CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter describes how Critical Discourse Analysis is used as a tool to expose power abuse and dominance that are present in written and spoken texts. As a direction of research, CDA does not have a restricted framework; rather its focus is on social problems and its advocatory role for victims of power abuse. To understand the principles and methodology in CDA, this chapter summarises some of the concepts introduced by three CDA proponents — Norman Fairclough, Ruth Wodak and Teun A. van Dijk. This chapter will also review past studies related to CDA and to the discourse of resistance. Some major concepts referred to in the study of Mahathir Mohamed’s discourse against ‘the war on terror’ will also be discussed. As this study is not restricted to any one particular framework, it attempts to incorporate the principles of CDA with a special focus on concepts taken from van Dijk’s ‘ideological square’ (van Dijk, 2004) which are pertinent to the analysis.

2.2 Critical Discourse Analysis

Critical Discourse Analysis (or CDA) is an approach to analysing discourse structures (written or spoken) that involves a study of the way social or political power, dominance, inequality, bias or resistance to such practices (in society) are mediated through the linguistic system (van Dijk, 1993, 2007; Caldas-Coulthard and Coulthard, 1996). At the same time, Critical Discourse Analysis views discourse as a ‘social practice’ (Fairclough, 2001:15) which means that language is determined by social
structure and social conditions, and that language also shapes social practice (Wodak, 1996). Titscher et. al provides an explanation of the dialectical relationship between society, culture and language:

Society and culture are dialectically related to discourse: society and culture are shaped by discourse, and at the same time constitute discourse. Every single instance of language use reproduces or transforms society and culture, including power relations. (Titscher et. al, 2000:146)

From the perspective of CDA, language is exploited by individuals or groups of people in a society as a means to achieve a particular goal. That is, through conscious selection of particular linguistic features, such as a lexical item, or a certain way of disclosing things in order to create a particular meaning (semantics), a certain purpose is achieved by the language user, which may be ideological (Khan, 2003). Past studies reveal such practices where racism is enacted with negative lexical choices to discuss immigration and ethnic issues. Van Dijk (1998b) uncovers this practice in British parliament debates, and Krishnamurthy (1996) finds degrees of racist talks embedded in the discourse of media and the dictionary. Such practices result in support, legitimisation or enactment of racist talk and the spread of racist ideology especially when the media or popular discourse recontextualises and reproduces racist discourse for public consumption.

The critique in the word ‘critical’ in CDA is aimed at the powerful elite in a society that uses language to maintain, exercise or reproduce power. In the context of CDA, the concept of the elite is understood as groups of people who have wide access and control over specific communicative events, e.g. media, parliamentary debates, textbooks and law, hence allowing the elite to gain influence and achieve their goal to sway the minds of the public (van Dijk, 1995, 1998a). The elites’ power and influence may be integrated in laws, rules and norms, hence taking the form of hegemony (Gramsci,
Dominance, on the other hand, is when power is abused, such as when the elites use their position to convey their own ideological views to serve their own interest (van Dijk, 1993; Weiss and Wodak, 2003). The role that CDA takes is to expose such practices:

CDA seeks to show how the apparently neutral, purely informative discourses of newspaper reporting, government publications, social science reports, and so on, may in fact convey ideological attitudes, just as much as discourses which more explicitly editorialize or propagandize. (Weiss and Wodak, 2003:300)

When doing a critical discourse analysis, the analysts must take up a position — ‘an explicit socio-political stance: they spell out their point of view, perspectives, principles and aims, both within their discipline and within society at large’ (van Dijk, 1993: 252). This can be achieved through expressions of support for the oppressed or the non-dominant in the analysis with the main aim to ‘ultimately resist social inequality’ (van Dijk, 1998a:1).

