A Comparative Corpus-assisted Discourse Analysis of New Zealand and Chinese Social Media Posts on the Student Climate Strikes.

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Abstract

Since 2018, student strikes for climate action have taken place around the world. The Swedish youth activist, Greta Thunberg, initiated this activism through her attempt to encourage more climate action from her government. The movement soon drew global attention and caused extensive discussion online, however the views posted by different cultural groups about the Student Climate Strikes were often quite diverse. In order to examine how social media users from different cultural backgrounds respond to this activism, and the underlying values which have shaped their responses, two corpora of social media posts discussing the strike were developed; one representing New Zealand Twitter users and the other representing Chinese Weibo users. To analyse these two corpora, this study combines corpus linguistics (CL) and critical discourse analysis (CDA). Findings reveal, that while the two communities generally praised the students' engagement in the climate protests, this occurs in distinctly different ways. For example, the Twitter users are more likely to directly show their appreciation for the Climate Strike, its participants, and its opinion leader Greta Thunberg, while the Weibo users tend to provide suggestions for, and encourage students towards other actions besides joining the strike. Moreover, the Twitter users are more likely to make comments on an individual strike participant, while Weibo users tend to judge the behaviours of the students as a group. Twitter users also often discuss their children from the perspective of parents. In contrast, few Chinese Weibo users take this perspective.

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

Signed: Date 28/07/2020

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Chapter 1:
Introduction

1.0 Overview

This thesis provides a corpus-assisted, critical discourse analysis that compares the different responses of Chinese Weibo users and New Zealand Twitter users to the Student Climate Strikes. This chapter introduces the study by first presenting the background of the main focus of the analysis, the Student Climate Strikes of 2019. It discusses the motivation for the strikes, important events in their history, and their leader, Greta Thunberg. It will also provide a brief illustration of the types of social responses that the strike received. This will be followed by an overview of the climate crisis protest movement, as well as a brief review of previous studies within the area of strike discourses on social media. Finally, the organisation of the chapters in this thesis is provided.

1.1 The Global Student Climate Strikes

Many scientific studies have shown that human activities have seriously influenced global climate patterns, and that, in turn, the consequences of climate change will adversely impact on human societies (Doney et al., 2012; Scott, 2016). In the face of increasingly serious climate problems and extreme climate conditions, along with the resulting inaction of governments to address these issues, the Swedish climate activist Greta Thunberg stopped attending school in August 2018, and started to protest by sitting outside the Swedish national legislature and decision-making department in Riksdag (Masha, 2018). A month later, Thunberg stated that she would strike on every Friday and began to use the slogan 'Fridays For Future' (Wahlström, Mattias, Kocyba, De Vydt & de Moor, 2019). Thunberg's main purpose was to call on the

Swedish government to reduce carbon emissions. Her practices quickly drew worldwide attention and an increasing number of students from all over the globe became inspired to participate in Friday Student Climate Strikes (Taylor, Watts & Bartlett, 2019).

The Student Climate Strikes movement grew throughout 2019 and expanded to more than 250 cities in countries such as Australia, New Zealand, Canada, Germany, and Finland. The demands of the participants also increased from the reduction of carbon emissions to all kinds of climate action, such as achieving a hundred percent renewable energy generation before 2030 and funding fossil energy communities to transit into new industry actively (Boulianne, Lalancette & Ilkiw, 2020). They primarily called on adults and politicians to take responsibility and act on climate issues.

By the end of August 2019, there were two main Student Climate Strikes across the globe, both of which symbolically took place on a Friday. The first was on the 15th March, 2019, when around 1.4 million people took part in the Climate Strike in 2233 cities and towns in 128 countries. (Carrington & Damian, 2019). The second was on the 24th May 2019, and it was on this latter occasion when the Climate Strike occurred in Australia and New Zealand. Hundreds of thousands of students worldwide took part in this second Strike. The strikers demanded that their respective governments took immediate action on the climate crisis. However, the country with the highest greenhouse gas emission in the last ten years, China, did not allow climate protests and strikes.

The 'Fridays For Future' movement has triggered fierce debates both online and offline (Taylor, Watts & Bartlett, 2019), and it has been both praised and criticised by scientists, authorities and parents. For example, while 340 scientists in the Netherlands have openly supported the Climate Strike (Schiermeier et al., 2019), others, such as the Australian Prime Minister Scott Morrison have argued that students should remain in school and focus on their learning. The Guardian reported Morrison as stating that the public wanted less activism in schools (The Guardian, 2019).

1.2 The Student Protest Strikes and social media

Since the development of Web 2.0, social media has begun to play an important role in social movements and has become one of the most important communication tools for protest participants (Theocharis et al., 2015). Ultimately, it has changed the mechanisms for social movement organisation and increased citizens' involvement in political issues (Hensby, 2017). Lance, Breunig and Givens (2008), for example, state that social media has brought down the communication costs of social movements, thus enabling an increasing number of people to participate in contemporary political movements. They suggest that as a result, demographic groups have gradually shifted from "ideologically-based identifications anchored in mass social organizations (party, class, church)" to "more self-directed political affiliations driven by lifestyle values" (p. 285). Furthermore, Raynauld, Lalancette and Tourigny-Koné (2016) suggest that with the help of social media, grassroots protests have been more able to challenge traditional political dominance, make official political actors recognise their presence and even influence political decision-making.

Similarly, social media has also strongly contributed to student-led social movements. For example, the emergence of digital social media was an important catalyst during student movements such as Chilean Student Movement in 2006 (Barahona, García, Gloor & Parraguez, 2012) and Austrian Student Protest in 2009 (Maireder & Schwarzenegger, 2012).

1.3 Climate change attitudes of the Chinese and New Zealand governments

Today, the Chinese and New Zealand governments have similar attitudes toward the climate change crisis. Both are signatories to the Paris Agreement and have agreed to enact and implement policies to decrease global warming (Agreement, 2015). However historically, the two governments' climate change attitudes are quite distinct. The Chinese government and China's leaders in the 1990s believed that environmental disruption was an unavoidable price

to pay to alleviate poverty, and to achieve development and prosperity (Lester, 1998). In 2009, China was also criticised for its relatively weak commitment to the Copenhagen Accord (Ye & Wu, 2015). This trend changed, however when China played an active and constructive role in the Paris Climate Summit (Browne, 2015). In contrast, the New Zealand government has attached importance to climate change issues for a long time, largely because New Zealand is a country with significant coastal assets that are vulnerable to sea level rise (McGranahan, Balk & Anderson, 2007). Such national interests have led to New Zealand's active response to the climate crisis.

1.4 Comments and ideologies on social media

Social media platforms also provide opportunities for individuals to express their views about social movements, and even debate with other people (Hwang & Kim, 2015). Howard et al. (2011), for example, investigated the use of Twitter and Facebook for the dissemination and discussion of ideas during the Arab Spring protests. Importantly, these online reactions often take place immediately and can represent the real-world consequences of the social issues concerned (Lin, Margolin, Keegan & Lazer, 2013). Furthermore, studies show that the posts on social media platforms can reveal important information about the beliefs, values and ideologies of users, both as individuals, and as wider communities (Swigger, 2013). For example, Tweets during the #BringBackOurGirls campaign revealed important ideologies about the perceived rights of female children rights (Chiluwa & Ifukor, 2015), and Weibo posts about climate change show that although climate change is viewed as a global threat, its users see it as having little connection to Chinese contexts (Liu & Zhao, 2017).

According to Twitter's and Weibo's most recent report, Twitter has 330 million active users and the number of active Weibo users has reached 400 million. In addition, statistics show that by the end of August 2019, 9.6% of New Zealand netizens consistently use Twitter (What are the current social media stats in New Zealand for 2019, 2019). Given that Weibo and Twitter are two of the largest social media platforms in China and New Zealand, it is likely that these social

media platforms will be able to reveal details about the beliefs and values of their users towards a particular area of focus. Furthermore, because socially and culturally they represent quite different primary user groups, the values and beliefs of their respective users are likely to be quite divergent.

While a number of studies have examined the role of social media in social movements, or examined social media posts and comments to explore the beliefs and values of a particular communities of social media users, there have been no studies on social media posts referring to the Student Climate Strikes, and in particular no examination or comparison of the way that different cultural groups have respond to the Student Climate Strikes. As a result, this study compares the social media posts of two geographically, linguistically and culturally different groups, Chinese Weibo users and New Zealanders Twitter users. The aim is to answer the following two questions:

1. How did social media users in China and New Zealand differently respond in their online posts about the Student Climate Strikes in 2019?
2. What might these responses reveal about the different underlying beliefs and values of the two communities, particularly with regards to the Student Climate Strikes?

To achieve this, the study employs a corpus-assisted discourse analysis of two researcher-developed corpora: the CNCS corpus, which contains Weibo posts written by Chinese social media users; and the NZCS corpus, which consists of Twitter posts written by New Zealand social media users, about the Student Climate Strikes. The outcomes of the research will have implications at two levels. Firstly, the results of this research can reveal the values of Chinese and New Zealand netizens in their online posts. Secondly, it could provide a motivation for other research to examine the ideologies of netizens from cross-lingual and cross-cultural backgrounds.

1.5 Organization of Chapters

The remaining chapters of this study are divided into eight sections. Chapter 2 is a review of the existing scholarly literature on four specific areas broadly related to the nature of this study. The first provides an overview of research into social media and online comments. The second looks at research on social media and contemporary social movements. This includes the use of the social media platforms Twitter and Weibo in the context of social protest. The third area examines discourse analytical studies of social movements as well those investigating climate change discourse. The final focus draws upon the scholarly literature to discuss three key areas; discourse, ideology and relations of power. It will also include a brief introduction to critical discourse analysis and corpus-assisted discourse analysis.

Chapter 3 first provides an overview of the methods used in this study; that is, corpus analysis and critical discourse analysis. Following this, the two specialised corpora developed for this analysis (New Zealand netizens' tweets about climate strike corpus and Chinese netizens' Weibo post about the climate strike corpus) are discussed, along with the process for data collection. This includes information about the size, sample and representativeness of both corpora and the functions of analytical platforms (AntConc and Sketch Engine) used for the study. Chapter 3 also introduces the corpus-assisted resources used to analyse the data.

Chapter 4 is the first stage of analysis. In this chapter, an introductory frequency and keywords analysis of both corpora is presented. Chapter 4 provides the foundation of for the following chapters, as the findings from this chapter are used to guide the analytical focus of Chapters 5 to 8.

Chapter 5 focuses on a comparison of the adjectives (e.g. good, little, young and proud), which are salient in the two corpora. This chapter examines the way the authors of the corpora evaluate and judge the Student Climate Strikes. Chapter 6 focuses on nouns that include notions about climate change and the strike participants. This chapter mainly discusses how Twitter and Weibo users position themselves in the Student Climate Strikes and how they view other people

who are involved in this movement. Chapter 7 focuses on pronouns, and how the Twitter and Weibo authors differently establish their collective identities as they talk about the Student Climate Strikes. Lastly, Chapter 8 discusses the utilisation of hashtags in both corpora.

The final discussion chapter, Chapter 9 concludes by making observations on five key areas. These include the Twitter and Weibo users' more general concern about the Student Climate Strikes, the sense of identity they construct through their posts, the tone they take, their underlying beliefs and values, and their views towards student strike leader Greta Thunberg. The chapter also discusses the potential limitations of this research. This is divided into three main area: limitations of the data collection process; limitations of combining corpus-assisted approaches with critical discourse analysis, and lastly, limitations of the cross-cultural analysis. Chapter 9 concludes with a final overall reflection on this study.

Chapter 2:
Literature review

2.0 Introduction

In order to provide a background for this corpus-assisted discourse analysis, which compares posts referring to the Student Climate Strikes on Twitter, the most popular American microblogging platform, and Weibo, the Chinese equivalent, this chapter provides a literature review of studies that have focused more broadly on these areas. The chapter begins by reviewing studies that discuss the role and impact of social media on online collective action and social movements. Following that I will look more specifically at studies that focus on protest and social movements posts on Twitter and Weibo, as well as those that examine how these platforms can provide an understanding of the values and beliefs of their users. Finally I will look at discourse studies, including those following corpus-assisted approaches, which investigate both social movements and climate change discourse.

2.1 Social media, social movements and collective action

2.1.1 The emergence of online collective action

The past 20 years has seen a rapid increase in the development of peer-to-peer information and communications technology (ICT). According to Hands (2011), this has resulted in the emergence of social networking platforms such as Twitter and Weibo, which he defines as "user-created content and websites specifically built as frameworks for the sharing of information and for social networking" (p. 79). These peer-to-peer platforms include interactive functions that existing media (i.e. traditional phones) have struggled to provide, ultimately increasing users' participation and connectivity, information sharing, and social collaboration

(Henderson & Bowley 2010).

Social networking platforms generally provide users with integrated and inventory-oriented resources to express their feelings and share their ideas. However, when certain social events occur, these social media platforms create opportunities for more spontaneous, 'entrepreneurial' forms of response. According to Bennett and Segerberg (2012), Facebook and Twitter, in particular, are commonly used for enabling a large number of audiences to be engaged and mobilised when a social event occurs. Users are able to take part in the discussion at short notice and for very little cost. As a result, Bennett and Segerberg describe social networking platforms as 'stitching technologies', because they are able to quickly assemble networks, share information and even recruit for political participation. Social media networking platforms, for example, played an important role in the civil unrest in Moldova in 2009 (Mungiu-Pippidi & Munteanu, 2009), the Iranian election protests of 2009–2010 (Morozov, 2009) and the Tunisian revolution of 2010–2011 (Zuckerman, 2011).

2.1.2 User-generated content and social networking

User-generated content (UGC) defined by Kaplan and Haenlein, (2010) as published content that is "created outside of professional routines and practices" (p. 61) is a crucial feature of social networking platforms and can take on various forms, such as Twitter tweets, Weibo posts, Facebook status updates, Youtube comments and so on. According to Dhar and Chang (2009), UGC is what is produced in the process of people being social, as well as the object around which sociality might happen. Hence, social media is saturated with UGC.

A number of studies have examined user-generated content. Lanz, Goldenberg, Shapira and Stahl (2019), for example, studied the attempts by music producers to seed their user-generated content with high status online music influencers. The authors found that status was relevant to the seeding process, in that high status influencers declined the opportunity to promote the work of low status music producers. In another example, Melumad, Inman and Pham (2019) study the way smartphone use changes the nature of UGC by encouraging briefer and less specific

content, than UGC created on desktop computers.

The UGC on Twitter and Weibo shares many common features, however it also exhibits a number of different characteristics. On the one hand, for example, the Twitter and Weibo posts of a particular user will both show up in the feeds of those who follow that user, and they will both include hyperlinks, images, and videos, etc. Furthermore, the posts of both platforms are largely publicly available. On the other hand, Twitter posts are limited to 280 characters in length each, while Weibo posts can be up to 2000 characters. Moreover, Weibo content, according to Yu, Asur and Huberman (2011), has a significantly different focus compared to Twitter content. Key topics in Weibo are created almost entirely from retweets of content form other media, such as jokes, images and videos, whereas on Twitter, key topics are often a response to current global events and news stories. UGC also ultimately contributes to the formation and coordination of social movements. This is further discussed in Sections 2.3.1 and 2.4.1.

2.1.3 The impact of social media on social movements

From the Arab Spring protesters to the Wall Street occupiers, contemporary social movements now employ digital media to communicate, organize, and coordinate their protest activities (Theocharis et al., 2015). Hensby (2017), for example, explicitly showed how Twitter mobilised the 2010/2011 UK student protests. As a result, Bennett, Breunig and Givens, (2008) have suggested that digital media has forever changed the long-established mechanisms of social movement organization, communication and mobilization. For instance, Myers (2000), has suggested that before digital media, information about a protest could travel, at most, only several hundred miles. However, now, with the advent of online social media, information about these events can be diffused globally. In addition, online social media provides real-time comments on social movement. Without it, people would require traditional forms of mass media, such as newspapers and broadcast media to disseminate and obtain information (Myers, 2000). These traditional forms of media spread information at a much slower speed.

Bennett (2003) states that the ways individuals relate to social issues has also changed as a result of emergent social technology. According to Tufekci (2014), protest participants before the time of ICT were more likely to create an organization in which people could think and make hard decisions together collectively, however, in the era of ICT, people tend to focus on their personal hopes and grievance (Bennett & Segerberg, 2012). These changes, however, have caused some concern for social movement activists. For example, in his comparison of the Seattle WTO Protest (1999), the Chiapas Peasant Uprising (1995) and Turkey's Gezi Park Protests (2013), Tufekci (2014) questions why the use of digital media has not produced more successful outcomes for social movements. He suggests a number of reasons. Firstly, social movement participants nowadays may use social media to gain publicity and omit to do the daunting tasks that protesters used to engage in. For example, leaflet printing can be substituted by online posts, or stirring speech can be replaced by vlogs. As a result, participants avoid collaborating on the types of collective tasks that can result in a successful protest. Other studies show that using social media in movements can be an intractable problem. For example, Bennett (2003) finds that with developed social platforms, individuals nowadays are less likely than in pre-internet eras to join institutionalised political action or become long-term members of social movements. Other scholars also show concern about social movement in the social media age. Fominaya (2014), for example, argues that compared to the past, activists now need to be more careful and reflexive in the online organisation, to keep the social movement running.

2.1.4 The role of social media in social movements

The widespread diffusion of social media platforms and the increase of protests around the world have raised a question about the role of social media in various kinds of social movements, such as dissents, protests, strikes and occupying movements. In recent years, researchers have shown an interest in whether social media acts as a catalyst when social movements occur. As a result, literature about digital activism and internet-mediated communication has proposed ways in which social media impacts on collective and connective actions, including providing news, assisting in the coordination of social media, helping users to join political events, creating opportunities to debate or chat with other people, mobilising new participants,

spreading information and facilitating emotional contagion. (Bennett & Segerberg 2012; Chadwick & Howard 2010) For example, Howard et al. (2011) research social media's role during the Arab Spring and state that social media was central to shaping political debates and spreading democratic ideas. Similarly, Tufekci and Wilson (2012) point out that social media was crucial in shaping how citizens made individual decisions about whether to participate in the Tahrir Square Protest protests or not. Social media also played an important role in the youth protests in Chile (Valenzuela, Arriagada & Scherman, 2012), budget repair bill protests in Wisconsin (Macafee & De Simone, 2012) and the 2011 protests in Egypt and Spain (Gerbaudo, 2016).

However, some scholars insist that although social media spreads information rapidly, the core ideologies underpinning social movements and protests have not changed. For example, by questioning if there is an indirect connection between connectivity and political effectiveness, Gladwell (2010) argues that activism in a digital network system is unlikely to generate committed collective action, particularly when the going starts to become difficult and tough. He mentions that in a successful movement such as the civil rights movement, the critical moment is usually when activists show strong ties and centralised hierarchical organisation. However, activists who depend on social media, on the contrary, are characterised with weak ties and horizontal decentralised organisation. So, digitally networked action, according to Gladwell (2010) is not equipped to bring about real systemic change. Furthermore, Fearn-Banks (2016) suggests that compared to the traditional methods, the only change is that social media makes it possible for faster communication. He also states that this faster communication can only be used by a small group of people, not the whole society.

2.1.5 Social media, social movements and the echo chamber
Some studies are concerned with how social media users communicate and consume information when a political issue occurs. Garrett (2009), for example, found that Internet users only tend to absorb online information that confirms their ideologies, especially within the political domain. In another study, Vaccari et al. (2016) noticed that Twitter users have

interactions (a comment or retweet) with authors with similar political ideas more frequently than those with different ones. And they are more likely to comment or retweet such posts. However, this does not mean that Twitter users are only communicating with like-minded people. The article also shows that users of Twitter interact frequently, with representatives of networks that display an oppositional ideology. Nevertheless, Vaccari et al. (2016), concluded that there is a phenomenon in Twitter referred to as the *echo chamber* which should not be overlooked.

