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Understanding Information Communication in Word of Mouth Behaviours

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This thesis is submitted in fulfilment of the requirements of the degree of Doctor of Philosophy (Marketing) in the School of Marketing, Faculty of Business at the University of Technology Sydney, Australia.

CERTIFICATE OF AUTHORSHIP/ORIGINALITY

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

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Abstract

Word of Mouth (hereafter, 'WOM') communication is one of the most pervasive and influential mediums consumers use to learn about products and services in markets (Alexandrov & Sherrell, 2006; Balter, 2008; Cotte, Coulter, & Moore, 2005; Grewal, Gotlieb, & Marmorstein, 1994; Whyte, 1954). Despite this acknowledgement little is known about the nature of the information that is typically communicated by WOM (Frenzen & Nakamoto, 1993). This research aims to provide this insight by examining a sender's decision to communicate by WOM.

Drawing on Random Utility Theory, a general model of WOM communication is proposed (Brown & Reingen, 1987; Louviere, Hensher, & Swait, 2000; Roloff, 1981; Thurstone, 1927). This model emphasises the sender of information as the controller of the flow of information in WOM networks. It accommodates the influence of context and the resulting motivations on the sender's choice of communication behaviour. At the heart of this model is the idea that a sender will choose to pursue rewards from a WOM exchange, thereby motivating them to participate. They will then choose behaviour that maximises the probability of obtaining these rewards. This allows the linking of the literature regarding motivation and behaviour in WOM communication.

This model was proposed within a choice based experimental framework. The advantage of using such a framework is that it allows precise measurement of individual level behaviours. The outputs of the models from this are also the probabilities of specific communication behaviours. These outputs are able to be used as inputs in systems and network based models of aggregate level WOM phenomenon. This offers one of the first methodological approaches to link the individual and aggregate level aspects of the WOM literature.

To test the robustness of this model two particular classes of WOM are considered: assisting and covering. Assisting refers to the typical form of WOM in which a sender will offer genuine assistance to the receiver to help them make the 'best' decision given their preferences. Covering refers to a less typical form of WOM in which a sender wishes to appear to be offering help but in fact is attempting to be as obstructive as possible. These two classes of WOM offer a strong test of this new model.

The results of this research indicate that there is strong support for the underlying model used to link WOM context, sender motivation and sender behaviour. The estimation approach using Individual level scale adjusted Feasible Generalised Least Squares (FGLS) regression offered choice predictions that correlated 0.79 with the observed choice probabilities. The specific results regarding assisting and covering type WOM also provide new insight into these WOM forms.

It is found that a sender generally provides helpful information when assisting. This is achieved by providing information about relatively important product features, by confirming a receiver's existing knowledge to make them more certain in their beliefs, by expressing the facts in the information with certainty, and by using language that is unambiguous, i.e. terminology consistent with previous communications. Each of these types of information would allow the receiver to improve the quality of their decisions. One exception can be noted; the sender also chooses to communicate information of lower economic value even when assisting. More recent research into interpersonal communication suggests that this may be a manifestation of risk averse behaviour, whereby a sender does not wish to be responsible if a receiver suffers losses as a result of a decision (Young, Donald, Freeman, & Benn, 2008).

With regard to covering type WOM it is found that senders exhibit largely the same behaviour as when assisting with two critical exceptions. These are choosing to

communicate information in an uncertain manner, and using marginally more ambiguous language, that is, language using terminology less consistent with prior communications. The effect of both of these would be a dramatic reduction in the usefulness of the information for the receiver; however, the remaining similarity to assisting type WOM prevents the receiver from detecting this covert action.

Results from this research offer new insights into how consumers use WOM communication each day. Furthermore, a number of additional gender specific insights are obtained offering even greater detail regarding how individuals choose to communicate by WOM.

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This has been an exciting adventure. I can't wait for the next...

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1. Introduction

Word of Mouth (hereafter 'WOM') is one of the most pervasive and influential mechanisms consumers use to learn about products and services (Whyte, 1954). Considerable research has described the many different types of WOM. Underlying most of this research is the characterisation that WOM, at its most basic, involves the transfer of information or knowledge from one consumer (the 'sender') to another consumer (the 'receiver') (Frenzen & Nakamoto, 1993). Beyond this common characterisation many varying forms of WOM have been explored. These range from a simple conversation between friends about a good cup of coffee (Holmes & Lett Jr., 1977), to a viral message advocating a particular brand of motor vehicle (Subramani & Rajagopalan, 2003). WOM is further complicated by the seemingly vast array of motives that a person can demonstrate when communicating (Dichter, 1966). This makes this highly pervasive and influential communication medium a challenge to understand.

One of the greatest practical challenges presented by WOM is the apparent difficulty in strategically controlling it as part of a marketing strategy. While typical marketing communications mediums such as television, radio, outdoor and others are entirely within the control of the marketer, WOM relies on consumers to communicate information about a product or service to other consumers. This relegates control of the information being communicated to the consumer and not the marketer, thus exposing marketers to a number of risks including: consumers choosing to alter the marketing message from what was intended by the marketer; consumers opting not to communicate the information at all; consumers not passing the information on to the intended audience; or consumers altering the marketing message so as to spread negative information. Each of these risks is unappealing to a marketer attempting to create and manage the image of a product or brand. Present marketing literature does not seem to adequately explain the apparent 'decisions' consumers make when selecting information (or not) for dissemination

using WOM communication. This poor understanding makes it difficult to include WOM into marketing strategy.

This research explores the processes that comprise WOM communication with the view to developing a theoretical framework to understand them. In particular, this research will provide a framework to understand the *decisions* that consumers make regarding the type of information that they will, or will not, communicate and how such decisions are reached. One of the main aims of this framework is to bridge the different research approaches being employed in the WOM literature.

Two particular kinds of WOM behaviour are used to test this framework: 'covering behaviour' and 'assisting behaviour'. 'Covering' occurs when an individual wishes to be hurtful towards a receiver's future decision making while protecting him or herself from future retaliation by the receiver. This is achieved by covering up their intentions as much as possible. In its essence this behaviour can be expressed as a combination of a sender wishing to be cruel and not wanting to get caught. This type of behaviour offers a suitable test of the proposed framework because it is not presently explained by existing literature, and it deals with the challenging choice of behaviour when there is a conflict between motives. The more commonly researched 'assisting' behaviour presents a considerable contrast to 'covering'. Assisting occurs when a person provides genuine help, generally in return for rewards arising from being helpful towards the receiver. Present research focuses quite heavily on this type of WOM, and as such there are a number of empirical studies with which the results of this research can be compared. These two forms of WOM, covering and assisting, offer a strong test of the proposed framework.

1.1 The Relevance of Word of Mouth

One of the critical components of a market that permits individuals to form preferences and make purchase decisions is the continuous flow of product

information (Larson, Foster-Fishman, & Keys, 1994; Rogers, 1995). Most approaches to marketing view information as primarily flowing from a business, with consumers as mere receptors of this information. This is reflected in most normative marketing theory in which businesses are conceptualised as the controllers of information in markets. WOM presents a considerable departure from this business control approach. This emerging WOM dominated view of information flow emphasises the control exerted by consumers with regard to what information is communicated, with businesses and marketers only able to exert limited influence. Research indicates that WOM, and other interpersonal sources, are by far the most important sources of information for consumers (Brown & Reingen, 1987; Gilly, Graham, Wolfinbarger, & Yale, 1998). Neglecting WOM sources would leave a considerable gap in our understanding of how information actually flows in markets. The conceptualisation of WOM as the primary mechanism for information flow in markets is advantageous as it reflects how information is actually communicated by consumers.

WOM has great potential as a communications tool for marketers. It improves marketing messages in terms of credibility, provides considerable reach, and reduces costs for marketing effort. These three advantages make WOM particularly relevant for marketing practitioners and theorists. As a result, WOM has established itself as a critical area of research focus.

Research often focuses on the great advantage of improved credibility that WOM provides. Traditional marketing campaigns, especially those with an advertising focus, are suffering from low perceived credibility among consumer groups. Consumers regard marketers as manipulative and treat any information they receive from them with suspicion (Cotte, et al., 2005; Grewal, et al., 1994). WOM offers messages being communicated a credibility that traditional marketing messages lack because consumers are more likely to believe the messages communicated by fellow consumers than from 'manipulative' marketers (Cotte, et al., 2005; Grewal,

et al., 1994). By adopting WOM strategies marketers have the opportunity to gain considerable credibility in their marketing messages, thereby improving the chances that consumers will incorporate that information into their decision making.

The reach of WOM also provides a considerable advantage. Consumers are exposed to a growing number of marketing messages in their daily lives. Marketers are needing to spend more time and money to reach consumers through this glut of competing messages (Godin, 1999). The average adult in the US was exposed to an estimated 52,469 television commercials in 2004 alone, or about 143 a day, and this number appears to be growing (Holt, Ippolito, Desrochers, & Kelley, 2007). Such an overwhelming amount of communication has resulted in consumers simply tuning out the large majority of marketing messages. WOM offers a new way to reach these consumers without the need to compete with traditional media for exposure. Unlike traditional marketing media that attempts to force information onto consumers, WOM relies on the natural communication that occurs among consumers every day. Focusing on WOM communication permits marketers to tap into this invaluable resource while overcoming the clutter of marketing messages populating the market.

Improved financial control is also an added benefit of WOM that is quite attractive to marketers. Budgetary pressures are a constant concern for a marketing department. One of the main objectives for any marketer is to maximise exposure among target consumers for each dollar spent on marketing effort. WOM communication is an exceptionally low cost approach to disseminating information among consumers. In contrast to traditional marketing media, which requires costs for development, placement and reinforcement of marketing information, WOM requires only the costs associated with the initial distribution of information to persons selected to instigate WOM flow. Consumers themselves then perpetuate the information by communicating it to fellow consumers in the market without the need for further intervention from the marketer. This is especially pertinent for the

launch of new or modified products where large amounts of product information needs to be disseminated. By using WOM to educate consumers about the key features and benefits of these unfamiliar products, marketers can help ensure that consumers make informed purchase decisions (Khermouch & Green, 2001; Thomas Jr, 2004).

In recognition of the benefits of WOM to marketers, substantial academic literature has focused on examining the various behaviours comprising WOM communication. The literature generally considers WOM behaviour from either the individual or aggregate level perspectives. In both cases some insights have been gained into what information may be communicated by WOM. The main difficulty with this literature is that it fails to provide a comprehensive conceptual framework of the full range of behaviours, including information selection, that comprise WOM communication. Most importantly, it fails to recognise the critical decision making process underlying the sender's choices regarding what information to communicate (Frenzen & Nakamoto, 1993). Instead, most literature views WOM as a passive flow of information through a network, ignoring the role of individuals in determining what they will permit to flow from one person to the next.

The investigation of the decision making process of information senders comprises the main focus of this research. With the development of a model of consumer decisions regarding WOM communication it becomes possible to predict the nature of the information flowing by WOM. Such prediction allows WOM, as an important marketing phenomenon, to be incorporated into an integrated marketing communications strategy.

1.2 Research Problem

The aim of this research is to examine the decisions of the sender regarding what information to communicate using WOM. Present literature largely does not recognise that:

> *"information flows 'actively' through a network as the result of a sequence of transmission decisions rather than as the inevitable result of a passive diffusion process."* (Frenzen & Nakamoto, 1993)

The present emphasis on the passive diffusion of information and the resulting failure to recognise the importance of the sender's decisions regarding what information to communicate presents a considerable gap in the literature.

The present literature examines aspects of both individual level and aggregate level WOM behaviour. Each perspective offers considerable insight into WOM processes despite this gap in the literature. The literature at the individual level introduces the sender-receiver dichotomy when conceptualising WOM communication. Using this conceptualisation it has addressed such WOM phenomena as commercial rumours (for example see Howell and Mizerski (2006)), internet weblogging or 'blogging' (for examples see Lawson-Borders and Kirk (2005); Sinickas (2007)), viral emailing (for examples see Helm (2000); Leskovec et al. (2007); Phelps et al. (2004)), and interpersonal conversation or classic WOM (for examples see Bansal and Voyer (2000); Frenzen and Nakamoto (1993); Verlegh et al. (2005); Whyte (1954)). The individual level literature largely recognises that complete information cannot be communicated using WOM although little is done to further explore how information is then prioritised for communication (Frenzen & Nakamoto, 1993). In most of this research the type of information that is communicated is generally controlled or very loosely classified with no specific investigation into its nature. Only one theoretical framework has been developed to examine the sender's

decision to disseminate information. Even so, that framework has limited generalisability due to the strong assumptions made regarding the motives of the sender when choosing what information to disseminate by WOM (Greenacre, Burke, & Denize, 2006).

The literature at the aggregate level addresses the emergence of social networks and the properties that these networks have (Burt, 1982; Granovetter, 1982). It has examined how social networks form, and a range of conditions that promote and inhibit information flow in these networks. Examples of some of the conditions considered include a network's political, social and class structure (Burt, 1997; Frenzen, 1995; Frenzen & Nakamoto, 1993; Piercy, 1989); the types of individuals and their relative position in the network (Burt, 1999; Gilly, et al., 1998); and the purchase experience of the people in the network (Wirtz & Chew, 2002). While this research has provided considerable understanding regarding how and where information flows in networks of individuals, it has not addressed the nature of the information comprising this flow. Similar to the individual level literature the type of information that is communicated is generally controlled or very loosely classified without any investigation into its nature or its selection by the sender.

The failure to provide a framework to understand the decision making process of the sender has resulted in a growing divide between the two areas of the WOM literature. Individual level literature has started to focus on phenomenon applicable only to individual people, while the aggregate level literature focuses on how groups of people behave in a cohesive network. As a consequence, the research outputs arising from the individual level literature are often not able to be fully integrated into the research at the aggregate level. To understand how WOM behaviour operates at both the individual and aggregate level it is necessary to (a) provide a general framework to understand information selection in WOM communication that is compatible with both the individual and aggregate level

literatures, and (b) to test this framework by applying it to the covering and assisting classes of WOM behaviour.

1.3 Research Objectives

The first objective of this research is to provide a comprehensive theoretical framework to understand the sender's decisions regarding what information to disseminate using WOM communication. The framework will be inclusive of the sender's decisions regarding with whom to communicate, the particular medium with which to communicate, and the nature of the information to be communicated. By incorporating all three of these decisions, this framework can be adapted to a broad range of WOM phenomena at the individual level including viral email, blogging, interpersonal, and others. The motivations driving the decision to communicate by WOM will be re-examined to overcome the difficulties of the previous theoretical model that had strong assumptions regarding motivations, giving this new model greater generalisability (Greenacre, et al., 2006).

The second objective of this research is to test this theoretical framework and, as a result, to examine the nature of the information chosen for communication using WOM. This will permit a characterisation of what information consumers deem 'important' for WOM communication in various contexts. In particular, this theoretical framework is applied to the phenomena of assisting, where an individual offers support to a receiver through WOM, and covering, where an individual wishes to be of little or no assistance to the receiver while not getting caught doing so. Specific hypotheses are developed regarding the communication of five types of information: the relative importance of the attribute that the information concerns, the impact of the information on preference variance through (dis)confirmation, the certainty with which the information is to be communicated, the economic value of the information, and the referential ambiguity of the language employed. The results of this research will provide inputs that are compatible with the needs of

aggregate level researchers thereby offering a bridge between the individual level researchers and their aggregate level counterparts.

1.4 Research Approach

A choice modelling approach is used in this research. Different types of information are identified in the literature and systematically varied to observe the information that senders choose to communicate to a fellow consumer. The moderating effects of the sender's preferred outcomes for the receiver (either positive or negative) on the choice of information is also examined in this experiment through covering and assisting. This allows individual level phenomenon to be incorporated into the experimental process and at the same time generate the probabilistic outputs sought by aggregate level researchers.

1.5 Organisation of this Thesis

This thesis is organised into nine chapters. The second chapter provides an overview of the literature concerning WOM communication. In this chapter the primary behaviours that comprise WOM, and the motivations that drive WOM are discussed. The third chapter then provides a review of the 'covering' and 'assisting' classes of WOM to indicate what behaviour a comprehensive model of WOM needs to accommodate. Drawing on these insights a new theoretical model of the sender's decision to disseminate is proposed in the fourth chapter. A detailed discussion of the application of this model to covering and assisting classes of WOM behaviour is then undertaken in chapter five generating the research hypothesis regarding the nature of the type of information communicated by WOM. The research method is then introduced in chapter six providing an overview of the choice experiment used to test the proposed theoretical model of the sender's decision to disseminate information by WOM communication and the research hypotheses. The results of the choice experiment are then detailed in chapter seven with further discussion

provided in chapter eight. Finally, the contributions and future research opportunities arising from this research are discussed in chapter nine.

2. WOM Literature

Considerable research has been undertaken into many of the processes that comprise WOM communication. Although literature has generally acknowledged that WOM communication is incapable of communicating all available information there has been little investigation into what information is most likely to be communicated (Kiecker & Hartman, 1994; Simonson, Huber, & Payne, 1988; Yale & Gilly, 1995). By providing an overview of the existing WOM literature it is intended that some insight will be gained into how information may be prioritised for dissemination.

It is important to note that there are several different ontologies present in the various WOM, social network and communication literatures. Two are particularly dominant and the choice between these fundamentally changes how the existing literature should be considered. The first of the two ontologies considers WOM communication between dyads, triads, small groups, large groups, and systems of people to be essentially the same phenomenon. The difference is only in scale with increasing numbers of people participating in the exchange of information. The second major ontology views each of these 'levels' as fundamentally different processes. While they all include communication, each level comprises behaviour that is unique from the other levels. Thus separate theory and analysis is needed at each level. This research adopts the first of these ontologies. This ontology was adopted as it is more dominant within the marketing communications literature, which is where this research is positioned. It is also the ontology of the author of this work.

The decision to use the ontology that WOM communication is the same essential phenomenon is reflected throughout this research. In particular, the review of the literature now focuses on the two extremes of the 'scale' implied by this ontology: the individual and aggregate levels. These are explained in more detail in

subsequent paragraphs. Theories regarding the intermediary levels implied by the other ontology are grouped within these two extremes to ease discussion.

This research is particularly interested in consumer to consumer type WOM communication, with particular emphasis on marketing applications. WOM has treatments in many literatures, such as management, health and marketing, but they each emphasis communication regarding difference subject matters. Because this thesis is particularly interested in consumption decisions this literature review places emphasis on the WOM literature derived from the marketing discipline. Within the marketing discipline, and to differing extents within the others also, WOM literature can largely be divided into two groups: that addressing WOM at the aggregate level, and that addressing WOM at the individual level. The aggregate level literature is primarily concerned with social network and system based theories that examine how groups of interconnected people interact and communicate. The behaviour of interest is typically that which emerges as a result of how the network or system operates. In contrast, the literature at the individual level examines how individual people use WOM in their own information environment. This includes behaviours such as seeking information to aid decision making, and determining whether to communicate information on to others. Each of these groups of WOM literature has contributed insights into how WOM communication functions.

This section reviews these to understand how individual consumers may determine the nature of the information that they will communicate. It also considers the factors that need to be considered in order to make a model of WOM that is compatible with both areas of the literature.

2.1 Aggregate Level Literature: Social Network and Community Theories

The literature that examines WOM communication at the aggregate level addresses the flow of information through networks or communities of individuals. It is primarily concerned with the properties of the network or system, and how these properties result in different behaviour by the network as a whole. Drawing heavily on Social Network Theory as proposed by Granovetter (1982) this literature aims to understand how networks form, operate, and then permit the flow of information. In this context, the structure of the network is typically explained using the strength and nature of the relational tie between individual actors in the network (Burt, 1980; Granovetter, 1973, 1982). It is this concept of the strength of the relational tie that offers the greatest unifying concept in this area of the literature. There are many other theories of social network structure and function available in the aggregate level literature. For a summary and discussion of many of these please see Monge and Constractor (2003). Within the marketing literature, however, Social Network Theory as proposed by Granovetter (1982) is the dominant theory used to understand social networks. Becasue one of the main objectives of this research is to ensure compatibility of the indiviaul level model proposed to the aggregate level research in the Marketing area I have chosen to emphasise this perspective in the literature. In addition, the modeling techniques used to test most of these theories have similar inputs. Thus compatibility with this one perspective should also ensuer that the resulting inddividual level model developed is still comaptible with a bread range of aggregate level theories.

Some research has used observations of social networks to identify how certain information content may be more likely to flow through WOM networks. For example, it has been found that novel information is more often passed along in a social network (Kim, 2009; Ohly, Kase, & Skerlavaj, 2010; Wilson & Peterson, 1989). The difficulty with this literature is that while it provides a theory of how

social networks form, thus permitting information to 'flow', it has only offered initial exploration into the nature of the information comprising this flow.

2.1.1 Social Networks

Social Network Theory, and other related social network literature, generally classify the relationship between individuals as either a strong tie or weak tie (Granovetter, 1982). Strong ties are characterised by strong personal relationships with frequent contact (Granovetter, 1982). The frequent contact among any two individuals in a strong tie relationship increases the probability of both individuals meeting each other's strong ties through common social gatherings. There is a reasonable probability that any strong tie formed by one group member will quickly be shared by the others as a result of common contact (Burt, 1980, 1982; Granovetter, 1973, 1982). The consequence of this common contact is the formation of sub-groups of strong tie relationships, or a 'clique' providing an explanation for the formation of smaller friendship groups, or other types of social groups, in large social situations (Iacobucci & Hopkins, 1992).

Weak ties, on the other hand, are characterised by weaker personal relationships with infrequent contact (Granovetter, 1982). The infrequent contact reduces the probability of these individuals sharing their strong tie relationships through common contact. Weak ties thus permit the connection of two sub-groups in a network without these groups forming one large sub-group (Granovetter, 1973). Individuals are therefore not forced to try and form strong social connections with every person. Instead they can concentrate on maintaining their limited strong tie relationships with the collective power of everyone's weak ties maintaining a social fabric between the smaller social groups formed.

Social Network Theory, which explores how relational bonds allow the formation of a broader WOM network, provides invaluable insight into how information

seems to be able to flow through a large network. However, this examination of information flow has primarily occurred from a structural perspective. That is, the literature has only really examined how the nature of the relationship and/or the nature of the exchange partners result in the *existence* of information flow, but not the nature of that flow.

Despite this limitation Social Network Theory does suggest that the specific content comprising an information flow will vary in different parts of the network. Within strong tie relationships a greater amount of information is exchanged as a result of the increased interpersonal contact present in this type of tie (Burt, 1980). Increases in communication permit greater levels of homophily, or uniformity, in attitudes, opinions, behaviours and preferences (Burt, 1980; Granovetter, 1973). In turn, increases in uniformity allow members of strong tie relationships to better understand the information needs of those with whom they have a strong tie, resulting in the provision of different information compared to less familiar weak ties (Kiecker & Hartman, 1994). This is reflected in an individual having an increased ability to influence a receiver's preferences in homophilous strong tie relationships, compared to less homophilous weak tie relationships (Gilly, et al., 1998). This indicates that, by the very nature of the different relationships comprising WOM networks, individuals will alter both the quantity of the information they communicate and the nature of the information they communicate.

2.1.2 Brand and Product Communities

A different area of the aggregate literature that has arisen from, and in some cases is parallel to, the social network literature, is that concerning brand communities. A brand community is generally considered to be any group of individuals who form social bonds as a result of a common attachment to a brand or product (Devasagayamand & Buff, 2008; Ouwersloot & Odekerken-Schroder, 2008). This

area of the aggregate literature views the affinity to the brand or issue as the source of the social fabric that binds the participants in a sub-group.

Research on brand and product communities has garnered considerable attention in industry. Literature in this area has identified many conditions under which brand communities arise, as well as how consumer participation affects subsequent product experiences (Casalo, Flavian, & Guinaliu, 2007; Cova, Pace, & Park, 2007; Muñiz Jr. & Schau, 2007; Ouwersloot & Odekerken-Schroder, 2008). It is particularly insightful for practitioners wanting to understand how to foster an increased emotional and social affinity with the brand among consumers (Ouwersloot & Odekerken-Schroder, 2008).

Despite this obvious advantage for practitioners, the challenge with this literature is that the nature of the information content being communicated is an a-priori characteristic of the network itself. The product or brand, as the focus of conversation, is how the membership and structure of the network is defined. The boundaries of the community are established based largely on where information about the product or brand ceases to be communicated. This has resulted in little attention being focused on what information consumers choose to communicate within the community. It is automatically assumed to be about the product or brand. There is some recognition that within these boundaries there will be fluctuations in information content, particularly with the formation of 'tribes' of community members within the broader community (Cova, et al., 2007). But even with this recognition this literature offers little assistance with understanding how various type of information will be chosen for communication by WOM.

The literature on brand communities agrees with Social Network Theory in suggesting that information flows will vary throughout a network but again neither provides a mechanism to understand how this arises. The failure of the two main areas of the aggregate level WOM literature to address how information content is

selected for communication presents a considerable gap in our present understanding of WOM. This gap emphasises the need to examine the role of individual consumers' decisions regarding what information to communicate using WOM.

2.2 Individual Level Literature

The WOM literature at the individual level has provided a number of insights into the various aspects of how individuals use WOM communication. This individual level literature can be divided into three main areas: Industry and normative marketing literature, which examines the relationship between business behaviour and the occurrence of WOM communication in markets; receiver information search and acquisition literature, which investigates how receivers of information collect and use information from various sources, including WOM; and sender motivation and transmission literature, which seeks to understand how people communicate information by WOM. These literatures are reviewed to understand how consumers may use WOM communication to send and receive information.

2.2.1 Industry and Normative Marketing Literature

There has been growing interest regarding how WOM can be used as a component of an integrated marketing communications strategy. In response to this interest industry and normative marketing literature has considered how marketers can adopt WOM strategies. Four main perspectives emerge in this normative WOM literature. The first perspective examines how to directly influence purchase decisions using what consumers perceive to be a WOM source; the second discusses how to instigate WOM among target consumers; the third examines the effects of various business functions on WOM; and the fourth considers how a marketing message can be made 'viral'. These perspectives provide some practical advice regarding how WOM strategies may initially be approached. Unfortunately,

they fail to provide a theoretical framework capable of predicting, or influencing in a targeted manner, the information content communicated by WOM.

