also above 10. In addition, the phone calls with the highest frequency of both the first and second features all share the same patterns: CWC was in a stressed state and the neurotypicals involved used a significant amount of non-literal utterances, including metaphors, metonymy and irony.

However, there is no connection among the mismatch, the repetition tendency and the tendency of CWC's responses to conform to the neurotypicals' statements.

4.2. FEATURES OF LITERAL AND NON-LITERAL UTTERANCES IN CWC'S WRITTEN LANGUAGE

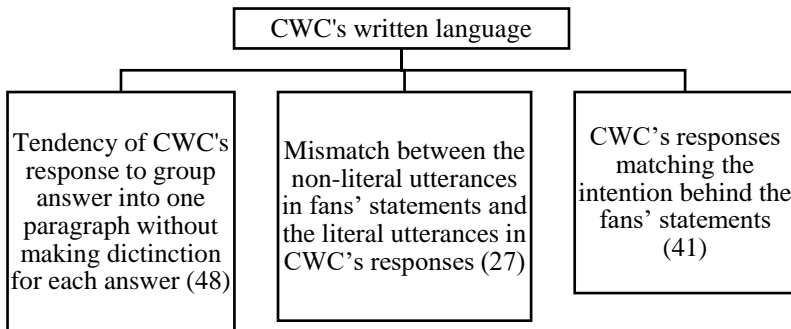


Figure 4.4. Numbers of the three features of CWC's written language in the 290 phone calls

4.3. THE CONNECTIONS BETWEEN CWC'S SPOKEN AND WRITTEN LANGUAGE

It can be inferred that CWC was much more likely to produce a literal response to a non-literal statement in spoken texts than in written texts.

The number of instances of conformation of CWC's response to the intention behind the neurotypicals' statements in CWC's spoken language is also much higher than that of his written language. However, CWC was more likely to produce a response that conformed to the intention behind the neurotypicals' statement in written texts than in spoken texts.

It is worth mentioning that although it has been determined that CWC was more likely to produce responses that did not fit the intention behind the neurotypicals' statements when he was stressed during spoken conversation, the same conclusion cannot be made with his written language.

Overall, the abnormality in CWC's language was more apparent in spoken texts than written texts. CWC was also much less likely to repeat the neurotypicals' statements in written text than in spoken text, although his writing could sometimes be influenced by the neurotypicals' writing style.

4.4. DISCUSSION

4.5. SUMMARY

Chapter Five

CONCLUSIONS AND IMPLICATIONS

5.1. CONCLUSIONS

The study attempted to explore the features of literal and non-literal utterances in CWC's spoken and written language, as well as the connections between his spoken and written language. The research was carried out using the Discourse Analysis method to analyze 37 phone

call and 290 emails between CWC and the neurotypicals he interacted with. The aim of the research was to answer the three research questions: “*What are the features of literal and non-literal utterances in CWC’s spoken language?*”, “*What are the features of literal and non-literal utterances in CWC’s written language?*”, and “*What are the connections between CWC’s spoken and written language?*” From the analysis of the data, the study managed to discover several features in CWC’s spoken and written language.

In CWC’s spoken language, there are three main features. The first feature is the mismatch between the non-literal utterances in the neurotypicals’ statements and the literal utterances in CWC’s responses. The second feature is CWC’s tendency to repeat the neurotypicals’ statements word-by-word. And the third feature is that CWC’s responses could sometimes match the intention behind the neurotypicals’ statements. It has been observed that CWC’s tendency of repetition was sometimes associated with the above-mentioned mismatch. The mismatch and the tendency of repetition were connected with the level of stress CWC was experiencing during the spoken conversations. However, the conformation of CWC’s response to the intention behind the neurotypicals’ statements was completely independent of CWC’s mood. Over time, there was a trend of CWC’s responses to move toward the conformation and slightly further away from the mismatch and the repetition. There was also a connection between the mismatch and the repetition, as CWC tended to repeat the neurotypicals’ statements as frequently as he produced mismatching responses in situations the mismatch feature was prevalent (most often situations when CWC was stressed). However, there was no such connection between the mismatch and the conformation.