The term echo chamber was first used to describe the reverberation of sound in a hollow enclosure. More recently it has been used to refer to a phenomenon in social media where people who enter an online political arena with existing attitudes and beliefs do not accept ideas or data that are incompatible with their existing attitudes and beliefs (Jamieson & Cappella, 2008). In contrast, information in line with their existing beliefs is accepted uncritically. Huckfeldt and Sprague's (1995) study of interpersonal communication, also finds that people gravitate toward others who share their opinions. Furthermore, Garimella and Weber (2017), analysed a large database of 679,000 Twitter users, and examined the relation between their tweeting behaviours and how they followed political or media accounts. They found that Twitter users are more likely to follow politicians who hold similar ideologies as their own. This was also verified by Twitter users' behaviour during Donald Trump's polarising election campaign, and also during Brexit in 2016 (Hänska & Bauchowitz, 2017; Gorodnichenko, Pham & Talavera, 2018)

Despite the echo chamber phenomenon, Baker (2006) points out that people of similar backgrounds (i.e. age, sex, race and nationality) are more likely to use similar words when discussing a certain phenomenon. Drawing upon this theory of similarity, a number of researchers have also found that social media users from different cultural and political backgrounds exhibit different communication patterns. Evidence can be clearly seen in Cheng and Chen (2014)'s research on Chinese tweets in the 2012 presidential election in Taiwan. The authors find that for internationally distributed social media platforms, such as Twitter,

communication patterns are deeply affected by local contexts. Takahashi, Tandoc and Carmichael (2015), in their study about a Philippines typhoon, also state that users from different backgrounds employed Twitter in ways consistent with their traditional roles.

2.2 Twitter

2.2.1 Twitter and social movements

For scholars, politicians and specialists, Twitter is a popular platform for accessing public opinion about social issues. According to Lin et al. (2013), one of the benefits of studying Twitter as a communication platform is that it allows researchers to do real-time observation of how netizens react to social events. According to Freelon, McIlwain, and Clark (2016), tweets are obviously not baseless or fabricated but represent public behaviour, and real-world consequences of social events, issues and crises. This might be a reason why some scholars think that studies of Twitter comments can reveal important information about the nature of public dialogs, such as how intense the support is for a particular opinion, whether an issue has the potential to gain attention, or there are normative pressures on opinions within a certain community. Furthermore, researchers can also focus on Twitter comments' potential of influencing individuals and politicians (Freelon, McIlwain, & Clark, 2016). There are also studies showing that Twitter not only disseminates and amplifies information, but also helps the public request assistance in special circumstances. During a disaster, for instance, Twitter can help to organise relief efforts, and sometimes even calm the victims. Kongthon, Haruechaiyasak, Pailai and Kongyoung (2012) classified tweets about a flood in Thailand and did a keyword analysis. They found out that Twitter had shown great potential to be a valid tool for citizens to receive and disseminate real-time information, and at the same time it allowed "citizen reporters" to provide instant situation reports. Such tweets can also be used as a tool to coordinate resources. Furthermore, since people tweet about the problems they meet during a crisis, once these tweets being classified and tidied, they can be used to prepare for disaster relief in the future. Takahashi, Tandoc and Carmichael (2015) analysed Twitter comments' during the Haiyan Typhoon in the Philippines and came to a similar conclusion, as did Wagler

and Cannon (2015) in their analysis of Twitter comments during the 2012-2014 Nebraska drought. The studies above have shown some of the reasons why Twitter has emerged as a popular organising and communication tool for protestors around the world and how, as a result, it is now seen as a means for understanding, monitoring, and even predicting the real-world phenomena.

2.2.2 Twitter and ideology

Twitter content can also be used to study political ideology. For example, Correa and Camargo (2017) investigated the connection between political ideology and Twitter activity during 2015 Colombian election and found that electoral results were closely associated with the number of tweets and retweets posted. Preoţiuc, Liu, Hopkins, and Ungar (2017) find that Twitter users are more interested in political engagement than ideological self-placement. In other words, Twitter users do not directly regard themselves as conservatives, liberals, moderates or extremists. They express their thoughts, engage in online discussion instead.

However, some researchers note that it is important to interpret studies examining the values and ideologies of social media users with care (Jungherr, 2015). Lin et al. (2013), for example, warn that treating tweets as surveys inferring the current attitude or belief of a certain group of people might be problematic, because user bases are not always representative of the target population (Kirilenko & Stepchenkova, 2014; Ruths & Pfeffer, 2014). Total tweet volume might also be a concern, because the comments of under-active users can be skewed by over‐active users (Leetaru, Wang, Cao, Padmanabhan & Shook, 2013), and tweets may also be sent by bots or professional accounts, which do not reflect the real opinion of individuals (Howard, Kollanyi & Woolley, 2016).

2.2.3 The use of twitter during social movements

The reasons why users employ Twitter more generally during social movements are different from one another. It can be used to report news, to gain information, to tell others what they are doing, or as pointed out by Ehrlich and Shami (2010), Twitter can be used for "reaching

information quickly; gaining higher visibility; feeling connected and being aware of what is happening around" (pp. 47-49). Furthermore, users more specifically 'tweet' during social movements for two main reasons. Firstly, some users tweet simply to share information. This can be seen in Vieweg, Hughes, Starbird and Palen's (2010) study about the Red River Flood, during which people mainly posted news and links to news found on external websites. Heverin and Zach's (2010) analysis of tweets after the shooting of Seattle police officers shows similar findings. Secondly, people tweet to feel connected to others. According to Yoo, Choi, Choi and Rho (2014), people desire an image that is acceptable to that pursued by others in their group or society. As a result, during a social movement, people often tweet to fulfil their desire to belong to an online community or social group. The 2016 USA Presidential election provides a good illustration of this practice (Penney, 2016).

2.3 Weibo

2.3.1 Weibo and social movements

The internet arrived in China in 1994, and initially, in the late 1990s, when the Internet first became available to the public in China, people primarily used Bulletin Board Systems (BBS) for online communication. This involved users connecting to the internet with a terminal program, in order to upload and download data, and exchange information (Damm, 2007). After BBS, the microblog became a popular form of communication for the online community in China. In 2007, Fanfou Weibo, the first weibo microblogging service, was created in Beijing. Following that, different kinds of weibo services emerged, including Sina Weibo, which gradually became the most essential online communication platform in China. At this time, Chinese internet users treated the internet as an entertainment tool, rather than an information highway. According to a 2005 study of urban Chinese internet use (Liang, 2005), most Chinese internet users do not seek out serious political discussions online, instead, their interest in on online entertainment. Interestingly, as the number of Chinese internet users rapidly increase in the total number of users, Sina Weibo has now passed Twitter, the world's leading microblogging platform, in the total number of users (Poell, de Kloet, & Zeng, 2014). Weibo's

latest official report (May 2018), for example, states that the number of active users in Weibo has reached 400 million, while in 2020 Twitter had 330 million users.

Like Twitter, Weibo has also been the focus of research, and this has tended to focus on three areas; commercialisation, governance and censorship. Firstly, in terms of commercialisation, Shirk (2011) has examined how developments and ongoing changes in Chinese social media mirrored the changes in Chinese culture. The author also points out that it is difficult to understand Chinese social media, without understanding the commercialisation of the Chinese mass media. Today, most media institutions generate their revenue through businesses advertising, they are profit-oriented, and they trade their shares. However, these institutions are not entirely privatised. The share of non-state investment in the Chinese media industry cannot exceed 49%, including newspapers, radio, and television stations (Shirk, 2011; Poell, de Kloet & Zeng, 2014). Secondly, the Chinese state embraces the Internet because it can be used to support the country's process of governance (Shirk, 2011). Indeed, as pointed out by Gang and Bandurski (2011), the Chinese government, nowadays, tends to regard online communication as the "voice of the public" (p. 39). As a result, Shirk (2011), suggests that the Internet in China has the invisible function of letting officials know citizens' views, even though these views take a rather unfiltered form. Nevertheless, they provide the Chinse government with opportunities to identify certain social problems (Shirk, 2011). Thirdly, many studies have showed that the Chinese website censorship is a complicated practice. Yu (2009), for example, suggests that the censorship system is intricate because it is organized across different ministries, each of which has different responsibilities. Hence, the author defines online censorship as "inconsistent and unpredictable" (p. 12). Furthermore, there was evidence that Chinese government was trying to facilitate the censorship system. For example, in 2011, Chinese government planned to institute a "Real Name" policy for Weibo, in order to reinforce the censorship. But this policy was not implemented due to too many complaints.

2.3.2 Weibo and ideology

Weibo texts, which are studied less than Twitter, can also reveal the important underlying

identities of Chinese society during social crises and movements. However, given the social, political and cultural differences between the users of twitter and Weibo it is most likely that they often have different usage patterns and different motivations for posting. Taking the 2010 Yushu earthquake as an example (Qu, Huang, Zhang & Zhang, 2011), Weibo shows how comments during the 2010 Yushu earthquake can be categorised into five main groups: opinion (33%), situation update (25%), general information about the earthquake (18%), emotion-related (16%) and action-related (posts from disaster relief participants) (4%). Compared with the scope of tweets posted in response to a similar situation on Twitter, the number of Weibo posts in the action-related category is remarkably low; possibly due to the relatively strict censorship of the Chinese government. Furthermore, in contrast to the sentiment analyses of Twitter, sentiment analyses of Weibo content show that during social movements, Weibo posts show very little increase in affective outpouring as the event develops. (Lin, Lachlan, & Spence, 2016).

2.4 Discourse analysis, social movements and climate change

2.4.1 The discourse analysis of protests and strikes

In the early 21st century, the primary focus of discourse analytical research on protests and strikes was on the mass media. Farrow and O'Brien (2005), for example, examined the newspaper coverage of the 2001/2002 New Zealand nurses' strike. They found that journalists would use certain words (such as *dangerous* and *powerless*) to describe the striking nurses, which they suggested could lead to the ongoing discrimination of nurses. Kariithi and Kareithi's (2007) study of the anti-privatisation strikes in South Africa also examines the role of mass media and how the print media construct and reconstruct policy debates. In contrast, studies of protest discourse after 2010 shift their focus to new media discourses. For example, Shirazi (2013) analyses the social media discourses of the Middle East and North America (MENA) social movement and concludes that digital communication technologies and their applications manage to provide ordinary citizens with opportunities to participate in communication about social movements, as well as allowing people to express their own ideas about civil resistance

and social actions. Shirazi concludes that such participation enables the new generation to become active players of political activities in the MENA region. As well as using a critical discourse approach, Shirazi also draws upon critical research in information systems (CRIS) to analyse social issues in MENA to evaluate the impact of information technology.

Some scholars have examined protest discourses and focused on the power relationships behind them. For example, in an examination of the protests against major international summits in Seattle, Genoa, Prague, Johannesburg, London and Copenhagen, Death (2010) states that protest discourses show a close interdependency between regimes of government and resistance practices. Death also points out that in a protest, the power relation might not be simply binary, i.e. government and freedom, public and private, etc. He states that instead, it is often necessary to consider the overlapping, multi-centric and other kinds of networks of global power relations. Saunders et al. (2012) also suggest that it is mistaken to view the power relation in a protest as a simple binary between government and participants. They state that different kinds of participants (novices, returners, repeaters, and stalwarts) might take different roles in a protest. So, instead of treating protesters as a homogenous group, scholars might need to consider the contributions of diverse factors to sustain protest politics.

2.4.2 Corpus analysis of climate change discourses

Recent discourse studies on climate change have tended to use a corpus-assisted focus. For example, Willis (2017) uses corpus analysis to analyse political speeches on climate change. She finds that politicians are likely to discuss climate problems from economic and scientific perspectives and ignore its effects on humans and society. The author also argues that politicians attempt to discursively 'tame' the climate instead of confronting actual climate problems. Through a corpus-assisted analysis of climate change blogs, Fløttum, Gjesdal, Gjerstad, Koteyko and Salway (2014) find that in contrast, when climate change is seen as a threat, people tend to connect the phenomenon with nature and humans. However, it is also viewed as an opportunity for industrial growth. In addition, some scholars have carried out cross-cultural discourse studies on the climate change issue. For instance, Grundmann and Krishnamurthy

(2010) examine comparative data from the US, the UK, France and Germany to show how climate issues are differently framed in these countries.

2.4.3 Discourses about climate change on Twitter and Weibo

While ordinary netizens continue to debate whether climate change is true or not, and if true, how severe its effect might be, almost all scientific communities repeatedly affirm the existence of climate change and warn the public of the significant result it may cause (Team, Pachauri, & Meyer, 2014). Nevertheless, there is a small minority of scholars who believe that climate change is a distant and intangible phenomenon, and that continuing to warn people of the severe consequences of climate change will ultimately evoke strong public anxiety (Spence, Poortinga, Butler & Pidgeon, 2011; Weber, 2010).

Studies that have investigated Twitter discourse on climate change find that Twitter users can also be divided into those who believe in climate change, those who deny its existence and those with mixed attitudes. Kirilenko and Stepchenkova (2014) conducted a global investigation of climate change and global warming posts on Twitter. They collected and analysed 1.8 million Twitter messages on climate change and found that climate discussion on Twitter is, to some degree, dominated by relatively few key opinion leaders. They conclude that tweets on climate change provide data for researchers to study patterns of public discourse in relation to natural and socio-economic events. Similarly, Pearce, Holmberg, Hellsten and Nerlich's (2014) analysis of Twitter posts referring to the Intergovernmental Panel on Climate Change's (IPCC) published assessment of physical climate science finds that among such tweets, hashtags associated with geographical locations were the most frequently used in discussions about the IPCC. The authors conclude that the use of these hashtags, to some degree, represent the public's attempts to make the relatively 'intangible' phenomenon of climate change more 'tangible' (p. 9). Pearce et al. also found that many climate change tweets are from those representing the mixed attitudes group, and that this group tends to share neutral opinions about climate change.

In another example of the analysis of online climate change discourse, Liu and Zhao (2017) examine discussion around climate change on Weibo over a two-month period surrounding the Paris Climate Summit. Their findings can be divided into three points. Firstly, non-governmental organizations (NGOs) are mostly absent from this topic on Weibo. Secondly, discussion on climate change is concentrated in major urban areas, especially in the capital, Beijing. And thirdly, there are few users discussing topics such as climate science or climate change's actual impact on China. According to the netizens' comments, climate change appears as a global threat that has little impact on China. Although there are some articles about climate discourse on Weibo, most studies simply focus on the online discussion of climate change in China. To conclude, this chapter, while discourse researchers have made a number of initial contributions to studies on climate change and climate change discourse, there is still much further work to do in this area (Wodak & Meyer, 2015).

2.5 Conclusion

The literature discussed in this review introduced the background to this study. It began by discussing social media and its relationship to social movements. In this context, it also introduced the social media platforms Twitter and Weibo. Finally, discourse analytical studies on social movement and climate change were discussed. Although, due to space, this literature review is not exhaustive, it does provide a preliminary reference for this thesis. The next chapter provides an overview of the methods used in this thesis; corpus linguistics and critical discourse analysis. The analytical platforms and the approach for building the two corpora used in this study are also introduced.

Chapter 3: Methods

3.0 Introduction

This study more generally aims to compare how Chinese and New Zealand social media users respond online to social movements, and in doing so contribute to the understanding of how people from different cultural backgrounds respond in certain ways to social issues, and why. In order to achieve this, the study uses a corpus-assisted discourse analysis (Baker, 2006; Gabrielatos & Baker, 2008; McEnery & Hardie, 2011) that examines and compares New Zealand Twitter and Chinese Sina Weibo posts about the 2019 Student Climate Strikes. Furthermore, drawing upon critical discourse studies (Fairclough & Wodak, 1997; Wodak, 2001), this study also looks at what the posts of these Twitter and Weibo users may reveal about the underlying beliefs and values of the two communities and their wider socio-cultural and political contexts, especially with regards to the Student Climate Strikes. The study, therefore, seeks to answer the following research questions:

Research questions:

1. How did social media users in China and New Zealand differently respond in their online posts about the Student Climate Strikes in 2019?
2. What might these responses reveal about the different underlying beliefs and values of the two communities, particularly with regards to the Student Climate Strikes?

In order to answer these two questions, the study uses both qualitative and quantitative methods (drawing, as mentioned upon corpus-assisted discourse studies and critical discourse studies) to compare two corpora, one comprised of New Zealand social media users' posts about the

2019 Student Climate Strikes, and the other comprised of Chinese social media users' posts about the 2019 Student Climate Strikes. The former are posted in English, while the latter largely in Chinese[1]. This chapter provides a methodological overview of the study, including an outline of the corpus-assisted approach to (critical) discourse analysis. The chapter will also explain the procedure for collecting the corpus data, building the corpus and selecting samples for analysis.

3.1 Methodological overview

3.1.1 Corpus linguistics

A corpus can best be explained as a large body of sampled, authentic (written or spoken) texts in machine-processable form that is representative of a certain language, or language community (Leech, 1992). Corpus linguistics (CL) is a method for studying the authentic, real-life language contained in these machine-processable texts, typically with the intention of answering research questions about the language found in the corpus, and its users (McEnery & Wilson, 2003; McEnery & Hardie, 2011). As corpora are characteristically quite large, consisting of thousands or millions of words, a corpus analysis necessarily involves the use of specialised computer software. The software, for example, *AntConc* (Anthony, 2004), or an online tool such as *Sketch Engine* (Kilgarriff, Rychly, Smrz & Tugwell, 2004), both of which are employed in this study, enables a large amount of language data to be analysed at once, and this allows the researcher to quickly identify salient language patterns in the data. Without the corpus software, an analysis would need to be carried out manually and this could take the researcher days or even weeks (McEnery & Hardie, 2011). The analytical focus of corpus analysis is often on keyword analysis, frequency analysis, concordance analysis and collocation analysis, and most corpus analytical software provides the tools required for these analytical areas (see Section 3.3). Importantly, corpus analytical software, such as AntConc is also able to analyse both English and Chinese.

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[1] While the Weibo corpus was analysed in Chinese to maintain the integrity of the corpus anaysis, all Chinese posts in this thesis have been translated into English.

3.1.2 Critical Discourse Analysis

Once certain salient language patterns are identified using the analytical tool of corpus analysis, the study will draw upon the resources of critical discourse analysis (CDA) (Fairclough, 1992, 2013) to make connections between the macro language practices of the Weibo and Twitter users and the wider socio-cultural and political contexts that shape their values and beliefs.

It is necessary to briefly discuss the term 'discourse' before further explaining CDA. According to Baker (2005), discourse is "a set of meanings, metaphors, representations, images, stories and statements" that together can "produce a particular version of events" (p. 3). Furthermore, Fairclough & Wodak, (1997) state that discourse, as a practice that is "socially constitutive" and "socially conditioned", can reflect and produce ideologies in society (p. 258). Thus, CDA typically involves a close reading of texts to examine the ideologies and power structures reflected through them.