The first perspective adopted in this normative literature examines how to influence consumers with what the consumer perceives to be a WOM source, sometimes described as a paid confederate or agent (Carl, 2006). Typically designed to interact with consumers at Point of Sale (hereafter, 'POS'), the strategies discussed aim to promote the purchase of a product. An example of such a perceived WOM source is a person who is paid to advocate a product to consumers in a retail environment without necessarily disclosing that they are being paid to do so. This particular example is common in bars where an alcohol manufacturer attempts to influence consumers to purchase their brand or product. Simulating a WOM exchange in this way does not offer insight into the functioning of natural WOM communication, as the natural exchange between two consumers is not used (Carl, 2006). There is also a failure to recognise the complexity of information exchange in WOM networks as the work adopting this perspective only attempts to influence a single consumer at POS rather than understand how consumers communicate information to each other beyond this initial interaction.

The second perspective in the industry and normative marketing WOM literature examines how businesses attempt to instigate WOM among target consumers. Drawing heavily on the aggregate WOM literature it characterises business attempts to identify 'opinion leaders' or 'mavens' to get them to advocate a specific product to their social groups. Such a process is usually called generating 'buzz' for a product (Carl, 2006; Khermouch & Green, 2001; Samson, 2006; Thomas Jr, 2004; Walsh, Gwinner, & Swanson, 2004). Opinion leaders are characterised as persons of influence within their social group and/or as a person with particular expertise in the product area, and who has the potential to be a product advocate (Carl, 2006; Walsh, et al., 2004). Mavens are similar to opinion leaders but also have more general objectives to be knowledge leaders, with a desire to be at the forefront of

learning and information dissemination (Brancaleone & Gountas, 2006; Feick & Price, 1987). Generating 'buzz' therefore typically involves the provision of product information or sample product(s) to individuals a marketer believes to be one of these opinion leaders. The objective of this provision is that opinion leaders will then become instigators of a chain of WOM communications. The main difficulty with this literature is that little theory is provided to understand how to identify, and subsequently influence, opinion leaders. Opinion leaders are usually identified based on the intuition of the researcher or on the identification of consumers who already advocate for similar products. This is a considerable gap in this aspect of the literature.

Even with the identification of opinion leaders, there is no theoretical treatment regarding how an opinion leader then instigates the intended WOM chain. While some discussion is present regarding how an immediate social group is impacted by an opinion leader there is little discussion regarding how specific information spreads to other consumers beyond that immediate social group (Walsh, et al., 2004). This can be considered a problem of failing to focus on the second step flows of information in a WOM network. Instead the focus is often on manifesting a situation where the opinion leader becomes a de-facto salesman for the product or brand.

A further issue with the business instigation component of the industry and normative literature is how the nature of the information is characterised. The nature of the information being communicated is generally only characterised as either positive or negative (Gremler, Gwinner, & Brown, 2001; Samson, 2006). The language of Positive WOM (or, 'PWOM') and Negative WOM (or, 'NWOM') offers this literature a mechanism to evaluate the information being communicate by WOM from the perspective of the business (Gremler, et al., 2001). These terms loosely refer to whether the information is positive or negative in its description of the product being sold by the interested business (Gremler, et al., 2001; Samson,

2006). The problem posed by this characterisation is that the terms positive and negative are exceptionally broad. They are relative terms from the perspective of the marketer considering the value of the information to their marketing effort. This broad relativity poses a considerable problem for the strategic use of WOM. The fact that information is positive does not necessarily mean that it is the information that is likely to be communicated by sender consumers, received and integrated by receiver consumers, or the 'best' information to bring about marketing outcomes. Based on these problems, this area of the industry and normative literature has limited applicability to understanding what information is communicated by WOM.

The third perspective in the normative literature considers the effect of business functions on the general occurrence of PWOM and/or NWOM. Numerous examples of this can be found in the literature, including: the customer-employee relationship style (Gremler, et al., 2001), the degree of inclusiveness of the client by the business in service delivery (File, Judd, & Prince, 1992), the implementation of loyalty programs (Lacey & Morgan, 2009), the promotion of the ethical attributes by the business (Roman & Cuestas, 2008), the use of customer rapport building techniques (Gremler & Gwinner, 2008), among others. All of the findings in this area of the literature generally indicate the presence of a relationship between business functions and the occurrence of WOM phenomena but rarely suggests how such business functions influence the dissemination of specific WOM content. Again, with the generalisations of PWOM and NWOM used regularly in this literature any attempt to understand the nature of the information content communicated is challenging, as the relative nature of the terminology prevents more elaborate analysis. This makes it difficult to understand what specific information may be communicated by WOM as a result of business actions.

The fourth perspective in the normative and industry literature concerns the dissemination of information in what is termed a 'viral' manner. This area of the literature arose from the adaptation of epidemiology theory and social network

literature. Common in its description of the spread of WOM is the metaphor that information content is a virus that the marketer is attempting to have spread among the target population (Datta, Chowdhury, & Chakraborty, 2005; Van den Bulte & Joshi, 2007). It is typically limited to describing the use of internet communication tools but has had some applications for other media (Southwell, et al., 2010; Unknown, 2005). The application to more interpersonal contexts is especially notable in the diffusion literature in this area (Rogers, 1995; Van den Bulte & Joshi, 2007). Useful insight into what the objectives for a WOM campaign may be can be obtained with this metaphor. By aiming to generate a self-spreading marketing message, substantial marketing outcomes can be achieved with minimal traditional marketing effort.

The difficulty presented by the viral literature is that the metaphor is an incomplete account of the functions of WOM communication. Using a metaphor of a virus often leads to the assumption that the information being communicated will pass from one person to another in much its original form. For some social dissemination situations, such as a 'viral video', this is the case. For more elaborate interpersonal WOM this account prevents the examination of the effect of the exchange process on the nature of the information being disseminated. The metaphor has yet to be extended to accommodate the highly likely 'mutations' in the WOM virus that will arise from individuals choosing what to communicate from one moment to the next.

The amalgam of industry and normative marketing literature concerning WOM communication attempts to provide an account of how a business can use WOM to achieve marketing outcomes. The perspectives offered in this literature provide loose theoretical accounts of how such marketing outcomes can be achieved. Indeed, there are substantial numbers of anecdotal accounts about how such perspectives are being used in business every day (for examples see Brooks (2006), Combs (2010), and Johnson (2009)). The difficulty with this literature is that it either does not recognise the complexity of WOM communication, or it does not

provide a complete account of the role of individuals in determining the information that is actually communicated by WOM. Although the literature indicates that there is a desire among businesses to harness WOM communication as a component of a marketing strategy the weak theoretical frameworks employed suggest that, at this time, there is little guidance being provided on how to use WOM.

2.2.2 Receiver Information Search and Acquisition Literature

Another area of the existing individual level literature is that of information search and acquisition. Information search and acquisition refers to the processes consumers use to gather information to aid decision making (Gilly, et al., 1998; Meyer, 1982; Yale & Gilly, 1995). Literature concerning information search and acquisition deals with the range of potential sources consumers may use to acquire information, including WOM. Although little of this literature is devoted solely to WOM, it does provide a number of insights into how receivers search for and use information. This is an issue that a sender must consider when determining what information is important for WOM communication. Drawing on this literature it is possible to understand some of the characteristics of information that a sender may use when determining what information to communicate. Insight can also be provided into the role that the receiver's use of the received information may play in the sender's decision to disseminate specific information content to them.

The primary premise of the information search and acquisition literature is that information prioritised for search effort and ultimate acquisition must be considered important (Simonson, et al., 1988; Yale & Gilly, 1995). How this importance is determined by a consumer has a number of theoretical treatments in the literature. One that is of particular relevance is the brand-attribute-based account of information search. The brand-attribute-based account suggests that potential consumers will acquire information about the attributes and branding of the products that they may purchase (Hagerty & Aaker, 1984; Tversky, 1972). This

acquisition is a gradual process as consumers seek information that would generally allow them to better discriminate between the product alternatives permitting product choice (Russo & Johnson, 1980; Saad, 1999; Saad & Russo, 1996). The assertion that consumers only seek important information makes this conceptualisation particularly useful as it overcomes the assumption often made in other frameworks that consumers seek complete information (Hagerty & Aaker, 1984).

How a specific piece of information is determined to be of importance for acquisition in the brand-attribute-based account also has a number of theoretical treatments in the literature. Two of the primary treatments in the literature are the economic and behavioural perspectives. Each of these perspectives offers a mechanism to understand how a consumer determines if a piece of information is important for acquisition, and also when enough important information has been accrued for information search to be discontinued.

The economic perspective asserts that an individual will ascribe a value to each piece of information based on the costs associated with acquiring it and the benefits it would provide in discriminating between the product alternatives (Ratchford, 2001; Simonson, et al., 1988). Based on this perspective, important information is that with the highest ascribed value. The problem with the purely economic perspective arises from the difficulty a consumer would face in determining this value. This is because the benefits provided by the information could not be known until the information had already been acquired. For a person to understand the benefits a piece of information offers prior to acquisition he or she would have to know what the information can do for their decision making relative to alternative pieces of information without actually having said information. The receiver would need to make inferences about the nature of the content and the usefulness of that content for each piece of information. For example, a highly valuable piece of information would be one that explains hidden costs in a product. But for a person

to know this value prior to collection they would have to already know that such hidden costs exist or infer that they are present. Literature has not readily addressed the nature of these inferences or how the receiver would then use them in determining what information is then important. The economic perspective is therefore limited, at this time, in the insight it can provide into how important information would be characterised by the sender in WOM behaviour.

In contrast to the economic perspective the behavioural perspective offers a number of characterisations of important information. The behavioural perspective has no central theoretical framework but simply observes the types of behaviours that consumers exhibit when they search for particular information. One such observation is that consumers typically search for information in the decreasing order of attribute importance and terminate information search once a preferred set of information regarding these important attributes has been gathered (Saad, 1999; Saad & Russo, 1996). Attribute importance would be based on the weight ascribed to that attribute, given its level, in the decision making process (Saad, 1999). If suitable differentiation between the alternatives is not achieved with the collected information then additional information on other important attribute(s) would then be sought (Saad, 1999; Saad & Russo, 1996). This suggests that whether a piece of information concerns a relatively important or unimportant product attribute may also be considered by a sender when selecting the information to disseminate to the receiver decision maker (Greenacre, et al., 2006). How a sender, as opposed to a receiver, may *use* attribute importance when determining what information to disseminate will be elaborated upon in the next section.

It can be seen that the information search and acquisition literature does not provide a theoretical framework that may be fully adapted to WOM applications. Its emphasis on the search for information does not reflect that the sender of information ultimately determines the nature of the information content selected for communication by WOM. By focusing solely on the receiver and their search for

information it overemphasises the role of the receiver in determining the nature of the information that flows in a WOM network. Receivers will often have preferences for information with specific characteristics. In their efforts to obtain this information they may form relationships in a strategic manner, ask questions of exchange partners, or even attempt to deceive partners to obtain this information. In spite of all these efforts the sender will still retain ultimate control over the flow of information, as they are the source of it. The receiver is an important component of understanding information flow in WOM, but understanding the sender is more important.

It is clear from the literature that the sender is likely to consider the information needs of the receiver when determining the type of information that they wish to communicate by WOM. All senders also act as receivers in different exchange situations giving them insight into the needs of a receiver. Thus using the information needs of the receiver as a way to characterise information of importance for the sender is likely to be valid. This indicates that the receiver's use of attribute importance to identify important information for acquisition is likely to also hold for sender's identifying important information for dissemination. The use of attribute importance by senders has also been considered in the sender motivation and transmission literature and is discussed in further detail below.

2.2.3 Sender Motivation and Transmission

Research regarding sender motivation and transmission presents another aspect of the broader individual level WOM literature. It examines two important areas of individual level behaviour: the motivation a sender has for communicating information; and the transmission process that the sender uses to communicate. This literature is particularly useful for understanding general WOM behaviour, since it is the sender's decisions regarding how and what to communicate that are the primary determinants of the nature of WOM flow. Drawing on this literature some

of the motivations that a sender may exhibit are be explored in the following section. The transmission processes suggested are also reviewed in order to understand their compatibility with the motivation component of this literature.

2.2.3.1 Senders' Motivations to Communicate

There are a number of distinct areas of the sender motivation literature addressing an array of different communication objectives and contexts. Each provides a number of insights into the variety of motivations that exist in WOM exchanges. This section reviews a number of the most important motivations mentioned in the literature and the framework proposed to unify them.

One motivation that has attracted particular attention is the desire to be an effective communicator. Researchers are interested in how this motivation impacts subsequent communication behaviour (Denize & Young, 2007; Heide & John, 1992). To achieve this understanding they have largely used the concept of communication norms. Communication, or exchange, norms are the joint expectations about information communication behaviour that permit one human to convey meaning to another (Denize & Young, 2007; Heide & John, 1992). Although the research on such norms typically focuses on interfirm exchange there is some literature addressing individual communication. Individual communication norms revolve around the use of consistent wording and language structures to communicate about a particular object or issue from one exchange situation to the next (Shintel & Keysar, 2007). The use of consistency permits both participants in the communication to draw on previous exchange experiences to help interpret the intended meaning of messages communicated in present exchanges. Such insights about communication norms are highly useful in understanding what type of information may be selected for communication. Through observation of historical communication future norms can be predicted.

The challenge presented by the literature concerning communication effectiveness and exchange norms arises from it being limited to only a single motivation. While for interfirm exchange effectiveness could be considered a dominant motivation, a broad range of equally valid motivations can be proposed for interpersonal communication. Indeed, in some circumstances it can even be reasoned that an individual may even wish to decrease effectiveness in order to obfuscate responsibility or act out against a disliked exchange partner. While communication effectiveness is an important motivation to permit interpersonal exchange further exploration of the diverse range of motivations that could be present is needed.

A number of different motivations for communicating specific information by WOM have been identified in other areas of this literature. These include: the desire to fit in with a majority opinion (Park, 2001), communication for enjoyment and to be inclusive of others (Step & Finucane, 2002), pure self interest (Schweitzer & Hsee, 2002), the justification of personal beliefs and claims to the sender him or herself (Schweitzer & Hsee, 2002), for profit or monetary incentives (Schweitzer & Hsee, 2002), as well as others including pleasure, affection, escape, relaxation and control (Paulsel & Mottet, 2004; Rubin & Martin, 1988). Entire classification systems for motivations have even been built around psychoanalytic models of certain types of dyadic interpersonal exchanges, especially for those involving a person with a psychological disorder (Wiggins, 1982). It can be seen from this literature alone that a broad range of motivations for communicating by WOM have been identified.

It makes sense that the communication literature has identified a relatively large range of motivations for interpersonal information exchange. Even with just naive observation of WOM communication it is clear that there are numerous types of WOM behaviour, and, by inference, numerous motivations would drive these numerous behaviours. Indeed, multiple literatures acknowledge that it is the 'spirit' of an exchange that drives the form of the exchange, in this case the exchange of

information using WOM (Frenzen & Nakamoto, 1993; Sahlins, 1972). Few studies have considered the full range of motivations however. Usually the motivation that is being investigated is purely a function of the chosen research context or a simple manipulation to offer initial insights.

The first author to attempt to offer a more unifying framework to explain communication motivation was Dichter (1966). In this work four main sender motivations for WOM communication were identified. These were product involvement, self involvement, other (person) involvement, and message involvement (Dichter, 1966). While each of these motivations is multidimensional, Dichter's (1966) work offered the first opportunity to begin to map the motivations that exist in WOM. More recent reviews of this work have suggested that message involvement is not necessary to understand interpersonal communication. The argument for the exclusion of message involvement is that it is a greater reflection of the chosen communication behaviour than the motivation towards that behaviour (Chung, 2007). Upon further consideration this argument may even be extended to suggest that message involvement is more reflective of viral internet transmission than a typical WOM exchange due to the implied static nature of the message. Even with this argument for the exclusion of message involvement, this motivational framework offers a useful means to characterise why a person would feel compelled to communicate information by WOM.

The three remaining motivations (or involvements) allow researchers to understand the sender's consideration of the three main players in any WOM communication situation: the receiver, the subject or object of the conversation, and him or herself. For each motivational involvement the sender may have strong or weak motivations, and positive or negative motivations (Dichter, 1966). One of the challenges of this conceptualisation of motivation is that it is often asserted that only one of the three motivations is present at a time. While in simple modelling situations this type of assumption may hold, a more complex model would need to

consider motivation as a balance between them. This would permit researchers to explain how consumers balance the multipurpose nature of WOM communication.

It is clear from this review of literature regarding sender motivations that it is important to integrate the numerous possible motivations into any model of WOM communication. The motivations of the sender, in addition to those of the receiver, will guide the communication process. Without the inclusion of sender motivation, any model of WOM is likely to prove unsuccessful.

2.2.3.2 Sender Transmission Behaviour

Another aspect of the sender literature refers more directly to the form that a WOM transmission takes. That is, the nature of a sender communicator's behaviour. There has been relatively little literature addressing the transmission behaviour of senders, with the focus often directed towards the previously discussed searching behaviours of receivers. Despite the relatively scant amount of transmission literature a couple of core behaviours that senders tend to exhibit while undertaking WOM exchange have been identified.

One of the most important discoveries in the sender transmission literature is that individuals are often highly risk averse when communicating by WOM (Greenacre, 2005; Greenacre, et al., 2006; Young, et al., 2008). This risk aversion manifests in communication of information that largely only confirms existing preferences on important product features (Greenacre, 2005). Consumers also tend to prefer to communicate about relatively unimportant purchase situations, such as the purchase of a toaster and not the purchase of a house (Young, et al., 2008).

Other literature has considered different aspects of sender behaviour. The most pertinent of these are the diffusion literature's focus on the selection of exchange partners (Rogers, 1995). Drawing on social exchange theory, this literature explores

ways a specific individual, or type of individual, is chosen as an information exchange partner. The individual level results of such research is rarely the focus of the studies; instead, focus is placed on the resulting network's efficiency at ensuring information flow (Burt, 2008; Rogers, 1995). As a consequence there is considerable cross-over with the aggregate level literature. Some of the individual level results of this research suggest that a person, or agent, will maintain contact with someone with whom there is little relational tension and whom has a good social reputation (Burt, 2008), and with a person with whom a relatively balanced amount of power is shared (Cook & Yamagishi, 1992). Furthermore, an agent is likely to obtain the most benefit from seeking information from a person whom has a more refined set of social contacts (Galeotti & Goyal, 2009).

While other such interesting results have been obtained in the diffusion literature this research often makes strong assumptions about how individuals enter and behave within a social network. The most challenging assumption for this research context is that the information within the network is uniformly distributed, or conforms to another specific distribution type (Burt, 2008). This assumption is established to permit agent based modelling. As a result there has been little theoretical development regarding individual information needs, and subsequent decisions to both communicate and seek information outside of this assumption. This presents a considerable gap in this area of the literature.

This gap in the decision making literature is further exacerbated by a lack of integration with the communication motivation literature. These gaps present both a considerable challenge and opportunity when developing a model to understand the behaviours that comprise WOM.

2.3 Summary and Conclusion

Clearly WOM has garnered a lot of research interest over the last 50 years. Literature at both the aggregate and individual levels has identified the importance of understanding communication behaviour and its subsequent impact on our consumption decisions. Despite this importance there has been little development of theory that brings together the valuable insights each area of the literature has provided.

The aggregate level WOM literature provides a theoretical framework to understand how WOM communication flows through networks of individuals. This is necessary in order to understand how individual members of a community are activated for WOM exchange. The problem with this literature is that it fails to provide a mechanism to determine the nature of the information content that is flowing in a network or community. While this literature does recognise that information content will vary as a result of the individual choices and interactions of the participants, it doesn't provide an account of how this would occur.

The industry and normative marketing literature, drawing heavily on the aggregate WOM literature, likewise acknowledges that information content will vary as it flows through a WOM network. Unfortunately this literature presently emphasises the use of simulated or pseudo WOM experiences to promote business outcomes. This limits the usefulness of this literature for examining the potential strategic use of the *naturally* occurring flow of information through WOM networks. It also fails to provide a thorough account of what the desired information that a business wants communicated actually comprises or the nature of the information that is presently communicated by consumers.

The receiver information search and acquisition literature examines the receiver's preferences for different information types. While this provides some potential

mechanisms to characterise information of importance in WOM communication it fails to recognise that the sender ultimately determines the nature of the information communicated. New research must extend on the receiver literature and recognise that although the sender may consider the information preferences of the receiver, they have the ability to discard them and make alternative decisions regarding what will be communicated.

The sender motivation and transmission literature is the final major area of the WOM literature. This literature recognises the important role of the sender in determining the nature of the information communicated, and in conjunction with other literatures, how the communication partner will be chosen. It has also identified a large number of motivations that a sender may experience that would drive this choice of behaviour. Unfortunately this literature fails to offer a robust theory linking these motivations to the various forms of WOM behaviour. The two areas of the sender literature are considered largely separately, with only minor works examining behaviour based on highly restrictive assumptions regarding the underlying motivations (Greenacre, 2005). It is the failure to provide a model for understanding the motivation/behaviour link in WOM communication that presents a considerable gap in the literature. It is this gap that is the focus of this research.

3. Literature on Covering and Assisting Behaviour

Prior to the construction of a model of WOM communication behaviour in the next section it is necessary to consider the behaviours that such a model would need to accommodate to prove 'successful'. Failure to consider the type of behaviours the model would need to explain is likely to result in critical aspects of WOM behaviour being omitted. This section reviews literature that suggests the existence of 'assisting' and 'covering' type WOM behaviours. These types of WOM provide the basis to test the model developed in this research.

3.1 Assisting Behaviour in the Literature

Assisting type behaviour can generally be considered as behaviour in which the sender attempts to offer helpful information to a receiver. This type of WOM behaviour is commonly examined within the WOM literature, although it is rarely specifically enumerated (Corcoran, Datcher, & Duncan, 1980; Ellison & Fudenberg, 1995; Brown, Broderick, & Lee, 2007). It is often just assumed to be the common form of WOM communication. This class of WOM behaviour is chosen for inclusion in this research as it allows for the examination of what can be considered the most common type of WOM communication behaviour (Cheung, Anitsal, & Anitsal, 2007; Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004).

The presence of assisting type behaviours in WOM communication is suggested by two streams of research. Other streams also allude to assisting type WOM, however these two present the strongest case. These two streams concern fairness and altruism, and classic microeconomic return on social investment. These streams have areas of overlap as they were introduced to deal with the explanation of behaviours that pure individual utility maximisation could not readily explain. Neither stream of research is presently actively used within the WOM context.

3.1.1 Fairness and Altruism

The concept of fairness and altruism arose from social economic discussions concerning how individuals reach shared outcomes. Research has previously asserted that individuals only seek to maximise their individual outcomes, even within a shared outcome context (Nash Jr., 1950). As research continued there has been growing evidence contradicting this earlier assertion (Bohlmann & Qualls, 2001; Hollingshead, 1996; Krishnamurthi, 1988; Montero, 2008; Nash Jr., 1950). More recently it has been found that individuals often care about the outcomes, or payoffs, that other people receive (Fehr & Schmidt, 2003; Montero, 2008). This newer research suggests that individuals sometimes pursue a result from an exchange (or other experimental game) that provides an exchange partner with optimal, or near optimal, outcomes with little or no regard to their own outcomes (Fehr & Schmidt, 2003).

Fairness and altruism literature typically accounts for the prioritisation of the outcomes of others using the concept of fairness. Fairness is most often treated in the literature as the process of ensuring that other participants in an exchange also derive utility from their participation (Fehr & Schmidt, 2003). It is becoming clear in this literature that an inherent trait in human interactions is that a fair outcome among the exchange partners is sought (Anderson & Patterson, 2008; Fehr & Schmidt, 2003; Slonim & Garbarino, 2008). Considering this finding it can be asserted that people do act in an altruistic manner in some contexts (Slonim & Garbarino, 2008).

The challenge presented by this literature is that it does not provide a detailed account of why such prioritisation of other people's outcomes occurs. The literature simply identifies that market equilibriums can be effectively reached when the individuals within the market seek fair outcomes (Fehr & Schmidt, 2003). Some literature has attempted to explain this phenomenon as a function of social or

psychological factors, but it largely remains unexplained beyond observations that it may have evolved through trial as a potentially successful social or cultural norm (Anderson & Patterson, 2008; Cordes, 2004; De Cremer & Van Dijk, 2005; deLeon & Varda, 2009). Nevertheless it provides a firm theoretical footing on which to continue the assertion that assisting type WOM behaviour holds a rightful place as one of the main types of behaviour present in social networks.

3.1.2 Social Investment and Reciprocity

The literature concerning social investment and reciprocity is highly related to the previously discussed fairness and altruism research. It departs from previous literature in one highly important regard, namely, the theoretical explanation of the motivations that drive the emergence of this behaviour (Gintis, 2006).

Social investment and reciprocity literature explains the pursuit of a fair or altruistic outcome with an extension of theories regarding individual utility maximisation (Fehr & Schmidt, 2003; Gintis, 2006). Within this extended utility framework, individuals still attempt to maximise their personal utility with little direct regard for others, but at the same time, these same individuals know that within a market environment the optimality of their outcomes is often contingent upon the decisions of others (Gintis, 2006). As such, the maximisation of personal outcomes will sometimes require the accommodation of the needs of others. That is, sometimes individual utility is maximised when people cooperate to maximise collective outcomes rather than competing for individual outcomes (Nash Jr., 1950).

This phenomenon has been observed in a number of areas including contract negotiation (Kuang & Moser, 2009), the division of resources (Elster, 2006), the formation of deals for exchange (Cox & Deck, 2005; Gintis, 2006), personal relationship management (Hartman, 1998), among many others. Within these areas the individual acting seemingly altruistically has a reasonable expectation for either

reciprocity on that altruistic outcome, or for receiving marginally improved individual outcomes from offering outcome improvements to others. This provides an account for why altruistic type behaviour is economically rational (Fehr & Schmidt, 2003).