In CWC’s written language, there are also three main features.

The first feature of CWC's written language is the tendency of CWC to group multiple responses to the neurotypicals' statements into one paragraph without clarifying which statement he was addressing. The second and third features are similar to those of his spoken language, namely the mismatch between the non-literal utterances in the neurotypicals' statements and the literal utterances in CWC's responses and the conformation of the responses to the intention behind the neurotypicals' statements. Over time, CWC's responses started to acknowledge the intention behind the neurotypicals' statements more, and caused less literal – non-literal mismatch. There is also a tendency of CWC's responses to repeat the neurotypicals' statements word-by-word, similar to one of the main features in CWC's spoken language, although this tendency was much less often seen in CWC's written language. However, an interesting detail to consider when this happened was that CWC tended to separate his responses in the same manner the neurotypicals did to their statements. This included the use of ordinal adverbs ("*firstly*", "*secondly*"...) and specific ways of numbering statements ("*1*", "*2*"...). This pattern suggests a connection between the repetition tendency and CWC's tendency of grouping multiple responses to the neurotypicals' statements into one paragraph, as CWC most often would separate his responses if the neurotypicals also did the same with their statements, especially with ordinal adverbs or numbering. Over time, CWC's responses also started to stop addressing to every questions posed by the neurotypicals and take into account the larger contexts behind the questions.

The mismatch between the non-literal utterances in the neurotypicals' statements and the literal utterances in CWC's responses was present in both CWC's spoken and written language. CWC's responses most often based themselves on small proportion of

small propositions of the neurotypicals' statements without considering the larger context surrounding the statements. However, the mismatch tendency was more likely to be seen in CWC's spoken language than his written language. In contrast, the conformation of CWC's response to the intention behind the neurotypicals' statements was more likely to be seen in CWC's written language than his spoken language. However, there is no evidence to suggest that CWC's spoken language had any effect on his written language over time. Furthermore, CWC's written language was also unaffected by the level of stress he was in, unlike his spoken language. In both spoken and written language, the tendency of repetition can be seen; although its frequency of appearance in written language was much lower than in his spoken language.

Table 5.1 summarizes the features of CWC's spoken and written language, as well as their relationship to each other

Table 5.1. Features of CWC's spoken and written language and their relationship to each other

SPOKEN LANGUAGE	WRITTEN LANGUAGE
- More mismatch between the non-literal utterances in the neurotypicals' statements and the literal utterances in CWC's responses + Mismatch was affected by CWC's mood.	- Less mismatch between the non-literal utterances in the neurotypicals' statements and the literal utterances in CWC's responses + Mismatch was not affected by CWC's mood.
- Less conformation of CWC's response to the intention behind the neurotypicals' statements	- More conformation of CWC's response to the intention behind the neurotypicals' statements
- More repetition of the neurotypicals' statements	- Less repetition of the neurotypicals' statements

SPOKEN LANGUAGE	WRITTEN LANGUAGE
+ Repetition was affected by CWC's mood	+ Repetition was linked to CWC writing the same way the neurotypicals did.

5.2. IMPLICATIONS

Since CWC's high-functioning autism was left untreated, his behavior was one of the purest manifestations of high-functioning autism. Thus, the analysis of his spoken and written language provides a good insight into the way other high-functioning autistic people communicate. The result of this research can be reviewed and applied by teachers, medical staff, social workers and the general public in order to better understand and work with high-functioning autistic people.