CDA has no one unified theory, and furthermore, does not draw upon one single methodology (Chouliaraki & Fairclough, 2010). This is because, following the initial CDA work of Fairclough (2013), a wide range of language analytical resources, drawn from different discourse approaches, including conversation analysis, metaphor analysis and pragmatics, among others, has been employed to help the analyst identify the relationship between a text and the social practices of its producers. As indicated above, and as used in this study, corpus analysis and its ability to identify frequently occurring language items, such as keywords or collocational tendencies, is also now increasingly used by critical discourse scholars (e.g. Baker, 2005; Deignan, 2005; McEnery & Hardie, 2011; Partington, Duguid & Taylor, 2013). The use of CDA in this study will be further discussed in Section 3.4.

3.1.3 Corpus-assisted discourse analysis

Studies that employ the tools of corpus linguistics to investigate the discourses of certain cultural or social groups are often referred to as corpus-assisted discourse analysis (CADA) (McEnery & Baker, 2015). Research employing CADA predominantly uses a combination of

quantitative and qualitative approaches to reveal the salient ideologies in language use. According to Baker et al. (2008), however, in CADA, the term 'assisted' might be seen as indicating that CL is "subservient" (p. 274) to CDA, i.e., that the relationship between these two methodological approaches is hierarchical. However, he further states that for the best results, both CL and CDA should "contribute equally and distinctly to a methodological synergy" (p. 274).

The benefits of combining CL and CDA are three-fold (Baker, 2006). Firstly, the examination of a large amount of texts at once can help to uncover "recurrent discursive patterns otherwise known as majority discourses" (p. 10). Secondly, counter examples are easier to find. Thirdly, it is easier to triangulate the findings because researchers can "test hypotheses arrived at in the close analysis of texts, against findings from the corpus data" (p. 14). For Kania (2020), because the two methods can complement each other, it is ultimately easier for researchers to analyse the target discourses and arrive at more robust conclusions.

3.1.4 Criticisms of corpus-assisted approaches

There are a number of criticisms of corpus linguistic research. Firstly, Widdowson (2008) argues that corpus-assisted research is often too broad for the study of discourse and does not always facilitate the necessary close and contextualised reading of texts. He states that, as a result, corpus-assisted research only offers a partial account of real language. Similarly, there is also concern that while corpus data usually only consists of written forms, the texts analysed are typically associated with a range of other semiotic forms that are overlooked (Baker, 2006). In this study, for example, many of the online posts contain images. These could not be analysed by the corpus software, AntConc nor Sketch Engine, that were used in this study, and were not included as data.

3.1.5. Systemic functional linguistics

Another important language analytical resource that is employed in CDA research and is drawn upon in this study is systemic functional linguistics (SFL). SFL considers language as a social

semiotic system and sees language from a functional perspective (Halliday & Matthiessen, 2013). Halliday identifies language as having three metafunctions; the *ideational metafunction*, the *interpersonal metafunction* and the *textual metafunction*. The ideational metafunction explains how people express their thoughts, the interpersonal metafunction explains how relationships with others are maintained and the textual metafunction explains how people choose and organise texts. Importantly, the ideational metafunction, includes a focus on transitivity, part of which identifies the different verb process used to construe meaning. These verb processes are divided into 6 types: *material processes* about actions and events, *behavioural processes* about physiological behaviour, *mental processes* about emotion or thoughts, *verbal processes* about communicating, *existential processes* about existence and *relational processes* about states and relationships. (Halliday & Matthiessen, 2004) By analysing Twitter and Weibo users' process type, the use of certain linguistic patterns can be revealed, providing information about the types of meaning constructed.

3.2 Corpus Data

In order to examine the different responses of Chinese and New Zealand's social media users have towards the Student Climate Strikes, two specialized corpora (Baker, 2006) were developed. The first corpus contains a collection of New Zealand netizens' tweets collected from Twitter about the Student Climate Strikes corpus (hereafter NZCS corpus), and the second contains a collection of Chinese netizens' Weibo posts about the Student Climate Strikes corpus (hereafter CNCS). Both corpora are synchronic as all data are collected from posts and comments from 2018 to 2019.

3.2.1 Size

The NZCS corpus consists of 548 tweets and retweets from 540 Twitter users. In total it involves 11,658 tokens. The CNCS corpus consists of 319 Weibo posts and comments from 319 Weibo users. In total it involves 20,422 Chinese characters (13,157 tokens). According to Baker (2006), there is no general consensus to the question "how large the corpus should be"

and even within a small corpus, various types of language phenomena can be identified. Indeed small corpus studies are seen as a relevant and effective method for linguistic investigation (Ghadessy, Henry & Roseberry, 2001).

3.2.2 Sample

For the purposes of this study, all data collected to build the two corpora were required to fulfil one main criterion; they had to be posts focusing on the discussion of the ongoing Student Climate Strikes. Two other criteria were implemented for the Chinese Weibo corpus (CNCS) and the New Zealand Twitter corpus (NZCS) respectively. For the NZCS corpus, Tweets about climate strike had to contain "nz" or "New Zealand" in the main body or hashtag, and the authors' location information had to be from New Zealand. This ensured that all texts in the NZCS corpus were created by New Zealand Twitter users. In Weibo, all collected posts had to be written by Chinese Weibo users. Although it was impossible to include all posts about the Student Climate Strikes in Twitter and Weibo, as many posts were included as possible during the period when the posts were collected.

3.2.3 Data entry and analysis tools

Baker (2006) states that in corpus analysis process, all data must be cleaned, so that it can be properly read and examined by the corpus software. Thus, after collecting all data, any images, videos, and links to other pages were removed, and the posts were converted into a plain text format. Following this, the Twitter data was saved as a single file titled NZCS. However, unlike English, a language with a segmented structure, Chinese words are normally written consecutively without a space (Chao, 1965). Thus, in this study, in order to analyse two corpora comparatively, it was necessary to segment the Chinese data into words with the SegmentAnt Tool. Afterwards, the Weibo data was saved as a single file titled CNCS. These two corpora were then examined using the software AntConc (Anthony, 2004) and online tool Sketch Engine (Kilgarriff, Rychly, Smrz & Tugwell, 2004).

3.2.4 Reference corpus

A reference corpus is a large corpus (often well over millions of words) that is designed to be representative of a particular language variety, most commonly that of a national language (Baker, 2006). The comparison of a specialised corpora with a reference corpus can help identify words in the specialised corpora which are not necessarily examples of normal or typical language behaviour, and are therefore salient to the specialised corpora. These salient words are referred to as *keywords* and will be described in further detail below. In this study, two reference corpora were used, the Wellington Corpus of Written New Zealand English (hereafter the WWC), and the Chinese reference corpus, zhTenTen corpus.

The WWC reference corpus consists of 1,000,000 words collected between 1986 and 1990. Like the British National Corpus, WWC data is selected from a range of common written genres including academic writing, fiction, newspaper, magazine and periodical texts. The WWC data includes a broad range of topics including religion, trades, hobbies, biography and so forth (Bauer, 1994). The zhTenTen corpus belongs to the TenTen corpora family and this corpora family have corpora in more than 35 languages. The zhTenTen reference corpus is in Chinese simplified characters, consisting of 13,531,331,169 Chinese characters. In this corpus, all texts are collected from the Internet. This corpus is made available by the Sketch Engine managers (Kilgarriff, Rychly, Smrz & Tugwell, 2004).

3.3 Corpus Analysis

In order to answer the research questions, frequently used corpus-assisted discourse analytical techniques were used; frequency analysis, concordance analysis, collocation analysis, keyword analysis.

3.3.1 Frequency analysis

Frequency refers to the number of times a word appears in the corpus and a frequency list of a corpus involves a list of all the words in a corpus, typically from most frequent to least frequent (Baron, Rayson & Archer, 2009). Tognini Bonelli (2010) remarks that in corpus linguistics,

frequency of occurrence is important because the repetition of words can point to something of analytical interest. Furthermore, for Stubbs (1996), frequency is important because language choice is not neutral, and as a result ideological positions might be revealed through a particular choice of words. Similarly, Baker (2006) also states that frequency is one the most central and basic concepts of corpus-assisted discourse analysis. He states that, wisely used, frequency analysis can be a "good starting point" (p. 47) when analysing various kinds of corpora. Often however, word frequency alone cannot tell us a lot about a corpus because the most frequent words are often function words (e.g. prepositions, articles, and conjunctions), which in terms of discourse do not always reveal much of particular interest (Baker, 2006).

3.3.2 Concordance analysis

A concordance contains a list of all the occurrences of a certain word (or cluster of words) from a corpus in its wider textual context (Baker 2006). Concordances can be organised alphabetically on the right or left side of the word, which allows the researcher to examine the different language patterns with which it is associated. Gabrielatos and Baker (2008) state that a concordance analysis often involves a combination of a corpus-assisted approach and CDA, because through this method, words in a frequency list can be qualitatively examined to establish what these words really mean in the context. Another name for a concordance is *key word in context*, or KWIC[2]. In some cases, however, a concordance list of a particular 'key' word (often referred to as node word) can consist of too many lines and analysing them all can be quite time consuming. In this case, a more manageable list of fewer concordance lines can be randomly selected using the functions of the corpus software to provide a representative sample of the node word in context. To further narrow down the scale of concordance analysis, a collocation analysis can also be useful (Baker, 2006).

3.3.3 Collocation analysis

Collocates are statistically significant co-occurring words, that is, a collocate of a certain word is another word which often appears alongside that word (McEnery & Hardie, 2011; Brezina,

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[2] Key word in the acronym KWIC simply refers to the word being examined. It does not refer to keyword as mentioned in 3.3.4. Often the term *node word* is preferred.

McEnery & Wattam, 2015). According to Baker "words can only take on meanings by the context they occur in" (Baker, 2006, p. 96). Thus, in order to understand a word's meanings, it needs to be examined in relation to the words that it collocates with.

Different algorithms can be used to identify the strength of a collocation; that is, the degree to which a particular node word collocates with another word, in comparison to the number of times it appears separately. These include MI3 (Oakes, 1998), z-score (Curtis, Smith, Ziganshin & Elefteriades, 2016), log-likelihood (Dunning, 1993), and log-log (Kilgarriff & Tugwell, 2001). In this study, AntConc's default statistic algorithm log-likelihood was used. According to Baker (2006), compared to other algorithms, log-likelihood is able to identify both "high frequency function words" and "low frequency content words" (p. 102) Throughout this study unless stated, the span of collocation window was set to 5 places to the right and 5 places to the left of the node word.

3.3.4 Keyword analysis

A keyword is a word (token) that appears more frequently in a target corpus than it does in a reference corpus. If the reference corpus is representative of a particular language community, then a keyword list shows all words in a corpus that appear more frequently than they normally do in that language community (Baker, 2006). Keywords are able to capture the overall "aboutness" (Scott & Tribble, 2006, p. 55), or the presence of discourses (Baker, 2006) of the texts in a corpus. They are calculated using a statistical measure (the log-likelihood algorithm in this case). Furthermore, in the AntConc software used for this study, every word is also given a probability value (p value). The smaller the p value, the more likely that a word does not appear in a keyword list by chance, and is instead a result of the author's particular choice. In both AntConc and Sketch Engine, the keyness statistic threshold is set as $p<0.05$.

3.4 Critical Discourse Analysis (CDA)

The critical discourse analysis of the two corpora was carried out following Fairclough's (1992, 1995, 2013) focus on the three interrelated dimensions; analysis of text; analysis of the process

of interpretation, and analysis of sociocultural practice. The focus began at the textual level, primarily employing the corpus-assisted findings (as discussed in Section 3.3) to examine the corpora at the micro-level (Fairclough, 1992). Following this, the level of discourse practice (also known as processing analysis, or discursive practice analysis), which focuses on the texts' production, distribution, transformation and consumption, was considered (Fairclough, 1992). For this study, this involved examining the way in which the Twitter and Weibo texts were presented to the audience, what sort of relationship the writer or speaker created with the audience, what kind of perspective and angle the author was taking and what the author chose to emphasise or ignore (Huckin, 1997). This includes, for example, the relationship between the authors of the Twitter or Weibo posts and their readers, or between the posts' authors and other people who leave comments. Furthermore, and as Rogers (2004) remarks, CDA "includes not only a description and interpretation of discourse in context, but also offers an explanation of why and how discourses work" (p. 53). Taking this into consideration, the socio-cultural level was then considered. At this ideological level, the underlying values and beliefs of the authors of the posts in the two corpora were analysed because language contains meanings that "are situated in special social and cultural practices" (Johnson, 2009). To conclude, the main concept that should be kept in mind is that CDA examines the combination of text and sociocultural practices that the text reflects, reinforces and produces (Fairclough, 1995).

3.5 Objectivity and the translation of texts

Rogers (2004) has criticised CDA for being too selective and "lacking in objectivity" (p. 197) because researchers often draw their conclusions through the analysis of only a few texts. However, in this study, I hope that the combination of CDA and CL has led to a more objective result. Nevertheless, as a person who supports environmental protection and the Student Climate Strikes, I cannot claim that my research is without some degree of bias, however as Wodak and Meyer (2009) have stated, CDA is research with attitude (Wodak & Meyer, 2009). That said, in this study, I have included the discussion of the different perspectives emerging from the data to maintain as high a degree of objectivity as possible.

Furthermore, although I am a native Chinese speaker, I mainly analysed the Chinese data after it had been translated into English, as I believed it was more effective to compare the texts in the same language. The translations were carried out after data were processed by Sketch Engine. To maintain the authenticity of the posts' language styles, I chose literal translations instead of free translation (Ordudari, 2007; Xuan, 2006). This sought to ensure that my personal interpretations were added into the texts as little as possible.

3.6 Conclusion

In brief, this study aims to answer the research questions identified in Section 3.0. CL and CDA were chosen as research methods for this study, because together they are increasingly viewed by researchers as useful for revealing information about the underlying beliefs and values of a particular discourse community. They are also particularly suitable for analysing data that has been collected from social media. The corpus analytical tools AntConc and Sketch Engine were used for the study due to their particular functions and features, including the ability to analyse both English and Chinese. The next chapter begins with a frequency and keyword analysis of both corpora.

Chapter 4:

Frequency and Keywords

4.0 Introduction

The first stage of the analysis included the analysis of frequency and keyword information about the Chinese Climate Strike corpus (hereafter the CNCS corpus) and the New Zealand Climate Strike corpus (hereafter the NZCS corpus). As Baker (2006) states, frequency and keyword analysis can provide useful entry points into a corpus and provide directions for further analysis. As a result, the first section of this chapter focuses on the presentation and analysis of frequency lists of the two corpora. Following this, keywords lists of both corpora are examined. Next, and given that it might be expected that the two corpora include many evaluative comments on the Student Climate Strikes, the adjectives appearing in both corpora are analysed. The remainder of the chapter examines the occurrence of hashtags in both corpora. Hashtags perform a range of important semantic and pragmatic functions in social media posts (Zappavigna, 2015, 2018). Considering that hashtags are not normally incorporated in a reference corpus, the hashtags were treated separately in this chapter, rather than being included in the frequency, keywords, or adjective lists, where they may have distorted the results. Notable findings emerging from this analysis will contribute to the analysis carried out in the following chapters.

4.1 Frequency analysis

Frequency is "one of the most central concepts in corpus-assisted analysis" (Baker, 2006, p. 47) because the repetition of words can, to some degree, reveal information about people's patterns of language use. In this study, a frequency analysis is seen as a starting point, because frequency lists can provide the researcher with a useful overview of a whole corpus. (Phillips, 1989)

According to Baker (2006), in most corpora, the highest ranked words in frequency lists are typically functional words, as "almost all forms of language have a high proportion of grammatical words," (p. 53). While it may be useful to identify the most frequent functional words in the NZCS and CNCS corpora and to compare these with reference corpora, Baker (2006) states that functional words are less likely to reveal the presences of certain discourses, an important focus of this study. As a result, the first stage of this chapter only focuses on the frequency of lexical words in the two corpora.

Table 4.1 and Table 4.2 show the 20 most frequent lexical words in the CNCS and NZCS corpora. In order to compare the two corpora, frequency and frequency percentage (standardised frequency) are both shown. According to Scott (2008), it is more useful to measure how many times a certain word appears per hundred words than simply listing the times a certain word appears in corpora. Furthermore, by comparing a word's frequency percentage in reference corpora, we can see if a word or phrase is used more than we expect. This is because reference corpora act as a "benchmark of what's normal in a language." (Baker, 2006, p. 43). As discussed in Chapter 3, the Chinese zhTenTen corpus was used as the reference corpus for the analysis of the CNCS corpus, while the Wellington Corpus of Written New Zealand English was used as the reference corpus for the analysis of the NZCS corpus.

Table 4.1 20 most frequent lexical words in the CNCS corpus (hashtags are not included.)

Rank	Word	Frequency	CNCS corpus Standardised Frequency %	zhTenTen Standardised Frequency %
1	march 游行	254	1.87	0.007
2	climate 气候	247	1.82	0.0006
3	change 变化	109	0.80	0.02
4	all 都	101	0.74	0.23
5	people 人	91	0.67	0.30

6	protest 抗议	89	0.65	0.0006
7	student(s) 学生	86	0.63	0.16
8	global 全球	68	0.50	0.02
9	environmental protection* 环保	59	0.43	0.02
10	big 大	56	0.41	0.24
11	warming 变暖	53	0.39	0.0006
12	country 国家	52	0.38	0.15
13	say 说	52	0.38	0.17
14	kid(s) 孩子	49	0.36	0.03
15	government 政府	47	0.34	0.10
16	strike 罢课	47	0.34	0.00006
17	problem(s) 问题	46	0.34	0.18
18	today 今天	45	0.33	0.20
19	more 多	45	0.33	0.23
20	environment 环境	44	0.33	0.09

*Environmental protection shows up as a compound word in the CNCS corpus

Table 4.2 20 most frequent lexical words in the NZCS corpus (hashtags are not included.)

Rank	Words	Frequency	Standardised Frequency %	WC corpus standardised Frequency %
1	climate	233	2.12	0.004
2	new	82	0.74	0.08
3	change	71	0.64	0.03
4	kids	64	0.58	0.009
5	Zealand	64	0.58	0.17
6	students	60	0.54	0.013
7	school	57	0.51	0.04
8	all	57	0.51	0.24

9	people	53	0.48	0.13
10	strike	51	0.46	0.006
11	more	42	0.38	0.17
12	nz	42	0.38	0.17
13	world	40	0.36	0.06
14	today	38	0.34	0.06
15	go	35	0.31	0.06
16	young	34	0.30	0.003
17	future	32	0.29	0.02
18	action	29	0.26	0.02
19	see	29	0.26	0.07
20	get	26	0.24	0.07

As we can see, these two frequency words lists have much in common. *Climate, change, people, strike, students, kids, today, more* appear in both lists. Almost all the words in both frequency lists are connected to the Climate Strike and reference most aspects of the strike, for example, what it is (*strike, march*); who is involved (*people, students, kids*); when it happened (*today*), and why it happened (*climate change*). Most of these words are non-evaluative and merely reference the Climate Strike itself.

Kids and *students* are two words that also appear frequently in both corpora, with each occupying 0.36% and 0.58% (*kids*), 0.63% and 0.54% (*students*) of the total number of words in the respective corpora. However, surprisingly, other words related to students and kids do not appear very often in the CNCS corpus, while *School* shows up 57 times individually and 101 times in the phrase *schoolstrike* in the NZCS corpus. As indicated in Table 4.1, the word *school* does not appear in the 20 most frequent words list of the CNCS corpus.

Another observation is that *New Zealand* and *nz,* are frequently mentioned in the NZCS and appear in the 20 most frequent lexical words, yet the same time, China (frequency=27) and

Chinese (frequency=34) are not in the 20 most frequent lexical words of the CNCS corpus.