This study finds some of the aforementioned concepts relevant in the analysis of the resistance speeches by former Prime Minister of Malaysia, Mahathir Mohamad. From the perspective of CDA, his struggle to restore justice and gain some power on the political issues surrounding the ‘war on terror’ are reflections of Mahathir’s struggles for power and (some measure of) dominance. Although the tendency for CDA is to expose how language is used to benefit the user’s (the elite) own interest at the expense of others, this study will instead attempt to unveil power relations and struggles by studying counter-power and strategies of resistance in Mahathir’s discourse. Van Dijk explains that a study of resistance and challenge ‘is crucial for our understanding of actual power and dominance relations in society’ (1993:250).
The position taken in this study is that Mahathir’s anti-war stance is not perceived as negative ideology—rather he is challenging the established power, empowering the people and reasserting his position in the existing power relations between Mahathir (representing anti ‘war on terror’) and Bush (representing pro ‘war on terror’). The fact that Mahathir is ‘allowed to provide a totally different version of facts’ (van Dijk, 1993:265) in his view on 9/11, terrorism, and the ‘war on terror’, hence reasserting his power, makes for an interesting study of resistance discourse by a member of the political society. It may provide evidence for Wodak’s observation that ‘texts are often sites of struggle in that they show traces of differing discourses and ideologies contending and struggling for dominance’ (2001:11). The findings may also provide support for Haque and Khan’s observation of Mahathir—that ‘Mahathir is a bona-fide CDA analyst’ (2004:183) because he is able to decipher and recognise the hidden ideologies of the West.

Pioneers in CDA, Norman Fairclough, Ruth Wodak and Teun van Dijk, have each contributed a direction for CDA research focusing on language and struggles of power and maintenance of power relations (Wodak, 2001:2). Although their methods may differ, the principles (as stated previously) share a common focus. Their work addresses social problems and takes up an advocacy role for victims of power abuse. The following section summarises the ideas of the key proponents of CDA and reviews some concepts that are related to this study.

2.2.1 CDA and the work of Fairclough

Norman Fairclough, one of the key proponents of CDA, focuses on how formal features of text are potentially ideological where hegemonic strategy is devised with the
use of ‘common sense’ (Fairclough, 2001:76). According to Fairclough (2001), ‘common sense’ is an idea that is made acceptable by an authoritative figure by embedding it in the text in a most logical and natural way. His CDA work on power relations and media studies relies heavily on Halliday’s functional-systemic linguistics (see Halliday 1978, 1985). This means that he examines discourse in terms of its phonology, grammar, vocabulary, semantics, presuppositions, implicatures, etc, and the subtly ‘hidden power’ in detail (Khan, 2003; Kamila, 2004). He views ideology as achieved through consent with the role of the mass media as a vehicle of power reproduction and dissemination.

To analyse discourse, Fairclough develops a three-dimensional framework of analysis that views discourse in three ways: discourse as a language text, a discourse practice and a sociocultural practice. He links these three dimensions in his interpretation, linking text with social practice and vice versa. Discourse and practice are ‘interdependent networks’ (2001:24) which he calls ‘orders of discourse’ with reference to Foucault (1981). In other words, a society or a social domain is basically structured and within it are various types of practices. For example, in a school domain, there would be discourse types of the classroom, the school playground and the staffroom. Fairclough also finds that structuring in a society evolves as determined by the ‘changing relationships of power at the level of social institutions or of the society’ (2001:24). This means that a study of social structure and power relations are important in analysing discourse and language use.

Like van Dijk, Fairclough also views those in power as the ones with the ‘capacity to control orders of discourse’ which are ‘ideologically harmonised internally or (at the societal level)’ (2001:25). Both van Dijk and Fairclough also share the view that power is not necessarily one-way or absolute, that is, it is not always wholly accepted by the dominated group. In view of that, Fairclough notes the various types of
power struggles than can occur within class or social groupings such as between men, women, ethnic groupings, or between the dominated and the dominating. He considers such power struggles as ‘necessary and inherent’ in the social system (2001:28) as they prove the power in language. Language, according to Fairclough, is ‘both a site of and a stake in class struggle and those who exercise power through language must constantly be involved in struggle with others to defend (or lose) their position’ (2001:29).

Fairclough’s concepts and framework are regarded by many as a detailed approach to conducting CDA and are often used and referred to by many CDA practitioners, including those who have conducted past studies on Mahathir’s discourse.