5.2.1. To teachers

From the analysis of the data, it can be inferred that the mismatch between the non-literal utterances in the neurotypicals' statements and the literal utterances in CWC's responses tended to happen when the neurotypicals' statements had a considerable amount of length and contained several non-literal utterances in order to express a single point. This tendency happened in both spoken and written texts. And although CWC was shown to be able to produce responses that matched the intention of the neurotypicals, the frequency of this happening was relatively low and inconsistent. Therefore, a general rule for teachers when communicating with high-functioning autistic students is that there should be no assumption of the students' ability to understand non-literal utterances. Thus, when communicating with high-functioning autistic students, especially when giving commands, teachers should try to express their intention clearly, using short, concise sentences. Teachers should also limit their use of non-literal utterances. It is recommended that teachers try to help students maintain a neutral mood during communication. And

when there is a miscommunication, teachers should not assume bad intention from students until there is evidence that proves otherwise.

5.2.2. To medical staff and social workers

This study can potentially provide medical staff and social workers with an insight into the language products of high-functioning autistic people. Medical staff can use the results of the study to create a framework of treatment method for language abnormality in high-functioning autistic people; and social workers can refer to the results in order to better aid high-functioning autistic people in integrating into society. It is also important that medical staff and social workers provide patients with a good communication model, as high-functioning autistic people have been shown to model their communication style from the neurotypicals they interact with (CWC's tendency to repeat the neurotypicals' statements, both in spoken and written texts).

5.2.3. To the general public

There is a tendency of the general public to expect a good level of understanding of non-literal utterances during normal communication. Thus, it is easy for the general public to assume bad intention from people when the intention behind non-literal utterances is not properly acknowledged. The result of this research has proven that there is a tendency for high-functioning autistic people to produce responses that does not match that intention, and this is not done under any malicious intention. Therefore, it is important that the general public take into account this tendency, and give high-functioning autistic people the benefit of the doubt when miscommunication occurs. When communicating with high-functioning autistic people, it is highly recommended that people use short sentences and limit the use of non-literal utterances. The most important thing to do during a

conversation with a high-functioning autistic person is to express a clear intention to him/her, without any non-literal utterances to distract him/her from the main point being made.

5.3. LIMITATIONS OF THE STUDY AND SUGGESTIONS FOR FURTHER RESEARCH

This study has a number of limitations that needed to be addressed in future research. First, during the course of the data analysis process, 84 emails were excluded from the research for not being based on any particular contexts. However, 39 of those emails were much longer than the 290 emails being used as data. They were exchanges between CWC and two neurotypicals, and CWC was not under the pressure to respond to the emails under a certain amount of time like he was with the 290 emails with fans. Furthermore, the 39 emails were also composed before the date of the 290 emails. The 39 emails, if properly researched, could provide an insight into the features of CWC's written language under different conditions from the 290 emails. This analysis can also provide evidence for whether CWC's written language showed any considerable change within a significant period of time like his spoken language.

Second, the 27th phone call from August 3rd, 2009 to November 10th, 2009 involved three people: CWC, Kacey and LC. Due to the scope of the study, the research only focused on the moments when CWC was talking with one person. However, CWC occasionally showed signs that he became confused while communicating with two people simultaneously. For example, in the extract below, CWC was arguing with LC and continued to talk even though Kacey interrupted and told him to stop talking.

[...]

Liquid: That has always been mine. Sonichu has been mine,

Sonichu has been mine ever since I came up with him in the walls of Manchester High School.

Kacey: That's why he showed it first, to prove it...

Chris: You've never been to Manchester High School!

Liquid: Yeah, I have! I went there for four, for four damn years!

Chris: You, but you, you stand right next...I tell you what. You stand right next to me in front of Mrs. Lori Jones, that was the, was the, one of the teachers over at Manchester High School...

Liquid: I am the real and true...

Kacey: Chris, stop yelling at my boyfriend! Be respectful!

Chris: [Talking over both Kacey and Liquid now] Or even from Mr. Pascarelli, who was the principal there! Go up right in front of him, and he would say I am the real Christian Weston Chandler and that you are the fake!

[...]

(Retrieved from https://sonichu.com/cwcki/Kacey_and_Liquid_Call)

CWC also showed signs of confusion in the phone call with Matthew, during the time period when Kacey was also involved in the conversation. In the extract below, Kacey and Matthew were talking to each other and they were not addressing CWC. However, CWC produced a response addressing both of them.