It should also be noted that hashtags appear very frequently in the NZCS corpus: *#climatestrike* (115 occurences), *#ss4cnz* (103 occurences), *#schoolstrike4climate (*72 occurences) *#fridaysforfuture* (59 occurences) and *#climatechange* (27 occurences), and therefore would be included in the top 20 most frequent lexical words of the corpus, if permitted in this frequency analysis. In contrast, no hashtag would appear in the most frequent word list of the CNCS corpus, if permitted. Instead of including hashtags in Table 4.2 as lexical items, hashtags are analysed separately in Table 4.7 and Table 4.8 in Section 4.4. The reason why hashtags are listed separately is that as a special phenomenon in the social media context, hashtags can reveal quite specific information about the two corpora and the people behind them (Zappavigna, 2015), but might otherwise distort the frequency and keyword analysis.

4.2 Keywords analysis

Though a frequency analysis can be a good entry point for a corpus analysis, frequency lists seldom reveal the 'aboutness' of a corpus (Phillips, 1989). Hence the next stage of the analysis identifies the keywords of the CNCS and NZCS corpora. Table 4.3 shows the most frequent 20 keywords of the CNCS when referenced against zhTenTen corpus, and the NZCS corpora when referenced against the Wellington Corpus of Written New Zealand Written English (WWC). Words written in English were not included in the CNCS corpus's keyword list, as these words could be argued as having a special status, which has no equivalent in the NZCS corpus. They will, however, be listed in Table 4.4.

Table 4.3 the top 20 keywords in the CNCS and NZCS corpora (Hashtags and English words in the CNCS corpus are not included.)

Rank	CNCS corpus	Keyness value	NZCS corpus	Keyness value
1	strike 罢课	2,275.97	climate	991.18
2	march 游行	2,081	kids	383.46

3	warming 变暖	833.44	nz	312.19
4	protest 抗议	482.39	students	310.23
5	Dleston 抖森***	481.46	change	284.28
6	go to the street 上街*	439.74	strike	275.3
7	demonstration 示威	368.14	gretathunberg	179.5
8	climate 气候	346.6	school	163.08
9	Mendes 萌德**	304.35	today	128.09
10	Brussels 布鲁塞尔	270.77	planet	124.52
11	plant 植	232.1	we	113.48
12	skip 旷	227.6	proud	112.39
13	haze 霾	206.05	future	111.72
14	road closure 封路*	160.8	greta	103.91
15	politician(s) 政客	158.07	our	102.27
16	city hall 市政厅*	142.06	youth	101.33
17	cut 翘	141.07	you	100.2
18	rabbit 兔子	131.97	action	97.15
19	white skin 白皮*	126.56	amazing	96.55
20	haha 哈哈	120.32	protest	95.04

*These words are treated as one word in Chinese

**Shawn Mendes (Canadian singer)'s nickname in Chinese

***Tom Hiddleston (British actor)'s nickname in Chinese

Unlike the frequency lists in Section 4.1, the keyword lists of the CNCS and NZCS corpora have fewer words in common, with only three words appearing in both lists (*climate, protest,* and *strike*). Furthermore, the NZCS corpus's keyword list exhibits some similarity to its lexical word list (Table 4.2), but the CNCS corpus's keyword and lexical list are dissimilar. Surprisingly, *rabbit,* and *white skin*, the nicknames of two celebrities, as well as two government-related words (*government* and *city hall*) appear. It is also noticeable that *we* and *our* appear in the NZCS corpus's keyword list, but not in the CNCS corpus. According to Baker

(2006), the way people use pronouns can sometimes indicate the presence of certain discourses in a corpus of texts.

As two of the most frequent lexical words in both the CNCS and NZCS corpora, the keyword list triangulates the initial observation that kids and students are the two topics discussed most frequently in the corpora. However, while the related words *kids, students,* and *school* occur in the NZCS corpus, neither *kids* nor *students* appear in the CNCS corpus's keyword list. In contrast, three concepts representing absenteeism in school appear; *skip school, skip class* and *cut class.* To further understand and compare the representation of kids and students in both corpora, the collocates and concordance of *kids* and *students* are examined in Chapter 5.

As mentioned above, it was interesting to note that the CNCS corpus contains some English words, and that if these were included in a keyword analysis of the CNCS corpus, a number would appear in the most frequent twenty keywords. Table 4.4 is a keyword list of the CNCS corpus with these English words included.

Table 4.4 Most frequent 20 key words in the CNCS corpus (English words included)

Rank	words	Keyness value
1	Strike 罢课	2,275.97
2	March 游行	2,081
3	warming 变暖	833.44
4	Greta (appears in English)	485.16
5	Protest 抗议	482.39
6	Dleston 抖森	481.46
7	go to the street 上街	439.74
8	than (appears in English)	418.32
9	is (appears in English)	402.7
10	demonstration 示威	368.14
11	Thunberg (appears in English)	365.52

12	hotter (appears in English)	365.39
13	planet (appears in English)	363.99
14	climate 气候	346.6
15	getting (appears in English)	304.82
16	Fridays (appears in English)	304.53
17	Mendes 萌德	304.35
18	Brussels 布鲁塞尔	270.77
19	Future (appears in English)	236.77
20	Shawn (appears in English)	236.4

Except for the name Greta Thunberg, a pioneer of climate strike action, the other English words that appear in the keyword list of the CNCS corpus are: *than, is, hotter, planet, getting* and *Friday*. The first five words in this list are from the sentence "our planet is getting hotter than…" This sentence appears six times in the CNCS corpus in total. All six sentences refer to a strike participant's demonstration sign. A cursory look at concordances with *Friday* shows that the word mainly comes from an English phrase: *Friday for future*, which is the same as the commonly used hashtag *#Fridays for future* in Twitter.

4.3 Adjectives

To examine how social media users in China and New Zealand evaluate the Student Climate Strikes and its participants, the 10 most frequent adjectives from the CNCS and NZCS corpora were identified. These can be seen in Table 4.5 and Table 4.6.

Table 4.5 10 most frequent adjectives in the CNCS corpus

Rank	Words	Frequency	Standardised Frequency %
1	Global	68	0.50

2	Big	53	0.39
3	Chinese	33	0.24
4	Good	29	0.21
5	Little	24	0.17
6	Every	14	0.10
7	Many	12	0.08
8	Full	11	0.08
9	Green	10	0.07
10	First	10	0.07

Table 4.6 10 most frequent adjectives in the NZCS corpus

Rank	Words	Frequency	Standardised Frequency %
1	New	82	0.74
2	Young	34	0.30
3	Proud	22	0.20
4	Great	19	0.17
5	Global	17	0.15
6	Amazing	15	0.13
7	Good	14	0.12
8	Right	13	0.11
9	Many	12	0.10
10	Real	11	0.10

As we can see from Table 4.5 and Table 4.6, frequently occurring adjectives that appear in both corpora are *global, many* and *good*. This is because in both corpora, the authors of the posts view the Student Climate Strikes as a "global" activity that influences "many" people.

It can also be seen in Table 4.5 that frequently occurring adjectives in the CNCS corpus, perhaps

with the exception of *good*, do not explicitly refer to attitudes or emotions. However, the NZCS corpus contains a number of frequently occurring attitudinal adjectives *proud, great, amazing, good* and *right*. Table 4.7 and Table 4.8 provide a side by side comparison of the frequently occurring positive and negative adjectives in the two corpora. Only adjectives with a frequency of more than 3 are included.

Table 4.7 Positive adjectives in the CNCS and NZCS corpora

Rank	CNCS corpus		NZCS corpus	
	words	frequency	words	frequency
1	good	24	proud	22
2	positive	5	great	19
3	young	3	amazing	15
4			good	14
5			right	13
6			well	9
7			better	10
8			awesome	8
9			nice	7
10			wonderful	7
11			best	6
12			inspired	6
13			inspiring	6
14			fantastic	5
15			strong	5
16			excellent	4
17			brilliant	3
18			happy	3
19			inspirational	3

Table 4.8 Negative adjectives in the CNCS and NZCS corpora

Rank	CNCS corpus		NZCS corpus	
	words	frequency	words	frequency
1	No occurrences		fake	9

Table 4.7 shows that there is a marked contrast in the number of frequently occurring positive adjectives in the two corpora, with 19 positive adjectives regularly being used in the tweets that comprise the NZCS corpus, in comparison to the CNCS corpus that only contains three nominally positive adjectives. Table 4.8 shows that only one negative adjective frequently occurs in the two corpora. A comparative analysis of the adjectives discussed in this section will be further examined in Chapter 5

4.4 Hashtag analysis

As a special phenomenon in social media texts, hashtags carry a very important function. One of the most significant dimensions of social media is searchability, which means making certain discourses findable by other social media users. Searchability is a prominent part of online communication practice. (Zappavigna, 2015) To examine the using pattern of hashtags in the CNCS and NZCS corpora, Table 4.9 below indicates those hashtags which frequently appear in the corpus. Because of the relative difference in the overall occurrence of hashtags in the two corpora, hashtags which occurred more than 3 times in the CNCS corpus and 5 times in the NZCS corpus are included in the table.

Table 4.9 hashtags in the CNCS and NZCS corpora (only hashtags appear more than 3 times in the CNCS corpus and 5 times in NZCS are included）

Rank	Words/Phrases	Frequency	Words/Phrases	Frequency
1	#Chinese kids choose to plant trees	6	#climatestrike	115
2	中国孩子选择种树		#ss4cnz	103
	#climatestrike (appears in English)	5		

3	#big climate march 气候大游行		#schoolstrike4climate	72
	#fridaysforfuture (appears in English)	3		
4	#climate change (气候变化)	3	#fridaysforfuture	59
5		3	#climatechange	27
6			#gretathunberg	24
7			#newzealand	19
8			#schoolsstrike4climate	17
9			#schoolstrike4climatenz	17
10			#climateaction	12
11			#nz	10
12			#schoolstrikeforclimate	9
13			#ss4c	9
14			#industry4future	8
15			#climateactionnow	7
16			#nzpol	7
17			#strikeforclimate	7
18			#actonclimate	6
19			#aukland	6
20			#wellington	6
21			#extinctionrebellion	5
22			#fridayforfuture	5

As can be seen in Table 4.9 (and taking into account the criteria for inclusion in the table), the NZCS corpus contains significantly more frequently occurring hashtags than found in the CNCS corpus. However, it should be noted that many of the phrases following hashtags in the CNCS corpus also frequently appear in the corpus without hashtags. The phrase #*big climate march*, for example, only occurs with a hashtag in the corpus 3 times, however without a hashtag *big climate march* appears 17 times. *Arbour Day/ Tree Planting Day* (植树节) shows

a similar phenomenon, *#Arbour Day/ Tree Planting Day* occurs only once in the corpus, but *Arbour Day/ Tree Planting Day* occurs 7 times. Furthermore, it is also worth noting that of the 5 frequently occurring hashtags in the CNCS corpus, 2 of them appear in English.

According to Zappavigna (2015), almost all hashtags can be categorized into certain types according to the functions they perform. For example, hashtags could be used to imply a posts' semantic domain (e.g. *#climatestrike; #climatechange*), or to connect the posts to an existing practice (e.g. *#climateactionnow*). As an important kind of data in online communication practice, hashtags used in the CNCS and NZCS corpora will be examined further in Chapter 8.

4.5 Conclusion

As previously mentioned, the frequency and keyword analysis provide an overview of the language patterns of both corpora. According to Baker (2006), by examining the frequency and keyword lists, it is easier for researchers to find salient discourses in a corpus. However, we cannot uncover much by simply looking at the words without their contexts. In following chapters, the collocations and concordances of certain salient words and phrases are examined in context, in order to discover patterns of language use. In doing so, the study will also compare how the users of both corpora respond to, as well as discursively construct, the Student Climate Strikes.

Chapter 5:

An Examination of Adjectives in Context

5.0 Introduction

As a result of the findings in Chapter 4, Section 4.3, this chapter focuses on the use of adjectives in the CNCS and NZCS corpora. Drawing initially upon the theory of language evaluation (Martin & White, 2003), this chapter examines how the two corpora differently evaluate the Student Climate Strikes and its participants. The chapter will first examine the lexical item *good*, one of the most frequent adjectives in both corpora, followed by the use of the adjectives *little* and *young*. Next, lexis that constructs the participants of the Student Climate Strikes as manipulated or coerced will be examined. Finally, the occurrence of the word *proud* in the NZCS corpus is discussed.

5.1 The use of *good*

As one of the most frequent adjectives in both corpora (24 occurrences in the CNCS corpus and 14 occurrences in the NZCS corpus), *good* is examined in this section and viewed as a starting point for the analysis of adjectives. According to the theory of language evaluation (Martin & White 2003), *good* can normally be categorised into two attitudinal meaning types. Firstly, *good* can be used to describe an emotion. In this sense, *good* indicates an agreeable and pleasing feeling and is used to convey feelings of happiness and satisfaction. Secondly, *good* can be used to indicate a kind of judgement or appreciation towards; i) those who are successful at doing something, ii) objects that are of high quality, or iii) behaviours that are commendable. Martin

and White (2003) also state that in general, such judgements can be divided into two types, either "those coping with social esteem" or "those with social sanction" (p. 52). Simply speaking, social esteem refers to the normality of people and objects (how usual they are); capacity (how capable they are) and tenacity (how determined they are). However, social sanction is about the veracity of people and objects (how honest they are) and propriety (how far they are beyond blame).

According to Martin and White (2003), the attitudinal meaning of a certain lexical item can be various according to its context. Thus, in order to recognize the different uses of *good* in the two corpora and how they differ, its occurrences are shown in concordance form. Table 5.1 displays concordances of *good* in the CNCS corpus and Table 5.2 displays concordances of *good* in the NZCS corpus.

Table 5.1 Concordances of *good* in CNCS corpus

1	The starting point is	**good**	but maybe do not need to go on strike.
2	Environmental protection is a	**good**	thing, but don't' begin on the wrong end.
3	actual action to protect environment would be	**good**	.
4	Isn't it	**good**	to plant some trees if someone has time…
5	It's not a	**good**	thing, the traffic is a mess…
6	Stay in school and protect environment in	**good**	ways in the future with related knowledge you
7	Very	**good**	learn
8	Now, the climate is not	**good**	opportunity to teach your kids!
9	It's for	**good**	, in the future, people starve. It's all related
10	you stop developing too, it's for everyone's	**good**	reputation, well well.

Table 5.2 Concordances of *good* in NZCS corpus

1	The	**GOOD**	things going on in #NewZealand right now.
2	thing that happens in a true democracy.	**Good**	one, New Zealand.
3		**Good**	on ya NZ Kids

4		**Good**	on them!
5	ones accountable for their actions, which is	**good**	to see
6	You're striking to feel	**good**	about yourself
7	So	**good**	to see a new generation exploited for money…
8	Far more environmental	**good**	would be done than this pointless, hollow…
9		**Good**	on the marchers, but the reporting is useless.
10	it's	**good**	but if the rest of the world doesn't get real serious…

As we can see in Tables 5.1 and 5.2, the use of *good* in the corpora relates to Martin and White's (2003) second judgement attitudinal type, in that the authors are making judgments on the strike and its participants. However, there are also some noticeable differences in usage. The NZCS corpus, for example, tends to use *good* to praise the activity or the participants directly. However, in the CNCS corpus, *good* is used in a more indirect way and sometimes followed by transitional conjunctions. As in lines (1) and (2) in Table 5.1, the adversative conjunction *but* was used to introduce an opinion that contrasts with the more positive one that was expressed in the first part of the sentence. In both circumstances, the emphasis appears to be on the latter part of the sentence. Although in lines (1) and (2) in Table 5.1, while the strike is initially praised as *good*, the real implications of these two sentences are "Do not go on strike" and "Don't begin on the wrong end (of environmental protection)".

Furthermore, in Table 5.1, lines (3), (4) and (6), the focus is on what would be more preferable than the strike. The writers imply that rather than striking, it would be *good* to *have some actual action*, or *plant trees* or *stay in school*. In general rather than simply offering praise, it would seem that the extracts in the CNCS corpus have a tendency of making suggestions about the Climate Strikes.

In contrast, the authors of the posts in the NZCS corpus (Table 5.2), mostly use *good* in a direct way to praise the strike activity, as in lines (1) and (2) or the participants, as in lines (3) and (4).

As mentioned above, *good* is used here as a type of judgment to construe attitudes towards people or their behaviours that are "in line with propriety" and "beyond reproach" (Martin & White, 2003, p. 53). Martin and White (2003) state that to some degree, propriety can be related to social obligation. Thus, in other words, compared to the CNCS corpus, the NZCS corpus praises the School Strike in a more direct way and regards it as something the students should engage in, without caveats.

5.2 The use of *little*

Little, an adjective which can be used to indicate that a person is young, is often used in both the CNCS and NZCS corpora to describe students who participate in the Climate Strike. It is also used, in particular, to describe the Swedish environmental activist Greta Thunberg, as a promoter and pioneer of the School Strike for Climate activity.

Tables 5.3 and 5.4 show the concordances of *little* in both corpora. *Little* is the 5th most frequently used adjective in the CNCS corpus (24 occurrences), but it only occurs as an adjective 4 times in the NZCS corpus.

Table 5.3 Concordances of *little* in CNCS corpus

1	Adults are playing dirty trikes behind the	**little**	kids, kids know nothing.
2		**Little**	kids know nothing about politics. They are incited…
3	Seeing a 15-year-old	**little**	girl caring so much about global climate change…
4	That "mature"	**little**	girl called for strike is claiming that…
5	Now a 15-year-old	**little**	girl who organised millions of teenagers to march…
6	That Swedish	**little**	girl who went on strike and protested for…
7	That	**little**	girl is winning a Nobel Peace Prize for…
8	The first time I knew this	**little**	girl was on a French TV show called quotidien…
9	…should be cultivated since one was a	**little**	kid.
10	There are even	**little**	kindergarten kids who are brought there by parents.

Table 5.4 All concordance of *little* in NZCS corpus

1	Love that you have a	**little**	activist!
2	Happy Climate Strike, kids! My own	**little**	Eco Super Hero would like adults to know…
3	Saw a	**little**	girl with a placard saying…
4	…young come out in protest against	**little**	our governments are doing to protect the…

In the NZCS corpus, *little* is more commonly used to describe an individual child/student and their specific behaviour, however in the CNCS corpus, *little* is often used to refer to a generic group of children or students. As we can see in lines (3) to (8) in Table 5.3, the only exception to this, is when the leader of the School Strike, Greta Thunberg, is being referred to. In this case, phrases such as *a little girl,* or *that little girl* repeatedly occur. This use of *little* to refer to Thunberg is particularly noteworthy and will be examined further in Chapter 6, Section 6.1.

As we can see in both lines (1) and (2) in the CNCS corpus, the *phrase little* kids collocates with *know nothing* to describe the students as immature and not able to make decisions for themselves. Furthermore, in lines (2) and (10), the authors use the passive voice, to state that these *little kids* are *incited* to take part in the strike or that they are *brought there* by adults, instead of deciding to go by themselves. This provides more evidence that as children, the strikers are regarded as not being the agents of their own decisions and are the tools of adults. When *little* is used in the NZCS corpus, it collocates with words expressing a positive stance, such as *activist*[3] and *eco super hero*.

To further examine whether and how the two corpora frame the children's Climate Strike actions as being influenced by others, words, phrases and sentences semantically related to 'manipulation' are examined in both corpora.

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[3] *Activist* is typically used to negatively describe an individual, in contrast to a word such a *demonstrator*, which has a more positive connotation. In this instance, *activist* when used in the wider lexical context of *Love that you have a little activist!* has a positive connotation.