At this time no literature appears to have tried to extend such results to a WOM context. Providing a model that accounts for this phenomenon, and a theoretical underpinning for it, would present a considerable contribution in the area of WOM communication.

3.2 Covering Behaviour in the Literature

Covering type behaviour is where a sender seeks to deliberately provide sub-optimal information to a receiver while trying not to be detected in doing so (DePaulo, Malone, Lindsay, & Muhlenbruck, 2003). This particular type of WOM has not previously been considered in the WOM literature. Some similar types of WOM that have blends of positive and negative motivations have been considered in some areas of the WOM literature. For example, the communication of positive referrals about a poor product to overcome dissonance (Wangenheim, 2004). By considering this previously unaddressed type of WOM communication it is intended that new insights into the diverse range of behaviours comprising WOM can be obtained.

Covering is being emphasised in this research as it provides a strong test of any proposed theoretical framework regarding the choice of information for WOM communication. It provides such a strong test because literature suggests that such negative actions against a receiver would be an exceptional event due to the obligations for positive behaviour inherent in successful ongoing social relations (Granovetter, 1985; Heide & John, 1992; Shapiro, 1987). The accommodation of this rarer and exceptional type of WOM behaviour and the more common assisting

behaviour, would indicate that the model is robust enough to explain the full range of possible WOM behaviours.

In the following section, two particular areas of literature are examined to illuminate some of the necessary components to any theoretical treatment of covering type behaviours in WOM. These areas of the literature pertain to opportunism and moral hazard, and to receiver consumer decision making. The opportunism literature highlights that covering behaviour can be expected within WOM contexts, and the receiver and consumer decision making literature highlights that a model of WOM would need to accommodate the sender's considerations of the decision outcomes of the receiver and the level of satisfaction felt by the receiver.

3.2.1 Opportunism and Moral Hazard

The opportunism and moral hazard literature considers how a person may come to be motivated to act in self interest without the knowledge of an exchange partner or even to the detriment of an exchange partner. This type of behaviour is often described as 'acting with guile' (Heide & John, 1992; Williamson, 1985; Wilson, Near, & Miller, 1998). In simple terms, this behaviour can be considered as a form of lying, misleading, misdirecting, or 'lying through omission' to *discretely* obtain advantage. The literature describes both the motivation and behaviour comprising opportunism.

The underlying motivation driving opportunism is that of self interest. Self interest is considered one of the core rational economic behaviours individuals can exhibit (Williamson, 1985). It comprises maximising personal outcomes in an exchange situation with little or no regard for the outcomes of others. The opportunism literature offers an extension on this pure utility maximisation concept. In the case of opportunism a person will still maximise their individual utility in an exchange,

but they will continue to pursue this maximisation even if it is to the detriment of the exchange partner (Wilson, et al., 1998). In many respects it can be considered utility maximisation even if the outcome sought is decidedly unfair or unjust (Fehr & Schmidt, 2003). Similar research at the inter-firm level has found similar behaviour, highlighting its ubiquitousness in human behaviour and endeavour (Wathne and Heide, 2000).

The behaviour that manifests as a result of this opportunistic motivation typically revolves around deliberate miscommunication of information or through mis-signalling. Information that is disseminated is typically incomplete or distorted, in order to manifest the desired personal outcomes while still ensuring that the outcome is achieved *discretely* (Thepaut, 2007; Williamson, 1985). This could involve aspects of deceit, lying, and outright treachery against the exchange partner. A critical component of this behaviour is that the exchange partner remains unaware of the imbalance in the outcomes of the exchange (Thepaut, 2007; Williamson, 1985). If the exchange partner were to become aware of the situation then they may retaliate or block the person from obtaining their sought outcome.

Similar opportunistic motivations and behaviours are explored in the psychology and socio-political literatures. These literatures typically describe people who pursue this behaviour as being a Machiavellian type personality, or as undertaking the process of 'hamming' another person (DePaulo & Rosenthal, 1979; Geiss & Moon, 1981; Gurtman, 1992; Thepaut, 2007). More recent research has begun to recognise the links between these literatures and the more economically oriented opportunism literature (Thepaut, 2007).

The concept of opportunism is readily applicable to aspects of covering type WOM. Within opportunism a person seeks a benefit that is likely to be at the cost of an exchange partner. Covering type WOM is similar in that the sender seeks a benefit, but in this case the benefit is that the 'disliked' receiver obtains a sub-optimal

outcome or cost. This presents a striking parallel. Although unlikely to be a norm, situations are likely to arise where such opportunistic type motivations would manifest in WOM exchanges.

The behaviour in a covering type WOM exchange also mirrors opportunistic type behaviour. The discretion inherent in opportunism is critical in a covering type WOM exchange. Acting in an obviously personally rewarding manner or too obviously to the detriment of the receiver would result in relationship breakdown due to the ongoing mistrust it would generate (Axelrod, 1984). Indeed, greatest short term and long term advantages arising from opportunistic behaviour are typically realised when the opportunist hides their intentions in order to achieve their objective (Wilson, et al., 1998).

3.2.2 Receiver and Consumer Decision Making Literature

The receiver and consumer decision making literature discusses the process consumers use to guide their selection of a product for purchase. It is of particular importance when considering the possibility of covering type behaviour as it provides the supposition that the outcome of an individual's decisions can be evaluated on several dimensions. It is this multi-dimensional evaluation that allows a sender to seek two outcomes from a receiver when undertaking covering type WOM. The two outcomes of particular relevance are a sub-optimal decision outcome for the receiver and a lack of knowledge in the receiver regarding this occurrence.

The classic view of consumer decision making processes involves consumers gathering information to form preferences, and then using these preferences to drive product selection (Ford & Smith, 1987; Louviere, et al., 2000; Meyer, 1981; Meyer & Sathi, 1985; Saad, 1999; Shafir, Simonson, & Tversky, 1993; Thurstone, 1927). The outcome of this process for the consumer is a degree of (dis)satisfaction with

their purchase. This (dis)satisfaction is generally considered to be driven by the degree of discrepancy between the individuals preferences and products ability to meet those preferences (Louviere, et al., 2000; Meyer, 1981; Meyer & Sathi, 1985). This forms the first criteria by which the outcome of the decision making process can be measured, that is, the degree of (dis)satisfaction felt, and expressed, by the decision maker.

A second mechanism by which the outcome of the decision making process can be evaluated is through objective evaluation. Objective evaluation involves the evaluation by an outside party as to whether the decision made by the consumer is the most optimal given their preferences. This is often seen in management decision making where the quality of a manager's decision is evaluated based on what is objectively best for the business (Daft, 2003). Although rarely seen in consumer decision making literature outside of health and nutrition contexts, it is important when considering how a sender may evaluate a receiver's decision making (Moorman, 1990; Moorman, Diehl, Brinberg, & Kidwell, 2004).

The distinction between these two evaluative criteria is important, nevertheless it is underutilised in present research in WOM communication. In this context, the sender can consider the outcomes for the receiver as consisting of two components: (1) the quality of the decision made as a result of the information received; and (2) the satisfaction of the receiver with the decision. It is this distinction that allows for the existence of covering behaviour as the sender can attempt to afford the receiver improved decision satisfaction while still reducing the quality of the decision made. These two outcomes provided by this literature supply a necessary input to the development of a more complete model of sender WOM behaviour.

3.3 Summary and Conclusion

Drawing on various literatures it is possible to understand the necessary components that a model of sender WOM communication decisions must accommodate for assisting and covering behaviour. Both the fairness and altruism, and the social investment and reciprocity literature document how helpful behaviour is common in human interaction (Anderson & Patterson, 2008; Elster, 2006; Fehr & Schmidt, 2003; Hartman, 1998). Of these two literatures the social investment and reciprocity literature provides a utility based account of why an individual would be motivated to act in a helpful manner (Cox & Deck, 2005; Fehr & Schmidt, 2003; Gintis, 2006). Presently, no such theoretical framework has been employed within the WOM literature to accommodate helpful/assisting type behaviours, thus presenting a considerable gap in the literature.

Literature regarding opportunism suggests that covert behaviour aimed at ensuring sub-optimal outcomes for an exchange partner is reasonable (Thepaut, 2007; Wangenheim, 2004). Presently no WOM literature has considered the presence of such behaviour although this kind of extreme self-oriented behaviour can be considered likely. This is especially the case given the presence of Machiavellian type behaviour and personality traits as suggested in the literature (Geiss & Moon, 1981; Thepaut, 2007; Wilson, et al., 1998). The consideration of such behaviours through the investigation of covering behaviour would allow this gap in the WOM literature to be addressed.

Decision making literature provides some of the framework necessary for the consideration of covering behaviour. The ability to differentiate between an observably 'good' decision outcome and the satisfaction of the decision maker is a necessary foundation for WOM research (Daft, 2003; Meyer, 1982; Meyer & Sathi, 1985). By utilising these insights it is now possible to construct a model of the sender's decision to communicate information by WOM.

4. A New General Theory: The Decision Making Process of WOM

As demonstrated in the previous sections, currently there is no comprehensive theoretical framework in place to understand how sender consumers determine what information to communicate using WOM. The literature examining aggregate WOM behaviour and industry practice indicates that the information content of WOM flow varies as it moves through a WOM network and that the content of such flows can be influenced. However, there is no existing framework to explain how this influence can be achieved for naturally occurring WOM. Both the receiver information search and acquisition, and transmission literatures show that the one of the foundation mechanisms to understand WOM flows is through mapping the decisions of the sender when they are selecting the information content for dissemination using WOM.

This section draws on the insights from literature and proposes a framework using Random Utility Theory (hereafter, 'RUT') and Social Network Theory (hereafter, 'SNT') to understand how a sender consumer chooses information to communicate by WOM. RUT was selected as the primary theoretical tool for this research as it offers fidelity of explanation and is widely compatible with a number of research methods. A RUT framework is also most compatible with SNT. Drawing upon the RUT and SNT frameworks during model development allows the final model to be compatible with both individual and aggregate level WOM literatures.

The first part of this chapter reviews how the sender determines what WOM exchange situation offers them the greatest rewards. The second part then discusses how the sender exhibits behaviour consistent with maximising the probability of receiving these rewards. The final parts of this chapter examine the impact of context on the sender's decisions, and the compatibility of this theory of individual behaviour with theories of aggregate behaviour in WOM communication.

4.1 The Utility of the Rewards for the Sender

Previous sender literature has noted that the motivation to disseminate information by WOM communication is the driving force behind all WOM exchanges (Sahlins, 1972). Therefore, it is essential to provide an account of *why* a sender may choose to undertake WOM communication.

RUT considers the often unobserved processes that comprise human decision making (Thurstone, 1927). RUT suggests that a person will observe and evaluate any alternatives available for selection, typically described as products in the marketing literature, prior to making a decision (Louviere, et al., 2000; Thurstone, 1927; Train, 2009). As a result of this evaluation the person will assign a utility value, or 'preference ordering', to each alternative based on its features and characteristics (Louviere, et al., 2000; Thurstone, 1927; Train, 2009). Using these utility values the person will be able to discriminate between the alternatives. They will then choose the option so as to maximise the utility derived from the decision (Thurstone, 1927). A full discussion of RUT can be found in Louviere, Hensher and Swait (2000). This drive to maximise the utility from a decision provides a mechanism by which to understand the motivation driving the decision to communicate information by WOM.

The proposed framework asserts that the 'product alternatives' are analogous to the possible rewards that a sender may obtain as a result of communicating by WOM. These rewards may include things such as being thanked by a receiver, or obtaining a discount for recommending a service to a friend. This notion that a sender will communicate so that they may obtain the greatest rewards for themself is supported by the WOM literature. It has been argued that interpersonal exchanges, such as WOM, are driven by a person's self interest and the value that they personally derive from the exchange (Frenzen & Nakamoto, 1993; Homans, 1961; Roloff, 1981). It must be noted though that this self interest is not a solely immediate

economic self interest, but rather a general self interest within a social environment (Granovetter, 1985; Heide & John, 1992; Shapiro, 1987). Such self interest recognises the potential trade-offs of immediate and long term returns on social investment.

RUT describes utility using the following function (Louviere, et al., 2000):

$$U_{iq} = V_{iq} + \varepsilon_{iq} \tag{1}$$

where U_{iq} can be considered the utility of the ith reward for the qth person. This utility can then be separated into a systematic component and a random component. The systematic component is the observable part of a person's preferences and is represented by V_{iq}. The random component arises from the characteristics that are unique to each individual and may include individual level errors in choice behaviour. It is represented by ε_{iq} (Louviere, et al., 2000). This random component will be assumed to be normally distributed with a mean equal to zero at this time (Wooldridge, 2006). The initial specification of this model will be undertaken using Ordinary Least Squares to produce a Linear Probability Model (hereafter, 'LPM').

The probability of person q choosing to pursue reward i from the reward alternatives can be written using an LPM (Louviere, et al., 2000):

$$V_{iq} = P(y = 1 \mid \Lambda)_{iq} \tag{2}$$

In this model the systematic component of utility is estimated directly as the probability of the choice event y occurring (and thus equalling 1) for reward i given its features Λ. This model permits us to ascertain how a person will choose the rewards that they may obtain from a WOM exchange situation. Alternative model forms are available for the expression of the probability of choice (Louviere, et al., 2000; McFadden, 1974; Train, 2009). In this case an LPM was chosen as it provides

the basis for more elaborate estimation procedures later. More elaborate estimation procedures were found to be necessary due to features of the data collected. The specification of the final estimation procedure with reasoning can be found in the methodology chapter.

The pursuit of specific rewards from communication can be seen to provide a single overarching motivation for communication. Having established a mechanism to understand this reward seeking motivation and the model form to express it it is now possible to explore the nature of the rewards a sender may choose to pursue. The various motives identified in the literature can now be discussed as simple variations on the form that the possible rewards may take (Chung, 2007; Cox & Deck, 2005; Dichter, 1966; Horowitz, et al., 2006).

4.1.1 Defining the Rewards from WOM

The consumer must account for the range of possible rewards, or consequences, that any WOM behaviour could bring about to make trade-offs between them. As a function of utility maximisation it can be generally asserted that the sender would seek rewards and avoid consequences. This section offers some ways to define the rewards (or consequences) that a sender would trade off between when determining the form of the reward(s) to pursue.

It must be asserted that the rewards for undertaking WOM behaviour arise only from parts of the environment where the sender is knowingly able to interact with and/or predict the effect of the WOM exchange upon. Rewards that have no possibility of being anticipated are not considered, as a sender would not reasonably include them in their decision making. This does not preclude the possibility of accommodating probabilistic rewards. While the present model takes the most economic interpretation of the motivational drivers of social interaction, it is still compatible with evolutionary interpretations in which individual utility

maximisation would be described as having evolved as a successful strategy for survival (Paulsel & Mottet, 2004; Rubin & Martin, 1988; Wilson, et al., 1998).

At the most basic level the parts of the environment that the sender can consider are (1) the receiver, (2) the product or issue being discussed, and (3) themself. This is not to say that these are the only possible components of the environment but these are the necessary minimum components to consider (Chung, 2007; Dichter, 1966). The variety of rewards or motivations available can be considered as blends of orientations towards these three parts of the environment (Gurtman, 1992). Much like the commonly used interpersonal circumplex that is used to map communication motivation states in a logical manner this specification provides a useful way to map multidimensional states into blends of core factors (Wiggins, 1982). In this case the factors included in the mapping are more consistent with economic and social network theory with regards to interpersonal communication behaviour.

4.1.1.1 Rewards from the Receiver

The receiver comprises one of the three core components of the information exchange environment for an individual sender. For every exchange there must be some notion of a recipient of information (Frenzen & Nakamoto, 1993). Although discussed here in a singular form the receiver can also be considered as a group of individuals; for example, a web-blogger communicating to his or her multiple receiver subscribers. Within this research the form of WOM being investigated is the common verbal exchange, and as a result the receiver is only considered in a singular form.

Drawing on the consumer decision making literature it is possible to see that the sender perceives two components in regards to what the receiver obtains from a decision: the quality of the decision outcome in an objective sense, and the

satisfaction of the receiver with that outcome (Louviere, et al., 2000; Mittal, Kumar, & Tsiros, 1999; Wangenheim, 2004). With the perception of these two features it is reasonable to assert that a sender may choose to influence them either together or separately in their pursuit of rewards (Wangenheim, 2004).

A sender consumer is likely to derive some internal reward, or utility, from the receiver obtaining either a higher or lower quality outcome from a decision. This would be a natural function of the orientation of the sender towards the receiver, or, simply put, whether the sender likes the receiver or not (Dichter, 1966; Geiss & Moon, 1981; Gurtman, 1992; Montero, 2008; Slonim & Garbarino, 2008). For example, the sender may derive utility from the reward of leading the receiver to purchase a product that does not meet their needs due to a dislike for the receiver. The *quality of receiver's decision outcome* (λ_{1a}) is therefore one component of the rewards that sender may seek from their communication behaviour.

The receiver, as the consumer of the product purchase, would always feel a degree of (dis)satisfaction with that purchase (Louviere, et al., 2000; Mittal, et al., 1999). The sender has the ability, and indeed a likely desire, to influence that satisfaction (Chung, 2007; Dichter, 1966; Wangenheim, 2004). A sender can thus derive utility, or reward, from influencing the receiver's satisfaction in either a positive or negative way. The direction of the influence that provides the reward would again be a function of the orientation towards the receiver (Dichter, 1966; Geiss & Moon, 1981; Gurtman, 1992; Montero, 2008; Slonim & Garbarino, 2008). For example, the sender may derive utility from a reward in which a disliked receiver feels dissatisfied with their purchase. Therefore the *receiver's satisfaction with the purchase decision* (λ_{1b}) will form a component of the reward the sender may seek from communicating.

In both cases the sender requires feedback from the receiver as to the outcomes regarding decision quality and decision satisfaction. Without this feedback the

reward would not be manifested for the sender. This feedback could be obtained through either direct observation of the receiver's experiences, from subsequent discourse with the receiver, or through the inferences of the sender. With the possible rewards from the receiver specified it is possible to consider other sources of rewards.

4.1.1.2 Rewards from the Product or Issue

In modern interpretations of consumer affinity to products there is an increasing recognition of an analogy between how consumers feel towards products and how they feel towards other people (Aspara, Olkkonen, Tikkanen, Moisander, & Parvinen, 2008). Thus the affinity for products allows the concept of rewards that has just been applied to the receiver to be extended to the product or issue being communicated about.

As the second of the three key components of the WOM environment the *product* or *issue* being discussed is likely to be a source of rewards for the sender. The rewards arising from the product or issue can be ascribed to two main sources; whether the product or issue is purchased or actioned by the receiver consumer, that is, the outcome for the product; and the extent to which the business owner, salesperson or other representative of the product is satisfied with the outcome for that product.

A consumer is likely to have a desire to see a product succeed or fail, and would be interested in the purchase outcome of the product as a result (Aspara, et al., 2008). This may be the result of an economic interest in the product or an emotional investment in the product. Such rewards can be a powerful motivator for various forms of WOM behaviour (Aspara, et al., 2008). When an economic incentive is being provided by a product manufacturer, a phenomenon being increasingly seen in practice, this effect is likely to become even more pronounced (Wirtz & Chew,

2002). Thus the *observed (purchase) outcome for the product* (λ_{2a}) can be considered a component of the rewards for the sender.

The sender is also able to consider the representative of the product when deciding what to communicate by WOM (Bäckström, 2008; Bäckström & Nel, 2009). This representative, as previously described, may be the business owner, salesperson or other product representative. Much like a consumer feeling satisfied with the purchase of a product, a representative can feel satisfied with the sale of a product (Bäckström & Nel, 2009; Bergeron & Laroche, 2009). For example, a sender may offer a WOM recommendation to a friend about a coffee shop to please the coffee shop owner with whom they may have some affinity. Even in the absence of some specific representative for the product or issue psychological research suggests that a sender may simply personify the product or brand and see to its satisfaction (Aspara, et al., 2008; Power & Hauge, 2008). The sender consumer has an ability to, and indeed a possible interest in, influencing that satisfaction. A sender can thus derive utility, or reward, from influencing the *product representative's satisfaction* (λ_{2b}) in either a positive or negative way.

4.1.1.3 Direct Rewards for the Sender

As the third and final component of the WOM environment the sender can also derive rewards directly for him or herself. Such rewards (or consequences) for the sender arise from the *impact the communication of information by WOM has on his or her own future decision making ability* (λ_3). By influencing the purchase decisions of others there is a natural impact on the sender's future decision making (Frenzen & Nakamoto, 1993; Hartman, 1998; Montero, 2008). A sender is highly likely to accommodate this when communicating by WOM (Chung, 2007; Dichter, 1966; Frenzen & Nakamoto, 1993). The impact on future decision making arises from two main sources that are closely interrelated: the potential for opportunity costs on future decision making (Thepaut, 2007; Wangenheim, 2004), and the

potential for future information reciprocity (Cox & Deck, 2005; Kuang & Moser, 2009; Stern, 1994).

There can be an *opportunity cost* for future decision making associated with the provision of information (Frenzen & Nakamoto, 1993; Thepaut, 2007). This opportunity cost is the possible reduction or loss of value from a future transaction (Frenzen & Nakamoto, 1993; Thepaut, 2007). For example, a sender may be less likely to be able to purchase a limited release product if they advocate it to other consumers who would then compete for the limited good. Therefore they may derive utility from the rewards of not communicating about this limited release product. Previous literature has accommodated this orientation towards the self through the introduction of different motives such as greed or altruism (Chung, 2007; Cox & Deck, 2005; Hartman, 1998; Horowitz, et al., 2006; Montero, 2008; Paulsel & Mottet, 2004; Rubin & Martin, 1988; Slonim & Garbarino, 2008; Step & Finucane, 2002; Sundaram, Mitra, & Webster, 2007; Swanson, Gwinner, Larson, & Janda, 2003; Thepaut, 2007; Walsh, et al., 2004). The proposed model, in contrast, conceptualises it as a part of the trade off to achieve the greatest total reward gained from the act of communicating.

A component of this impact on future decision making that should be noted is the less obvious potential for *information exchange reciprocity* from others. Literature has suggested that a sender often has an expectation of reciprocal information sharing when they themself are making some future decision and are in need of information support (Cox & Deck, 2005; Fehr & Schmidt, 2003; Kuang & Moser, 2009). Such reciprocity may not be specifically from the receiver participating in the present information exchange, but a more general expectation from the community (Burt, 1980, 1997; Cox & Deck, 2005; Fehr & Schmidt, 2003; Granovetter, 1982; Iacobucci & Hopkins, 1992; Kuang & Moser, 2009). This presents a pseudo concept of Karma that seems rooted in human psychology. Even if reciprocity is not guaranteed the sender may view their communication as an act

that increases the likelihood of them receiving reciprocal information flow sometime in the future, thereby rewarding their communication behaviour (Cox & Deck, 2005; Fehr & Schmidt, 2003; Kuang & Moser, 2009). This is founded in economic interpretations of expectations of reciprocal motives that underlie economic models of altruism (Cox & Deck, 2005; Fehr & Schmidt, 2003; Kuang & Moser, 2009)

The role of the impact on future decision making is closely related to the issue of moral hazards and opportunism (Dur & Roelfsema, 2010; Thepaut, 2007; Wangenheim, 2004). Moral hazard proposes that an individual consumer may appear to provide information for no immediate reward but trusts that in the future the receiver will return the favour thus providing a possible future reward (Frenzen & Nakamoto, 1993). This framework's use of rewards for the 'self' from the perspective of the sender accommodates this phenomenon while also accommodating the diversity of other potential motivations present.

4.1.1.4 The Functional Form of the Rewards

Having identified the three main components of the WOM environment from which rewards can arise, it is now possible to map these into a multidimensional space. Most WOM literature typically considers only a single motivational drive for a sender at a time (Dichter, 1966). While useful in many circumstances, this does not reflect that motivation has classically been seen as a blend of various factors (Chung, 2007; Dichter, 1966; Gurtman, 1992; Sundaram, et al., 2007; Wiggins, 1982). By mapping each component onto a dimension of a three dimensional space it becomes easy to conceptualise the blending process that a sender consumer will use when determining the combination of rewards they wish to pursue through a WOM exchange. This multidimensional representation is shown in Figure 1.
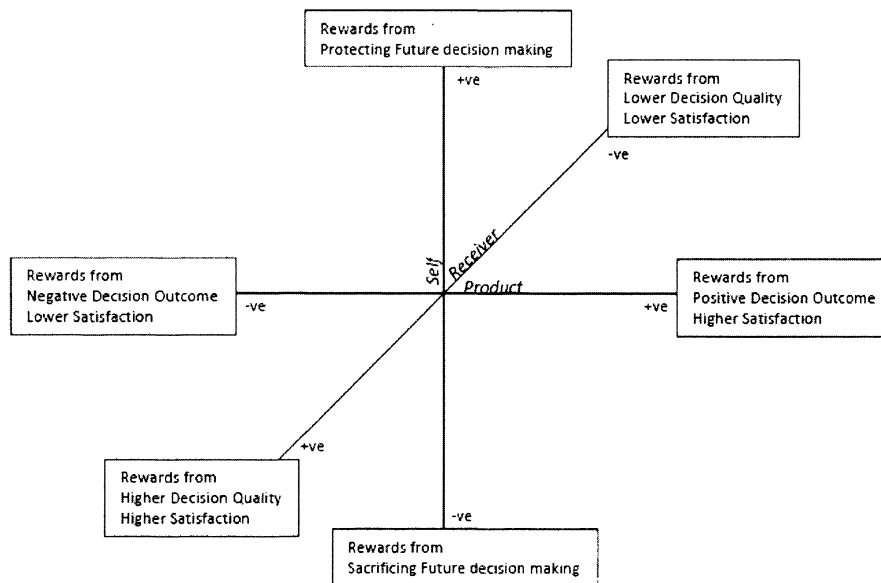
Figure 1: Multidimensional representation of reward blending

Figure 1 provides a useful simplification for how a sender would select the set of rewards to pursue from the WOM exchange. Whether the sender has a relatively positive or negative orientation towards each of the components of the environment will drive them to seek differing sets of rewards, with the reward originating from one of the components of the environment. In effect, it can be visualised that the sender would position him or herself within this reward space aligning against each component of the environment such that the set of rewards that are to be obtained maximise their utility for this communication situation.