In her work on a critical discourse analysis of the rhetoric of Mahathir Mohamad, Kamila Ghazali (2004) explores the concept of discourse as a social practice in fifteen speeches of Mahathir from 1982-1996. These are speeches delivered at the United Malay National Organisation (UMNO) General Assembly, where Mahathir was president. Her focus is on the three major themes in Mahathir’s speeches: Islam, economy and UMNO. Kamila’s multilevel analysis incorporates an exploration of the relationship between language and social practice, how social issues are understood through language and how discursive practice are constrained by social practices. Her findings show the different strategies Mahathir used to create solidarity with the people (the audience and Malaysian citizens as a whole), namely, by using non-technical language, euphemisms, presupposing shared values and beliefs. On asserting authority, Kamila finds that Mahathir used imperatives and the pronoun ‘we’, whilst on wanting to appeal to the Muslim Malays, Mahathir made intertextual references to the Islamic genre. The limitation in Kamila’s work is pointed out by Idris Aman (2006) who also conducted a CDA of Mahathir’s discourse. According to him, Kamila failed to focus on a major aspect of Mahathir, which is his leadership ideology. Idris Aman (2006) attempts to fill the void in his critical discourse analysis of Mahathir Mohamad’s
discourse in his New Year Speeches entitled *Language and Leadership: a Critical Discourse Analysis of the Discourse of Mahathir Mohamad* (translated from Bahasa Malaysia). Like Kamila, he also employs Fairclough’s model but adding, from what is missing in Kamila’s work, an analysis of the production and dissemination of Mahathir’s discourse. Idris finds that the ideology of Mahathir’s leadership is expressed via a combination of generic and authoritative expressions, while employing metaphors, similes, and other linguistic devices as well as intertextuality and interdiscursivity in his rhetoric.

Both Kamila and Idris’ works are important contributions to the study of political discourse using CDA. They have been particularly helpful for this research as their extensive commentaries on Mahathir’s use of language helped shaped the present study, enabling this researcher to note comparison of Mahathir’s rhetoric directed to Malaysians (as in Kamila’s and Idris’s works) with that directed to an international audience. This study is hence different as it focuses on Mahathir’s resistant speeches covering international issues such as justice and democracy that are in Mahathir’s views, lacking in the wake of 9/11.

2.2.2 CDA and the work of Wodak

Another approach to CDA is called the discourse-historical method devised by Ruth Wodak. She calls it an interdisciplinary approach because it combines linguistic study with historical and social aspects. Her view on text production is that it is influenced by social-psychological dimensions. This includes the speech situation, the status of the participants, time and place, sociological variables (group membership, age, professional socialisation), psychological determinants (experience, routine) and
other extra linguistic factors such as culture, gender, class membership and speech situations and personality (Titscher et. al, 2000). From these psychological and social dimensions and conditioning, text planning which is the structuring and perception of reality occurs via schemata for the concrete realization of a situation or text. Similar to van Dijk’s cognitive dimension, Wodak offers the term ‘frames’ to mean ‘the global patterns which summarise our general knowledge of some situation’ (Titscher et. al, 2000: 156).

Like Fairclough, Wodak finds that there is a dialectical relationship between discourse and social practice: ‘discourses as linguistic social practices can be seen as constituting non-discursive and discursive social practices and, at the same time, as being constituted by them’ (Wodak, 2001:66). An example of this dialectical relationship is found in Wodak’s CDA work on anti-Semitic discourse. This work looks at public discourses during the 1986 presidential campaign of Kurt Waldheim. To explore how anti-Semitic sentiments emerged in different settings, she examines a variety of media genres (print, radio, television) and makes comparisons to local and American media reporting. Her findings show a number of strategies characteristic of ‘we’ discourse, including justification, blaming the victim, trivialisation, denial, allusions, constructing the others as enemies in defence against being anti-Semitic. As her studies included many genres, her findings reveal how elite discourse can and do influence the talk of the public, which leads to prejudiced practices.

Another study of prejudice discourse by Wodak was on the discourse of nation and national identity in Austria. This is an investigation of the discursive construction of national sameness and difference of a specific out-group. What emerged from her study is the discovery of how discriminatory, racist, anti-Semitic utterances can occur
everywhere, including in everyday conversations. These types of discourses are not always explicit, sometimes they can take vague forms (e.g. use of allusions, implications).

Wodak’s methods of analysis are considered useful in conducting the analysis of Mahathir’s use of discursive strategies and argumentative moves in his speeches (see Chapter 4 for the analysis). The method she suggests is to first, examine the specific contents in the discourse (e.g.: the meanings), then examine the discursive strategies. Wodak defines strategies as the ‘intentional plan of practices adopted to achieve a particular social, political, psychological or linguistic aim’ (2001:73). The third step is to study the linguistic aspect, which includes examining lexical items. Like van Dijk, Wodak is especially interested in the discursive construction of ‘us’ and ‘them’. This present study attempts to investigate how Mahathir uses ‘us’ and ‘them’ in his construction of his various identities in the speeches. An elaboration of the concept is provided in the next section.