5.2.1 The construction of the students as manipulated

In this section, using the lexical search function of AntConc and Sketch Engine, all words in a passive construction that collocate with *kids* (and related synonyms) were examined in both corpora, and any collocations with words related to manipulation were further examined. They are all listed below. Extracts (1) to (6) are from the CNCS corpus, Extracts (7) and (8) are from the NZCS corpus.

(1). These dumb kids **are so brainwashed**, how pity. (CNCS corpus)

(2). We all know what people are talking about, nothing more than dictatorial Chinese government, with which kids don't have freedom to go on strike and they **are brainwashed.** (CNCS corpus)

(3). These people don't have their own thoughts, they **are easily incited**. (CNCS corpus)

(4). They look so young, they don't want to stay at school or think by themselves. They feel good by **being incited** to go on strike. (CNCS corpus)

(5). She will find herself not learning anything, just **being used** like a chess piece, and she will feel extremely frustrated. (CNCS corpus)

(6). Is this kid **being deluded**? Doesn't she know that with so much environmental protection pressure, many people will lose their jobs? (CNCS corpus)

(7). Feels like she **is been used**. Melodramatic paid actress, go be a kid! (NZCS corpus)

(8). 1000's of students are **brainwashed** because climate change is a hoax. (NZCS corpus)

The first observation is that the CNCS corpus contains more utterances and lexical items that discuss 'kids' as being manipulated than the NZCS corpus. Furthermore, and as might be expected, all these extracts view the manipulation negatively. *Incited* usually indicates that someone is being encouraged to behave in a negative way, *used* in this context indicates that someone is being exploited for someone else's advantage, and *brainwashed* indicates that someone is being persuaded to believe in something they might not otherwise believe in. In all of the above cases, the passive recipients are at a disadvantage in this relation. To be specific,

the authors' unspoken implication here is that within the context of the Climate Strike, kids hold less agency or power than adults.

In most cases, although the authors indicate that the children who take part in the strike are being used or brainwashed, no authors here explicitly mention who the people or organisations are that are using or brainwashing the children. It could be speculated that the excluded actors of these processes of manipulation are parents or the government, although this is very rarely stated.

One explanation of the differences between the CNCS corpus and the NZCS corpus when discussing relations between parents and kids is that the different cultural backgrounds should be taken into consideration. According to Ware (1981), the process of raising children has traditionally included practices that might be viewed as manipulation, and these have also been regarded as normative. However, in modern times, with the changes in values, parents' "manipulation" rights have been brought into debate and the boundary between education and manipulation is shifting. Furthermore, Camras, Kolmodin and Chen (2008) state that compared to parents in western countries, Chinese parents are often more comfortable about exerting control over their children. They suggest that this is because relations between the Chinese government and its citizens shape Chinese parental relations with their children. In order to maintain social stability, the Chinese government suppresses all forms of protests and strikes, and in recent years the Chinese government has even taken proactive action to guide people's activities. (Chen & Zhang, 2019). In this context, Chinese social media users are more likely to unconsciously view Chinese children as similarly being subject to social control and not able to think independently. Extracts (1) to (6) support this point.

5.3 The use of *young* in the CNCS and NZCS corpora

In both the CNCS and NZCS corpus, *young* is used in a similar manner to *little*. The balance of its frequency across the two corpora, however, is reversed, in that *young* occurs 34 times in the

NZCS corpus but only 3 times in the CNCS corpus. To compare the use of *young* in both the CNCS and NZCS corpora and examine the different usage of *young* and *little*, Table 5.5 shows the concordances with *young* from the CNCS corpus and Table 5.6 provides 10 lines of concordances from the NZCS corpus.

Table 5.5 Concordances of *young* in CNCS corpus

1	Said by a Tai teenager Thiti Usanakul: "as	**young**	people who are about to inherit this planet, we…
2	Many of the participants are	**young**	people, parts of them have participated in…
3	To oppose the negative impact of climate change,	**young**	people in Belgium have went on strike continuously.

Table 5.6 Concordances of *young* in NZCS corpus

1	These	**young**	climate leaders are our hope for a better world!
2	Love this! Flood of	**young**	climate strikers arriving in Wellington, NZ
3	Feeling inspired by all you amazing	**young**	people!
4	Amazing speeches by	**young**	activists at the Wellington Parliament!
5	As a new Nelsonian I was so proud of the city's	**young**	people this morning.
6	These	**young**	people are seriously awesome. #climatechange
7	Manipulation of	**young**	minds.
8	On Friday,	**Young**	people are rising in 2052 places in 123 countries.
9		**young**	people around New Zealand striked for…
10	Our	**young**	people have a legitimate right to protest.

It can be observed that in the CNCS corpus (Table 5.5) that the few concordances containing *young* are used to quote the words of others (line 1), or present impartial details about the strike (lines 2 and 3), and hence the author's use of the word is less evaluative. However, in the NZCS corpus (Table 5.6), most of the concordances containing *young* express direct praise and appreciation of the participants. For example, in lines (3) and (5), the authors express their feelings about the young as "inspired" and "proud", and in lines (4) and (6), the authors express approval about the behaviour of the young and stating that they are "amazing" and "awesome".

Furthermore, in the CNCS corpus, *young* collocates with *people*, while in the NZCS corpus, besides *people*, *young* also collocates with *climate leader*, *climate strikers*, *activists* and *minds*. This could suggest that in contrast to the CNCS corpus, the authors in the NZCS corpus tend to acknowledge the strikers' identities to a greater extent. This acknowledgement, along with their positive evaluation of the young as inspirational, amazing and awesome, perhaps indicates that the NZCS authors, most of who appear to be mature adults, confer some degree of agency and power on the student climate strikers.

5.4 The use of *proud* in the NZCS corpus

As discussed in Section 5.1, the ways in which the Student Climate Strikes and its participants are evaluated in the CNCS corpus and NZCS corpus are different. To some degree, the NZCS corpus praises the strike participants in a more direct way, while the CNCS corpus tends to give advice to the strikers, as a component of the praise. To further understand this phenomenon, this section examines the use of the word *proud* in the NZCS corpus. *Proud* is of interest, as it is the most frequent adjective in the NZCS corpus (22 occurrences), however, *proud* (骄傲) does not occur at all in the CNCS corpus. Table 5.7 shows the concordances of proud in the NZCS corpus.

Table 5.7 Concordances of *proud* in NZCS corpus

1	My son was there in mind and in spirit. I am so	**proud**	of him.
2	So	**proud**	of my daughter and all the other kids today.
3	My son stood up at the end…climate change. So	**proud**	.
4	So	**proud**	to see my bub and these brilliant kids out.
5	So	**proud**	to stand with my daughters to protest climate change.
6	Damn it's great to be a Kiwi today. So bloody	**proud**	of our youth.
7	These kids really make us	**proud**	.
8	These kids make us	**proud**	.

9	Thousands of kids have … I am very, very	**proud**	of them.
10	Super	**proud**	to be part of today's wonderful…

Semantically, the use of *proud* in these concordance lines indicates the adult authors' personal pleasure or satisfaction at the actions of the students. As seen in the table, the objects of these sentences can be roughly categorised into two types: the authors' own children, and other participants in the strike. In half of the lines (e.g. lines 1 to 5), the objects are *my son*, *my daughter(s)* and *my bub*. Interestingly, in the other half of the lines, the strike participants are defined as *our youth* and *these kids*, instead of strikers or protesters, suggesting that the authors construct an affinity to the children of their compatriots. Hence the pride evidenced by the NZCS authors could also be viewed as a type of national pride or patriotism.

5.5 Conclusion

In this section, some important findings emerged. The first observation is that compared to the CNCS corpus, the NZCS corpus tends to evaluate the Climate Strike and its participants in a more direct way. In other words, the authors in the NZCS corpus are more likely to use adjectives with obvious attitudinal tendency and positive discourse prosody (e.g. proud). In contrast, the CNCS authors use slight praise, often followed by the offer of advice to the Student Climate Strikes participants. Secondly, both corpora show great concern about the strikers being manipulated or coerced, however, this is less evident in the NZCS corpora, where in many cases the students are constructed as having more agency. At the same time, the students are constructed as having less agency in the CNCS corpus.

The next chapter examines the nouns in both corpora to further examine how the authors of the two corpora differently view the Student Climate Strikes. The chapter will analyse, among others, the occurrence in the corpora of the nouns *climate*, *students* and *Greta Thunberg,* the originator of the Student Climate Strikes.

Chapter 6:

An Examination of Nouns in Context

6.0 Introduction

In this chapter, the keywords *climate*, *students* and *Greta* are analysed to compare how these topics are conceptualised across both corpora.

The keyword *climate* will be investigated first. *Climate* has the highest keyness value in the NZCS corpus (keyness value = 991.18), and the eighth highest keyness values in the CNCS corpus (keyness value = 346.6). The analysis of *climate* is divided into three parts. The first involves an overview that indicates how the two corpora discuss *climate change.* This section also examines the different conceptualisations of notions *climate change* and *global warming* in the corpora. The second part focuses on a concordance analysis of *climate* in the NZCS corpus in particular. This analysis reveals that the authors of the NZCS corpus tend to connect climate change with human activities. The last part examines how users in both corpora discursively deny climate change.

The keyword *students* will be examined next. *Students* is one of the most frequent lexical words in both corpora, and it has the third highest keyness value in the NZCS corpus (keyness value = 310.23). Given that students are the main participants of the strike, collocates of *students* are examined to see how they are discursively conceptualised across the two corpora.

Thirdly, the first name of the Student Climate Strikes pioneer and leader, *Greta,* is investigated.

Greta has the fourteenth highest keyness value in the NZCS corpus (keyness value = 103.91) and fourth highest in the CNCS corpus (keyness value = 485.16). The analysis finds that collocates of *Greta* primarily make reference to her identity as a youth and female activist.

6.1 The conceptualisation of *climate change* in the CNCS and NZCS corpus

Table 6.1 below shows the 10 strongest lexical and grammatical collocates of climate in the CNCS and NZCS corpus. The frequencies of the collocates are in the brackets.

Table 6.1 The 10 most frequent lexical and grammatical collocates of *climate* in CNCS and NZCS corpus with a -5/+5 span

CNCS corpus	NZCS corpus
march (游行, 93); **change (变化, 70)**; protest (抗议, 38); **is/are* (是, 33)**; **warming (变暖, 32)**; global (全球, 27); appeal (呼吁, 18); government (政府, 17); not (不, 17); strike (罢工/罢课, 16)	**change (60)**; the (46); to (38); strike (26); **of (25)**; in (23); for (23); a (23); **is (17)**; #climatestrike (16)

* In Chinese, the present-tense auxiliary verb *be* (是) can be translated as "am"; "is" and "are".

A number of observations can made from the table. Firstly, and as to be expected, in both the CNCS and NZCS corpora *climate* frequently collocates with *change*. Also, as to be expected, other frequent collocates in the table indicate that *climate* or *climate change* usually occurs with *march, protest*, or *strike* (in the CNCS) or *strike* (in the NZCS). The table also shows that *climate* is frequently followed by *is* in both corpora suggesting that attributive processes that classify or describe climate change, or the climate change strikes, are common in the corpora. Finally, it can also be seen that in the CNCS corpus *warming* frequently collocates with *climate*, but that this doesn't occur so frequently in the NZCS corpus. W*arming* is often used to construct the climate change as less severe (Joireman, Truelove & Duell, 2010). The use of warming is discussed below in Section 6.1.3

6.1.1 Analysis of climate change

As expected, in both the CNCS and NZCS corpora *climate* or *climate change* frequently collocates with *march, protest*, or *strike* (in the CNCS) or *strike* (in the NZCS). However, in this section, in order to evaluate how the concept of climate change is discursively conceptualised in both corpora, occurrences of *climate change* that specifically reference the phenomenon, rather than the Student Climate Strikes are examined. Table 6.2 below shows a random selection of 10 concordances of *climate change* in the NZCS corpus and Table 6.3 below shows a random selection of 10 concordances of climate change in the CNCS corpus.

Table 6.2 Concordances of *climate change* in the NZCS corpus

1	…protest against government inaction on	**climate change**	.
2	…spoke loud and clear, and take steps to stop	**climate change**	. Because the alternative is
3	see these kids. Hopefully he'll realize that	**climate change**	unthinkable.
4	Let's demand true sustainable economy & principle!		is real!
	old … are cause of	**climate change**	
5	Animal agriculture is … a major cause of	**climate change**	.
6	…students are brainwashed because	**climate change**	.
7	Human caused	**climate change**	is a hoax.
8		**Climate change**	is becoming a religion…scientific
9	children talked about…want changed to reduce	**climate change**	fraud.
10	…regardless of location, culture…to impact	**climate change**	is worse than Voldemort…

Table 6.3 Concordances of *climate change* in the CNCS corpus

1	Kids are taking care of	**climate change**	because they are the biggest victims here.
2		**Climate change**	is … going to influence everyone.
3	Many people think that	**climate change**	is only the responsibility of developed countries.
4	kids might not even know the cause of	**climate change**	.
5		**Climate change**	is true, but it might not be caused by carbon

6	Who can tell if	**climate change**	emission
7	…students on the street to strike for	**climate change**	is indeed caused by carbon emission?
8	In Brussel, students walked on the street for	**climate change**	and ask for more active actions of the
9	German students are striking because of	**climate change**	government…
10	The government must take	**climate change**	seriously!

As shown in both tables, authors in both CNCS and NZCS corpora tend to discuss *climate change* within the context of providing opinions about the phenomenon. The only concordances with climate change that refer to it using non-evaluative language are line 1, Table 6.2 and lines 8-9, Table 6.3.

Furthermore, the cause of climate change is another common topic in both corpora, although it is discussed in different ways. In the NZCS corpus, two authors (Table 6.3, lines 4 and 5) identified human activity, notably *economic activity* and *animal agriculture* as the reasons behind climate change, while one suggests the human cause of climate change is a fraud (line 7). In the CNCS corpus, two authors (Table 6.4, lines 5 and 6) acknowledge that the phenomenon of climate change exists, but nonetheless question scientific facts about the reason for climate change. Another author in the CNCS (line 4) conceptualises *kids* (probably strike participants) as not having sufficient knowledge to understand the causes of climate change. As seen in Chapter 5 this CNCS author also belittles the agency of the strikers. Based on these concordances, it could be argued that when referring to the *cause* of climate change, the NZCS corpus is more likely to use declarative language pattern to define the climate change as a human-induced phenomenon while the CNCS corpus tends to question the existing scientific consensus that climate change is related to greenhouse gas emissions.

As evidenced in Table 6.1 *is* is also a frequent collocate of *climate.* In the NZCS corpus, it is frequently used to provide a descriptive evaluation of the veracity of climate change, through the phrase *climate change is …* ; for example, *climate change is real, is a hoax, is … a religion,* and *is worse than Voldemort* (lines 3 and 6-8, Table 6.2). This evaluation occurs directly and

concisely, with no following subordinate clauses to clarify the evaluative statement. However, when the authors of the CNCS use the phrase *climate change is ...* (lines 2, 3, 5 and 6, Table 6.3) they do not make evaluative statements about the veracity of the phenomenon. The only exception is in line 6 where the author does states that climate change is *true*, but then using the conjunction *but* clarifies the statement by suggesting that human activities may have little to do with climate change.

Based on the concordances in Tables 6.2 and 6.3, when evaluating the veracity of climate change, the NZCS corpus tends to be more direct and make categorical assertions. While the CNCS corpus tends to critique the information or ideas related to *climate change*, rather than denying the phenomenon of climate change itself.

6.1.2 Climate change scepticism

As discussed in Chapter 2, scepticism about the existence of climate change has proliferated around the globe, even though almost all scientific communities have unceasingly shown that climate change is real (Team, Pachauri, & Meyer, 2014). The Internet has by far provided the major forum for climate scepticism. Yet, as shown in Section 6.1.1, while the CNCS corpus and the NZCS corpus both include posts that discuss the existence of climate change, for the most part, it would seem that climate scepticism is not a particularly frequent topic among the Weibo and Twitter users who make reference to the Student Climate Strikes. Of the 20 concordances in Tables 6.3 and 6.2, for example, only two express an outright denial of climate change, while another two imply that although climate change exists, it may not be the result of carbon emissions.

Nevertheless, the examination of climate scepticism in the two corpora might reveal information of interest. As a result, and in order to further examine how authors of the two corpora question the existence of climate change and the stances they take about the phenomenon, words such as *fraud*, *hoax*, *denial*, *lie* and *fake* were searched in both the CNCS and NZCS corpora. Table 6.4 shows a list of words that are related to climate change denial,

alongside their frequencies,

Table 6.4 Words related to climate change denial in the CNCS and NZCS corpora

CNCS corpus	NZCS corpus
fake (假, 2); fraud (骗局, 1);	fake (9); lie (3); hoax (3); fraud (2);

Three extracts are used to further examine this phenomenon, Extracts (1) and (2) are from the NZCS corpus and Extract (3) is from the CNCS corpus.

(1). Those brains of mush being fooled by **hoax** data from East Anglia, NOAA, NASA et al. CO_2 isn't the primary greenhouse gas. Warming effect of CO_2 declines as its concentration increases. 1st and foremost, CO_2 is plant food. In the last 4 ice ages, CO_2 level was dangerously low. (NZCS)

(2). They are taking part in the biggest **lie** in NZ history. Truth wants to come out. (NZCS)

(3). Climate is far warmer in the age of dinosaurs, even the B.C. centuries are warmer than nowadays. The so-called climate warming is a **fraud**. (CNCS)

In Extract (1), the authors' opposition to climate change is mainly directed at the information or ideas related to *climate change*, rather than being a direct denial of climate change itself. The author assumes that *data* from *East Anglia* (University), *NOAA* (National Oceanic and Atmospheric Administration), *NASA* (National Aeronautics and Space Administration) and other authorities are wrong and that people are being deceived. The author uses the metaphor *brains of mush* to refer to people who believe in the information provided by these authorities. The author uses the passive voice to depict these climate change believers as passive recipients of scientific information. In this process, the believers' agency is removed.

In contrast in Extract (2), the climate change believers are given agency, however, although the author of Extract (2) acknowledged that fact that the strikers *are taking part in* the activity on

their own initiative, the word *lie* is used to define the activity they are involved in. Thus, the author also implies that the participants are misguided or deceived. Finally, in Extract (3) the authors connect the climate concerns to shifts in temperature, as opposed to the catastrophic environmental problems that result from climate change. To achieve this, the author uses a comparison of historical temperature patterns to suggest that climate warming is a *fraud*.

There are many studies trying to establish why a certain percentage of the population remain unconvinced by climate issues despite the existence of scientific proof. A cross-national study, for example, from 2015 shows that among 13 countries, climate scepticism is higher in developed countries such as New Zealand, Australia, Norway and the USA. Furthermore, climate scepticism is strongly influenced by political conservatism, an individualistic worldview, and by those who are strongly patriotic. (i.e. people who strongly identify with the country they live in are more likely to be sceptics). In contrast, those who live in regions with relatively vulnerable environments are less likely to be sceptics (Tranter & Booth, 2015). Another explanation for climate change scepticism involves what is referred to a "anti-reflexivity theory" (Young & Coutinho, 2013). Anti-reflexivity theorists think that scepticism is mainly a movement initiated by the traditional energy industry. It is argued that the fossil fuel and coal industry is organising the sceptics. According to Dunlap and McCright (2010), the essential strategy and core of climate scepticism is to "obfuscate, misrepresent, manipulate and suppress the results of scientific research". (Dunlap and McCright, 2010, as cited in Liu, 2015, p. 281) This is further analysed in Chapter 8.