The rewards chosen for inclusion in this model are not the only rewards that literature suggests may be obtainable (Chung, 2007; Dichter, 1966; Gurtman, 1992; Hennig-Thurau, et al., 2004; Park, 2001; Phelps, et al., 2004; Sundaram, et al., 2007; Wiggins, 1982). The rewards identified in this case are those that are most compatible with the decision making literature and the chosen underlying theory, Random Utility Theory. Additional reward types can be mapped into these components of the environment, and additional environmental components can also be included as relevant for other WOM contexts. These would simply be additional dimensions in the visualisation. Within a general interpersonal verbal WOM

exchange context, which is the context for this research, and based on present literature, the components proposed here are most likely to contribute to predictive and explanatory power for individual behaviour (Chung, 2007; Dichter, 1966).

The observable part of person q's preferences, with the associated choice probability, for a specific reward set i, can therefore be defined as a function of the specific reward types available (Louviere, et al., 2000):

$$V_{iq} = f(\lambda_{1a}, \lambda_{1b}, \lambda_{2a}, \lambda_{2b}, \lambda_3) \tag{3}$$

The sender is thus able to trade off between these reward types to obtain the highest utility reward set from the communication (Greenacre, 2005; Louviere, et al., 2000). The specific form of this function would be determined by the specific context for the WOM communication. The specification of the hypothesised functional form of this equation for the contexts that give rise to assisting and covering type behaviours is covered in Chapter 5.

4.2 Choosing a Behaviour

Once the sender has chosen the overall reward set they wish to pursue from a potential WOM exchange (or exchanges) they must then determine how they wish to pursue this reward (Frenzen & Nakamoto, 1993). This requires the sender to make decisions regarding their WOM communication behaviour. It is reasonable to assume that the communication behaviour would simply reflect the underlying reward seeking behaviour (motivation) that is driving it (Horowitz, et al., 2006).

Drawing on RUT theory it is possible to see that *the communication behaviour that increases the potential of receiving the chosen rewards will have greater utility for the sender*. This assertion provides the theoretical link between the choice of rewards (motivation) and the choice of communication behaviour and is the critical

premise of this framework. In this way we can examine the trade-offs between different WOM communication behaviours that the sender may undertake to maximise the probability of receiving their chosen reward.

Returning to the function RUT uses to describe utility (Louviere, et al., 2000):

$$U_{kq} = V_{kq} + \varepsilon_{kq}$$

(4)

we can assert that U_{kq} is the utility for the kth WOM behaviour alternative for the qth sender. This utility is defined solely as the probability of the WOM behaviour to bring about the selected reward for sender q. As previously explained, this utility can then be decomposed into a systematic component (V_{kq}) and a random component (ε_{kq}) (Louviere, et al., 2000). The random component will be assumed to be normally distributed with a mean equal to zero (Wooldridge, 2006). The initial specification of this model will be undertaken using Ordinary Least Squares to produce an LPM.

The probability of sender q choosing a particular WOM behaviour combination k from the alternatives can be written as:

$$V_{kq} = P(y = 1 \mid X)_{kq}$$

(5)

In this model the systematic component of utility is estimated directly as the probability of the choice event y occurring (and thus equalling 1) for communication behaviour i given its features X. This model permits us to ascertain how a person will choose the rewards that they may obtain from a WOM exchange situation. An extended model form is elaborated in the methodology chapter.

Having specified the process by which a particular WOM behaviour combination is chosen it is necessary to develop a mechanism to characterise the features of that

combination. This would allow the components of the behaviour, including information selection, medium selection and exchange partner selection, that are most influential in driving the choice of final communication behaviour combination to be identified. Based on existing WOM literature it can be asserted that WOM behaviour is composed of three minimum essential components (Frenzen & Nakamoto, 1993; Verlegh, et al., 2005). These three components of communication behaviour are: the choice of receiver with whom a sender will communicate, the medium chosen by which to communicate, and finally, the choice of specific information to communicate (Bansal & Voyer, 2000; Brown & Reingen, 1987; Frenzen & Nakamoto, 1993; Gilly, et al., 1998; Granovetter, 1982; Greenacre, et al., 2006; Verlegh, et al., 2005; Whyte, 1954; Yale & Gilly, 1995).

By specifying these three components of behaviour it is possible to characterise what the sender would be communicating and how they would do so. It can therefore be seen that the various WOM behaviour combinations are composed of: the available receiver(s) (X_1), the available communication medium(s) (X_2), and the available information (X_3) (Frenzen & Nakamoto, 1993; Step & Finucane, 2002; Verlegh, et al., 2005). We can therefore state that the systematic component of the utility of a WOM behaviour combination is a function of these characteristics.

$$V_{kq} = f(X_1, X_2, X_3) \tag{6}$$

Drawing on this function it is possible to examine the trade-offs a sender will make between the available behaviour alternatives in his or her attempt to manifest their chosen rewards. The precise form of this equation is again dependent upon the nature of the context (Gurtman, 1992; Wiggins, 1982). The specification of the hypothesised functional form for assisting and covering behaviour is detailed in a subsequent chapter.

Before this trade off can be fully understood the components of the WOM behaviour require further characterisation. This is because the 'receiver', the 'medium', and the 'information' can all be further decomposed. Decomposing each of these components behaviour permits a more elaborate model of the sender's decision to be specified (Meyer, 1981; Meyer & Sathi, 1985; Mittal, et al., 1999; Roberts & Urban, 1988). It is important to note that although the three main components of WOM behaviour are discussed here as separate concepts the sub-components of each may also be traded off across concepts when determining the final WOM behaviour combination.

4.2.1 The Receiver

The receiver (X_1) can be further decomposed into the individual characteristics that a sender may consider when choosing the receiver with whom they wish to communicate. These characteristics do not include the form of the relationship between the sender and receiver as this belongs as a part of the context. It is necessary to impose this limit on the characterisation of the receiver within this research as it allows for greater compatibility with Social Network Theory. Further explanation of this is provided in sections 4.3 and 4.4. The characterisation of the receiver thereby only refers to the components of the receiver that any sender may observe or experience.

There are virtually innumerable mechanisms by which to characterise a receiver (Mazzarol, Sweeney, & Soutar, 2007; Yale & Gilly, 1995). Many of these have been identified throughout WOM and related communication literatures. They include attributes such as physical appearance (Hughes, Farley, & Rhodes, 2010), the inflection and intonation of a person's voice (Hughes, et al., 2010; Pardo & Remez, 2006), culture (Lam, Lee, & Mizerski, 2009), expertise (Burt, 1999; Childers, 1986; Gilly, et al., 1998), among many other physical and psychological characteristics (Chiu, Hsieh, Kao, & Lee, 2007; Mazzarol, et al., 2007; Sweeney,

Soutar, & Mazzarol, 2008; Yale & Gilly, 1995). Each of these are expected to be of varying importance within various contexts.

For the purposes of this research two main characteristics are of most theoretical interest: gender, and general likability. These two offer a basis to evaluate a physical and psychological characteristic on the choice of WOM behaviour. These were chosen over alternative characteristics largely due to the relative ease of manipulation within an experimental framework. They are not designed to offer a complete account of receiver selection, but simply a first test of this model.

The role of the *receiver's gender* (R_1) in the sender's decision to communicate by WOM has received some attention in the literature. It is suggested that both men and women value the receipt of WOM information whereas only men tend to value the sending of WOM information (Awad & Ragowsky, 2008). Also, men and women tend to exhibit subtly different communication behaviour in online exchanges and in other communication contexts (Barker, 2009; Croft, Boddy, & Pentucci, 2007; Kirlidog, Aykol, & Gulsecen, 2009; Subrahmanyam, Garcia, Harsono, Li, & Lipana, 2009; Swanson, et al., 2003; Wiedmann, Walsh, & Mitchell, 2001). For example, women tend to communicate more for entertainment and to pass the time than males (Barker, 2009). While such results often confound the reward sought (motivation) with the behaviour exhibited, they do suggest that individuals may behave differently when communicating with the two genders. Thus, it is appropriate to include gender as a characteristic of the receiver that is considered by the sender. The precise nature of these differences will be considered during the development of the research hypotheses for assisting and covering types of WOM.

The adoption of *general likeability of the receiver* (R_2) is based on the expectation that it is one of the more basic underlying psychological constructs in interpersonal relationships. This construct has presently not been directly examined in WOM

literature. Even so, there are innumerable indirect references to it. Often WOM focuses on the communication of information among friends, relatives and other positive relationships, be they strong or weak ties (Mason, 2008; Sanders & Walsh, 2009). By implication there must be an alternative negative group available for WOM communication. The general likeability of the receiver, as an emotionally driven psychological construct, provides an excellent mechanism to divide these groups (Söderlund & Rosengren, 2007; Walker, 2001). It is therefore an important characteristic that the sender is likely to consider when deciding the WOM behaviour to exhibit.

Drawing on these physical and emotional components it is possible to begin to characterise the features of the receiver that the sender may consider. At this stage the *receiver* (X_1), as one of the three critical components of the environment, can be characterised by their gender (R_1) and likeability (R_2), as expressed below:

$$X_1 = f(R_1, R_2) \tag{7}$$

The characterisation of the other components of the environment can now be considered.

4.2.2 The Medium

A sender is able to consider many possible characteristics of the *medium(s) available for communication* (X_2) when deciding which one to utilise. Some research has compared the degree of influence arising from different WOM mediums (Cotten & Gupta, 2004; Doh & Hwang, 2009; Lin, 2007; Mishna, Saini, & Solomon, 2009; Steffes & Burgee, 2009; Young, 2004). Most of this research only evaluates a single online and/or offline source in isolation. A very limited amount of research has compared offline WOM sources using the characteristics of vividness and perseverance but these are often contingent on how a sender would

implement the communication beyond the medium (Herr, Kardes, & Kim, 1991).
At this time no research has considered the a priori choice of the medium and the
characteristics that may be considered in that choice.

Implied from the existing research on single sources, a WOM communication
medium can have a number of possible characteristics. The most obvious
characteristic implied is whether the medium is *technology mediated or direct
interpersonal (S_1)*. This characteristic is able to capture many of the intangible
features previously considered, such as vividness, the medium's ability to
communicate tacit or explicit information, and personability (Cotten & Gupta,
2004; Doh & Hwang, 2009; Lin, 2007; Mishna, et al., 2009; Steffes & Burgee,
2009; Young, 2004). The electronic-WOM (or 'eWOM') literature, which
emphasises exchanges of information by computer and other similar technology,
highlights such differences with verbal WOM. This characteristic provides a useful
distinction between classic verbal WOM and eWOM while still retaining them
together in this unifying framework. This affords researchers to explore any
differences that this may present in the future.

Another characteristic of the medium that is closely tied to the capacity to
communicate to some receivers is the *ability to communicate to multiple receivers
at a single point in time (S_2)*. This simply refers to the situation in which a sender
has the option to communicate to a single receiver, as in a dyad, or to multiple
receivers within a group discussion. This characteristic is at least partially related to
whether the medium is technology based as there is a natural limitation of direct
interpersonal to reach multiple persons after a certain point. Even so, this
characteristic is highly useful for understanding medium selection during more
common WOM exchanges between smaller groups of friends and within
communities.

It is again important to emphasise that these are not the *only* characteristics of a communication medium. They are simply the most obvious based on present research. Future research can propose alternative characteristics that may be particularly useful in a specific research context. In this case, with the identification of these two characteristics the medium can be expressed as a function of those characteristics.

$$X_2 = f(S_1, S_2) \tag{8}$$

It is now possible to consider the precise functional form of the characteristics within the choice of medium. This is undertaken in later sections.

4.2.3 The Information

With the first two components of WOM behaviour decomposed into their primary characteristics it is now possible to consider the final component. *Information that can be communicated* (X_3) can be further decomposed into the features that comprise each piece of information that may be chosen for WOM behaviour.

Any form of expression involves the synthesis of a person's emotions and thoughts into an easily understood message. This synthesis does the sender a great disservice as no message or representation is likely to ever be able to communicate the entirety of what they mean, thus giving rise to a danger of being misinterpreted by the receiver. A sender would therefore attempt to select a piece or pieces of information that is the 'best' synthesis of the message they wish to communicate.

Previous research that draws on information search and acquisition literature notes two particular information characteristics that are used by the sender when determining what information to communicate by WOM (Greenacre, 2005). These characteristics are the *relative importance of the attribute that the information*

concerns (T_1), and the *impact of the information on preference variance through (dis)confirmation* (T_2) (Greenacre, 2005). The perceived relative importance of the attribute that the information concerns has regularly been assumed to be a characteristic of information selection behaviour, but there has been little formal testing of that assumption (Fasolo, McClelland, & Todd, 2007; Frenzen & Nakamoto, 1993; Greenacre, 2005; Greenacre, et al., 2006). The assumption of the use of attribute importance as a characteristic of information is compliant with decision making theory. A receiver consumer will seek information on the most important dimensions of the product alternatives to better assist their decision making (Saad, 1999; Saad & Russo, 1996). A sender would be aware of this need in the receiver consumer and would thus utilise this attribute importance characteristic regarding the information available when determining their WOM behaviour.

The impact of the information on preference variance through (dis)confirmation (T_2) would receive similar consideration by the sender. (Dis)confirmation of information can have numerous effects on the decision making of the receiver consumer. Typically, information that confirms existing preferences would reduce the variability in receivers' preferences, offering them greater ease in choice (Bohlmann & Qualls, 2001; Van Der Meer, 1963). Preference variability is similar to the concept of decision confidence, in that it is the uncertainty felt by a decision maker and manifest empirically in variability in a respondents decisions (Van Der Meer, 1963). Contrastingly, disconfirmation can increase preference variability, making decision making much more difficult as this new and unexpected information would need to be integrated before a decision can be finalised (Bohlmann & Qualls, 2001). A second effect of (dis)confirmation could also be present. Disconfirmation can illustrate to a receiver consumer that their mean preferences have been incorrectly formed. That is, they have developed incorrect beliefs about a product or product attribute (Bohlmann & Qualls, 2001). Confirming information does not have this effect, and in fact implies correct mean preferences have been formed. In both cases it is relatively straight forward for a sender to

recognise this need in a receiver consumer. This is because a receiver is likely to prompt a sender with some familiarity of their information needs for assistance. Thus a sender would likely consider this characteristic of information when determining what to communicate, as prior research has indicated (Greenacre, 2005; Greenacre, et al., 2006).

Within the education and psychology literature the certainty with which information or knowledge is held has attracted considerable attention. It is a critical aspect for understanding how individuals transition from uncertainty to certainty while learning. That research typically aims to develop techniques to facilitate students during this transition (Bhatt & Camerer, 2005; Early, 2003; Strømsø & Braten, 2009). Despite its recognition in the literature it has garnered little attention within the communication literature beyond observations regarding how it is achieved semantically (Colson, 2005; Early, 2003; Fetzer, 2008). From a WOM perspective, it is easy to see that *the certainty with which the information is to be communicated* (T_3) may be considered by a sender when determining their WOM behaviour. Some preliminary support for this can be found in prior research (Greenacre, 2005; Greenacre, et al., 2006; Schweitzer & Hsee, 2002). By modifying the certainty with which they express information the sender is able to manipulate how diagnostic the information is for the receiver consumer. Information that is communicated in an uncertain manner, such as qualifying it with 'I think...', would generally fail to decrease the variability in the receiver consumer's preferences. This is because the diagnostic properties of the information have been significantly impeded by adding an element of probability to the facts. Indeed, such uncertain information would require additional information to be collected to enable triangulation of facts so that those facts may then be meaningfully used during decision making. The communication of uncertain information thus makes the WOM exercise nearly pointless, which may be desirable to a sender communicating with a disliked receiver. In contrast, communication of information in a certain manner allows all of the benefits of information collection are afforded the receiver consumer.

Drawing on economic literature it is also possible to consider the characteristic of *the economic value of the information* (T_4). More classic economic theory suggests that all items can be ascribed an economic, or monetary, value as long as it has realisable utility for someone (Carter, 1985; Hilton, 1981; Thurstone, 1927). Extending this assertion to communication behaviour it is easy to see that an economic value can be present for information (Carter, 1985; Hilton, 1981; Snow, 2010). Within most WOM exchange situations the economic value of information remains largely unmeasured, however some information can explicitly contain facts regarding the economic value of the subject of the discussion; for example, information regarding an available purchase discount on a product. Such explicit economic information has received some attention in the WOM literature but has never been considered as only one of the *many* characteristics that information can have (Frenzen & Nakamoto, 1993). This therefore makes an interesting addition to the characterisations of information.

Information may also be characterised by the consistency of the language employed relative to previously communicated information. More specifically, whether the terms contained in the information have been used previously thereby establishing a way of referring to particular objects or concepts (Metzing & Brennan, 2003; Shintel & Keysar, 2007). Such *referential ambiguity* (T_5) of information is an intriguing characteristic only previously examined in linguistics. Considering such a characteristic from the perspective of the sender it can be seen that they may wish to increase or decrease ambiguity in some cases if it is to their advantage (Snow, 2010). The use of ambiguous terminology would hinder the receiver's ability to understand the message by maximising the probability of the receiver misidentifying the object being referred to in the message (Keysar, Barr, & Lin, 2001; Metzing & Brennan, 2003; Shintel & Keysar, 2007; Snow, 2010). This type of linguistic characteristic has yet to be integrated into the WOM literature but has

the potential to provide considerable insight into the nuance in communication that is present in WOM.

Drawing on these it is possible to express a piece of information available for WOM communication (X_3) as being a function of its characteristics:

$$X_3 = f(T_1, T_2, T_3, T_4, T_5) \tag{9}$$

The precise functional form of these characteristics is examined in Chapter 5 for each context. Any number of additional characteristics can be included into the function above giving future researchers the ability to examine characteristics that are particularly useful for their research context. This affords a great deal of flexibility in response to particular requirements.

4.3 The WOM Decision Making Process

Returning to the overall WOM decision making process it can be seen that it is composed of two main decisions: the choice of sought reward (giving a motivation); and the choice of WOM behaviour to obtain that reward. These two decisions are entirely compatible with RUT and provide a useful framework from which a sender's decision to communicate using WOM can be understood.

The choice of rewards can be understood by characterising each possible reward based on the part of the WOM environment from which it arises. These are: the receiver, the subject of the communication (the product), and the sender themself. Within these components of the environment the rewards themselves can be further refined and, as previously described: the *quality of receiver's decision outcome* (λ_{1a}) and the *receiver's satisfaction with the purchase decision* (λ_{1b}); the *observed (purchase) outcome for the product* (λ_{2a}) and *the product representative's satisfaction* (λ_{2b}); and, finally, the *impact of the communication on the sender's own*

future decision making ability (λ_3). The systematic component of the utility of the

sender's rewards for communicating (V_{iq}) can therefore be expressed as:

$$V_{iq} = f(\lambda_{1a}, \lambda_{1b}, \lambda_{2a}, \lambda_{2b}, \lambda_3) \tag{3}$$

with the sender choosing to pursue the reward combination that maximises their

innate utility in a particular communication context. With the choice of rewards to

pursue the sender can then consider the WOM behaviour to exhibit.

The WOM behaviour chosen would be such that the probability of obtaining the

rewards is maximised. WOM behaviour is comprised of three minimum necessary

components: receiver selection (X_1), medium selection (X_2), and information

selection (X_2). Each of these three parts of the environment can be decomposed into

their relevant characteristics to allow for a greater understanding of what is driving

the choice of behaviour. The characteristics of the receiver being used within this

research are *gender* (R_1) and *likeability* (R_2). The characteristics of the medium

being employed are whether the medium is *technology mediated or direct*

interpersonal (S_1), and the medium's *ability to communicate to multiple receivers*

(S_2). The characteristics of the information included are the *relative importance of*

the attribute the information concerns (T_1), the *impact of the information on*

preference variance through (dis)confirmation (T_2), the *certainty with which the*

information is to be communicated (T_3), the *economic value of the information* (T_4),

and the *referential ambiguity of the language employed* (T_5). Drawing on all of

these characteristics the systematic component of utility of the sender's possible

WOM behaviour combinations (V_{kq}) can be expressed as:

$$\begin{aligned} V_{kq} &= f(X_1, X_2, X_3) \\ &= f(R_1, R_2, S_1, S_2, T_1, T_2, T_3, T_4, T_5) \end{aligned} \tag{10}$$

With these characteristics in place it is possible to examine what the sender would trade off between among these when choosing their WOM behaviour. This affords the opportunity to examine a sender's WOM behaviour in a degree of detail that has not previously been attempted.

It is essential to realise that although the two decisions of reward and behaviour selection are presented here in a sequence, there is likely no specific temporal ordering for the sender. These decisions may be made simultaneously or through some sort of revision process. This is because the choice of reward must be undertaken with knowledge of the WOM behaviours available for selection. It is not feasible for a sender to choose a reward that could not be obtained with the possible WOM behaviours. Therefore both decisions must be made in the knowledge of the other. Due to the possible impact of this on the appropriateness of the model form selected, the experimental procedure designed allows for the separation of the two processes so that the model works as described above. Further information regarding this experimental procedure can be found in Chapter 6.

4.4 The Influence of Context in WOM

The context is best described as the state of the WOM environment from the perspective of the sender. The sender will be oriented in positive or negative ways to each component of the environment: the receiver, the subject of the conversation (be it a product or issue), and themself. Based on this orientation, which arises from the context, different rewards will have higher or lower utility for the sender.

This orientation to the WOM environment includes the emotional, psychological and relational orientation of the sender to the receiver(s), the product(s) or issue(s), and to him or her-self. For example, the context could be that the sender is limited to communicating to a receiver whom they do not like, for example a disliked work colleague. In this context rewards of greatest utility would likely revolve around

reducing the receiver's *decision quality*. The behaviour chosen therefore emphasises communication of information that is of little value to the receiver.

The role of the context is critical as it is the primary determinant of preferences beyond the nuance of innate personal preferences. It is expected that sender preferences would be driven by different contexts with contexts characterised by the sender's different orientations to the minimum three components of the environment. The orientations themself would have arisen from previous interactions and experiences.

4.5 Integration with Social Network and Systems Based Theory

One of the critical objectives for this theoretical framework of micro-level WOM behaviour is to ensure its compatibility with macro-level theory. By integrating this RUT based framework with Social Network Theory (SNT) this objective can be satisfied.

SNT examines how the nature of the relationship between a sender and receiver forms the primary basis for the development of smaller social groups and the larger networks they comprise (Burt, 1980; Granovetter, 1985; Granovetter, 1973, 1982). The two key relationship types suggested in SNT are strong ties and weak ties. Strong tie relationships are characterised by interpersonal contact that is both frequent and personal. Any strong tie relationship held by either member of the initial pair-wise relationship is likely to end up becoming shared by the exchange partner through common contact. Through sequential sharing of strong tie relationships a tight social cluster is formed (Granovetter, 1973, 1982). In contrast, weak tie relationships are characterised by infrequent and often impersonal contact. As a result, a weak tie relationship held by an individual is less likely to end up being shared with that individual's other ties. Weak tie relationships therefore rarely

become part of a sub-group, but instead act as bridges linking the sub-groups of strong ties (Granovetter, 1973, 1982).

The proposed micro-level model posited on RUT permits an extension of SNT. The strength of the relational tie is the primary mechanism used to explain the formation of networks of relationships and the subsequent flow of information. Within the proposed model the strength of the relational tie, with the associated frequency and intimacy of contact between the sender and receiver, can be considered a part of the context for the exchange. This is because it comprises a part of the emotional, psychological, and relational orientation of the sender to the receiver(s). With the strength of the relational tie being a formative component of the orientation of the sender to the receiver it is possible to then specify the rewards (motivation) chosen by senders for that context. This allows the subsequent WOM behaviour to be modelled.

Considering the implications of this for SNT such a theoretical link makes it possible to elaborate on the simple strong and weak tie relational types. That is, strong and weak tie relational types may be further decomposed. By modelling the subsequent probabilities of the individual sender choosing WOM behaviour in various relational contexts it would be possible to incorporate these into probabilistic models of network structure. These probabilistic models would allow researchers to describe the way network structures form in considerably more detail.

The attraction of being able to include individual level behaviour into models of network formation is the capacity to achieve greater understanding of how networks function. From a practitioner's perspective, such understanding can allow them to better utilise networks for the dissemination of information. Indeed it may finally permit managers to achieve a critical mass of information dissemination with *just* the crucial individuals necessary, rather than wastefully disseminating information en-mass.

5. Covering and Assisting: Classes of WOM Arising from this New Model

Having established a general model capable of examining the choice of Word of Mouth (WOM) behaviour given the choice of reward, it is now possible to apply this model to the specific classes of covering and assisting. Application of the model to these classes of WOM allows the examination of the predictive ability of the model and a deeper understanding of the behaviours comprising WOM communication.

For the purposes of this research only the behavioural aspects of the model that address information selection are addressed. This arises from the necessary specification of the rewards sought within the covering and assisting contexts. This chapter draws on the literature outlined in Chapter 3 to explain the specific reward drives that the sender would have selected in these two classes of WOM. This permits the generation of hypotheses regarding the information that would then be selected for communication.

The Assisting and Covering types of WOM have been selected to test this model because of the diverse types of WOM behaviour they represent. Assisting is generally considered in the literature as one of the more common forms of WOM communication behaviour. Covering, in contrast, is far less common and a dysfunctional type of communication behaviour. Many other types of WOM are available to test the general model proposed. These two were chosen simply because they would provide a strong first test and present an interesting addition to present literature. Future research can continue to test the general model with the diverse range of WOM behaviours suggested in the literature.