2.2.3 CDA and the work of van Dijk

Teun A. van Dijk is another prominent contributor to the field of Critical Discourse Analysis. He adopts CDA to examine the relationship between language and social cognition in his work on power abuse and enactment in political discourse in Western societies (van Dijk 1987, 1993, 1996, 2002). Van Dijk (2002) describes his particular approach as the sociocognitive approach, relating ideology to ‘a common mental representation that belongs to a specific social group’ (Kamila, 2004:37).

According to van Dijk (2004), such ideologies appear in text and talk via generic statements shared by the group or via presupposed shared values of a group (e.g. citing important values, norms, or practices understood by a particular group such as
democracy, justice and freedom). Similar to Fairclough and Wodak’s view, ‘ideology controls discourse’ (Kamila, 2004:37) and is manifested in the society’s organisation and practice.

Van Dijk (2004) offers a systematic approach to the study of discourse which entails the study of discursive structures, for example at the semantic, lexical, and rhetorical levels. Typical characteristics that feature in parliamentary debates involve a concept he calls the ‘ideological square’. In the ideological square, Positive Self-representation and Negative Other-representation are employed in discourse. In the former, as the name indicates, the ‘self’ is presented positively. The ‘self’ is understood as the language user’s group that he/she belongs to (the groups may range from political, racial, ethnic, to even gender). Van Dijk lists national rhetoric and self-glorification as typical semantic micro-strategies for positive self-presentation in argumentative discourses where emphasis is laid on Our good properties or actions whilst emphasising Their bad properties and action. This means that in addition to mentioning the self positively, the other-presentation is negatively invoked simultaneously. This also means that any of their positive actions are hedged, mitigated or even omitted. Said (1981), Karim (2000), Khan (2003) and more recently Poole (2002) found negative portrayals of Muslims in the Western media ranging from movies, documentaries, books, newspapers to magazines.

The aforementioned approach is also useful in the study of war and political reporting (see Amer 2009; Erjavec and Volcic, 2007). Amir’s (2009) work is an analysis of the writings by the columnist/writer for The New York Times, Thomas Friedman. Through a detailed examination of the writer’s argumentative structures and moves, Amer finds that Friedman writes about the Palestinian uprising (Intifada) using negative lexical choices, presenting them as the out-group who are ‘violent, confused and irresponsible’ (2009:26), leading to a biased and prejudiced construction of the
Palestinians. Whilst doing so, Friedman portrays Israelis as the positive in-group. Amer points out the strategy that Friedman employs, which is to positions himself as an authority on the Middle East through his conversational style of writing and the categorical modality. Amer calls this move, ‘self legitimisation’ which is an assertion of self-owned power so that the Americans view Friedman as a rational, objective, honest and ‘telling-it-like-it-is’ observer. The audience is then led to believe that what he says are hard facts, supporting CDA’s view that discourse does ideological work.

Erjavec and Volcic’s (2007) paper entitled ‘Serbian war on terrorism’ shows how Bush’s discourse is exploited, recontextualised and recycled by the Serbian media and the public as they draw ‘parallels between the attacks on the WTC and the Pentagon with the former Yugoslav wars’ (2007:123). The Serbs do so to legitimise the violence enacted on the Muslims in Bosnia and Kosovo during the 1990s to prove that they have a common enemy with the U.S. and that the enemy is Islam. The Serbs, in interviews conducted by the researchers with the general population, employ polarisation in their discourse by describing all (we) Western/European/Christians as ‘good’, fighting for freedom and civilization, whilst the ‘evil’ is the ‘other’ who are non-Western/non-European/non-Christians-Muslims. The Serbs echo the U.S.’s rhetoric by pronouncing that military action is the ultimate answer to fight terrorism, even extending the meaning of terrorists to ‘include all violent acts carried out by Muslims for political purposes’ (2007:133). According to Erjavec and Volcic, the Serbs have an unremitting desire to construct an identity of themselves that is aligned with the Western group:

A struggle among the Slovene, Croatian and Serb elites to define the prevailing meaning of 9/11 represents an ongoing attempt to shape a specific sense of belonging to a ‘civilised, European/Christian/Catholic’ world, and to frame the meaning of being a ‘Slovenian’, a ‘Croatian’ or ‘Serb’ and thus the boundaries of ‘acceptable’ Slovenes, Croatian-ness, Serbian-ness. (2007: 135)
It is important to note here that the ‘other’ does not necessarily mean the non-whites or non-Western as purported by van Dijk (2004). A negative ‘other’ can also be used to legitimise acts of violence on the West, as when Osama bin Laden describes the Americans and Bush as the ‘other’ to legitimise the 9/11 bombings on the U.S. (Garbelman, 2007).

Another move explored by Van Dijk (1993) in his analysis of anti-racist discourse is the ‘critical of us’ move. He finds that anti-racism arguments by politicians are based on humanitarian norms and values e.g. emphasizing ‘equality for all’, sometimes even leading to the *ad hominem* move of accusing the anti-immigrant politicians as racist.

The aforementioned features and moves are particularly useful as a guide to investigate how such structures and moves are expressed in the discourse of resistance by Mahathir Mohamad. Further elaboration of other relevant concepts by van Dijk is found in Chapter 3.

### 2.3 Resistance of Power in Media and Political Discourse

Some studies reveal how the less dominant group’s resistance discourses also employ the same strategy which is to portray a ‘negative other’ and a ‘positive we’, only this time the ‘other’ is the U.S. and the West. Evidence of power struggle does not only appear in political debates, it also appears in the media i.e. alternative media reporting versus mainstream media reporting. The most obvious show of resistance has been noted in studies on the Middle East (Hakam, 2009; Mazid, 2008) during the Prophet Muhammad’s cartoon controversy in 2006.

Jamila Hakam’s analysis (2009) of Arab English-language newspapers uses Mills’ (1995) concept of ‘signals of affiliation’ and the contextual linguistic paradigm of
Critical Discourse Analysis to reveal the conscious selection of news stories that signal Muslim/Arab affiliation. In a less obvious display of resistance, these newspapers were also particularly selective in choosing articles from European newspapers ‘that can be tempered or reconciled in intertextual ways with Arab and Muslim ideologies’ (Hakam, 2009:54). Hakam’s paper is important in that it investigates alignment in discourse, illustrating that people do consciously resist familiar ideologies and will do so through media and gate keeping. A biased and negative portrayal of the ‘other’ and control of specific evaluation of events are also found in Mazid’s (2008) comparative work on political cartoon strips produced by the West and the Middle East. His study looks at both the visual and the textual with semio-linguistic features using functional-grammar. As sense of humour is part of the discourse of cartoon strips, Mazid finds that parody and exaggeration are the tools used for a biased, misrepresented reporting of the ‘other’. The cartoon drawings ridiculed Bush in Egyptian newspapers whilst in the Western newspapers, Osama is ridiculed in their cartoon depictions. The findings reflect how biased reporting and emphasis on the ‘negative other’ are the norm in newspapers in the Middle East, leading Mazid to conclude that the cartoon controversy ‘epitomises the struggle for control over discourse in that the debate is not overtly about anything other than the extent and limits of freedom of expression’ (2008:35). This is in line with Fairclough’s observation that media discourse ‘can also be wielded to negotiate, challenge, and resist existing relations of inequality and dominance’ (1999:205).

Evre and Parlak’s (2008) study of Turkish newspapers’ coverage of Muslims’ reaction to Denmark’s published caricatures of the Prophet Muhammad, reveals that ‘good things’ are attributed to Islam, and ‘bad things’ to the West. The researchers call it ‘the media elite’s perception of the West at a specific moment’ (2008:338). The study also shows how the newspapers portrayed Muslims as victims and instructed the readers to resist the West (via economic boycott). Other recurring themes in the newspapers
include the superiority of Islam and a portrayal of the West as immoral. An interesting feature in the study is the attempt to create an *otherisation* within the notion of ‘we’ by showing that there are ‘good Muslims’ and ‘bad Muslims’. The study concludes that the newspapers’ biased reporting ensured that Turkey is constructed as a ‘supreme subject’ (2008:340) and a leader of other Islamic countries because of its’ unique position of being Islamic and having Western values.