6.1.3 Analysis of warming in the CNCS corpus

In the CNCS corpus, *warming* is a frequent collocate of *climate* (frequency number = 32), but in the NZCS corpus, *warming* occurs only 7 times. Furthermore, *warming* has the third highest keyness value in the CNCS corpus, (keyness value = 833) whereas in the NZCS corpus, the keyness value of *warming* is relatively low (keyness value=51.78). This section examines and compares how the two corpora conceptualise the widespread notion of the climate as 'warming'. Extract (4) is reproduced from the NZCS corpus and Extracts (5) and (6) from the CNCS corpus.

(4). …Increases in C02 are not responsible for **global warming**. (NZCS)

(5). **Global warming** is not connected with human activities and industrialization. It is influenced by solar radiation and the movement of sun and earth. (CNCS)

(6). Equatorial region is the biggest victim of **climate warming**, but they cannot let their voice be heard. (CNCS)

In Extract (4) and Extract (5), the author refutes the relationship between global warming and human-caused carbon emissions. Both these extracts are not directly denying the phenomenon of climate change, but instead are denying scientific facts that human activities are strongly connected to these climate problems.

Semantically speaking, *global warming* and *climate change* are not equivalent. The use of the term *global warming* tends to be more closely associated with temperature, while *climate change* focuses on wider meteorological changes in the environment (Gann & Matlock, 2014), and a number of researchers (e.g. Joireman, Barnes Truelove & Duell, 2010) have found that the use of the term *global warming* makes the climate problem sound less severe. Hence, scientific communities favour the use of *climate change* over the use of *global warming* (Luntz, 2003).

As with Extract (3) in Section 6.1.2, Extract (6) provides further evidence that the CNCS corpus tends to downplay serious climate change by associating it with natural temperature variation, due to geographic differences. In Extract (6), regions with relatively high temperatures are depicted as *the biggest victim*, and it is presupposed that people in hotter regions suffer more from climatic anomalies than those from relatively cooler regions. This Extract provide evidence that the CNCS corpus tends to relate climate issues to what are perceived as manageable and non-threatening changes in temperature, rather than the types of catastrophic projections and extremes of weather that scientists suggest a 2 degree rise in the world's

temperature would cause (Coffel, Horton & de Sherbinin, 2017).

6.1.4 Summary of the analysis of climate

Findings in Section 6.1.1 to Section 6.1.3 show that, firstly, the authors of the two Student Climate Strikes corpora rarely use non-evaluative language to discuss the climate change phenomenon. Secondly, when discussing the causes of climate change, the NZCS corpus is more likely to acknowledge that climate issues are caused by human activities, while the CNCS corpus tends to focus on questioning the impact of human-produced carbon emissions.

Furthermore, it shows that although authors from both corpora acknowledge the need to act on climate issues, climate change scepticism is also apparent in both corpora. However, in the NZCS corpus, these climate change sceptics tend to directly deny the existence of climate issues, while authors of the CNCS corpus tend to convey their scepticism less directly. Furthermore, through the frequent use of the phrase *global warming*, the CNCS corpus is more likely to underplay the severe consequences of the climate crises. The next section examines how both corpora discuss the main participants of the Student Climate Strikes: students.

6.2 The use of *students* in the CNCS and NZCS corpus

In Chapter 4, Table 4.1 shows that the word *students* occurs 86 times in the CNCS corpus (7th highest) and 60 times (6th highest) in the NZCS corpus. Students are seen as the main force in the climate strikes. An examination of how the protesting students' behaviours are being evaluated on Twitter and Weibo can provide insights into the ideological beliefs and values of the producers of the posts in both corpora. This section will therefore examine and compare the posts found in the two corpora that contain the word *students*. Firstly, Table 6.5 below shows the collocates of *students* related to nationality and city in the CNCS and NZCS corpus with a -5/+5 span.

Table 6.5 collocates of *students* relates to nationality in the CNCS and NZCS corpus with a -

5/+5 span

Category	Collocates of students in CNCS corpus	Collocates of students in NZCS corpus
nationality/ city	German (德国的, 9); **global (全球, 9)**; country (国家, 7); **Chinese (中国, 5)**; Swedish (瑞典的, 4); Melbourne (墨尔本, 4); Australian (澳大利亚的, 3); Dutch (荷兰的, 2); British (英国的, 2); Frankfurt (法兰克福, 2); Amsterdam (阿姆斯特丹, 1); Seattle (西雅图, 1); New Zealand (新西兰, 1); Sydney (悉尼, 1); Canberra (堪培拉, 1); Toronto (多伦多, 1); Hamburg (汉堡, 1)	**New (14)**; **zealand (14)**; **global (4)**; world (2); Christchurch (2); Wellington (1); Nelson (1); Auckland (1); Aotearoa (1)

As Table 6.5 indicates, the word *students* in both corpora collocates with *global*. However, while the CNCS corpus also refers to Chinese students, as well as those from different parts of the world, the NZCS corpus tends to mainly refer to students from the New Zealand context. This suggests that while the authors of the CNCS corpus focus on the strike actions of students worldwide, those of the NZCS corpus focus on local strike action. These differences are most likely because there was no large-scale climate strike on the Chinese mainland, while in New Zealand participants organised two strikes, one in March, 2019 and the other in May, 2019.

Examples of the way that both corpora discuss the Student Climate Strikes as a global phenomenon, can be seen in Extract (7) from the NZCS corpus and Extracts (8) and (9) from the CNCS corpus.

(7). Thousands of **students** kick off **global** climate change strike… (NZCS)

(8). There is a **global students** strike involving millions of participants. (CNCS)

(9). …a **global students** climate change strike was going on all over the world yesterday afternoon. (CNCS)

In all three extracts, *global* is used as attributive adjective to indicate that the student strike is large-scale and its participants are all over the world. In Extract (8) and (9), the authors used the generalised quantifiers *thousands* and *millions* to emphasise the great number of strikers.

The following extracts indicate how the CNCS corpus discusses Chinese students and the NZCS corpus discusses New Zealand students.

(10). Let us remember the positive message sent today by thousands of **New Zealand** school **students** on the streets for #SchoolStrike4ClimateNZ (NZCS)

(11). Wonderful **New Zealand students**! (NZCS)

(12). Students from other countries are on the streets, marching for climate of our planet, what are **Chinese students** doing now? (CNCS)

(13). There never will be **Chinese students**. (CNCS corpus)

Extracts (10) and (11) provide evidence of positive discourse prosody. In Extract (10), the author describes the actions of student strikers as sending a *positive message* and the author of Extract (11) directly praises the students in New Zealand as *wonderful*. In Extract (10), the generalised quantifier *thousands* is also used to positively describe the size of the collective response of student strikers.

However, as we can see from Extracts (12) and (13), Chinese students are discussed as being absent in the Student Climate Strikes. In Extract (12), the author uses an interrogative mood to ask about *Chinese students'* actions. One of the possible interpretations is that the author was trying to compare the different practices between Chinese students and those from other countries. The implication is that *Chinese students*, no matter what they are doing, are *not marching for climate of our planet*. In Extract (13), the author uses the declarative mood to

indicate that *Chinese students* will never be part of the Student Climate Strikes.

While both extracts state that Chinese students are not taking part in the Student Climate Strikes, neither of the authors attempt to provide an explanation. According to King, Pan and Roberts (2013), in contrast with the previous administration which censored criticism of the state, the censorship focus of the current Chinese government is collective action. As a result, Wang, Cai, Xin and Chen (2019) state that when discussing collective action online, Chinese social media users are concerned with the possibility of "political prosecution" (p. 219). Hence, as we can see, references to Chinese students in the CNCS corpus are relatively minimal in comparison to references to students from other countries.

6.2.1 Metaphors analysis of students

Many discourse studies have shown that metaphor is important in uncovering speakers and writers' attitudes and values (Cameron & Maslen, 2010; Semino, 2008; Musolff, 2004). Deignan (2005), for example, states that metaphors can reflect ideological beliefs because metaphors are the tools with which people embody abstract ideas. As a result, metaphors in the two corpora are viewed as contributing to the formation of the Student Climate Strikes discourses, as well as the identities of the striking students. Examples of metaphors used in the climate strike posts can be seen in the extracts below. Extracts (14) and (15) are taken from the NZCS corpus, Extract (16) is taken from the CNCS corpus.

(14). The international movement encouraging young students to strike school in the name of climate change has spread like **wildfire.** (NZCS)

(15). **Flood** of young climate strikers arriving in Wellington, NZ #ClimateStrike #FridaysForFuture (NZCS)

(16). Do acting on climate equal wandering on the square like a **flock of sheep**? (CNCS)

The first observation here is that Extracts (14) and (15) characterise the Climate Strike

participants as powerful natural phenomena, while Extract (16) characterises the strikers as docile and tamed animals. The common feature of the metaphors *wildfire*, *flood* and *flock of sheep* is that they are normally large-scale, which might indicate the large number of students taking part in the Student Climate Strikes.

Metaphors that represent people as floods, wildfires or other natural disasters have been analysed by many researchers. For example, Chavez (2001) explains that a flood or wildfire, irrespective of the damage it causes, is normally viewed as uncontrollable. In many studies, the use of flood and wildfire metaphor can be understood as negative because it is related to concepts such as uncontrollability, however, in Extracts (14), and (15), the metaphorisation of the Student Climate Strikes as uncontrollable is positively construed.

On the other hand, in Extract (16), the student strikers are metaphorised as a flock of sheep. First, the process of representing people as animals is a form of dehumanisation, used to degrade people's humanity (Haslam, Loughnan & Sun, 2011). The author of Extract (16) compares the strike to a herd, namely, to belittle the significance of the students' activity. More importantly, by stating that the strikers are similar to domestic animals, the author further emphasises the strikers' vulnerability and negates their subjective initiative. Moreover, the author uses the interrogative mood (question) to demand information from the audience. It could be argued that the author of this post was not requiring an answer but trying to encourage other Weibo users to reply in a similarly negative way.

To conclude, although the metaphors in Extracts (14) to (16) all acknowledge the large number of Climate Strike participants, there are some differences. The NCCS corpus shows a relatively positive attitude towards the students while the CNCS corpus is more negative. Furthermore, the NZCS corpus focuses more on the uncontrollability of the strikers while the CNCS corpus implies the opposite. This can be viewed as further evidence that the CNCS corpus indicates that students are easily manipulated, and lack agency.

6.2.2 Summary of the analysis of students

In this section, it was found that, firstly, both corpora acknowledge that the Student Climate Strikes is a wave of movements that have influenced a great number of students globally. Nevertheless, when discussing the domestic circumstances in the respective countries, the NZCS corpus is more likely to use attitudinal words to express praise and compliment, whereas the CNCS corpus shows a reluctance to comment on the specific situation in China. Secondly, the CNCS corpus, again, in contrast to the NZCS corpus, shows a tendency to belittle the agency of students.

6.3 The use of *Greta Thunberg* in the CNCS and NZCS corpus

In this section, the keyword *Greta Thunberg* is investigated in context. As the name of a Swedish environmental activist who is reported as "the leader and target" (David, 2019) of School Strike for Climate, *Greta Thunberg* has one of the highest keyness values in both the CNCS and NZCS corpora. The keyness value of *gretathunberg* in the NZCS corpus is 179 and the keyness number of *greta* is 103. The keyness value of *Greta* in the CNCS corpus is 476. Thus, by utilising the concordance function of Antconc and Sketch Engine, language patterns within the wider context of the word *Greta* (*Thunberg*) in both corpora are compared and the salient lexical and semantic co-occurrences of *Greta (Thunberg)* are examined. Table 6.6 and Table 6.7 respectively show the concordances of *Greta* in the CNCS corpus and NZCS corpus.

Table 6.6 All Concordances of *Greta* in CNCS corpus

1	…initiated by 16-year-old Swedish girl named	**Greta**	Thunberg took place all over the world.
2	… which is initiated by a Swedish girl named	**Greta**	Thunberg
3	a 16-year-old Swedish female student named	**Greta**	Thunberg initiated school strike.
4	I've watched the Climate Strike initiator	**Greta**	's Ted Talk, a little girl who is just 15 can…so touched
5	Thanks to the Swedish girl	**Greta**	Thunberg, dozens of countries have started strikes…
6	…influenced by Swedish youth activist	**Greta**	Thunberg (Greta Thunberg).
7	the iconic figure is 16-year-old Swedish student	**Greta**	Thunberg, she skipped class to sit in front of…

Table 6.7 Concordances of *Greta* in NZCS corpus

1		**Greta**	and her student followers are so inspiring.
2		**Greta**	is able to explain what a lot of grown-ups can't….
3	I am thinking that adults should be joining	**Greta**	's campaign too. What do you think?
4	This is GREAT	**Greta**	should go on a world tour and lead demonstrations…
5		**Greta**	! Thanks for your activism and best of luck to you all!
6	Kia Ora from Aotearoa/New Zealand to you	**Greta**	, you are my daughter's inspiration!
7	Go,	**Greta**	!
8	…whether it's this 16-year-old on QT,	**Greta**	Thunberg…we should be giving the vote to teens now.
9	The 'school strike' was started by	**Greta**	Thunberg, an inspirational young woman from Sweden…
10		**Greta**	Thunberg, the founder of the Youth Strike for…

As a female and teen-age activist, *Greta Thunberg* is frequently discussed within the power structure of adults and patriarchism. This section examines the CNCS and NZCS corpora's attitudinal tendency towards *Greta Thunberg* and her actions.

As shown in the concordances in Table 6.6, the most evident distinction between these two corpora when discussing *Greta Thunberg* is that in the CNCS corpus, *Greta Thunberg* is consistently referred to by her full name, which collocates with the construction of her identity (*16-year-old Swedish girl*, *a 16-year-old Swedish female student*). She is also frequently highlighted as the initiator (lines 1-4), starter (lines 5), or influencer (line 6), of the strike action. Furthermore, although the authors in the CNCS corpus recognise her contribution to the movement, the CNCS corpus tends to use a non-evaluative tone when discussing Greta Thunberg.

However, in NZCS corpus, Thunberg is always referred to by her first name, which collocates with the appreciation of her practices (*are so inspiring/ should go on a world tour*). Hence, it can be inferred that in the CNCS corpus, the authors tend to describe Thunberg's identity (e.g.

lines 1 to 3) while in the NZCS corpus, the authors are more likely to positively judge and appreciate Thunberg's actions (e.g. lines 8 and 9).

6.3.1 Greta Thunberg's identity as a youth activist

As shown in Table 6.6, in the CNCS corpus, five of eight extracts mentioned Thunberg's gender and age. The words and phrases being used are: *girl*, *little girl*, *16-year-old girl* and *16-year-old Swedish female student*. Only in line 6, is Thunberg's gender is omitted. In this extract, she is defined as *youth activist*. However, the word *youth* is still used to indicate her identity as an adolescent.

In the NZCS corpus, the authors tend to discuss Thunberg's identity in a more subtle way, although exceptions can be seen in line 8, where Thunberg is directly called *this 16-year-old* and line 8, where Thunberg is described as *young*. In the other concordances, however, Thunberg's age and identity are implied indirectly. For example, in lines 2 and 3, although the author does not directly describe Thunberg's identity as a teenager, she is referred to in opposition to *grown-ups* and *adults*, and in line 10, Thunberg's age is defined through the term *Youth Strike*.

Although the texts in Table 6.6 and Table 6.7 are not necessarily derogative, as mentioned in Section 5.2 and 5.3, by emphasising that someone is young, the authors' subtext might be that they themselves are "old" enough to make these kinds of comments. Furthermore, the authors might be insinuating that the objects being discussed are not mature enough and easily manipulated.

According to the lexical priming theory (Hoey, 2012; Pace-Sigge & Patterson, 2017), collocations that occur repeatedly are likely to result in the phenomenon of semantic priming; that is, in a certain domain, when two words, phrases, sentences or concepts are repeatedly associated, they begin to be subconsciously connected with one other -one concept works as a trigger and another as a target. This phenomenon is also known as the frequency effect (Pace-

Sigge & Patterson, 2017). By observing Table 6.6 and 6.7, it could be argued that the authors in both the CNCS and NZCS corpora are strongly connecting Greta Thunberg to an adolescent image.

6.3.2 Greta Thunberg's identity as a female

Although global power structure is still largely patriarchal, with the development of Web 2.0, some feminist scholars state that the landscape is changing (Jackson, 2018). Internet users are no longer simply audiences and readers, but creators and participants. Under these circumstances, although the authors of both corpora are not consciously taking part in the discussion of gender issues, they are nevertheless unconsciously taking part in the discussion of gender.

As shown in Table 6.6, in the CNCS corpus, when it comes to Thunberg's identity, almost all authors used the words *girl* and/or *female student,* while in the NZCS corpus, this only occurs in line 16 where Thunberg's gender is mentioned (Thunberg is described as a *Young woman*). Based on the analysis of the concordances, it shows that the CNCS corpus is more likely to emphasize Thunberg's gender, and that this is less pronounced in the NZCS corpus. In other words, in the CNCS corpus, the authors acknowledge and attach importance to Thunberg's female identity. In the NZCS corpus, the authors largely ignore gender categories and treat both male and female indifferently.

6.3.3 Conclusion

In this section, after analysing the identity of Greta Thunberg, some findings emerged. Firstly, both corpora tend to emphasise Thunberg's identity as a youth. Secondly, compared with the NZCS corpus, the CNCS corpus is more likely to discuss Thunberg's identity as a female. By emphasising Greta Thunberg's identity as a "teenage girl", the authors, might subconsciously, reduced the importance of Thunberg's identity as a climate activist. Thirdly, and similar to the findings found in the discussion of *students*, the non-evaluative tone is obvious in the CNCS corpus while the NZCS corpus shows a stronger appreciation towards Thunberg's actions.

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The focus of Chapter 7 is on the semantic analysis and linguistic functions of pronouns (especially the first-person plural pronoun) in both corpora.

Chapter 7:

An Examination of Pronouns in Context

7.0 Introduction

Many studies show that personal pronoun choice can indicate how speakers and writers position themselves through language (e.g. Fortanet, 2004; Kashima & Kashima, 1998; Íñigo-Mora, 2004). After examining how Twitter and Weibo users view the strike participants in Chapter 5 to Chapter 6, this chapter focuses on how authors of both corpora position themselves in regard to the Student Climate Strikes.

Drawing upon Íñigo-Mora's (2004) notions of 'exclusive we' and 'inclusive we', this chapter begins by comparing the use of the first-person plural pronoun *we* in the two corpora. Following that the chapter examines the way that the two corpora differently employ the possessive determiner *our*.

7.1 Analysis of the first-person plural pronoun *we*

According to Íñigo-Mora (2004), the use of *we* can be divided into two types. Firstly, *we* can be used as an "exclusive we" (p. 34). 'Exclusive we' tends to indicate a distancing from the hearers/readers because it implies that the hearers/readers are not in the same homogenous group as the speakers/writers. Secondly, *we* can be used as "inclusive we" (p. 34), which refers to the speakers/writers, as well as the hearers/readers. Quirk, Greenbaum, Leech and Svartvik (1985) further distinguish the use of 'inclusive we' to include:

1. The 'genetic *we'*, which includes all mankind.

2. The 'editorial *we'* used to avoid the first-person pronoun 'I' so that a speaker or writer can appear less self-centred.

3. The 'rhetorical we' which be viewed as similar to the 'genetic we' but on a smaller scale. For example, it can be used collectively to refer to 'the nation' or 'the party'.

4. The 'we' used to refer to hearers/readers when the speakers/writers are giving advice, typically in order to provide a non-authoritative but slightly condescending tone.