It is important to note that these two types of WOM are defined primarily by the motivation of the sender towards the receiver, that is, the rewards sought by the sender. Likewise many other types, or examples, of WOM in the literature are

primarily defined by the motivation of, or reward type sought by, the sender (Awad & Ragowsky, 2008; Bäckström & Nel, 2009; Brown & Reingen, 1987; East, Hammond, Lomax, & Robinson, 2005; Feick & Price, 1987; Frenzen & Nakamoto, 1993; Gooding, 1996; Gremler, Gwinner, & Brown, 2001; Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004; Henningsen & Henningsen, 2003; Needham, 2008; Still, Barnes Jr., & Kooyman, 1984; Swanson, Gwinner, Larson, & Janda, 2003; Young, Donald, Freeman, & Benn, 2008). This approach to defining WOM should be treated with caution. The general model proposed suggests that reward selection (motivation) is driven by context, with motivation then driving behaviour. This indicates that classes of WOM should be defined primarily by context, where the WOM process begins. To ensure compatibility with existing literature however, and to offer a first test of the model, this new approach of defining a type of WOM based on context and not the motivation underlying the behaviour will not be undertaken at this stage.

5.1 Assisting in WOM

Assisting in WOM can generally be described as when a sender wishes to act in the best interest of the receiver to the greatest extent possible. This can be considered a weak form of altruism, where helping the receiver is the dominant drive of WOM behaviour. Assisting type behaviour has been identified in a broad range of WOM literatures. Although it is not always regarded as the dominant motivation in individual WOM studies, it can be seen as one of the most consistently identified motivations across literature (Chung, 2007; Dichter, 1966; Gilly, et al., 1998; Phelps, et al., 2004; Roloff, 1981; Rubin & Martin, 1988; Sanders & Walsh, 2009; Walsh, et al., 2004).

Aggregate level WOM theory suggests that assisting is one of the most common forms of WOM. Such positive behaviour is needed for successful ongoing social relations (Granovetter, 1985; Heide & John, 1992; Shapiro, 1987). Without

assisting behaviour it can be seen that the ongoing relationships and the exchanges that arise from such relationships, including WOM, would begin to break down due to mistrust. Without trust of the sender generated from the provision of some form of general assistance there would be no basis on which the receiver could trust the received information. This would reduce the value of the information during the receiver's decision making removing the incentive to maintain the relationship over other more fruitful relationships, hence the relational breakdown. There is therefore an incentive for senders who wish to maintain fruitful relationships to generally assist receivers in WOM communication.

This section demonstrates how assisting behaviour complies with the model proposed in the previous chapters. This is achieved through the discussion of the context and rewards that give rise to assisting. In addition, hypotheses are developed regarding the WOM behaviour that would result in this context.

5.1.1 The Context for Assisting

The context for any WOM exchange can be considered as the initial prompt that compels a sender to choose to pursue WOM rewards and behaviour. Context is best described by the sender's orientation to three main components of the environment: the receiver, the product(s) or issue(s), and themself. The context that gives rise to assisting is also best described in this way.

For assisting type WOM to manifest the context would require a *positive orientation towards the receiver* (Hartman, 1998; Montero, 2008; Slonim & Garbarino, 2008; Young, 2004). It must extend beyond neutrality as the receiver must obtain benefit from the relationship for is to be of assistance; neutrality would offer no cost, but also no benefit. Such a positive orientation would include a generally positive emotional, psychological and relational connection to the receiver. It would most likely be present in situations such as when a sender is

considering communicating with a close friend or family member, or perhaps even a kind stranger.

Assisting type WOM is not defined by the sender's orientation towards the product or issue, or to him or her-self (Barker, 2009; Chung, 2007; Cox & Deck, 2005; Horowitz, et al., 2006; Montero, 2008; Paulsel & Mottet, 2004; Phelps, et al., 2004; Rubin & Martin, 1988; Slonim & Garbarino, 2008). While these two orientations would need to be considered present in all assisting contexts, the average orientation across individuals would be *neutral towards both the product or issue, and to themself.* This neutrality should be considered a general omission of consideration. It represents indifference, as opposed to a positive or negative orientation. An example of such an omission would be where the sender has no particular like or dislike of a particular product but is considering communicating about it because of its fit with the receiver.

Further definition of the context that gives rise to assisting is not necessary. Numerous exchange situations would be expected to conform to this contextual definition. With the context described it is now possible to consider the rewards that arise in such a context.

5.1.2 Reward Selection for Assisting

Assisting type WOM is most readily defined by the rewards sought by the sender. As such the rewards are defined a-priori as those that give rise to the assisting type of WOM. Assisting type WOM is characterised by a desire to offer genuine help to the receiver. In a context where the orientation towards the receiver is paramount the rewards arising from the receiver would be of primary interest to the sender, and thus have high utility. Other reward types would have comparatively low, to no, utility for the sender on average.

The rewards that arise from the receiver are able to be decomposed into two components, as described in the model: the *quality of receiver's decision outcome* (λ_{1a}) and the *receiver's satisfaction with the purchase decision* (λ_{1b}). With a positive orientation towards the receiver the sender would derive most utility from positively affecting both the quality of the receiver's decisions, and the receiver's satisfaction with that decision.

The rewards that arise from the product or issue, and the sender themself can also be decomposed into several components: the *observed (purchase) outcome for the product* (λ_{2a}) and *the product representative's satisfaction* (λ_{2b}); and, for those from the sender him or her-self, the *impact of the communication on the sender's own future decision making ability* (λ_3). As the sender has a neutral orientation towards the product there would be no regard placed on either the observed outcome for the product or the product representative's satisfaction. These rewards would have no utility for the sender (on average) and would not be pursued. Likewise the sender would place no regard on the impact of the communication on their own future decision making ability. This is not to say that the sender would deliberately sacrifice their own decision making, but simply that on average the sender would not consider the impact, paying no attention to whether it is positive or negative.

Based on these assertions the systematic component of utility of rewards for assisting can be expressed as a linear additive combination of the individual rewards. Within this function the betas for λ_{1a} and λ_{1b} are both large and positive values, and all other beta values approach zero ($\lambda_{2a,}\lambda_{2a}$ and λ_3). The systematic component of the utility of the sender's rewards for communicating (V_{iq}) can therefore be expressed as:

$$
\begin{aligned}
V_{iq(assist)} &= B_0 + (+B_{1a})\lambda_{1a} + (+B_{1b})\lambda_{1b} + (0)\lambda_{2a} + (0)\lambda_{2b} + (0)\lambda_3 \\
&= B_0 + (+B_{1a})\lambda_{1a} + (+B_{1b})\lambda_{1b}
\end{aligned}
\tag{11}
$$

with the sender pursuing this reward combination as it would maximise his or her utility for this communication context.

5.1.3 Hypothesised Behaviour for Assisting

With the context and resulting rewards for assisting type WOM established, it is possible to consider the WOM behaviour that the sender would choose to manifest. Due to the need for simplicity with the implementation of the experimental procedure, the choice of information is considered the main experimental manipulation. The selection of receiver and medium is then considered as a moderator of that choice. The hypotheses developed reflect this experimental procedure. The reasoning behind this simplification is elaborated upon in the following chapter.

5.1.3.1 Information Selection

The primary behaviour of interest is the type of information the sender would choose to communicate in response to the reward drives for assisting. Starting with information only, it is possible to explain the systematic component of the utility of the sender's choice of WOM behaviour (V_{kq}) as a linear additive function of the characteristics of the information available.

$$V_{kq(assist)} = \beta_0 + \beta_1 T_1 + \beta_2 T_2 + \beta_3 T_3 + \beta_4 T_4 + \beta_5 T_5 \tag{12}$$

where T_1 is the *relative importance of the attribute that the information concerns*, T_2 is the *impact of the information on preference variance through (dis)confirmation*, T_3 is the *certainty with which the information is to be communicated*, T_4 is the *economic value of the information*, and T_5 is the *referential ambiguity of the language employed*.

With this function in place, the hypothesised value of the coefficients for each information characteristic can be considered. As stated, the reward for the sender arises from the receiver making a quality decision and being satisfied with that decision. As a result information that is of greatest *assistance* to the receiver's decision making would be prioritised for communication. Such assistance would help permit this quality decision to be made and subsequent satisfaction felt.

The first information characteristic considered is the *relative importance of the attribute that the information concerns* (T_1). This characteristic has attracted prior research interest and it has been noted that individuals typically prioritise the acquisition of information that concerns the most important product attributes (Bettman, 1979; Frenzen & Nakamoto, 1993; Gilly, et al., 1998; Herr, et al., 1991; Rogers, 1995). This is a logical behaviour for the receiver as information is of interest primarily due to its diagnostic properties that assist in decision making (Louviere, et al., 2000; Meyer, 1981; Meyer & Sathi, 1985; Rogers, 1995; Saad, 1999). Gaining such diagnostic information for the most important attributes of the product helps to ensure that decisions are suitably based on the most important parts of the product. It is clearly of interest to examine this information characteristic from the sender's perspective using the proposed model.

Little research has considered this information characteristic from the perspective of the sender. There are some initial indications that the importance of the attribute the information concerns is used by the sender when determining what information to communicate (Greenacre, 2005). Applying this information characteristic to the context where assisting type WOM is present requires consideration of the rewards driving the selection of behaviour. The first reward drive present in this context arises from the sender's desire to see the *receiver make a decision of high quality*. Drawing on the decision making literature it can be seen that information that permits differentiation among the product alternatives on the most *important* dimensions is most assistance to the receiver (Bettman, 1979; Greenacre, et al.,

2006; Saad, 1999; Saad & Russo, 1996). This suggests that when trying to assist the receiver by improving their decision quality, the sender would be expected to communicate information that concerns attributes that are generally considered important.

The second reward drive present in assisting type WOM arises from the sender's desire to see the receiver being *satisfied with their purchase decision.* This reward drive is closely related to decision quality. While decision quality is an objective evaluation of purchase outcome, satisfaction is a subjective evaluation of quality by the receiver. It relies on the receiver being able to select the product most suited to their preferences (Diehl & Poynor, 2010; Mao & Oppewal, 2010; Mittal, et al., 1999). The sender communicating information regarding the most important product attributes would allow the receiver to improve the match between their preferences and the product selected based on the most critical aspects of the product. Combining this insight with the previous insight regarding decision quality leads to the development of hypothesis one.

> *Hypothesis 1: When assisting the receiver, the sender is more likely to communicate information that concerns a relatively important attribute than information that concerns a relatively unimportant attribute.*

The second information characteristic considered is the *impact of the information on preference variance through (dis)confirmation* (T_2). Consumer decision making literature has largely seen the role of information as informing consumers about product features and ensuring they make correct decisions given their preferences (Bettman, 1979). More recent work has placed an increasing value on understanding how information can also serve to make people more certain in their preferences (Allenby & Rossi, 1999; Erdem & Keane, 1996). Information that confirms existing preferences increases the certainty a consumer feels during decision making (Dhar, 1997; Guzman & Kolstad, 2007). It is reasonable to assert

that with increases in certainty a decision maker would experience lower preference variance during decision making, thereby making choices easier and delaying deferral (Dhar, 1997; Kingsley & Brown, 2010; Meyer & Sathi, 1985). Disconfirming information has the opposite effect, i.e. increasing uncertainty and making a decision task more difficult. This important role of information has only just begun to garner attention in the WOM literature (Greenacre, 2005).

There is considerable opportunity for this information attribute to be used by a sender seeking reward from improving a receiver's *decision quality*. By communicating information that tends to confirm commonly held knowledge about the product, or, if possible, by confirming knowledge specifically known to be held by the receiver, the sender would be able to reduce the receiver's preference variance (Dhar, 1997; Guzman & Kolstad, 2007; Kingsley & Brown, 2010; Meyer & Sathi, 1985). While the effect of this on objective decision quality has not been readily considered in literature it can be reasoned that confirmation allows the decision maker to better match their preferences to the available product alternatives (Delquié, 2008). This offers them the opportunity to find the 'best' fitting product for their preferences.

Impact of the information on preference variance through (dis)confirmation is also likely to be considered when the sender is pursuing rewards arising from improving a *receiver's decision satisfaction*. By increasing the receiver's certainty through communicating confirming information, the sender reduces the receiver's need to exert effort by making inferences, making the decision making process easier and more satisfying (Dhar, 1997; Mao & Oppewal, 2010). Furthermore, by reducing the receiver's need to rely on inferences, the probability of the receiver better matching their product choice to their preference is markedly improved. This results in the development of hypotheses two.

Hypothesis 2: When assisting the receiver, the sender is more likely to communicate information that confirms the receiver's knowledge than information that disconfirms the receiver's knowledge.

The third information characteristic proposed is the *certainty with which the information is to be communicated* (T_3). Beyond literature in linguistics examining how uncertainty is generated in language, this characteristic has received almost no attention in the communication literature (Fetzer, 2008; Greenacre, 2005). The interest in including this characteristic arises from earlier research suggesting its possible role in the sender's decision to communicate information (Greenacre, 2005).

Reflecting on the sender's desire to assist the receiver to obtain a *quality decision outcome,* such a characteristic can play an important role. While communicating information in an uncertain manner can be considered a function of the sender actually being uncertain, such communication can also serve a manipulative purpose on the part of the sender. By manipulating expressed certainty, the sender can influence how diagnostic the information is for the receiver consumer. Information that is expressed in a less certain manner would be less helpful to a receiver than if it were expressed with certainty. By making the facts in the information uncertain and thus probabilistic in nature the information would be less likely to decrease the variability in a receiver consumer's preferences. Because of this effect a sender wishing to assist the receiver would be expected to choose to communicate information in a more certain manner. Upon reflecting on the sender's motivation to see the receiver make a *satisfying purchase decision* this effect becomes even more likely. By communicating information in a certain manner the information is more diagnostic, and, as previously noted, would allow the receiver consumer to better match their product choice to their preferences. Based on these expectations hypothesis three is developed.

Hypothesis 3: When assisting the receiver, the sender is more likely to communicate information that is expressed with certainty than information that is expressed with uncertainty.

The fourth characteristic of information considered in this research is the *economic value of the information* (T_4). It has been noted in the literature that information of economic value tends to be communicated by WOM (Frenzen, 1995; Frenzen & Nakamoto, 1993). In addition it has been found that information that contains facts with direct economic benefits, such as the availability of a cheaper price, are of great benefit to a consumer compared to information that does not contain such facts. Such facts offer marked improvements in value received from a transaction (Sahlins, 1972; Williamson, 1985). While this area of WOM research is underdeveloped it does provide a basis on which to develop a hypothesis regarding sender behaviour.

With the sender's pursuit of rewards gained by maximising the receiver's *decision quality* it can be seen that the economic value of communicated information is likely to play a role. Information that contains facts of high economic value would allow the receiver to make the best financial decision on a purchase occasion (Sahlins, 1972; Williamson, 1985). Upon receipt of this information the receiver would be able to make informed trade-offs between price based attributes and other relevant attributes (Meyer, 1981). Thus it would be expected that a sender wishing to assist the receiver is likely to communicate information of greater economic value than information of lesser economic value.

Such an effect is even more likely with the sender's pursuit of rewards that arise from the receiver's *decision satisfaction*. A receiver consumer would be expected to achieve a much more satisfying decision outcome if they are able to obtain greater economic value than they otherwise could have (Hilton, 1981; Hume & Mort, 2008). By saving the receiver money, or at least allowing them to make better

informed price trade-offs, the sender can achieve the maximum benefit and subsequent satisfaction. A sender wishing to assist the receiver would thus be considered highly likely to communicate information of higher economic value when assisting. This leads to the development of hypothesis four.

Hypothesis 4: When assisting the receiver, the sender is more likely to communicate information that is of greater economic value than information of lesser economic value.

The fifth and final information characteristic considered is the *referential ambiguity of the language employed* (T_5). Such referential ambiguity refers to the use of terminology that is (in)consistent with previous conversations or other conversation standards (Metzing & Brennan, 2003; Shintel & Keysar, 2007). Although it has never been considered in interpersonal communication literature, the linguistics literature offers unique insights into how such referential ambiguity is achieved (Irmen, 2007; Nieuwland, Otten, & Van Berkum, 2007; Papadoppulou & Clahsen, 2006; Serratrice, 2008). This characteristic is particularly interesting due to the contrast of assisting and covering type behaviours in this research.

The potential use of the referential ambiguity characteristic within the context of assisting is relatively clear based on the largely manipulative role it would play. For a sender deriving rewards from the receiver having higher *decision quality*, offering previously identified helpful information in the most understandable manner would be expected to be desirable. By using terminology that is consistent with previous communication situations, the sender can improve comprehension of information, allowing it to be more effectively used to improve decisions (Irmen, 2007; Metzing & Brennan, 2003; Shintel & Keysar, 2007).

The reward arising from *sender satisfaction* would also be expected to result in similar information choices regarding this attribute. By choosing to communicate

information in an unambiguous way, there would be substantial reductions in confusion and subsequent task complexity (Irmen, 2007). This would likely make the purchase process considerably more enjoyable for the receiver, thus increasing satisfaction. Furthermore, the improvements in communication clarity would be expected to allow the receiver to use the information to achieve a greater match between their product choice and preferences, resulting in improved purchase satisfaction. Based on these expectations hypothesis five is developed.

Hypothesis 5: When assisting the receiver, the sender is more likely to communicate information that contains terms consistent with previous communications (unambiguous) than information that uses inconsistent terms (ambiguous).

Drawing on these research hypotheses it is now possible to explore the type of information that a sender would choose to communicate as a part of their WOM behaviour when assisting. Other aspects of WOM behaviour that may be chosen can now be considered.

5.1.3.2 The Receiver in Assisting

Receiver selection is a critical aspect of the sender's decisions regarding the type of WOM behaviour to exhibit in pursuit of their chosen rewards. Due to the nature of assisting type WOM, some of these behaviours are actually held constant as they form a component of the definition of assisting, or they are not directly relevant to the research at hand. This section considers the role of the receiver characteristics in the sender's decision to communicate.

Beyond the information being communicated, the second most critical component of WOM behaviour is receiver selection. The characteristics of the *receiver* employed in the model of the sender's decision to communicate are *gender* (R_1) and

likeability (R_2). Starting with likeability of the receiver, it can be seen that within assisting type WOM the general likeability of the receiver must be positive (specified as equal to 1 in equation 13). That is, the sender would choose a likeable receiver by definition. This is due to the contextual requirement of a positive orientation towards the receiver within assisting. For this reason, the likeability of the receiver is held constant in a likeable state for this part of the research.

Turning to the other characteristic of the receiver, *gender* may also play a considerable role in determining the WOM behaviour exhibited by the sender (Greenacre, et al., 2006). Although previous research has identified that gender can have an impact on WOM behaviour, especially for the receiver, no research has considered the impact of the gender of the receiver on the decision to communicate by the sender (Awad & Ragowsky, 2008; Barker, 2009; Kirlidog, et al., 2009; Swanson, et al., 2003).

Due to the nature of the experimental design employed it is not possible to directly examine a sender's decisions regarding which receiver to communicate with. Further details of this experimental procedure can be found in the following chapter. Instead the moderating effect of the gender of the receiver on information selection is examined across individuals. The resulting effect of this on the functional expression of the sender's systematic component of utility for the WOM behaviour (V_{kq}) and the choice of information (T_x) is that they are now conditional on the receiver characteristics, such that:

$$V_{kq(assist)} \mid (R_1, R_2 = 1) = \beta_0 + \beta_1 T_1 + \beta_2 T_2 + \beta_3 T_3 + \beta_4 T_4 + \beta_5 T_5 \qquad (13)$$

Research has indicated that female receiver-consumers' purchase decisions can be more greatly influenced by WOM (Awad & Ragowsky, 2008; Kirlidog, et al., 2009). This arises from their greater ability to trust and their stronger use of social interaction within interpersonal processes (Awad & Ragowsky, 2008; Kirlidog, et

al., 2009). Drawing on theses insights, it is possible to see that a sender may have a predisposition to offering greater assistance to a female receiver than to a male receiver. This is because a female receiver is likely to be more welcoming of the information and thus able to put it to greater use. When considered in light of the sender's pursuit of rewards arising from the receiver's *decision quality*, a sender would reasonably expect that a more interactive and trusting female receiver would achieve a higher quality decision outcome than a less interactive and trusting male receiver. The ability to put the information to greater use as a result of trust and interaction is also likely to result in the receiver obtaining a better match between their purchase outcome and preferences. The resulting *satisfaction felt by the receiver* from this match would offer the sender the opportunity to obtain the reward arising from this satisfaction. Thus the sender would be more likely to communicate information that is of assistance to a female receiver than a male receiver. In this circumstance, the assisting information has been specified within hypotheses 1 though 5. This results in hypothesis six.

Hypothesis 6: The sender is more likely to communicate information that is assisting in nature to a female receiver than a male receiver.

This hypothesis offers first insight into the impact of gender on the information chosen by sender's for WOM communication.

5.1.3.2 The Medium in Assisting

The final component of WOM behaviour is the sender's selection of the medium. The model proposes two characteristics that a sender may use when determining the medium to communicate with as a part of his or her WOM behaviour. These two characteristics are whether the medium is technology mediated or direct interpersonal (S_1), and the medium's ability to communicate to multiple receivers (S_2).

The context of interest for this research is direct interpersonal WOM. As a result medium selection is not the focus of this research. The medium selection aspect of the model was included previously as it was necessary to consider the full range of components that served as a minimum in a full model of WOM behaviour choice on the part of the sender. This is due to the relative neglect of this area of WOM research.

As a consequence of this contextual specification, for this research the sender's choice of whether the communication is *technology mediated or direct interpersonal (S₁)* is held constant at direct interpersonal. This allows interpersonal WOM to be explored in this circumstance. Due to the nature of the experimental procedure employed this research also only uses a single receiver per respondent. As a consequence, whether the medium type has the ability *to be used to communicate to multiple receivers* or not (S_2) is held constant at a single receiver. To allow a fair comparison of both covering and assisting on the remaining dimensions these constants are maintained for both. Exploration of medium choice on the part of the sender therefore remains an exciting opportunity for future research.

5.2 Covering in WOM

Covering type WOM has not previously been considered in the literature. Drawing on the Opportunism, Moral Hazard and Machiavellian literatures it can be defined as when a sender wishes to be seen in a positive light by the receiver, but does *not* wish to be of assistance to them (DePaulo & Rosenthal, 1979; Geiss & Moon, 1981; Gurtman, 1992; Thepaut, 2007). In simplest terms it can be considered as a mechanism used by a sender when he or she wants to be seen to be nice, but in fact is working against the receiver. Similar behaviour has been noted in the communication literature and is often described as a sender acting with guile

towards a receiver (Heide & John, 1992). Examples of this type of behaviour include: when a person deceives fellow shoppers about an upcoming sale for a limited product to improve their chances of obtaining the product themself; when a consumer recommends against others purchasing a product to maintain its exclusivity and status, which can often be seen in music consumption within the Indie genre where general social acceptance of a song is undesirable; where the consumption of a product or service is of greatest value when few people consumer it, such as a quiet hiking trail that becomes less attractive when there are too many people hiking on it; when a person simply doesn't like the person they are communicating with, but must appear to be helpful, such as in a workplace; among others.

This section introduces this behaviour, and elaborates on the contexts that give rise to its occurrence. The rewards a sender chooses in this context are then discussed, and the WOM behaviour that may then be chosen as a result is hypothesised.

Covering can be considered an atypical form of WOM communication. As previously described, covering behaviour is likely to result in eventual relationship breakdown due to the sender's apparent dislike for the receiver (Granovetter, 1985; Heide & John, 1992; Shapiro, 1987). It must be noted though that this behaviour, while atypical, would still be expected to occur. The receiver's lack of knowledge of the sender's guile would ensure that the ongoing relationship is not overly damaged in the short term. That being said the relationship would likely still be terminated when the sender ceases to have use for it (Thepaut, 2007; Wangenheim, 2004). It is this feature that allows the behaviour to manifest in real situations, making it relevant to research.

Considering the likely implication of this type of WOM to advancing our understanding of WOM in general, there are a number of factors to consider. The fact that this type of WOM forms an exception to what would be commonly

expected presents a unique test for the proposed framework. The ability to accommodate seemingly exceptional behaviour would demonstrate model robustness. In addition, while as an individual level behaviour its status as an atypical behaviour lowers research interest, its potential role in aggregate level WOM models may prove important (Burt, 1982, 2008; Frenzen & Nakamoto, 1993; Granovetter, 1982; Marsden & Lin, 1982). The occurrence of atypical WOM behaviours at critical connections in a broader WOM network may result in vastly different outcomes for the network as a whole (Burt, 1982, 2008; Frenzen & Nakamoto, 1993; Granovetter, 1982; Marsden & Lin, 1982). This type of structural effect of atypical behaviour would be important even if the typical behaviour within the network remains as assisting type WOM (Granovetter, 1982). This re-invigorates the interest in atypical WOM behaviours, such as covering, due to their future potential with aggregate level research.

5.2.1 The Context for Covering

The context for covering type WOM is best described by the sender's orientation to the three central parts of the environment: the receiver, the product(s) or issue(s), and themself; much the same as it was for assisting type WOM. Within the proposed model it is this context that prompts the sender to seek specific types of rewards from WOM exchanges, forming the motivation for their WOM behaviour.

For covering type WOM to manifest the context would require a *negative orientation towards the receiver* (DePaulo & Rosenthal, 1979; Geiss & Moon, 1981; Gurtman, 1992; Thepaut, 2007). Such a negative orientation would include a largely negative emotional, psychological and relational connection to the receiver. This type of orientation likely manifests in situations where the sender is to potentially communicate with a person for whom they have no affinity, or even abjectly do not like.

In addition to this negative orientation towards the receiver, literature suggests that there would also need to be a *positive orientation of the sender towards him or her-self* (Geiss & Moon, 1981; Thepaut, 2007). A positive orientation would be present in situations where the sender is generally obliged to be self serving, in contrast to a more neutral orientation in assisting, wherein they do not consider their own needs or even are willing to sacrifice their own needs.