[...]

Kacey: Is he being disrespectful again, Daddy?

Matthew: He's always been... he's been disrespectful this whole time.

Chris: [*heavy sigh*] I have not been lying!

Matthew: When Kacey says it, when Kacey says it you believe it now.

Kacey: I just don't understand.

Matthew: I don't understand either.

Chris: I can't say I'm in full understanding either.

[...]

(Retrieved from https://sonichu.com/cwcki/Father_Call#Respect_and_Listening_Skills_281:19:04-1:24:45.29)

Due to the lack of sufficient data, the study was unable to properly analyze how this confusion manifested in CWC's spoken language. However, Attwood (2007) also made a similar comment about this kind of confusion in people with Asperger's syndrome (a type of high-functioning autism), using the phrase "*two's company, three's a crowd*" (p. 56) to describe such situation. However, Attwood provided no further detail about this phenomenon. Therefore, further research should look into the features of CWC's spoken language during conversations with more than two participants involved. It is recommended that a future study should consider the 12 phone calls that were excluded from this current research, which involved more than three active participants.

Third, there seems to be another connection between CWC's spoken and written language that this study failed to properly analyze due to the researcher's limited knowledge and a lack of clear framework for data analysis. There seems to be a tendency in CWC's written language to emulate the style of spoken language, such as voice raising or sighing. The most apparent manifestation of this feature is the use of capital letters. These capital words were possibly an attempt of CWC to emulate a loud voice, as they were placed in extremely specific areas of the emails. This feature is both apparent in the 290 emails with fan and the excluded 84 emails. Here is an example of such instance (retrieved from https://sonichu.com/cwcki/Mailbag_5#Daniel_Tammet.2FPunching_your_baby_will_make_it_gay)

I would not hate the guy for just the **ONE** reason; I liked Stephen Fry's vocal work on LittleBiGPlanet, but I do not hold his lifestyle against him; he did his work and did a good job. Also, hoping someone dies for **ONLY** that one reason is just stupid.

I appreciate your wanting to name your child after me, but **FOR GOD'S Sake**, raising a child with Autism is a **LOT OF HARD WORK**, a **LOT** harder than raising a Normal Child. Although, you may look up Autism on Wikipedia to see the mental problems of the child to further prove the point. Also, **For God's Sake, NEVER EVER** let your wife drink, smoke or be physically abused or hurt while she is pregnant. **IF ANYTHING**, such actions **CAN PROVOKE** homosexuality in the child.

GOD! W.T.F. is going on in that head of yours?!

I'm sorry for that outburst, but you needed the wake-up call in my humble opinion. May god bless you with a straight, normal, intelligent child. --
ChrisChanSonichu 01:16, 29 November 2009 (CET)

Additionally, the chat log excluded from the study also contains several instances of CWC writing “*sigh*” and one instance when CWC wrote a description of how he was sighing, as if the chat section was a spoken conversation:

[...]

CWCSonichu: why can't you just say "okay" after I type in brb, so I can get an aspirin, take a deep breath or something, which is the acronym for "be right back"?

CWCSonichu: ***sigh***

CWCSonichu: ***belch***

CWCSonichu: ***from stress***

CWCSonichu: ***and pain***

[...]

(Retrieved from https://sonichu.com/cwcki/Vivitheg%27s_AIM_chat)

Future research should look into this phenomenon properly, in order to determine whether CWC's written language had a tendency to emulate spoken language, and if so, to what extent. It is recommended that a future study of this kind can collect data from CWC's chat logs for its analysis.

Fourth, the main focus of this study was on one-on-one conversations between CWC and the neurotypicals he interacted with. However, CWC also published several videos and written texts in which he was the only participant of the speaking and writing acts. An analysis into these videos and texts can also provide an insight into the features of CWC's spoken and written language when there was no neurotypicals involved in the speaking and writing acts.