To examine how both corpora use *we*, Table 7.1 and Table 7.2 provide a selection of concordances of *we* in the CNCS corpus and the NZCS corpus.

Table 7.1 Concordances of *we* in the CNCS corpus

1	Students from other countries are striking for climate, what are	**we**	doing?
2	Foreign children are working on climate issues,	**we**	also need to contribute…
3	The government did a good job in polluted water treatment but	**we**	should carry out more active actions.
4	We didn't go striking, but	**we**	planted trees
5	Don't you know that the trees	**we**	planted are secondary forests now.
6	What kind of planet are	**we**	leaving to our children?
7	Seriously, if	**we**	don't act on climate issues now, we'll regret.
8	Government pays attention on these climate issues and	**we**	are also encouraged to protect environment.
9		**We**	really need to act now.
10		**We**	still have a lot to do but it's good that we insist…

Table 7.2 Concordances of *we* in the NZCS corpus

1		**We**	all must work together regardless of location, culture…
2	If	**we**	all sit back because we're small, the world burns.
3	Go youth. It is your world	**we**	are messing up. So pleased to see you fighting back.
4	by supporting this generation…	**we**	are not believing on our children that they can…
5		**We**	are taking scientific environment advice from a 16 year old

6		**We**	are striking for climate.
7	If you were smart	**we**	'd be in class
8	If	**we**	are not believing on our children … whose else?
9	Together,	**we**	can make a change
10	people who planted these trees…	**we**	can stand under them today.

A cursory observation of Table 7.1 and Table 7.2 shows that most of the concordances use the 'inclusive we'. The only exceptions are lines 6 and 7 in Table 7.2. These authors take the stance of the strikers (in contrast of people who are not participating in the strike) in order to explain - perhaps to the adult community - why they are striking.

In some uses of the 'inclusive we', *we* represents the 'genetic we'; i.e, all of mankind facing the climate crisis. For example, in line 1, Table 7.2, the author uses *we* to include people from all parts of the world. The modal auxiliary *must* is also used in this concordance to indicate that taking action on climate change is the obligation of all mankind. Furthermore, in line 7, Table 7.1 and line 2, Table 7.2, the authors have stated that *we* should work together on climate issues. In these cases, *we* is again clearly used in an inclusive way to refer to the entire human race (Quirk et al, 1985).

In other uses of the 'inclusive we', the authors from both corpora use *we* to identify themselves as belonging to the group 'adults', and to separate themselves from the group 'protesting youth'. For example, in line 6, Table 7.1, the author uses *we* to direct a rhetorical question to other adults. In this concordance line, *children* are clearly identified as not belonging to the group that the author is in. This usage can also be seen in line 3, Table 7.2, but in this case the message is being directed to the children who are fighting climate change, rather than other adults. Here, the second-person possessive pronoun *your* is also used; on one hand, to imply a sense of ownership, and on the other hand, to indicate the author's exclusion from the group of protesting children.

In line 5, Table 7.2, the inclusive *we* is used to refer to the group 'adults' creates a tone of condescension directed at the climate striking youth. By defining the striker as a *16 year old*, the author emphasises the striker's age to imply that young people are not mature enough to offer *scientific environment advice*.

However, *we* does not always represent the same groups across the two corpora. For example, in the CNCS corpus, the Chinese are often constructed as a distinct group in order to construct an argument of comparison. This can be seen in lines 1 and 2, Table 7.1, where phrases such as *students from other countries* and *foreign children* are used. In line 1, the author uses the interrogative mood to imply that because *students from other countries* are acting on climate change, *we* (Chinese people) might need to do something as well. In line 2, the clause *we also need to contribute* is used to imply that maybe *we* do not contribute now, or we need to contribute more in the future. In both cases, the authors' have constructed the Chinese population (or at least Chinese Weibo users) as exclusive from the climate change protesters.

In addition, in line 6, Table 7.2, the author states that they are *striking for climate*. Given that the author uses the present continuous tense to share their personal experience, it is reasonable to infer that the author is one of the strikers. However, by using the first-person plural pronoun *we* instead of the first-person singular *I*, the author has chosen an editorial way to address themselves. In this case, the use of *we* is associated with power, because it can be understood as a reminder that *I* do not "stand alone" (Brown & Levinson, 1987, p. 202).

To conclude, in the CNCS corpus, *we* is used to represent Chinese people/China (in contrast to those in other countries) (lines 1, 4 and 5, Table 7.1); adults (in contrast to children) (line 6, Table 7.1); and mankind as a whole (lines 7, 9 and 10, Table 7.1). In the NZCS corpus, *we* is used to represent either those who participated in the Climate Strike (in contrast to those who didn't take part in the strike) (line 2, Table 7.2), adults (in contrast to children) (line 3 and 8, Table 7.2) and mankind as a whole (lines 1, 9 and 10, Table 7.2). Among these different referents, it is only when *we* is used by the strikers to refer to the Climate Strike participants

themselves, that the term is explicitly used as 'exclusive we' (line 3 and 4, Table 7.2). (Quirk et al, 1985)

As mentioned before, by using *we* to narrate personal experience, the author implies that this experience is shared by others. However, this kind of experience might not be shared by the hearers/readers. According to Pennycook (1994), due to this dichotomy of meaning, *we* is a pronoun of both "solidarity and rejection" (p. 175).

7.1.1 We and climate nationalism in the CNCS corpus

In Table 7.1, line 3 (CNCS corpus), the author takes an authoritative tone to judge the work done by the government and evaluate it as *good*. Through the rhetorical use of the collective pronoun *we*, the authors construct themselves and the government as part of a homogenous group. Normally, compared to individuals, political institutions (such as the Chinese government) are considered as a "high-power group" because they have "inherent collective power". (Al-Qahtani, 2017, p. 29). By aligning themselves to the government, the authors also identify as members of the high-powered group.

In lines 4 and 5 in Table 7.1 (CNCS corpus), the authors mention another climate action: tree planting. Massive afforestation activities have been vigorously promoted by the Chinese governments in the 21st century (Frayer, Sun, Müller, Munroe & Xu, 2014). As a result, tree planting has become an important collective action in China. To some extent, by emphasising the contribution of afforestation, the author has also demonstrated a sense of identity with the Chinese government's collective practices.

In line 4, Table 7.1 (CNCS corpus), the author compares two material processes: striking and planting trees. In this case, *we* excludes the strikers from the community of tree planters. By comparing these two groups, the author constructs two opposite communities and uses binary opposition as an argumentative strategy. In line 5, Table 7.1, the author slightly undermines the importance of protesting by indicating that tree planting (which aligns with the government's

plan of action) is a better course of action than striking.

Extract (1) provides another example of how nationalism is used as an argumentative strategy in the CNCS corpus.

(1) How much impact does human activities have to climate? Are **we** deceived by the western countries? Are they suggesting that **we** should spend money on emission reduction? (CNCS)

In Extract (1), the passive voice is used to conceptualise *we* (the Chinese people) as victims of a western deceit of human induced climate change. To emphasise this point, the author uses three successive rhetorical questions, a rhetorical strategy that can often induce other social media users to respond. Extract (1) suggests that climate change is a plot that used by western countries to take advantage of developing countries. As discussed in Chapter 6, the deficiency of public understanding about climate change can lead to climate change scepticism, and furthermore as Liu (2015) points out, Chinese climate change scepticism is sometimes a result of the mistrust between China and western countries. Fisher (2012) also states that for a nation's leader, climate change discourses are sometimes subsumed within discourses of state solidarity. As such, it is reasonable to infer that the authors of the CNCS corpus are often influenced by the Chinese government's attitude towards climate issues.

7.1.2 Modality and pronoun use in the NZCS corpus

A closer inspection of the use of first-person plural pronouns in the two corpora indicates that they frequently collocate with modals. The examination of the modality (Halliday & Matthiessen, 2004) of the concordance lines with *we* can provide further insight into the collective identity of the group and how they work to influence others in both corpora. This can be seen in Table 7.3, which shows the collocates of *we* that are related to modality.

Table 7.3 All modality related collocates of *we* in CNCS and NZCS corpus with a -5/+5 span

CNCS corpus	NZCS corpus
can (可以, 8); should (得, 1)	**can (13)**; should (4); must (4); couldn't (2); shouldn't (1)

Table 7.3 shows that authors of both the NZCS and CNCS corpus may regularly refer to their particular group's ability to do something, as *can* is the most frequent collocate with *we*. Thus, this section will, for the most part, focus on the bi-gram *we can*. Extracts (2) to (4) are from the NZCS corpus and Extract (5) from the CNCS corpus.

(2). **We shouldn't** be wondering why our kids are striking, **we should** be wondering why **we** didn't (NZCS)

(3). …Together, **we can** make a change. (NZCS)

(4). **We can** still make it right. And by supporting this generation… (NZCS)

(5). **We can** influence our family, our family can influence the community, then the society, then the world. (CNCS)

(6). Wish **we** all **can** do our best to protect environment. (CNCS)

In Extract (2), the author uses contrasting parallel structures to contrast the adults' and *kids*' behaviours and to argue that adults should join the strike. To achieve this rhetorically, the first clause employs the negative form of the modal *should*, and the second clause employs its positive form to emphasise a modality of obligation (Eggins, 2004). By comparing the actions of *kids* and adults, the author is able to express their admiration for the climate strike. Similarly, in Extracts (3) to (6), the authors use the modal finite *can* to indicate that *we*, as a collective group, have the ability to contribute to environmental protection. Through this choice of language, the author not only expresses their own thoughts, but calls on others to participate in the Climate Strike. In these cases, the authors of extracts (2) to (6) clearly connect their individual behaviours with their sense of collective responsibility.

7.2 The use of the possessive determiner *our*

The possessive determiner *our,* used to refer to possession and show a sense of ownership, has the 15th highest keyness value in the NZCS corpus (keyness value =102). In contrast, the keyness value of *our* is relatively low in the CNCS corpus (keyness value less than 10). As indicated above, the collective identities found in the two corpora are dissimilar. The authors of posts in the CNCS corpus exhibit a sense of collective nationalism, while those in the NZCS corpus tend to identify as 'adults'. To explore this further, this section examines the first-person plural determiner *our* in the CNCS corpus. Table 7.4 lists the collocates of *our* in both the CNCS and NZCS corpus within a -5/+5 span. The frequency of each collocates is in parenthesis.

Table 7.4 the 5 most frequent lexical collocates of *our* in CNCS and NZCS corpus with a -5/+5 span

CNCS corpus	NZCS corpus:
we（我们，20); climate(气候，10); influence(影响, 10); can (可以, 8); problem (问题, 7); march (游行, 7); say (说, 6); plant (种, 5); tree (树, 5); **country** (国家, 5)	Future (10); first (9); our (8); climate (8); we (7); they (7); planet (7); **children** (6); **young** (5); them (5)

As shown in Table 7.4, it is obvious that both corpora construct ownership of the climate by using the phrase *our climate*, the sense of ownership may further indicate that the authors in both corpora are willing to take responsibility for climate issues. Table 7.4 also reinforces the finding that the CNCS corpus has a stronger connection to nation, while the NZCS corpus focuses on children and youth as members of the New Zealand Community. Extracts (7) to (9) from the CNCS corpus and Extracts (10) to (12) from the NZCS corpus can provide further insights into these findings.

(7). What about **our** country? Things like that will never happen here. (CNCS)

(8). Is it allowed in **our** country? (CNCS)

(9). How come that **our** country has not informed of the protesting? (CNCS)

(10). we must celebrate the hope that **our** children sparked today. (NZCS)

(11). I Stand with **our** children.... (NZCS)

(12). At today's #schoolstrike4climate #schoolstrike4climatenz. So great to see **our** young people out in full force demanding to be heard. (NZCS)

In Extracts (7) to (9), instead of using "China", or even "my country", the authors use *our country* to express the sense of collective ownership. Many studies have shown that *our country* is a term that can reinforce the emotional involvement of people towards a particular country (Al-Qahtani, 2017). Interestingly, in extract (8), the author asks *Is it* (the Student Climate Strikes) *allowed in our country*. This use of an interrogative mood, also seen in Extracts 7 and 9, indicates a lack of understanding about the situation in China. Here the people are constructed as passive recipients of the government's decisions and rules. These findings support the discussion in section 7.1.2.

This particular use of language is worth discussing further. As mentioned in Chapter 2, the Chinese have relatively fewer opportunities to participate in public marches and strikes. At the same time, evidence shows that Chinese government restricts online speech and manipulates online opinions (Chen, Pan & Xu, 2016). Within this context, it might be expected that Chinese media users would construct themselves online as lacking power with regards to political issues. However, according to Kádár and Zhang (2019), the official Chinese news media tends to focus on collective action because by emphasising the collectiveness of Chinese people, the Chinese government can consolidate its domination. It could be argued, therefore, that the authors of the CNCS corpus are influenced by, and unconsciously reproduce the language patterns of collective discourse, such as *our country*, that they encounter in the wider news media.

In Extracts (10) and (11), from the NZCS corpus, the use of *our children* does not indicate a blood relationship between the authors and the strike participants. Instead this parental-like

voice can be understood as indicating support and approval of the strikers' behaviours (Whyte, 2015). By using the possessive determiner *our*, the authors are expressing their inclination for being in the same collective group as the strikers. The discourse prosody of Extracts (10) to (12) are also evidently positive. The authors used words such as *great* and *celebrate* to indicate their appreciation of Climate Strike.

7.3 Conclusion

This chapter primarily analysed the use of the first-person pronoun *we* in the context of the two Student Climate Strikes corpora. Findings suggest that in the CNCS corpus, the authors tend to use binary opposition as an argumentative strategy. The CNCS corpus is more likely to use rhetorical 'inclusive we' to include the Chinese Weibo users while excluding Climate Strike participants. However, although the NZCS corpus also uses more 'inclusive we' than 'exclusive we', authors in the NZCS corpus have stronger sense of belonging with the 'adult' community.

It was also found that authors of posts in the CNCS corpus are more likely to express their identity as national citizens. Furthermore, posts in the CNCS corpus frequently exhibit distrust of western countries and recognition of the Chinese government's practices. At the same time, when it comes to the climate crisis, authors of the CNCS corpus tend to view themselves as passive recipients of the political decisions of Chinese government. In contrast, the NZCS corpus tends to use a 'parental-like' supportive voice when discussing the strike participants. As such, the authors in the NZCS corpus emphasise the responsibility and duty to act on climate issues.

The following chapter examines the use of hashtags in both the CNCS and NZCS corpora.

Chapter 8:

An Examination of Hashtags in the Corpora

8.0 Introduction

This chapter examines how the CNCS and NZCS corpora use hashtags in their online discussions of the Student Climate Strikes. After a brief overview of hashtags in the corpora, and following Zappavigna (2015), the chapter then examines the two main functions of hashtags in the corpora; to enact relationships, and to identify the content of the posts. The chapter concludes by looking specifically at the most frequently occurring hashtag in the CNCS corpus #*Chinese kids choose to plant trees,* which given its uniqueness, warrants further attention.

8.1 Overview of hashtags in the two corpora

As was seen in Chapter 4, compared to the NZCS corpus, which contains 162 unique hashtags, considerably fewer hashtags are found in the CNCS corpus, which only has a total of 25 unique hashtags. One possible explanation could be that Chinese Weibo users do not use hashtags as frequently as Twitter users. According to Gao, Abel, Houben, and Yu (2012), a comparison of Weibo and Twitter syntactic content shows that only 6.3% of Weibo posts contain hashtags, while 20.0% of Twitter posts contain hashtags. A reason for this phenomenon could be that Twitter users, in general, might be more eager, than the largely Chinese users of Weibo to let their opinions be found in the public forum. Another reason could be that without large scale Student Climate Strikes in China, Weibo users feel less connected to the Climate Strike, and so

are less inclined to use hashtags to facilitate searches to their posts.

Furthermore, and according to the observations of Table 4.9 in Chapter 4, the semantic domain of hashtags in both corpora can be mapped as a spectrum from those that are closely relevant to the Student Climate Strikes to those that are loosely relevant. At the 'relevant' end of the spectrum, the hashtags used are often very specific about one particular strike. These hashtags are perhaps unlikely to be searched for, or seen by the broader social media audience (e.g. #schoolstrike4climatenz in the NZCS corpus and #bigclimatemarch in the CNCS corpus). However, at the other end of the spectrum are hashtags that are too general to be used to for searches on the Climate Strike, since the search results would lead to an excess of irrelevant results (e.g. #newzealand; #proud in the NZCS corpus and #useless in the CNCS corpus).

8.2 The two main functions of hashtags in the corpora

According to Zappavigna (2015), rather than merely performing in "the service of information management", hashtags also operate in "the service of interpersonal social relations" (p. 277). She states that one of their most important functions is their evaluative function. This enables people to "construe attitudes" toward the topics they are discussing and "enact relationships with the ambient audience" (p. 284). To further examine how authors from the CNCS and NZCS corpora use hashtags to express their opinions towards the Climate Strike and enact relationships, Table 8.1 includes the five most frequent hashtags from the NZCS corpus, with and without evaluation or attitudinal tendency, and Table 8.2 includes 5 most frequent hashtags that are from the CNCS corpus, with and without evaluation or attitudinal tendency.

Table 8.1 5 Most frequent hashtags from the NZCS corpus, with and without evaluation

Hashtags without evaluation	Hashtags with evaluation
#climatestrike (115);	#proud (5);
#ss4cnz (103);	#amazing (2);
#schoolstrike4climate (72);	#awesome (1);

#fridaysforfuture (59);	#inspiring (1)
#climatechange (27)	#encouraging (1)

Table 8.2 5 most frequent hashtags from the CNCS corpus, with and without evaluation

Hashtags without evaluation	Hashtags with evaluation
#Chinese kids choose to plant trees (中国孩子选择种树) (6)	#Useless (废了的) (1)
#climatestrike (appears in English) (5)	
#big climate march (气候大游行) (3);	
#fridaysforfuture (appears in English) (3)	
#climate change (气候变化) (3)	

Table 8.1 and 8.2 list the most frequent hashtags from both the NZCS and CNCS corpus. They are divided into two types: hashtags with, and hashtags without, evaluation. These hashtags provide examples of two important hashtag functions (Zappavigna, 2015). On the one hand, hashtags not including an explicit evaluative dimension perform an information management role by indicating the semantic domain of the posts. On the other hand, hashtags including an explicit evaluative dimension are involved in constructing attitudes and enacting relationships.

Following the observations of Table 8.1 and 8.2, the following sections are divided into two parts. Section 8.3 is an analysis of hashtags that exhibit stance-taking and enact relationships, while Section 8.4 contains analysis of hashtags that are simply used to identify the 'aboutness' of the posts.

8.3 Hashtags used to enact relationships

This use of language to enact relationships is referred to as the interpersonal metafunction (Halliday & Matthiessen, 2013). This metafunction is strongly connected with stance taking, negotiating and affiliation establishing (Martin & White, 2005). This interpersonal use of

language can be seen in Extracts (1) to (3) from the NZCS corpus, and Extract (4) from the CNCS corpus.