Within covering, the product itself is not an important part of the context. Therefore the average orientation across individual senders would be *neutral towards the product or issue*. A neutral orientation does not imply any form of negative orientation, but a general absence of consideration on the part of the sender.

This specific combination of orientations manifests the reward drives that are emblematic of covering. A work environment would be the most relatable example of when a covering context would be present. A sender may be forced by organisational structure to regularly communicate with receiver colleagues to whom they have a negative orientation. In such a work environment a positive orientation towards the self is also necessary to protect one's own employment or workplace status.

5.2.2 Reward Selection for Covering

Within the proposed model, the definition of covering type WOM is primarily established through the rewards that the sender seeks from communication. Much like assisting type WOM, the rewards pursued by the sender are therefore established a-priori as a part of the definition of covering type WOM. The rewards sought in covering type WOM are, by definition, derived entirely from the receiver, and the sender him or her-self. This is due to the importance of the contextual orientation of the sender to these parts of the WOM environment.

The rewards that the sender would pursue can be decomposed into three components: the *quality of receiver's decision outcome* (λ_{1a}) and the *receiver's satisfaction with the purchase decision* (λ_{1b}), both of which arise from the receiver, as well as the *impact of the communication on the sender's own future decision making ability* (λ_3), which arises from the sender. Other reward types are of no utility to the sender in this context on average and thus are not considered.

With the negative orientation towards the receiver being one of the primary contextual components, the sender would derive utility from negatively affecting the receiver's decision quality (Geiss & Moon, 1981; Thepaut, 2007). This presents one of the main reward drives for the sender. This reward drive must be balanced with the sender's desire to protect their own future decision making ability, which comprise one of the other major reward drives (Thepaut, 2007; Wilson, et al., 1998). As a result, the sender is seeking the dual outcome of *negatively influencing the quality of the receiver's decision outcome* (λ_{1a}) while simultaneously *positively influencing their own future decision making ability* (λ_3).

The apparent exception to the sender's desire to negatively influence the receiver is that the sender would seek to influence the receiver so they *positively influence their purchase satisfaction* (λ_{1b}). This apparent exception arises from the rewards sought from the protection of future decision making. If the receiver was to become unsatisfied with their purchase then the receiver would likely be unhelpful towards the sender in return during future WOM exchanges, resulting in a negative influence on the sender's future decision making.

Based on this reward specification, the systematic component of utility of rewards for covering can be expressed as a linear additive combination of the individual rewards sought. Within this function the beta coefficients for λ_{1a} are large and negative, and the beta coefficients for λ_{1b} and λ_3 are large and positive. The beta value for λ_{2a} and λ_{2b} approach zero as they are of little to no utility for the sender.

The systematic component of the utility of the sender's rewards for communicating (V_{iq}) can therefore be expressed as:

$$V_{iq(cover)} = B_0 + (-B_{1a})\lambda_{1a} + (+B_{1b})\lambda_{1b} + (0)\lambda_{2b} + (0)\lambda_{2b} + (+B_3)\lambda_3$$
$$= B_0 + (-B_{1a})\lambda_{1a} + (+B_{1b})\lambda_{1b} + (+B_3)\lambda_3 \tag{14}$$

This presents a interesting amalgam of sought rewards. It is this reward combination that is the key characteristic of covering type WOM.

5.2.3 Hypothesised Behaviour for Covering

Having defined the rewards that a sender seeks during covering type WOM the resulting behaviours that a sender would exhibit can be considered. Due to the need to simplify the experimental procedure the choice of information is the primary behaviour examined, much like with assisting. The choice of receiver and medium is treated as a moderator of the choice of information. The hypotheses developed reflect this approach to examining the behaviour exhibited during covering. The reasons behind this simplification are elaborated upon in the following chapter.

5.2.3.1 Information Selection

To build a model of the selection of information it is necessary to specify the functional form that the systematic component of the utility of behaviour takes. In this circumstance it can be stated that the systematic component of the utility of the sender's choice of WOM behaviour (V_{kq}) is a linear additive function of the characteristics of the information available.

$$V_{kq(cover)} = \beta_0 + \beta_1 T_1 + \beta_2 T_2 + \beta_3 T_3 + \beta_4 T_4 + \beta_5 T_5 \tag{15}$$

where T_1 is the *relative importance of the attribute that the information concerns*, T_2 is the *impact of the information on preference variance through (dis)confirmation*, T_3 is the *certainty with which the information is to be communicated*, T_4 is the *economic value of the information*, and T_5 is the *referential ambiguity of the language employed*. With this function in place, hypotheses are developed regarding the type of information that would have the highest utility for the sender when covering.

It is now possible to turn to the first information characteristic, the *relative importance of the attribute the information concerns* (T_1). For a sender wishing to acquire the rewards that arise from the *receiver achieving a low quality decision outcome*, the initial expectation would be that he or she would choose to communicate information concerning less important attributes. Such communication would ensure that the disliked receiver is less informed about the product dimensions being considered except for those that are relatively unimportant (Louviere, et al., 2000; Meyer, 1981; Meyer & Sathi, 1985; Rogers, 1995; Saad, 1999). This would afford the receiver little diagnostic ability when comparing alternatives. However, the apparently contrasting other reward drives also need to be considered.

The sender's rewards arising from *protecting their own future decision making ability* through giving *the receiver a satisfying decision outcome* dictates that any attempt to inhibit the receiver's decision making must be done in a covert fashion (Heide & John, 1992). For a highly uninformed receiver the sender may be able to communicate information concerning relatively unimportant product attributes. But it is reasonable for a sender to assume that in most exchange situations a receiver would be at least relatively informed about a product they are considering purchasing (Bettman, 1979; Kivetz & Simonson, 2000). Thus there is a strong chance that the communication of information concerning less important product attributes may be detected either during communication, during decision making, or

after decision making. This detection would result in receiver This is likely to lead to future retaliation by the receiver with them actively trying to negatively influence the sender's decision outcomes (Bunker & Ball, 2008; Cox & Deck, 2005; Fehr & Schmidt, 2003; Stern, 1994). Due to this need for covert action by the sender hypothesis seven was developed.

> *Hypothesis 7: When covering, the sender is more likely to communicate information that concerns a relatively important attribute than information that concerns a relatively unimportant attribute.*

The second information characteristic to consider is the *impact of the information on preference variance through (dis)confirmation* (T_2). With the sender wishing to influence the receiver such that they would achieve a *lower quality decision outcome*, it is clear that they are incentivised to provide information with the least use for the receiver. It has been found that information communication is primarily undertaken to inform consumers about product features so as to help ensure they make correct decisions given their preference, and to increase their certainty when making decisions (Allenby & Rossi, 1999; Bettman, 1979; Erdem & Keane, 1996; Kivetz & Simonson, 2000). Information that confirms existing preferences should provide this certainty, as previously discussed for assisting (Dhar, 1997; Guzman & Kolstad, 2007; Kingsley & Brown, 2010; Meyer & Sathi, 1985). As a result, confirming information would, on average, be expected to be more useful for a receiver. Considering this in light of the sought reward of *lowering the receiver's decision quality*, it is expected that the sender would disconfirm existing preferences to increase preference variance, thus hindering receiver decision making.

The communication of information that disconfirms existing preferences is a relatively covert mechanism that the sender may use to negatively influence the receiver. This makes it possible for a sender to obtain rewards from *protecting their*

own future decision making ability through giving *the receiver a satisfying decision outcome* using this same behaviour. Due to the rarer but sometimes necessary need for the sender to give some receivers information that disconfirms their preferences to correct them, it would be difficult for a receiver to detect the sender's negative intentions (Bohlmann & Qualls, 2001; Smith & Hunt, 1987). This allows the sender to seemingly cover their negative intentions towards the receiver. The simultaneous achievement of all rewards would offer the sender the greatest utility, resulting in hypothesis eight.

Hypothesis 8: When covering, the sender is more likely to communicate information that disconfirms the receiver's knowledge than information that confirms the receiver's knowledge.

The third information characteristic to examine is the *certainty with which the information is to be communicated* (T_3). Information certainty generally refers to the addition of phrases that indicate the information being communicated is probabilistic in nature (Colson, 2005; Early, 2003; Fetzer, 2008). For a sender seeking the reward that arises from the receiver obtaining a *low quality decision outcome*, this information characteristic has considerable potential. Information that is communicated in an uncertain manner would generally be less diagnostic for a receiver than the same information communicated with certainty. Indeed, this is likely to result in the receiver having to expend more effort collecting information to triangulate the facts. Thus when covering, it is expected that the sender would communicate information in an uncertain manner.

This expectation is further reinforced when the other rewards sought by the sender are considered. The communication of information in an uncertain manner is a relatively covert mechanism to negatively influence the receiver. It is easily misattributed to the sender actually being uncertain about the facts, rather than simply being manipulative (Geiss & Moon, 1981; Greenacre, 2005; Greenacre, et

al., 2006; Schweitzer & Hsee, 2002). It is thus possible for a sender to attain the rewards from *protecting their own future decision making ability* through giving *the receiver a satisfying decision outcome*. The receiver can feel overall satisfaction with the information communication process as they would have obtained information of some use. This information would also have helped them achieve a better match between their preferences and chosen product than if no communication had taken place. However, the sender could have helped more by expressing that information with certainty. Based on this, hypothesis nine is developed.

Hypothesis 9: When covering, the sender is more likely to communicate information that is expressed with uncertainty than information that is expressed with certainty.

The fourth information characteristic used in this research is the *economic value of the information* (T_4). The economic value of information is the extent to which the information contains facts of immediate economic impact, such as information about price discounts (Frenzen & Nakamoto, 1993; Sahlins, 1972; Williamson, 1985). This characteristic is interesting to consider for a sender seeking reward from *lowering the decision quality for the receiver*. Information containing facts of high economic value are clearly desirable to the receiver (Hilton, 1981; Hume & Mort, 2008). They provide a receiver the opportunity to save money, and also allow them to make better informed trade-offs between price and other attributes. It is expected that a sender wishing to inhibit receiver decision making would provide information of low economic value.

There is an apparent conflict between this reward drive and the other rewards arising from a sender *protecting their own future decision making ability* through *giving the receiver a satisfying decision outcome*. Communication of facts of low economic value is a highly overt act on the part of the sender. It is difficult to

obscure the intention of withholding information of economic value, except through a potential claim of ignorance. Due to the fact that the sender is likely to be a relative expert in the area, such a claim is unlikely to be believed by the receiver. Even if the receiver is to believe the sender's supposed good intentions initially, the loss of economic value would likely be detected either during or after decision making as the receiver interacts further with the product. Such losses would lead the receiver to be dissatisfied and may lead to retaliation during future WOM exchanges (Bunker & Ball, 2008; Cox & Deck, 2005; Fehr & Schmidt, 2003; Hilton, 1981; Hume & Mort, 2008; Kuang & Moser, 2009). The sender is thus unlikely to communicate information of low economic value for fear of being detected and subsequently sacrificing rewards arising from protecting their own future decision making ability through giving the receiver a satisfying decision outcome. This results in the development of hypothesis ten.

Hypothesis 10: When covering, the sender is more likely to communicate information that is of greater economic value than information of lesser economic value.

The final information characteristic considered is the *referential ambiguity of the language employed (T_5)*. Referential ambiguity refers to whether the terminology used in the information is (in)consistent with previous conversations or general conversation standards (Metzing & Brennan, 2003; Shintel & Keysar, 2007). For a sender seeking a reward arising from the *receiver achieving a low quality decision outcome* this attribute could play a major role. By using terminology that is inconsistent with previous communications the sender would be able to confuse the receiver considerably (Keysar, et al., 2001; Metzing & Brennan, 2003; Shintel & Keysar, 2007; Snow, 2010). Even information that would be of assistance would be more difficult to understand if phrased in an unfamiliar way.

However, there is a difficulty with asserting that the sender would use ambiguous terminology as it is again a very overt action. The other rewards arising from the *sender protecting their own future decision making ability* through *giving the receiver a satisfying decision outcome* would be difficult to obtain if ambiguous terminology was used. This is because the receiver would easily detect that the sender is attempting to obfuscate the communication as it is easy to compare the present communication behaviour to prior communication incidences. Upon detection the receiver would likely suspect that the sender was attempting to confuse them to lower their decision quality leading them to be dissatisfied. In turn they would retaliate in future WOM exchanges by negatively influencing the sender's future decision making (Bunker & Ball, 2008; Cox & Deck, 2005; Fehr & Schmidt, 2003; Kuang & Moser, 2009). Based on the sender's need to also satisfy all three reward drives to the greatest extent possible hypothesis eleven is developed.

> *Hypothesis 11: When covering, the sender is more likely to communicate information that contains terms consistent with previous communications (unambiguous) than information that uses inconsistent terms (ambiguous).*

Using these research hypotheses the general nature of the information communicated during covering type WOM can be examined.

5.2.3.2 The Receiver in Covering

The selection of the receiver is another one of the three critical components of the sender's decisions regarding their WOM behaviour. Much like assisting type WOM, covering type WOM partially defines the nature of the receiver that would be selected in this context. This section examines the two receiver characteristics proposed in this research: *gender* (R_1) and *likeability* (R_2). These two characteristics

allow further understanding of both the definition of covering type WOM and the behaviour that is expected within covering type WOM.

Considering the likeability of the receiver first, it can be seen that within covering type WOM the likeability of the receiver must be negative. That is, the receiver must be *dislikeable*. It is a definitional feature of covering type WOM, therefore this decision on the part of the sender can be established a priori. The reason for this is that there is a contextual requirement for the sender to have a negative orientation towards the receiver (Geiss & Moon, 1981; Thepaut, 2007). As a result, this characteristic of the receiver is held constant at dislikeable within the experimental method employed. This is established with R_2 being equal to -1 in equation 16.

The other receiver characteristic of *gender* can also be examined. As a result of the experimental procedure, to be described in the next chapter, it is not possible to directly examine the choice of receiver by the sender. Consequently, the gender of the receiver is treated as a moderator of information choice on the part of the sender. Owing to the decision to treat gender as a moderator of information choice, the systematic component of utility for the sender's WOM behaviour (V_{kq}) and the choice of information (T_x) is now conditional on the receiver characteristics, such that:

$$V_{kq(cover)} \mid (R_1, R_2 = -1) = \beta_0 + \beta_1 T_1 + \beta_2 T_2 + \beta_3 T_3 + \beta_4 T_4 + \beta_5 T_5 \qquad (16)$$

As established in the previous section, a sender is expected to communicate information with helpful characteristics to cover their hurtful intentions. Helpful information is hypothesised to concern important product attributes (T_1), to have greater economic value (T_4), and to use referentially unambiguous terminology (T_5). It is possible to examine the moderating role of the receiver's gender across all of these as they are all considered to be overt characteristics of information.

Research indicates that the decisions of female receiver-consumers are more influenced by WOM due to their greater trust in and use of social interaction processes (Awad & Ragowsky, 2008; Kirlidog, et al., 2009). It is therefore possible to infer that a sender would offer greater assistance to males than to females as males would utilise this helpful information less. In contrast, females would likely make good use of any helpful information provided, leading the sender to provide as little helpful information as possible. Such behaviour would provide the sender with greatest utility from the rewards arising from *protecting their own future decision making ability* through *giving the receiver a satisfying decision outcome*, while still ensuring the *receiver achieved a low quality decision outcome*. Based on this reasoning hypothesis twelve is developed.

Hypothesis 12: When covering, the sender is more likely to communicate information that is intended to be helpful in nature to a male receiver than a female receiver.

It has been previously hypothesised that the sender would use two of the information characteristics to choose information that would provide the rewards from giving the *receiver a low quality decision outcome*. These two information characteristics are the *certainty with which the information is to be communicated* (T_3) and the *economic value of the information* (T_4). For each of these characteristics respectively the sender is hypothesised to communicate information in an uncertain manner and information that is of low economic value. As both of these characteristics are being used in a harmful manner against the receiver they can be considered together when examining the potential moderating effect of receiver's gender.

Drawing on the same research on the impact of gender on information use it can be seen that females are likely to be more negatively influenced through WOM. This is due to their trust in and use of interpersonal communication (Awad & Ragowsky,

2008; Kirlidog, et al., 2009). As such, female receivers would be an easier target for covering type WOM compared to males. A sender seeking to obtain the rewards arising from ensuring the *receiver achieved a low quality decision outcome* would therefore target females. Meanwhile, the naturally covert nature of this covering type WOM still allows the sender to ensure they obtain the rewards form *protecting their own future decision making ability* through *giving the receiver a satisfying decision outcome*. Indeed, a female receiver is likely to obtain a more satisfying purchase outcome due to the trust in the information and belief that they have the best match between their preference and product choice. This results in hypothesis thirteen.

> *Hypothesis 13: When covering, the sender is more likely to communicate information that is intended to be hurtful in nature to a female receiver than a male receiver.*

It is important to note that the results for hypothesis 12 and 13 would be inextricably linked. When examined closely they are simply the opposites of each other. Two hypotheses have been developed rather than unifying them into a single hypothesis due to the complexity of covering type WOM. Information that is covert in nature would be treated in a negative light to cause harm (i.e. be hurtful), while information with an overt nature would be used to do good (i.e. be helpful). The use of the terminology of helpful and unhelpful information is employed to simplify the integration of the information selection literature and the literature concerning gender differences in WOM.

Using these hypotheses it is possible to understand the role that the characteristics of the receiver have in the sender's WOM behaviour.

5.2.3.2 The Medium in Covering

The last of the three critical components of WOM behaviour is the selection of the medium. The model developed in this research suggests two characteristics of the medium that the sender would use when choosing the medium with which to communicate. These characteristics are whether the medium is technology mediated or direct interpersonal (S_1), and the medium's ability to communicate to multiple receivers (S_2).

As previously described for assisting, the context for this research is only concerned with direct interpersonal type WOM. Consequently, the characteristic of the whether the medium is either *technology mediated or direct interpersonal (S_1)* is held constant at direct interpersonal.

The other characteristic of the medium is its *ability to be used to communicate to multiple receivers (S_2)*. As is discussed in the coming chapter, due to the nature of the experimental procedure being employed only a single receiver is able to be examined by a sender. As a result of this methodological necessity this characteristic is held constant at only single receiver communication.

Drawing on the hypotheses developed for both assisting and covering type WOM it is now possible to investigate what WOM behaviour a sender would choose to exhibit in each case. This offers new insights into the functioning of WOM and allows for a greater understanding of interpersonal communication processes.

6. Research Method

Having established the hypotheses for this research in the previous chapters, it is now necessary to consider the methodological approach to test these hypotheses. This section introduces an *online* choice based experimental approach to be employed in the study. Included are details of the experiment and the reasoning behind it, the pre-testing phases necessary for the success of the experiment, along with details regarding the research subjects and analysis plan.

Choice based experiments provide considerable insight into WOM phenomenon not possible with other methods. Some researchers consider experimental methods to offer too narrow a view of WOM phenomenon, with concerns that they may lack external validity (East, 2007). However, if carefully applied, experimental methods can offer considerable insight when examining even the most complex behaviours. There are three primary reasons that a choice experiment was chosen over other, more traditional WOM research methodologies. The first is that the outputs of this method are the choice probabilities of specific WOM behaviours. These choice probabilities have the potential to be used in future research as input to aggregate level methods, such as agent based modelling, thereby bridging individual and aggregate level methods.

The second reason for the use of a choice based experiment arises from the need to observe not just the WOM behaviour chosen, but also the behaviours that are not chosen. One of the criticisms of only employing direct observation of WOM phenomenon is that it is exceptionally difficult to observe communication break downs (Dempsey, 2010; East, 2007; Fay, Page, Serfaty, Tai, & Winkler, 2008). If a communication breakdown occurs, the WOM network tends to self terminate, thus limiting the ability to investigate the type of information that is not being communicated effectively (Bush & Tiwana, 2005; Cruz & Fill, 2008; Fay, et al., 2008). This creates a success bias in natural observation which is not present in

experimentation. Information that continues on to be communicated successfully as well as information which ultimately proves unsuccessful can be investigated in experimentation, allowing for new insights into the WOM phenomenon.

The final reason for the selection of a choice based methodology is that it does not require the respondents to reflect on their own behaviour like other methods. Research has indicated that respondents are quite poor at reflecting on their own communication behaviour (Dempsey, 2010; East, 2007). Accommodating this likely problem is even more important within a WOM research context. Often people misattribute the source of WOM information that they have received to social phenomenon such as 'general knowledge' (Dempsey, 2010; Young, et al., 2008). Choice based experiments overcome limitations that may arise from respondents being unaware of, or having misperceptions regarding their own behaviour. It is for these reasons that this methodological approach has been selected.

6.1 The Experimental Instrument and Research Design

The *online* instrument, as the respondent saw it, was composed of four sections. The respondent, acting as a sender of information, first saw a fictitious newspaper article providing general information about a product, followed by a recording by a paid actor requesting WOM information, a choice experiment where the sender subject chooses what to communicate to the actor, and finally a series of demographic and psychographic questions. The manipulations within the experiment were undertaken both within and across respondents to provide the data required to test the research hypotheses.

6.1.1 The Introduction and Fictitious Newspaper Article

The introductory section of the instrument provided respondents with a brief overview of the experiment about to be undertaken. An explanation of choice based experimental tasks was then provided as many respondents may not have been as familiar with this type of response task. To comply with ethics requirements an overview of the research objectives was provided, however the intended comparison between likeable and dislikeable receivers was not disclosed to prevent any response bias. Active consent for this research was obtained for all respondents

After these instructions respondents were provided a fictitious newspaper article to read concerning a particular product. The article was designed so as to offer the appearance of a scanned article clipped from a newspaper. The newspaper article provided information about a particular fictitious product to establish a baseline of product preferences on the part of the sender. The subject was told that this newspaper article had been widely read and the information it contained about the product was now common knowledge. This established a set of knowledge that the receiver in the instrument would also have. The effect of the article was to remove any potential biasing effect from personal preference or historical experience that may have arisen from the use of a product actually available on the market. The pre-testing of the newspaper articles was undertaken in conjunction with the information the subject was able to choose to communicate to the receiver. This is discussed further in the following section. The text for the newspaper articles is provided in Appendices C, D, E and F.

To ensure that the newspaper article had been read properly, respondents were asked a question regarding a specific attribute of the product, the answer of which came from the article. The question was always asked about an attribute that was not used in any part of the research task to remove any potential effects arising from the increased attention that this verification procedure may cause. Failure to answer

the question or answering the question incorrectly prevented the respondent from proceeding with the survey, until they had changed their response to the correct answer. The intended effect of this was to ensure that the respondent had paid attention to the newspaper article and was actively engaged with the experimental instrument.

Four products were tested in this research including a home delivery service for local restaurants, a holiday package, laundry detergent and a personal computer. These were chosen as they provided a combination of high and low involvement products and services offering generalisability to the research. In addition, prior research had used some of these products allowing for some insight into how pre-testing may best proceed (Greenacre, 2005). Each subject only completed the survey for one product with the entire experiment being replicated within each product category.

6.1.2 The Request from the Actor-Receiver

After the respondent had read the newspaper article they were prompted to listen to an audio file that contained a request from an actor-receiver for WOM help. An actor was used for this request to allow for the manipulation of their (dis)likability, as required for the examination of assisting and covering type WOM. Two actors were used, one male and one female, each recording a likeable and dislikeable version of the request for WOM help. The scripts used by the actors for the likeable and dislikeable manipulations had minor differences to reflect the different approaches to the relationship.

The context chosen for the relationship was that of a workplace. This was because the manipulation of communication motivation was possible in this context. Respondents are likely to have worked with colleagues that they have liked and others they have disliked, thus offering a relatable situation in the task. This offers

more external validity to the application of covering type WOM. The script reflected this contextual choice. There are numerous other contexts in which both assisting and covering type WOM may arise. For example, covering is likely to occur in market situations in which product supply is low for an 'exclusive' product. The workplace context was adopted over this type of context because a workplace has many norms for acceptable behaviour that would encourage the respondent to act in a reasonable manner, thus reducing experimental error.

The likeable script began with the actor congratulating the respondent for doing a good job on a recent work project, "Hi, I just wanted to call you up because I heard about your work on the Forbin job, congratulations, I heard you did some great work on it."; while the dislikeable script began with the actor chastising the respondent for doing a bad job on that project, "Hi, I just wanted to call you up because I heard about your work on the Forbin job, ouch, you really stuffed everyone there on that one didn't you. Ah well, as long you don't do it again I suppose." Following this manipulating the actor made a request for advice specific to the product category. This request for advice was the same for both the likeable and dislikeable manipulations. The full scripts for the recordings can be found in Appendix A.

An audio only request was chosen to reduce the number of covariates that may be introduced with the use of video. With the use of video the respondent may consider the looks and behaviour of the actor over the intended research manipulations. Using this type of receiver prompted WOM exchange allows for adequate manipulation of receiver characteristics. Research has also indicated that prompted WOM exchanges are typically more impactful on receivers, and are thus of considerable research interest (East, Hammond, Lomax, & Robinson, 2005).

To assist with the realism of the audio request it was presented as a telephone call from a work colleague in an adjacent department. This limits the context to be primarily a weak tie type relationship. This is suitable for the purposes of this

research as this research is only attempting to provide evidence that the underlying theory and method developed here are able to capture communication behaviour. However, there are also strong theoretical grounds to suggest that weak tie relationships should be the focus of a greater amount of research. Weak tie relationships are the main mechanism by which information reaches the most diverse areas of a network (Granovetter, 1985). Strong tie relationships tend to only communicate information within a core cluster of individuals, and not to the broader network. Thus gaining insight into how weak tie relationships operate gives us insight into how the broader network will function (Granovetter, 1985). With the underlying theory and method tested in this research, future research can consider strong tie relationships also, providing an even greater account of network function.