Humour and mockery are also found to be tools used to represent the ‘other’ in a critical and interdisciplinary study on social discrimination of the British and the Brazilians by Caldas-Coulthard (2003) entitled ‘Cross-Cultural Representation of ‘Otherness’. The study employs a multidisciplinary approach, combining the method of naming, corpus linguistics and appraisal theory as methodological instruments to compare how the British press and the Brazilian press write about each other ‘from two very different perspectives’ via text and images. Caldas-Coulthard employs the term ‘recontextualising’ to mean ‘one writes or speaks about any social practice’ (Caldas-Coulthard, 2003:294) outside their own practice that may result in viewing each other in ‘different and aggressive ways’ (2003:294). This is expressed either through scorn, humour or sarcasm, as noted by Caldas-Coulthard:

> The First World uses colonial discursive practices to represent the other though a process of denigration and difference, the Third World uses postcolonial forms of resistance through humour and sarcasm. (Caldas-Coulthard, 2003:295)

Findings reveal that reports in the British press on Brazilians are recontextualised through ‘a biased point of view’ (2003:288) as when the Brazilians are depicted as violent, corrupt and poor. The counter discourse by the Brazilian press ‘explicitises’ the way an ‘outsider’ constructs Brazil, but taking on a tone of indignation. Caldas-
Coulthard’s focus on ‘reference to elite nations, personalisation and negativity’ (2003:277) are useful for this study on Mahathir’s reference to the elite nations.

On the public stage, such as in media conferences involving politicians, resistance towards an ideology is implicit, polite and diplomatic. A study conducted by Bhatia (2006) on two politicians with contrasting ideology, namely, Bush and Chinese President Jian Zemin, investigated the ways in which the two powerful presidents negotiate ideas whilst maintaining facework in press conferences. Bhatia uses a variety of CDA models, and presented the findings in themes which are positivity, influence, power and evasion. Findings reveal that press conferences are neither spontaneous nor dynamic because they are meant to show a ‘united front’ between leaders (Bhatia, 2006:195). Despite the ‘complex interplay of opposites’ (Bhatia, 2006:195) between the politicians, Bhatia finds that the evasive approach the leaders take when facing questions from the press, or in situations of contrasting ideologies, defeats the purpose of a public press conference. Yet, an interesting fact that can be concluded here is that this proves van Dijk’s observation about how the elites are able to control a communicative event for their own purpose, even when they face so-called hostile questions or loaded statements meant to provoke the politicians to reveal their dislike towards one another. This means that even live media conferences can work to their advantage as the leaders have the upper hand. This study also reveals that peace, facework and credibility are at stake for the leaders— for the sake of maintaining face and politeness, they must appear calm and respectful of one another even when they may in fact disagree. Bhatia’s study relies on several media resources for a more informed and balanced interpretation of the analysis where this study takes its inspiration from. However, Bhatia has not shown how he arrives at the chosen themes, nor has he indicated which framework was employed. Despite that, Bhatia succeeds in
proving that CDA is a useful tool to ‘excavate meaning from underneath the surface level of utterances’ (Bhatia, 2006:200).

2.4 Summary

This study aims to examine Mahathir’s discourse of resistance using some principal concepts from Critical Discourse Analysis (CDA) which sees CDA as a method to shed light on how discourse structures uncover forms of legitimation, denial or resistance to power abuse that are implicit or explicit in language, for the purpose of restoring justice. The concepts introduced in this chapter have been used in the formulation of the research questions which are explained in detail in the following chapter. Thus far, this chapter has reviewed the concepts in CDA relevant to this study, followed by reviews of past studies on resistance and reproduction of power in discourses. The review has shown how the West and the dominant elites use language to promote their views and their positive selves, whilst the dominated groups (referred here as the non-whites) also use language to either defend themselves, to resist or to pose a challenge to a given ideology that is achieved either by putting themselves in positive light (positive self-presentation), depicting themselves as victims, or by calling for an outward challenge. Because CDA does not have a specific framework, this study finds van Dijk’s concepts in his work on racist and anti-racist discourse and political debates, in particular the ‘ideological square’, helpful to examine the discursive strategies and argumentative moves adopted by Mahathir in his discourse. The following chapter is an explanation of the research methodology.