(1). Wow! These kids are **#inspirational** (NZCS)

(2). So **#proud** of our children and families who joined in with the International action on climate change! #ClimateStrike #ClimateAction #bethechange. (NZCS)

(3). My kids will be there. **#proud** (NZCS)

(4). **#Useless** Why do people instigate protest? China is supporting the climate agreement. Go striking for what? (CNCS)

In Extract (1), the author first uses an exclamatory minor sentence (*Wow!)*, followed by the declarative mood in a relational process, where the attribute *#inspirational* is used to define the carrier of the clause, *these kids*. Both the minor sentence and the hashtag express the author's appreciation of the strikers' practices and in doing so, they aim to connect with readers on an interpersonal level. Interestingly, Zappavigna (2015) states that hashtags used to evaluate others' behaviours can be very specific or personal, and as a result, many interpersonal hashtags are not likely to be replicated by other microblog users. (Zappavigna 2015). Furthermore, in Extracts (2) and (3), by using the hashtag *#proud*, the authors express their appreciation of the strike participants. However, *#proud* is unlikely to be a widely searched Student Climate Strikes hashtag. In this case, #proud is used to express opinions rather than increase searchability. In Extract (2), the object *our children and families* indicates that the author is in the same group of the readers who approve of the Climate Strike. The author does not only enact relations with his or her own family members, but also the audience.

In Extract (4), the CNCS corpus author uses the hashtag *#useless* to deny the significance of the Student Climate Strikes. The author positions the hashtag in front of the post to declare his/her attitude and employs the interrogative mood to further doubt the importance of the Student Climate Strikes. In brief, it could be argued that the authors of the NZCS corpus are

more likely to express attitudes toward their children and family's involvement in the Student Climate Strikes, while authors of the CNCS corpus tend to judge the Student Climate Strikes itself.

8.4 Hashtags that identify 'aboutness'

As shown in Table 8.1 and 8.2 (also shown in Table 4.9, Section 4.4), the majority of all hashtags in both corpora are those without attitudinal tendency. Zappavigna (2015) points out that the primary function of hashtags is to indicate the topic of a post. Extracts (5) to (7), from the NZCS corpus, and extracts (8) to (9), from the CNCS corpus, allow the further examination of these type of 'aboutness' hashtags.

(5). This should have been the only story for us to focus on today. **#climatestrike** (NZCS)

(6) So inspiring to see all these you people out today to stand up for their future **#ss4cnz #climatestrike** (NZCS)

(7). Today is the day! **#ClimateStrike** (NZCS)

(8). The **#fridaysforfuture** strike is started by a 16-year-old Swedish girl called Greta Thunberg, it was on March 15th. (CNCS)

(9). The **#climatechange** protest started on January 10th in Brussels. Thousands of Belgian students are striking to call on more active climate actions. (CNCS)

In Extracts (5) to (7) the authors use the hashtags to connect their posts to the Student Climate Strikes. In Extract (5), for example, the hashtag *#climatestrike* is the only explicit indication as to what the post is about. In other words, without the hashtag invoking the aboutness of the topics and the posts, the audience may have difficulty establishing the semantic domain of the posts. Hence, and as seen in extracts (5) to (7), authors of posts often use hashtags to provide the 'experiential context' (Zappavigna, 2015) of their messages to the audiences.

However, in Extracts (8) and (9), the authors embed the hashtag as the subject of the post to provide information about the Climate Strike. For example, Extract (9) includes information such as location, time, number of participants and purpose of strike but no words relating personal thoughts and experiences. By embedding the hashtags in the posts, the authors convey the information in a more complete way.

Furthermore, as we can see from Extracts (10) and (11), an evident feature of the NZCS corpus is the use of multiple hashtags to identify the topic of the posts. However, it was found that this phenomenon does not appear in the CNCS corpus.

(10). School's out - and the kids are ready for action! **#climatestrike #climatechange #ss4cnz #fridaysforfuture** (NZCS)

(11). Incredibly moved and inspired by these students, incredibly ashamed to be an adult. **#auckland #ss4cnz #ClimateStrike #climatechange** (NZCS)

While using multiple hashtags might be another approach for increasing the visibility of posts, on the other hand, the appearance of a large number of different hashtags might also suggest that the online Climate Strike mobilisation is not very centralised. In contrast, the widely used '#MeToo' hashtag is globally recognised as an important mobilising tool for digital feminist activism. (Mendes, Ringrose & Keller, 2018)

8.5 The '#Chinese kids choose to plant trees' hashtag in the CNCS corpora

One unique hashtag in the CNCS corpus is #Chinese kids choose to plant trees. [4]Extracts (12) to (13) are from the CNCS corpus.

(12). **#Chinese kids choose to plant trees**. We are not indifferent to the Climate Strike, we choose to go into action. (CNCS)

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[4] To analyse this hashtag in a more convenient way, spaces between tokens are retained after translating.

(13). **#Chinese kids choose to plant trees.** Children in the western countries are going on strike. And Chinese children…plant seeds. (CNCS)

In Extract (12), the use of active voice and the present tense verb *are* (是) establishes a declarative mood which enables the author to conceptualise the statement of the post as a fact. By emphasising that Chinese kids are *not indifferent to the Climate Strike*, the author constructs the absence of the Climate Strike in China as reasonable, and constitutes the planting of trees as a comparable, if not more appropriate, action. Similarly, Extract (13) compares the different actions carried out by Chinese children and children in the western countries. In both extracts, the subtext is that Chinese children, while not participating in the Student Climate Strikes, nevertheless contributed to improving the environment. Furthermore, and as stated in Chapter 7, the emphasis on tree planting could also be viewed as an acknowledgement of the Chinese government's climate saving practices. By indicating that Chinese children are contributing to climate issues, the authors show accordance with the government's policies, but simultaneously imply that China is contributing to the global climate movement.

8.6 Conclusion

In this chapter, the linguistic functions of hashtags are examined. Findings show that in the NZCS corpus, the authors normally use hashtags to express their appreciation towards the Climate Strike and its participants. There is also a comparative lack of hashtags in the CNCS corpus, which has three possible explanations. Firstly, the unwillingness of the Chinese authors to make public judgements about the Climate Strike; secondly the wider lack of participation, and thirdly, the habits of Weibo users.

The next chapter reviews the key findings and observations in this study. It will also make some concluding connections with the existing literature and the cultural backgrounds of both corpora.

Chapter 9:

Discussion and Conclusion

9.0 Introduction

This chapter begins by providing a discussion of the key observations found in Chapters 4 to 8. Following this, the limitations of the study and implications for future research are addressed. Lastly, the chapter provides a brief conclusion of the study.

9.1 Key Observations

In response to the first research question, *How did social media users in China and New Zealand differently respond in their online posts to the Student Climate Strikes in 2019?*, there were three main findings. Firstly, it was observed that the CNCS corpus and the NZCS corpus praise the Student Climate Strikes in different ways. The New Zealand Twitter users of the NZCS corpus are more likely to directly show their appreciation for the Climate Strike, its participants, and its opinion leader Greta Thunberg. In contrast, Weibo users tend to provide suggestions for, and encourage students towards, other actions besides joining the strike. Overall, however, compared to the NZCS corpus, the attitudes reflected in the CNCS towards the Student Climate Strikes and its participants are relatively less positive.

Secondly, the New Zealand Twitter users of NZCS corpus are more likely to make comments on an individual strike participant, while Weibo users tend to judge the behaviours of the students as a group. Twitter users often discuss their children from the perspective of parents. However, few Chinese Weibo users take this perspective.

Thirdly, when discussing the climate change phenomenon, Both Twitter and Weibo users tend to offer their opinions on the topic. However, the authors of these two corpora show somewhat different attitudes toward climate change. For example, when it comes to the causes of climate change, Weibo users of the CNCS corpus tend to question the general scientific agreement that climate change is closely related to carbon emissions. However, Twitter users of the NZCS corpus tend to refer to climate change as caused by human activity.

In response to the second research question, *What might these responses reveal about the different underlying beliefs and values of the two communities?,* five related key themes emerged from this study. These include: i) a condescension towards the students; ii) a belief that the students are indoctrinated; iii) an undercurrent of climate change scepticism; iv) the emergence of certain collective identities, and v) a patriarchy towards Greta Thunberg. These observations are further discussed in the sections below.

9.1.1 A condescension towards the students

As discussed in Section 5.2 to 5.3, although most Twitter users and some Weibo users acknowledge the power of Student Climate Strikes participants, some authors of both the CNCS and NZCS corpora tend to employ a condescending and patronising discourse (Huckin, 2002; Hummert, 1994; Hummert & Ryan, 1996) towards the student strikers; that is, they ascribe themselves with more agency and competence than the students.

As shown in Chapter 2, although generations have witnessed the ability of youth to maturely engage in social and political movements and issues, it seems that a certain amount of Twitter and Weibo users still refuse to acknowledge the agency and power of young people. For example, as shown in Sections 5.1 to 5.3, the activities of strikers are praised by some as *good*, other authors still refer to the student strikers using the expressions *little kids* or *little girl*. Specifically, the CNCS authors tend to view the children's concern for the environment and their desire to strike as influenced and enabled by their parents. Moreover, the view that the children cannot make their own decisions is also evident in the NZCS corpus.

Ginwright, Cammarota and Noguera (2006) identify two possible reasons why young people engaged in social action are treated in a patronising way. Firstly, adults may feel that they have a responsibility to "lead the way" (p. 338) and secondly adults can feel threatened believing that they may not be able to control the situation.

9.1.2 Belief that the students are indoctrinated

Findings show that both Twitter and Weibo users show concern about the strikers as having been indoctrinated or manipulated, in particular, to participate in the Student Climate Strikes, or believe in the phenomenon of climate change. There are a number of reasons why they might hold these views. Firstly, the students are seen as having different, and often discomforting, values and beliefs to the Twitter and Weibo users. Jamieson and Cappella (2008) state that most people bring presumptions and existing attitudes towards a discussion on a particular topic, and that, "when confronted with discomforting information, humans readily find ways to reject it" (p. 75).

Secondly, and related to the previous section, studies showing that youth are often characterised by wider society as passive participants when it comes to social issues. Checkoway and Gutierrez (2006), for example, state that children are viewed as marginal and passive recipients in social events. Additionally, Noguera and Cannella (2006) argue that young people are often described as "spectators, ground troops, and victims, but rarely as actors with the ability to influence the course of events" (p. 334). Hence, any support for a serious cause is likely to be perceived as the result of indoctrination.

Thirdly, and related to the finding that the Chinese Weibo users tend to show a greater concern with children being manipulated (Chapter 5), it was also argued that this phenomenon is strongly associated with Chinese parents' authoritarian parenting style. Many scholars state that in comparison to Western parents, Chinese parents exhibit more controlling and authoritarian characteristics (Xu et al., 2005). An investigation into parenting styles shows that when

compared to mothers in western countries, Chinese mothers are less likely to accept democratic participants in family life (Wu et al., 2005). As a result, when discussing an activity that is led and organised by youth, Chinese social media users are more likely to view the participants as having little agency and lacking an ability to make their own decisions.

9.1.3 An undercurrent of climate change scepticism

For the most part, Twitter and Weibo users appear to recognise the scientific facts and acknowledge the existence of climate change. However, the corpus data shows that a certain number of users remain unconvinced by these facts. A possible explanation for this might be found in anti-reflexivity theory (Young & Coutinho, 2013), which suggests that climate change scepticism can be influenced by the propaganda produced by the traditional energy industries.

It was found in Chapter 6 that Chinese Weibo users tend to favour the term 'global warming'; a term which is widely seen to underplay the severe climatic issues which have resulted from the world's rise in temperature. Furthermore, it was observed in the corpus data that some Weibo users have deep distrust of Western countries. The CNCS corpus even provided evidence of a tendency for its users to connect climate issues with nationalism (Fisher, 2012). Chinese climate nationalism is perhaps closely related to the authoritarian nature of the Chinese social environment. Many researchers have also noted that in various areas, China shows 'aggrieved nationalism' (Callahan, 2004; Gries, Crowson & Cai, 2011). Aggrieved nationalism is a kind of defensive and somehow xenophobic ideology that is embodied in Chinese society. Additionally, aggrieved nationalism is, to a large extent, due to the so-called 'Century of Humiliation' (Scott, 2008), a period from the mid-nineteenth century to mid-twentieth century where the Chinese Empire was subjugated by the western powers and Japan. In other words, the sense of being disrespected historically by western countries may have aggravated the current Chinese perspective towards the global climate crisis (Qingguo, 2005). Furthermore, the all-pervasive patriotic education of the Chinese government may have also contributed to this aggravation (Zhao, 1998). For New Zealand Twitter users, climate change scepticism can be largely explained through mistrust between scientists and laypeople.

9.1.4 Collective identities

By comparing the usage of pronouns in both corpora, it can be seen that the different stances that the Twitter and Weibo users took towards the Student Climate Strikes are often shaped by their particular sense of identity. Three common senses of identity prevail in the corpus data. Firstly, through the evaluation of pronoun usage, it was seen that many Twitter and Weibo users identified as collectively belonging to the entire human race (Quirk et al, 1985). Secondly, some users identified collectively as parents who praised or criticised the young activists' behaviours. Thirdly, and as shown in Sections 7.1 to 7.3, some Weibo users in particular exhibited a sense of collective identity as Chinese citizens. These users emphasised the contribution of the Chinese people and the Chinese government towards climate change. In contrast, Twitter users were less likely to make comments from an identity as citizens of New Zealand. One possible explanation is that the language used by Weibo users is unconsciously shaped by the language of the collective discourse found on official Chinese social media and regularly consumed by Chinese citizens (Kádár & Zhang, 2019). On this point, while the core demand of the Student Climate Strikes is that the world's governments declare a climate emergency and take action to limit the earth's warming due to carbon emissions, a number of Chinese Weibo users instead emphasise tree-planting programmes as a preferable course of action to the climate strike. In doing this, it could be argued that these users are subconsciously normalising the prohibition of Student Climate Strikes in China.

9.1.5 Patriarchy towards Greta Thunberg

A number of findings emerged in the corpus data related to the identity of Greta Thunberg, the leader of the Student Climate Strikes. As a teenage female activist, Greta is discussed within the context of a certain patriarchal power structure, frequently referred to by the diminutive *little* and often by the patronising collocation *little girl*. Furthermore, this tendency is more pronounced on Weibo. By identifying her in this way, Thunberg's other identities, in particular her identity as an articulate, powerful and internationally recognised spokesperson for the environment, are neglected.

9.2 Limitations of the research

There are a few limitations to this study and these are addressed here. Some relate to the process of data collection, some relate to methods, and some relate to the multilingual nature of the data.

Six limitations are concerned with the collection of data. Firstly, the posts for the two corpora were collected through the use of keywords. As a result, any posts about the Student Climate Strikes, which did not include the keywords used for the search, were not included in the corpora. As a result, it is likely that certain potentially relevant posts about the Student Climate Strikes were absent from the corpora. Secondly, collecting reliable data from the Chinese social media context about the Student Climate Strikes can be difficult because of the country's suppression of strikes (Trevaskes, 2010). It is, therefore, difficult to ascertain whether certain posts are censored, or, if only those posts in line with the state's interests are available on the platform. Thirdly, data collected for this research included posts from Twitter and Weibo. Posts from other influential social platforms such as Facebook, Quora and Wechat are absent and may have contributed further to the study. Fourthly, as the Student Climate Strikes has been an ongoing activity, opinions of those posting about the strike to social media might have changed, particularly as the Student Climate Strikes overtime receive more publicity, or as consequences of climate change become more apparent. The data collection for this research was completed on August 2019, and thus the findings of this research only relate to a certain period. Fifthly, many of the collected posts and comments might be created by young people, and even strike participants. It might have been useful to examine this specific subgroup of data individually, but this was not possible in this study due to length and time limits. Furthermore, and according to Lefever, Dal and Matthiasdottir (2007), research that involves online data collection has a common limitation. That is, it is difficult to know whether the posts collected as data were created by many different individuals, or if they were created by only a few active social media users and are thus only expressing the voices of this small group.

Limitations with the methods of the study are largely concerned with the criticism of CDA for its possibility of bias in data selection and analysis. When collecting and analysing data, researchers might make the mistake of 'cherry picking' (Morse, 2010), which can lead to findings that are in line with the analyst's pre-held thoughts. Furthermore, these personal dispositions might influence the outcomes of the analysis. As is hopefully evidenced here, one way that CDA has recently avoided this limitation is to combine it with more statistically orientated corpus-assisted approaches, which enable the analysis of large collections of data, rather than the single text traditionally analysed in Critical Discourse Analysis (Kania, 2020; Baker, 2006; Baker et al., 2008). Nevertheless, throughout this study it was still necessary to select concordance lines or extracts from the wider corpus as examples for analysis. Where concordance lines were used they were randomly selected using the tools available in Sketch Engine (Kilgarriff, Rychly, Smrz & Tugwell, 2004), so that they provided a representative selection of the data. Any longer textual extracts analysed in Chapters 4-8 were selected because they were deemed to provide examples of the type of observations routinely found elsewhere in the data.

A final limitation results from the study's comparison of posts from two different languages. In order to present the study in English, the Chinese data was necessarily translated. However comparable words and language patterns across different languages often have subtle differences of meaning which are not always understood by those who are not speakers of the languages concerned. As a result, certain nuances of meaning found in the Chinese posts may have been lost in the process of translation carried out for this study (Ordudari, 2007).

9.3 Implications for future research

Given the increasing influence of the Student Climate Strike and its protagonists such as Greta Thunberg, more research could be carried out in this area.

Firstly, since this research is limited to comparing and analysing the similarities and differences

of user-generated content on two certain social platforms: Twitter and Weibo, future research might examine the social media posts on the Student Climate Strikes, or related climate change action, on other social media platforms. Secondly, due to the time limit for carrying out this study, and the fact that only a limited number of posts were accessible online when the corpora were built, both the CNCS and NZCS corpora are relatively small. In the future, larger corpora could be created to provide a more comprehensive analysis of the response of social media to the Student Climate Strikes, or related climate change action. Thirdly, because of my present situation as a Chinese national studying in a New Zealand university, the focus of this comparative analysis was only on Chinese and English social media. However, the Student Climate Strikes, and other forms of climate change action, occur globally (Taylor, Watts & Bartlett, 2019), and thus, similar studies focusing on other languages and cultures could be carried out in the future.

9.4 Conclusion

With the increasing awareness of the serious climate problems facing the world, and the inaction of governments to address these climate issues, a wave of student climate strikes - influenced by the Climate Change activist Greta Thunberg - took place throughout many countries worldwide. This thesis focused on examining the way Chinese Weibo users and New Zealand Twitter users responded to these Student Climate Strikes, and examined the different stances taken by the authors of these posts including their attitudes towards the strike participants, their activities, and the phenomenon of climate change. Furthermore, it sought to examine how their posts revealed the presence of certain underlying social values and ideologies. A corpus-assisted critical discourse analytical approach was employed to carry out these objectives.

To conclude this chapter and this study, three broad observations can be made. Firstly, Chinese Weibo users tend to represent and evaluate the Student Climate Strikes through language that is indirect and ambiguous, while the Twitter users employ language that is expressive and direct.

Secondly, ideological polarisation toward climate issues occurs among both Twitter and Weibo users. On the one hand, the climate strike supporters show their appreciation of the strike and its participants, while on the other hand, the climate change sceptics express their distrust of climate science, and their concern about the student strikers. The analysis suggests that the reasons for the attitudes of this latter group are twofold; there is a gap between their understanding of the climate situation and the expertise of scientists on the subject, and that they also refuse to value the agency and views of the students. Thirdly, the Chinese Weibo users are more likely to emphasise their collective identity as Chinese citizens, compared to the New Zealand Twitter users.

In general, this study aims to contribute to the understanding of how and why people from different cultural and political backgrounds respond in certain ways to social issues. Furthermore, by utilising the corpus software (Sketch Engine and AntConc) to compare the way Chinese and New Zealand social media users respond to Student Climate Strikes on two very popular social platforms (Twitter and Weibo), this study also aims to make a positive contribution and provide a reference for future cross-cultural corpus assisted discourse analysis.

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