A caller ID graphic accompanied the audio file describing this colleague based relationship. The caller ID image also included fictitious personal notes that were implied to have been written by the respondent him or her-self. These personal notes had annotations regarding the (dis)likeability of the person helping to re-enforce the experimental manipulation. The notes specifically mentioned" the nature of the relationship, for example "senior supervisory role, but not in charge of me"; the (dis)likeability of the person, for example "NOT [capitalisation used in text] a nice person at all, do not like her"; that the relationship was a weak but relevant relational tie, for example "only know in passing but seems to talk to my boss a bit"; and a notation about the large geographic distance present in the relationship to assist re-enforce that it is a weak tie, for example "Don't see them much, is located in a building down the road".

Each audio file was pre-tested to ensure that the intended manipulations were present and to identify any potentially unwanted covariates that may have been accidentally introduced. The pre-testing involved three phases. The first phase had fellow researchers qualitatively evaluating the audio recordings. Two researchers were used for each recording. The researchers rated the recordings on a number of

interpersonal dimensions, with emphasis placed on the two key target variables of 'friendliness' and 'likeability'. The suitability of the recordings was then discussed in a semi structured interview. This semi-structured interview was the basis of the analysis, with the academics' opinions of the success of the manipulation and any potential source of confounds or problems highlighted. Following this, a quantitative survey phase using just the interpersonal ratings was conducted using a small sample of different academics. A third quantitative survey phase was then employed using a larger sample of respondents from the same list provider that provided the main research sample. For the quantitative survey phases observation of the frequencies and independence samples t-tests were conducted between the manipulations to confirm that respondents were rating the audio requests differently, and that the difference was in line with the intended manipulations. The male voice actor was successfully pre-tested for both the likeable and dislikeable manipulations across all four product contexts. The first female voice actor tested proved unsuccessful due to an apparent 'sexiness' of her voice that confused the (dis)likeable manipulation. A second female voice actor was successfully pre-tested after this. Full details of this pre-testing process including the scripts used by the actors can be found in Appendix A.

To ensure that respondents listened to the audio request a spoken password was attached to the end of the file. The password needed to be selected by the respondent from a list of possible passwords before they were able to proceed to the next screen of the experiment. Failure to choose the correct password resulted in the screen reloading until the correct password was chosen. This security measure was undertaken to ensure that the respondent had listened to the audio request in full prior to proceeding with the experiment. The password was always an animal name, such as 'bird', that had no relation to the experiment, and was not relayed by the actor in order to maintain the realism of the actor-receiver's request for WOM help. Instead a mechanical sounding computer generated voice was used for the password.

6.1.3 The Choice Task: Information to Communicate to the Receiver

Having listened to the request for help from the actor-receiver the respondent then chose the information to communicate to the actor-receiver. The choice task involved the selection of a statement from a list of pre-designed statements. Each statement was designed to manipulate the characteristics of the information contained within them to provide insight into which characteristics the sender-respondents were using to inform their choices.

In line with the research hypotheses, five information characteristics were manipulated within the statements. These characteristics were: the relative importance of the attribute that the information concerns (T_1), manipulated by changing the product attribute referred to in the statements; the impact of the information on preference variance through (dis)confirmation (T_2), manipulated by either confirming or disconfirming one of the facts established in the fictitious newspaper article in the experiment regarding the previous product attribute; the certainty with which the information was communicated (T_3), manipulated through the inclusion or omission of a qualifier such as 'I think' at the start of the statement; the economic value of the information (T_4), manipulated by including or omitting a direct reference to a monetary benefit to the receiver from having the information such as 'you could save $100'; and, the referential ambiguity of the language employed (T_5), manipulated through the use of terminology that is inconsistent with the language norms established in the fictitious newspaper article at the start of the experiment. Each characteristic had two levels each, taking reasonable extremes of the scale implied for the characteristic.

To arrange the characteristics and levels into the statements a half fractional factorial design was used. In total 16 statements were needed for each product

category. A fractional factorial was chosen over a full factorial as it reduced the choice task to a reasonable size while still retaining statistical efficiency. The fractional factorial correlates the higher order interactions (the three, four and five way interactions) with the lower order interactions (two way interactions) and main effects to reduce the number of statements included in the experiment. This design assumes that higher order interactions have no significant effect (Louviere, et al., 2000). It is reasonable to make this assumption as it has been noted that main effects typically account for 70 to 90 per cent of variance and two way interactions typically account for 5 to 15 per cent of variance in linear models (Louviere, et al., 2000). The fractional factorial design used can be found in Appendix B with the resulting statement sets for each product category found in Appendices C, D, E and F.

Each statement was pre-tested to ensure that the information characteristics intended were actually contained in the statements. This was especially important as some information characteristics were relative to the information contained in the newspaper article supplied earlier in the experiment. The pre-testing of the statements involved first using existing literature to identify more and less important product features for each product category. Then the statements were written regarding these product features in line with the experimental design using the intuition of the researcher. A Delphi type study using academics was initially undertaken (Linstone & Turoff, 1975). This study prompted the academics to decide whether each statement was the high or low level for each of the information characteristics and discuss the reasons behind their decisions. This allowed the language features that generated the information manipulations to be identified. If any problems were found with the manipulations they were corrected at this stage.

Following this Delphi study a choice experiment was undertaken using a small sample of respondents from the sample panel provider as used for the main experiment. This choice experiment organised the statements into sets of three and

prompted respondents to choose which statement most conformed to the high level of each information characteristic. The choice frequencies allowed the statements to be sorted for each information characteristic. Higher choice frequency indicated that respondents considered it to be the 'higher' level of the information characteristic, with lower choice frequency indicating the 'lower' level. This provided a basis on which to evaluate the performance of each statement on each information characteristic. Several rounds were used for each set of statements with them refined at each round. Full details of this pre-testing can be found in Appendix G.

To complete the development of the choice task in the main experiment the statements were arranged into choice sets using a Balanced Incomplete Block Design (BIBD) (Kuehl, 2000). The BIBD used can be found in Appendix H. The advantage of such designs is that they do not require all combinations of all the possible statements to be shown to the respondent. This made the size of the experimental task much more reasonable for respondents. The BIBD used resulted in four statements being included in each choice set, with each respondent completing twenty sets in total. Each statement occurred four times across the design with each statement pair occurring once.

Rather than having respondents indicate only the statement they would most likely choose to communicate, they were asked to indicate statements they were most likely, least likely, and second most likely to communicate. This provided a full rank ordering of the statements for each choice set. The effect of this decision is that the existing 20 choice sets could be exploded into multiple choice sets providing substantially more data for estimation purposes. Research has indicated that this type of best worst method for data collection provides substantial improvements in model estimation with only marginal increases in task complexity (Ben-Akiva, Morikawa, & Shiroishi, 1991; Bradley & Daly, 1994; Chapman & Staelin, 1982; Hausman & Ruud, 1987). The order of the choice sets was also randomised for all respondents to minimise order effects.

6.1.4 Demographic and Psychographic Measures

In addition to the core choice based experiment, a number of other measures were included in the research instrument. Basic demographic characteristics of the respondent were incorporated into the survey, as well as a five point three-item measure of the respondent's opinion leadership.

Previous research has indicated that the perceived demographic or psychographic homophily, or similarity between the sender and receiver, may impact WOM communication behaviour (Brown & Reingen, 1987; Gilly, et al., 1998). To accommodate this potential effect the sender was prompted to rate their perceived similarity with the actor-receiver for a range of lifestyle and behavioural characteristics.

Supplementary measures of the actor-receiver manipulations were also included. Respondents were prompted to indicate the age of the actor-receiver, the cultural background, along with a range of rating based relational indicators. These relational indicators included a scale for the respondent's perceptions of the actor-receiver's (dis)likeability. These measures were included as backup in case the primary manipulations failed in some way.

A sample copy of one research instrument can be found in appendix I. An online demonstration version that includes the audio and other components of the survey can also be viewed at: http://www.surveygizmo.com/s/196630/understanding-conversations-duma-copy-for-sample.

6.2 Summary of the Research Design

The primary choice task involved the research subject choosing statements to communicate to an actor-receiver. The statements were characterised using five

information attributes each with two levels. These statements were designed using a half fractional design resulting sixteen statements. The sixteen statements were arranged into twenty choice sets using a Balanced Incomplete Block Design (BIBD). Each choice set is composed of four statements, with each statement occurring four times across the design and each statement pair occurring only once.

The choice task was repeated for each type of receiver. The receiver was characterised using two attributes both with two levels each. Based on a full factorial this resulted in four types of receiver. Each respondent was exposed only to a single actor-receiver, with receiver type varied across subjects. This varying across subjects in effect relegates the choice of receiver component of sender WOM behaviour to a moderator on information choice. Making the receiver characteristics a moderator of choice was necessary to reduce the choice task to a reasonable size.

The entire choice experiment was then replicated across four product categories with each respondent only undertaking the experiment for one. This offers a degree of generalisability to the research results. The accommodation of various receiver types and product categories resulted in 16 survey instruments being employed.

6.3 Subjects

The subjects used for this research were recruited through a list company. The Sydney based company engaged maintains a list of respondents from around Australia for research purposes. The privacy and ethics standards of this company complied with the requirements established for this research.

To incentivise participation the list company paid respondents between $5 and $10 to complete the survey instrument. Respondents were not specified to fit into any particular demographic or psychographic groups. The only restrictions imposed on participation were that the respondents were over 18 years of age and not be employed in the same industry as the product context in the research instrument.

The restriction was imposed for ethics reasons and to minimise any effect of respondent expertise on the choice of information to communicate.

Respondents were restricted from undertaking the survey for more than one product category or with more than one receiver type. This minimises any potential learning effects that may bias the results. Subjects were randomly assigned to a particular survey using a randomly ordered request to participate by the list company.

The research instruments were made active in phases over a two week period. Generally only four instruments were active at any given period. The instruments were rolled out in this manner to allow for data validation to occur throughout. To minimise any effects that may have arisen from patterns in responses as a function of recruitment timing the survey instruments were released in a random order.

The choice of such a broad sample frame was to offer the greatest generalisability of the research results. An overview of the sample characteristics is provided in the results chapter.

6.4 Analysis Plan

The initial model proposed in this research was a Linear Probability Model (hereafter, 'LPM') employing Ordinary Least Squares procedures. Although helpful during hypothesis development; it proved to be inadequate for final analysis. To this end a more advanced form of this model is proposed for estimation.

Three main concerns regarding features of the choice based data led to the decision to use a more advanced model form. These are: the likely presence of some preference heterogeneity, within subject heterogeneity arising from the best/worst task, and across subject scale heterogeneity. Preference heterogeneity refers to the differences in the underlying preference function and subsequent choice behaviour

by each respondent (Adamowicz, et al., 2008). As a number of possible utility functions may be present in the sample individual level models are necessary (Adamowicz, et al., 2008; Flynn, 2010).

Advancing on the problem of preference heterogeneity is the possible presence of within subject heterogeneity arising from the best/worst task. A highly un-researched phenomenon in applications of best/worst procedures is that the choice process employed by respondents to select the best object in the choice set may not be the same process as that for the worst (Adamowicz, et al., 2008). Such a problem would be compounded within full rank ordered choice tasks where a 'second best' or 'second worst' object may also be indicated, as is the case with this research. If such a problem existed this would present a situation in which at least two model forms were present in the data, one for best and another for worst, and possibly more for second best/worst, etc. Any single model attempting to fit this data without accommodating this phenomenon would likely fit the data poorly. It should also be noted that any explosion process employed for this data could serve to magnify this problem.

To overcome these first two issues an individual level Feasible Generalised Least Squares Regression (hereafter, 'FGLS') model is proposed. The FGLS model uses the estimated choice probabilities from an LPM to calculate the variance in the predicted y so that these may then be used as weights in a weighted least squares model of the same functional form as the LPM (Baum, 2006). It is expected that this would accommodate any within subject scale heterogeneity arising from the best/worst task and subsequent data explosion process. This permits the underlying preference structure reflected in both the best and worst data points to be more accurately identified.

Taking the original LPM functional form:

$$P(y = 1|X)_{iq} = \beta_{0q} + \beta_{1q}x_1 + \beta_{q2}x_2 \dots + \delta_{ir} \tag{17}$$

$$\hat{y}_{iq\ OLS} = \beta_{0q} + \beta_{1q}x_1 + \beta_{2q}x_2 \dots + \delta_{ir}$$

where the choice probability (estimated as $\hat{y}$) of an object i given the characteristics of the object X for person q is equal to some linear function of those individual characteristics. Included in the model are the choice sets r effects coded into the parameters δ_{ir} to remove any set specific effects.

When transformed into the FGLS the functional form includes the variance in the predicted y from the above OLS as the weighting term $\hat{h}$ for each person q for each object i such that (Priemaza, 2010):

$$\hat{h}_{iq} = \hat{y}_{iq\ OLS}(1 - \hat{y}_{iq\ OLS}) \tag{18}$$

This presents the final FGLS functional form with $\hat{h}_{iq}$ now represented as a weight employed during estimation (Hill, 2010):

$$\hat{y}_{iq\ FGLS} = \beta_{0q}\frac{1}{\hat{h}_{iq}} + \beta_{1q}\frac{x_1}{\hat{h}_{iq}} + \beta_{2q}\frac{x_2}{\hat{h}_{iq}} \dots + \frac{\delta_{ir}}{\hat{h}_{iq}} \tag{19}$$

Using this FGLS the probability of choosing object i from j alternatives is expressed as:

$$P_{iq} = \frac{\exp(\hat{y}_{iq\ FGLS})}{\sum_{j=1}^{j}\exp(\hat{y}_{jq\ FGLS})} \tag{20}$$

In this probability calculation the parameter for δ_{ir} is not included as can be seen by the omission of its coefficient in equation 19. This is because it is a nuisance parameter intended to clean the remaining equation, not offer predictive power.

The third concern regarding the nature of the choice based data is the possibility of across subject scale heterogeneity (Ebling, Frischknecht, & Louviere, 2010; Fiebig, Keane, Louviere, & Wasi, 2010; Flynn, Louviere, Peters, & Coast, 2010). Scale heterogeneity generally refers to differences in the implied utility scale underlying individual choice behaviour. To accommodate this possible effect a scale factor was introduced to the FGLS model (Ebling, et al., 2010; Frischknecht, 2010). The scale factor used is the Mean Squared Error (MSE) from the individual level OLS. This permits the coefficients in the FGLS to be re-scaled such that:

$$\widehat{\boldsymbol{\beta}}_q = \frac{\beta_q}{\text{MSE}_q} \tag{21}$$

The FGLS model specified in equation 19 can therefore be updated to reflect the presence of this scale adjustment factor:

$$\hat{y}_{iq\ FGLSa} = \hat{\beta}_{0q}\frac{1}{\hat{h}_{iq}} + \hat{\beta}_{1q}\frac{x_1}{\hat{h}_{iq}} + \hat{\beta}_{2q}\frac{x_2}{\hat{h}_{iq}} \dots + \frac{\delta_{ir}}{\hat{h}_{iq}} \tag{22}$$

The probability of choosing object i from j alternatives can thus be expressed as:

$$\hat{P}_{iq} = \frac{\exp\left(\hat{y}_{iq\ FGLSa}\right)}{\sum_{j=1}^{j}\exp\left(\hat{y}_{jq\ FGLSa}\right)} \tag{23}$$

This final model form accommodates the three main concerns regarding the choice data. By addressing these concerns a more robust analysis can be undertaken providing a much stronger test of the research hypotheses.

7. Results

To ease the presentation of the results this chapter is divided into several sections: an overview of the sample profile, the data preparation procedure, the models estimated, and finally the testing of the research hypotheses for assisting and covering type WOM. This chapter is then concluded with a broad overview of the research results.

7.1 Sample Profile

In total 21 respondents were collected for each of the 16 surveys. Some oversampling did occur on a number of the surveys; however, any additional responses were randomly removed to retain the balance in response rates across the surveys. Although not necessarily a large estimation problem, such oversampling may raise concerns of response bias regarding across subject manipulations. The total final sample size for this research is thus 336 responses.

From Table 1 it can be seen that women are slightly underrepresented in the sample when compared to the population of the state of New South Wales in Australia, the primary location from which the sample was drawn (ABS, 2010). Despite this slight overrepresentation there is still a broad enough gender mix in the sample for the purposes of this research. Within the covering manipulation females are also slightly over-represented, however, suitable gender variation is present for this research.

Table 1: Respondent Gender

	Sample Frequency	Sample Percent	Assisting Frequency	Covering Frequency	NSW Percent 2010
Female	202	60.1	82	120	50.4
Male	134	39.9	86	48	49.6
Total	336	100.0	168	168	100.0

Examining Table 2 it can be seen that there is broad range of age groups represented in the sample. Although the younger age groups are slightly overrepresented compared to the population of New South Wales it is within acceptable levels for this research (ABS, 2010).

Table 2: Respondent Age

	Frequency	**Percent**	**NSW Percent 2010**
18 to 24 years	54	16.1	12.9
25 to 34 years	104	31.0	18.6
35 to 44 years	78	23.2	18.1
45 to 54 years	49	14.6	17.6
55 years or older	51	15.2	32.9
Total	336	100.0	100.0

Turning finally to Table 3 it can be seen that a relatively broad range of occupations and industry groups are present in the sample. Respondents who are unemployed, homemakers or retired, and those who have an unspecified employment status do make up the larger proportion of the sample. Despite this overrepresentation a broad range of other individuals are still present easing concerns over the presence of any possible sample bias. In addition, as this research is concerned only with WOM behaviour in generic product categories the occupation of the respondents is expected to be of little impact.

Table 3: Respondent Employment Status

	Frequency	Percent
Unemployed/Retired/Homemaker	68	20.2
Other Employment status	49	14.6
Administration/Clerical/Reception	30	8.9
Accounting/Finance/Banking	26	7.7
Science/Technology/Programming	26	7.7
Education	24	7.1
Student	22	6.5
Health Care (Physical and Mental)	15	4.5
Construction	11	3.3
Sales/Marketing	11	3.3
Customer Service	10	3.0
Restaurant/Food service	6	1.8
Consulting	5	1.5
Distribution	5	1.5
Production	4	1.2
Architecture/ Design	3	0.9
Arts/Leisure/Entertainment	3	0.9
Human resources management	3	0.9
Management (Senior/Corporate)	3	0.9
Operations/Logistics	3	0.9
News/Information	2	0.6
Research	2	0.6
Social service	2	0.6
Advertising/PR	1	0.3
Beauty/Fashion	1	0.3
Real Estate	1	0.3
Total	336	100.0

The characteristics of the sample collected are suitable for the purposes of this research. In general a broad cross section of the general community is present allowing for the generalisation of results back to general human behaviour. This permits conclusions to be made about 'common' interpersonal communication behaviour.

7.2 Data Preparation

Prior to estimation, the choice based data were expanded using an explosion process (Chapman & Staelin, 1982). An implied full rank order was obtained for each choice set using a sequential best/worst task. To make use of this data, implied choice sets were extrapolated from each existing choice set (Chapman & Staelin, 1982). These implied choice sets were every pair-wise combination of statement from each original choice set. The statement in each pair with the highest rank order as stated in the original choice set was marked as that chosen by the respondent. This explosion procedure turned the existing 20 choice sets of four statements each into 120 choice sets of two statements each. A spreadsheet illustrating this process is available upon request.

The data may have been exploded in a number of other ways. The pair-wise explosion was used in this case as it provided the most statistical information from the data collected. Pair-wise explosion also retains the original balance of the design with each statement still occurring an equal number of times and each pair of statements occurring an equal number of times (Chapman & Staelin, 1982).

The coding system employed for the information characteristics was based on the fractional factorial design employed. The coding system can be seen in Table 4.

Table 4: Coding for the Information Characteristics

	Level 1		Level 2	
	Description	**Code**	**Description**	**Code**
The relative importance of the attribute the information concerns (T_1)	Unimportant	-1	Important	+1
The impact of the information on preference variance through (dis)confirmation (T_2)	Confirms	-1	Disconfirms	+1
The certainty with which the information is to be communicated (T_3)	Uncertain	-1	Certain	+1
The economic value of the information (T_4)	Valueless	-1	Valuable	+1
The referential ambiguity of the language employed (T_5)	Unambiguous	-1	Ambiguous	+1

Although the two way interactions between the information characteristics are able to be estimated based on the fractional factorial design these have not been included in the proposed models. This is because there is no theoretical foundation for their inclusion at this time. Future research may consider possible interactions.

All estimation of models was undertaken using the software package SPSS Statistics v17.0.

7.3 Modelling Sender behaviour for WOM

As an individual level modelling approach was used within this research 336 models were estimated, one for each respondent. To examine whether the individual level scale adjusted FGLS models were appropriate, the within sample prediction of the most likely statement to be chosen was observed. The prediction was undertaken for the statements within the choice sets as shown to the respondents. This was necessary as such a modelling approach has never been used before.

Previously the FGLS model has only been used to address across subject heterogeneity in classic econometric methods (Hill, 2010; Priemaza, 2010). A summary of this prediction test can be seen in Figure 2.
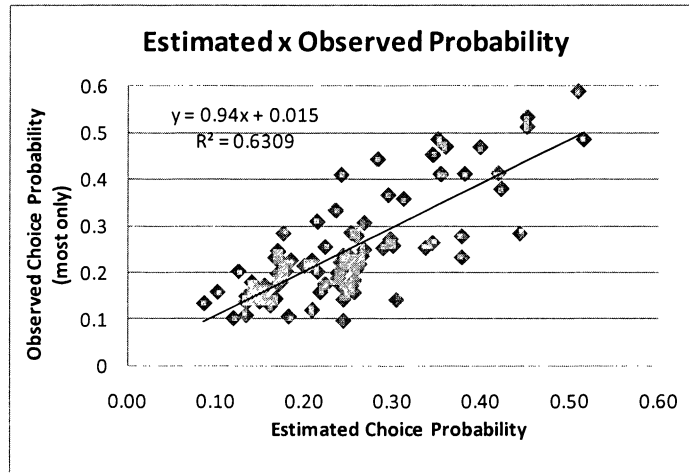
Figure 2: Estimated vs Observed Probability

From Figure 2 it can be seen that the models predict well. The slope of the relationship between the observed and predicted values approaches one and the intercept also approaches zero. The correlation between the estimated and observed probability is 0.79 supporting the adequacy of the models.

To allow for the examination of the research hypotheses these individual models were aggregated into four general models, two for the assisting type WOM and two for covering. Within these two types of WOM the gender of the receiver actor was varied. The aggregation involved the averaging of the individual level coefficients. The t-statistics were then calculated using the standard error of that average. The aggregate results can be seen in Table 5.

Table 5: Aggregate of the Individual level FGLS Model Results

	Assisting (Likeable Approach)				Covering (Dislikeable Approach)			
	Male Receiver		Female R.		Male R.		Female R.	
	$\hat{\beta}$	t-stat	$\hat{\beta}$	t-stat	$\hat{\beta}$	t-stat	$\hat{\beta}$	t-stat
Attribute Importance (T_1)	0.946	3.506	0.203	1.010	0.293	1.141	0.321	1.734
Preference Variance (T_2)	-2.352	-4.792	-2.342	-5.522	-1.604	-3.445	-1.382	-3.600
Certainty Expressed (T_3)	0.519	2.032	-0.001	-0.011	-0.219	-1.208	-0.351	-2.165
Economic Value (T_4)	-0.894	-3.258	-0.891	-3.976	-0.885	-5.049	-0.984	-4.493
Referential Ambiguity (T_5)	-0.303	-2.160	-0.253	-2.272	-0.159	-1.304	-0.226	-1.825

With these aggregate level results in place the research hypotheses can now be considered.

7.4 Assisting Type WOM

For assisting type WOM the context for the sender is best described by their positive orientation towards the receiver. The sender's orientation towards him or her-self, and to the product or issue being discussed are not critical parts of the context. As previously discussed, based on this context the sender would seek rewards arising from both positively influencing the quality of the decision outcome for the receiver (λ_{1a}) and the receiver's satisfaction with that decision (λ_{1b}).

Given these motivations, hypotheses regarding both the information a sender would choose to provide, and the potential moderating role of the type of receiver on this choice were developed. Each of these is addressed in turn in the following section.

7.4.1 Information Choice

The first set of hypotheses considered relates to information selection by the sender. Testing these provides insight into the nature of the information that is typically communicated during assisting type WOM.

> *Hypothesis 1: When assisting the receiver, the sender is more likely to communicate information that concerns a relatively important attribute than information that concerns a relatively unimportant attribute.*

It is expected that if a sender is trying to be of assistance to a WOM receiver they would choose to communicate information that concerns relatively important product attributes. Information regarding the most important attributes would likely improve the receiver's decision quality on the and resulting decision satisfaction (Bettman, 1979; Fasolo, et al., 2007; Frenzen & Nakamoto, 1993; Gilly, et al., 1998; Greenacre, 2005; Greenacre, et al., 2006; Herr, et al., 1991; Rogers, 1995). This would provide the sender with the rewards they are seeking that arise from the receiver.

If this effect was present the value for $\hat{\beta}$ for T_l should be significant and positive in the model for the assisting type. Looking at Table 5 it can be seen that this coefficient is equal to 0.946 and 0.203 with t-statistics of 3.506 and 1.010 for males and females respectively. Thus only males are significantly positive but the generally positive result for both offers *weak support for hypothesis one.*

> *Hypothesis 2: When assisting the receiver, the sender is more likely to communicate information that confirms the receiver's knowledge than information that disconfirms the receiver's knowledge.*

Information that confirms existing beliefs can considerably reduce the variability in a consumer's preferences. Confirmation allows a decision maker to make better decisions as they can rely less on inferences or probabilistic choice that comes with high variability (Allenby & Rossi, 1999; Dhar, 1997; Erdem & Keane, 1996; Greenacre, 2005; Greenacre, et al., 2006; Guzman & Kolstad, 2007). Due to the sender's desire to obtain rewards from a receiver consumer making a good decision, and from their satisfaction with that good decision it was hypothesised that they would prioritise information that confirms existing knowledge about a product.

Based on this hypothesis the values for $\hat{\beta}$ for T_2 would be expected to be negative and significant when assisting. From Table 5 it can be observed that the male and female coefficients are indeed negative with values of -2.352 and -2.342. These are also highly significant, with t=-4.792 and t=-5.522 respectively. This offers *strong support for hypothesis two.*

Hypothesis 3: When assisting the receiver, the sender is more likely to communicate information that is expressed with certainty than information that is expressed with uncertainty.

Drawing on the linguistics literature the impact of expressed certainty on information choice was considered. For a sender seeking rewards from improving the receiver's decision quality and satisfaction it was hypothesised that they would choose to express information in a certain manner. The expressed certainty of the information would make the information more diagnostic for a receiver than information expressed with uncertainty, thereby improving decision making ability of the receiver, as well as allowing for a more satisfactory purchase outcome (Fetzer, 2008; Greenacre, 2005).

If this hypothesis were supported the value for $\hat{\beta}$ for T_3 would be positive and significant. As can be seen from Table 5 the male coefficient can be seen to be

0.519 and significant with t=2.032. The female coefficient is not significant however. This indicates that there is *weak support for hypothesis 3*.

> *Hypothesis 4: When assisting the receiver, the sender is more likely to communicate information that is of greater economic value than information of lesser economic value.*

General economic theory suggests that information containing facts of higher economic value would generally be of more benefit during decision making than information of low value, since it allows a consumer to make better informed tradeoffs. As a result, decision making is improved, and with the chance to obtain better value from a position satisfaction would likewise improve (Frenzen, 1995; Frenzen & Nakamoto, 1993; Hilton, 1981; Hume & Mort, 2008; Sahlins, 1972; Williamson, 1985). For a sender wishing to obtain rewards from offering these benefits to the receiver, it was considered logical that this high value information would be communicated.

Based on this hypothesis the value for $\hat{\beta}$ for T_4 would be expected to be positive and significant. Looking at Table 5 it can be seen that male and female coefficients are highly significant with t=-3.258 and t=-3.976 respectively, but both coefficients are negative with values of -0.894 and -0.891. This offers evidence that *refutes hypothesis 4*.

> *Hypothesis 5: When assisting the receiver, the sender is more likely to communicate information that contains terms consistent with previous communications (unambiguous) than information that uses inconsistent terms (ambiguous).*

The use of terminology is hypothesised to have a large impact on the receiver's comprehension of information. It is expected that a sender would communicate

information that uses terminology consistent with previous communications when assisting. This improved comprehension allows the receiver to put information to better use offering them the chance to improve their decision making and satisfaction with the purchase outcome, both of which provide the sender the rewards they seek from communication when assisting (Irmen, 2007; Metzing & Brennan, 2003; Shintel & Keysar, 2007).

If this effect were present in the model the value for $\hat{\beta}$ for T_5 would be negative and significant. From Table 5 it can be seen that this is the case for both males and females. The male coefficient is -0.303 with t=-2.160, and the female coefficient is -0.253 with t=-2.272. This offers *strong support for hypothesis 5*.

7.4.2 The Moderating Role of the Receiver

For this research only one characteristic of the receiver was considered, his or her gender. In order to test the research hypotheses the coefficients from the male and female receiver models in the assisting type of WOM were compared using independent samples t-tests. These t-tests were undertaken assuming equal variances and utilising the equal sample sizes that arise from the experimental design. The results of these tests can be seen in Table 6.

Table 6: Independent Samples Test Results Across Actor-Receiver Gender for Assisting

	Male Receiver		Female Receiver		Independent Samples Test	
	$\hat{\beta}$	$S_{\hat{\beta}}$	$\hat{\beta}$	$S_{\hat{\beta}}$	$(\hat{\beta}_M - \hat{\beta}_F)$	t-statistic
Attribute Importance (T_1)	0.946	0.270	0.203	0.201	0.743	20.237
Preference Variance (T_2)	-2.352	0.491	-2.342	0.424	-0.011	-0.149
Certainty Expressed (T_3)	0.519	0.256	-0.001	0.163	0.521	15.749
Economic Value (T_4)	-0.894	0.275	-0.891	0.224	-0.003	-0.088
Referential Ambiguity (T_5)	-0.303	0.141	-0.253	0.111	-0.051	-2.605

Using the results from the independent samples t-tests, the moderating role of the actor-receivers gender on the respondent-sender's decisions regarding what to communicate can be examined.

Hypothesis 6: The sender is more likely to communicate information that is assisting in nature to a female receiver than a male receiver.

It was hypothesised that a sender would communicate information of an assisting nature to females more so than to males. Such an effect is expected as females tend to be more trusting and interactive during WOM exchanges (Awad & Ragowsky, 2008; Kirlidog, et al., 2009; Swanson, et al., 2003). A trusting and attentive female receiver is more likely to put this information to better use as a result affording them better decision quality and resulting satisfaction than a male counterpart (Awad & Ragowsky, 2008; Barker, 2009; Kirlidog, et al., 2009; Swanson, et al., 2003). A sender seeking rewards from these would thus prioritise communication to female receivers.

Due to the diversity of results for the information selection component of the model, it is necessary to consider the moderating role of each information characteristic one at a time. This allows for a more in-depth understanding of the results. Hypothesis 6

is thus broken down into individual hypotheses for each information characteristic with each new sub-hypothesis reflecting the original hypothesis.

> *Hypothesis 6a: The sender is more likely to communicate information that that concerns a relatively important attribute (and is thus assisting in nature) to a female receiver than a male receiver.*

Based on this hypothesis a significant difference in the coefficients between the male and female actor-receivers for T_1 would be expected. As seen in Table 6 the difference is 0.743 and is highly significant with t=20.237. This indicates that male actor-receivers are much more likely to receive information concerning important product features than females. This *refutes hypothesis 6a, and offers evidence refuting hypothesis 6.*

> *Hypothesis 6b: The sender is more likely to communicate information that confirms the receiver's knowledge (and is thus assisting in nature) to a female receiver than a male receiver.*

It is expected that there is a difference between male and female actor-receivers on the coefficients for T_2. From Table 6 it can be seen that there is no significant difference in the coefficients with t=-0.149 suggesting that male and female actor-receivers are equally likely to receive information that confirms existing beliefs. This *offers no support for hypothesis 6b, and offers no support for hypothesis 6.*

> *Hypothesis 6c: The sender is more likely to communicate information that is expressed with certainty (and is thus assisting in nature) to a female receiver than a male receiver.*

Based on hypothesis 6c it is expected that there would be a significant difference between male and female actor receivers for T_3. Examining Table 6 this is indeed

the case with t=15.749. Furthermore, based on the mean difference it can be concluded that male actor-receivers are much more likely to receive information expressed in a certain manner. This result provides *strong evidence to refute hypothesis 6c, and further evidence to refute hypothesis 6.*

> *Hypothesis 6d: The sender is more likely to communicate information that that is of greater economic value (and is thus assisting in nature) to a female receiver than a male receiver.*

It is expected from hypothesis 6d that male and female actor receivers would have significantly different coefficients for T_4. From Table 6 it can be seen that this is not the case with t=-0.088. This offers *no support for hypothesis 6d or hypothesis 6.*

> *Hypothesis 6e: The sender is more likely to communicate information that contains terms consistent with previous communications (unambiguous) (and is thus assisting in nature) to a female receiver than a male receiver.*

With regard to hypothesis 6e it is expected that there would be a significant difference in the coefficients for T_5 between male and female actor-receivers. Examining Table 6 it can be seen that this is the case with t=-2.605. The mean difference indicates that male receivers are more likely to have information communicated to them using unambiguous terms than females. This result provides *strong evidence to refute hypothesis 6e, and further evidence to refute hypothesis 6.*

Considering the collective results for hypotheses 6a through 6e it can be seen that the majority of results tend to refute the expectation in hypothesis 6. Instead of senders providing information that is helpful in nature to female receivers, helpful information was prioritised for male receivers. This result is not consistent across all information characteristics resulting in only a *weak refutation of hypothesis 6.*

7.4.3 Overview of Assisting Results

The results for these research hypotheses provide new insights into the sender's
behaviour when undertaking assisting type WOM. The results are summarised in
Table 7.

Table 7: Results for Assisting Type WOM

	Hypothesis	Result
H1	When assisting the receiver, the sender is more likely to communicate information that concerns a relatively important attribute than information that concerns a relatively unimportant attribute	Largely Supported
H2	When assisting the receiver, the sender is more likely to communicate information that confirms the receiver's knowledge than information that disconfirms the receiver's knowledge	Supported
H3	When assisting the receiver, the sender is more likely to communicate information that is expressed with certainty than information that is expressed with uncertainty	Largely Supported
H4	When assisting the receiver, the sender is more likely to communicate information that is of greater economic value than information of lesser economic value	Refuted
H5	When assisting the receiver, the sender is more likely to communicate information that contains terms consistent with previous communications (unambiguous) than information that uses inconsistent terms (ambiguous)	Supported
H6a	The sender is more likely to communicate information that that concerns a relatively important attribute (and is thus assisting in nature) to a female receiver than a male receiver	Refuted
H6b	The sender is more likely to communicate information that confirms the receiver's knowledge (and is thus assisting in nature) to a female receiver than a male receiver	Not Supported
H6c	The sender is more likely to communicate information that is expressed with certainty (and is thus assisting in nature) to a female receiver than a male receiver	Refuted
H6d	The sender is more likely to communicate information that that is of greater economic value (and is thus assisting in nature) to a female receiver than a male receiver	Not Supported
H6e	The sender is more likely to communicate information that contains terms consistent with previous communications (unambiguous) (and is thus assisting in nature) to a female receiver than a male receiver	Refuted
H6	The sender is more likely to communicate information that is assisting in nature to a female receiver than a male receiver	Largely Refuted

With the results for assisting type WOM now complete it is possible to examine Covering type WOM behaviour.

7.5 Covering type WOM

Covering type WOM presents an interesting exception to typical WOM. Within covering type WOM the context is primarily described by the sender's orientation to two components of the environment (DePaulo & Rosenthal, 1979; Geiss & Moon, 1981; Gurtman, 1992; Thepaut, 2007). The first is their negative orientation towards the receiver. As previously discussed, such negative orientation is considered uncharacteristic of a typical WOM environment as it is more likely to result in eventual relationship break down (Granovetter, 1985; Heide & John, 1992; Shapiro, 1987). The second component is the positive orientation of the sender towards him or her-self. This orientation is anticipated to be relatively common in many WOM contexts (Thepaut, 2007; Wilson, et al., 1998). Other environmental components, such as the product or issue being discussed, do not have a specific orientation within covering type WOM (DePaulo & Rosenthal, 1979; Geiss & Moon, 1981; Gurtman, 1992; Thepaut, 2007).

Given these orientations a specific combination of rewards would be sought by the sender. The sender would seek the first reward from seeing that the disliked receiver achieves a low quality decision outcome (λ_{1a}). However, in order to protect their own future decision making ability (λ_3), they would ensure that this is done in a manner in which the receiver still feels satisfied with the decision (λ_{1b}).

Within the framework of these specific motivations, hypotheses regarding the information a sender would choose to communicate, and the moderating role of the type of receiver on this choice were developed.

Table 8: Aggregate of the Individual level FGLS Model Results (Covering Only)

	Covering (Dislikeable Approach)			
	Male Receiver		Female Receiver	
	$\hat{\beta}$	t-stat	$\hat{\beta}$	t-stat
Attribute Importance (T_1)	0.293	1.141	0.321	1.734
Preference Variance (T_2)	-1.604	-3.445	-1.382	-3.600
Certainty Expressed (T_3)	-0.219	-1.208	-0.351	-2.165
Economic Value (T_4)	-0.885	-5.049	-0.984	-4.493
Referential Ambiguity (T_5)	-0.159	-1.304	-0.226	-1.825

Table 8 shows the model results for covering type WOM. These results are an excerpt of Table 5 to ease the testing of the research hypotheses.

7.5.1 Information Choice

The sender's choices regarding the information to communicate to the receiver are considered first. This aims to provide insights into the information that is typically communicated during covering type WOM.

Hypothesis 7: When covering, the sender is more likely to communicate information that concerns a relatively important attribute than information that concerns a relatively unimportant attribute.

If a sender is trying to derive the rewards from covering in WOM they would choose to communicate information about a relatively important product attribute. Although information concerning less important product attributes would be of less help to the receiver such action is easily detected by the receiver leading to considerable dissatisfaction. When detected the receiver is likely to retaliate damaging the sender's future decision making ability (Bettman, 1979; Bunker &

Ball, 2008; Cox & Deck, 2005; Fehr & Schmidt, 2003; Kivetz & Simonson, 2000; Stern, 1994).

If this effect were present then the value for $\hat{\beta}$ for T_1 should be significant and positive. Looking at Table 8 it can be seen that this coefficient is equal to 0.321 for female actor-receivers and significant with t=1.234. In contrast the coefficient for males is not significant. This offers *weak support for hypothesis 7*.

> *Hypothesis 8: When covering, the sender is more likely to communicate information that disconfirms the receiver's knowledge than information that confirms the receiver's knowledge.*

Decision making literature suggests that information that confirms existing beliefs is often of most benefit to a receiver as it decreases their preference variance, making their decision making easier and more accurate (Dhar, 1997; Guzman & Kolstad, 2007; Kingsley & Brown, 2010; Meyer & Sathi, 1985). For a sender wishing to hinder the receiver's ability to reach a quality decision outcome there would obviously be a preference for communicating information that disconfirms knowledge. As this is unlikely to be detected by the receiver it is also unlikely to impact on the sender's future decision making as a result of the receiver retaliating due to their dissatisfaction.

Based on this the value for $\hat{\beta}$ for T_2 is expected to be significant and positive. It can be seen in Table 8 that this coefficient is equal to -1.604 and -1.382 for male and female actor-receivers respectively. In both cases these are significant with t=-3.445 and -3.600. This offers *strong evidence refuting hypothesis 8*.

> *Hypothesis 9: When covering, the sender is more likely to communicate information that is expressed with uncertainty than information that is expressed with certainty.*

It was hypothesised that a sender seeking rewards from negatively impacting the receiver's decision quality would choose to communicate information with uncertainty. Expressed uncertainty makes information less diagnostic for the receiver compared to the same information expressed with certainty (Colson, 2005; Early, 2003; Fetzer, 2008; Geiss & Moon, 1981; Greenacre, 2005; Greenacre, et al., 2006; Schweitzer & Hsee, 2002). As this choice is unlikely to be detected by the receiver it is also unlikely that the receiver would be dissatisfied and retaliate against the sender reducing their future decision making ability.

With this in mind the value for $\hat{\beta}$ for T_3 would be expected to be significant and positive. It can be seen in Table 8 that this coefficient is equal to -0.315 for female actor-receivers and significant with t=-2.165. The coefficient for male actor-receivers however is not significant. This offers *weak support hypothesis 9*.

> *Hypothesis 10: When covering, the sender is more likely to communicate information that is of greater economic value than information of lesser economic value.*

Considering the economic literature again it can be seen that information of high economic value is highly beneficial to a receiver. Economically valuable information allows a receiver to make more informed tradeoffs, thereby improving their decision quality (Frenzen & Nakamoto, 1993; Hilton, 1981; Hume & Mort, 2008; Sahlins, 1972; Williamson, 1985). Even though in covering a sender wishes to lower the receiver's decision quality, if they communicated low value information it is likely to be detected by the receiver. This may lead the receiver to be dissatisfied and act against the sender by negatively impacting their future decisions (Bunker & Ball, 2008; Cox & Deck, 2005; Fehr & Schmidt, 2003; Hilton, 1981; Hume & Mort, 2008; Kuang & Moser, 2009). This is clearly undesirable for

the sender and thus the sender would likely choose to communicate information of higher economic value when covering.

Considering this possible effect it is expected that the value for $\hat{\beta}$ for T_4 would be significant and positive. Looking at Table 8 it can be seen that this coefficient is equal to -0.885 and -0.984 for male and female actor-receivers respectively. In both cases these are significant with t=-5.049 and -4.493. This offers *strong evidence refuting hypothesis 10*.

> *Hypothesis 11: When covering, the sender is more likely to communicate information that contains terms consistent with previous communications (unambiguous) than information that uses inconsistent terms (ambiguous).*

The final information characteristic considered is the consistency of the terminology used. A sender wishing to disrupt a receiver's ability to obtain a high quality decision may use ambiguous terminology, that is, terminology that is inconsistent with previous communication instances (Keysar, et al., 2001; Metzing & Brennan, 2003; Shintel & Keysar, 2007; Snow, 2010). However, this would be easily detected by a receiver leading to possible dissatisfaction with any purchase outcome. The receiver would likely then retaliate against the sender harming their future decision making ability (Bunker & Ball, 2008; Cox & Deck, 2005; Fehr & Schmidt, 2003; Kuang & Moser, 2009). Based on this reasoning it is expected that the sender would send information using terminology consistent with previous communication.

If this effect were present the value for $\hat{\beta}$ for T_5 would be expected to be significant and negative. Turning to Table 8 it can be seen that the coefficients for moth male and female actor-receivers are not significant with t=-1.304 and -1.835. This offers *no support for hypothesis 11*.

7.5.2 The Moderating Role of the Receiver

The possible moderating role of the receiver's characteristics on the sender's choice of information was also considered. This research only considers one characteristic of the receiver at this time, his or her gender. In order to test the research hypotheses the coefficients from the male and female receiver models in the covering type of WOM were compared using independent samples t-tests as they were for assisting type. The results of these tests can be seen in Table 9.

Table 9:

Independent Samples Test Results Across Actor-Receiver Gender for Covering

	Male Receiver		Female Receiver		Independent Samples Test	
	$\widehat{\beta}$	$S_{\widehat{\beta}}$	$\widehat{\beta}$	$S_{\widehat{\beta}}$	$(\widehat{\beta}_M - \widehat{\beta}_F)$	t-statistic
Attribute Importance (T_1)	0.293	0.257	0.321	0.185	-0.028	-0.824
Preference Variance (T_2)	-1.604	0.466	-1.382	0.384	-0.222	-3.371
Certainty Expressed (T_3)	-0.219	0.181	-0.351	0.162	0.132	4.960
Economic Value (T_4)	-0.885	0.175	-0.984	0.219	0.099	3.243
Referential Ambiguity (T_5)	-0.159	0.122	-0.226	0.124	0.066	3.501

Two hypotheses emerged for how the actor-respondent's gender may moderate the choice of information by the sender. In both cases these hypotheses are decomposed into sub-hypotheses to improve the ability to present the results.

Hypothesis 12: When covering, the sender is more likely to communicate information that is intended to be helpful in nature to a male receiver than a female receiver.

Due to the inherent trust females generally place in WOM communication and the greater extent to which they use interpersonal processes, it is likely that any helpful information they receive would be used more by them than male receivers (Awad &

Ragowsky, 2008; Kirlidog, et al., 2009). To a sender seeking rewards from reducing the quality of the receiver's decision this is clearly undesirable, hence any helpful information that would be provided when covering would be more likely to be communicated to a male. Helpful information is only provided to a disliked receiver in the first place as it is too obvious when it is *not* communicated, possibly drawing future retaliation from the dissatisfied receiver (Awad & Ragowsky, 2008; Kirlidog, et al., 2009). Based on the original theoretical framework three types of helpful information would be prioritised when covering, including information concerning important product attributes, information of greater economic value, and information containing terminology consistent with previous communication norms. Sub-hypotheses regarding each of these types of information allows for the testing of hypothesis 12.

> *Hypothesis 12a: When covering, a sender is more likely to communicate information that concerns important product attributes (and thus is intended to be helpful in nature) to a male receiver than a female receiver.*

Considering the role of the receiver's gender, helpful information about important attributes is expected to be targeted at male recipients. Female recipients would use the information to maximise their decision quality better than males, thereby reducing the ability of the sender to obtain their sought rewards from lowering decision quality (Awad & Ragowsky, 2008; Kirlidog, et al., 2009).

If this effect were present a significant difference between male and female actor-receivers in the coefficients for T_1 would be seen. Looking at Table 9 it can be observed that there is no significant difference with t=-0.824. This offers *no support for hypothesis 12a or hypothesis 12.*

Hypothesis 12b: When covering, a sender is more likely to communicate information that is of greater economic value (and thus is intended to be helpful in nature) to a male receiver than a female receiver.

Turning now to the potential moderating role of the receiver's gender on the selection of information that is of greater economic value it is again considered that males would be the more likely recipients of this helpful information. Based on this a significant difference in the coefficients for male and female actor-receivers for T_4 would be expected. Looking at Table 9 it can be seen that such a difference is present with t=3.243. Examining the direction of this difference it is clear that males are more likely to receive information of greater economic value than females. This offers considerable *support for hypothesis 12b and hypothesis 12.*

Hypothesis 12c: When covering, a sender is more likely to communicate information that contains terms consistent with previous communications (unambiguous) (and thus is intended to be helpful in nature) to a male receiver than a female receiver.

The final sub-hypothesis for hypothesis 12 concerns the moderating role of receiver gender on the choice of information that employs terms consistent with previous communications; that is, the ambiguity of the language in the information. It was reasoned that a sender would be more likely to communicate the more helpful unambiguous information to male receivers than to female receivers. If such an effect is present a significant difference between the male and female actor receiver coefficients for T_5 would be seen. Examining Table 9 a significant difference can be observed with t=3.501. Turning now to the nature of that difference it can be seen that females are more likely to receive unambiguous information. This result *refutes hypothesis 12c and hypothesis 12.*

Based on these three sub-hypotheses it can be seen that *collectively there is no evidence to support hypothesis 12*. Due to the non-significance or contradiction of the results it can be generally concluded that of the information chosen for communication that can be considered helpful in nature is prioritised roughly the same for both males and females when covering. Further discussion of this result is undertaken, as this conclusion may be able to be attributed to a misspecification of what information is 'helpful' in the first instance.

Hypothesis 13: When covering, the sender is more likely to communicate information that is intended to be hurtful in nature to a female receiver than a male receiver.

Some information, due to its relatively covert nature, is used by the sender to obtain the rewards from lowering the receiver's decision quality. The covert nature of the information lessens the sender's fears of detection, thus allowing them to pursue rewards from protecting their own decision making by giving the receiver a seemingly satisfying decision outcome (Bunker & Ball, 2008; Cox & Deck, 2005; Fehr & Schmidt, 2003; Hilton, 1981; Hume & Mort, 2008; Kuang & Moser, 2009). The gender of the receiver is expected to moderate this communication of unhelpful information when covering.

Due to the greater trust that women tend to place in WOM communications and their greater use of interpersonal exchange it is expected that the sender would feel they can more greatly influence a female receiver's decision outcomes (Awad & Ragowsky, 2008; Kirlidog, et al., 2009). The more trusting female receiver would be more likely to integrate and use unhelpful information giving the sender greater rewards for their communication behaviour. To examine this hypothesis two sub-hypotheses are proposed. Each of these concerns a single information characteristic suggested by the model that a sender would use to select information that is unhelpful in nature. These unhelpful types of information are that which

disconfirms preferences increasing preference variance, and information that is expressed in an uncertain manner.

> *Hypothesis 13a: When covering, a sender is more likely to communicate information that disconfirms the receiver's knowledge (and thus is intended to be hurtful in nature) to a female receiver than a male receiver.*

The potential moderating role of the receiver's gender on the selection of information using the characteristic of whether the information (dis)confirms the receiver's knowledge can now be considered. Information that disconfirms knowledge generally has the effect of increasing the variability in the receiver's preference. Increased preference variability results in the receiver needing to rely probabilistic decision making more so than otherwise, thus likely decreasing the quality of their decision outcome (Allenby & Rossi, 1999; Bettman, 1979; Erdem & Keane, 1996; Kivetz & Simonson, 2000). Due to the trust females place in WOM it is expected that females would be the more likely recipients of such information. If this effect were present a significant difference between the male and female actor-receiver coefficients would be seen for T_2 in Table 9. Looking at this table it can be seen that a significant difference is present with t=-3.371 and that females are the more likely recipient of disconfirming information. This *supports hypothesis 13a, and hypothesis 13*.

> *Hypothesis 13b: When covering, a sender is more likely to communicate information that is expressed in an uncertain manner (and thus is intended to be hurtful in nature) to a female receiver than a male receiver.*

The other sub-hypothesis concerns the potential moderating role of the receiver's gender on the choice of information that is expressed in an (un)certain manner.

Information expressed in an uncertain manner is generally less diagnostic, thereby increasing the receiver's need to rely on probabilistic decision making (Colson, 2005; Early, 2003; Fetzer, 2008; Geiss & Moon, 1981; Greenacre, 2005; Greenacre, et al., 2006; Schweitzer & Hsee, 2002). Probabilistic decision making most often reduces the quality of the decision outcome for the receiver, providing the sender with the rewards arising from this. A more trusting female receiver is likely to be more impacted by this behaviour thus providing more rewards to the sender. Consequently a sender would prioritise information expressed with uncertainty more so when communicating to females. If such an effect were present a significant difference between the male and female actor-receivers coefficients for T_3 would be seen. Turning to Table 9 a difference can be observed with t=4.960. Considering the direction of this difference it can be seen that females are more likely to receive information expressed in an uncertain manner. This *supports hypothesis 13b, and hypothesis 13*.

Considering the collective results it can be seen that *hypothesis 13 is supported*. Although hypothesis 13b was supported the refutation of hypothesis 13a makes the result unclear. This result is further discussed in light of the definition of what information may be deemed 'helpful' or 'unhelpful', as this definition has considerable influence on this conclusion.

7.5.3 Overview of Covering Results

With these results new insights have been gained into the behaviour a sender exhibits during covering type WOM. A summary of these results can be found in Table 10.

Table 10: Results for Covering Type WOM

	Hypothesis	Result
H7	When covering, the sender is more likely to communicate information that concerns a relatively important attribute than information that concerns a relatively unimportant attribute	Largely Supported
H8	When covering, the sender is more likely to communicate information that disconfirms the receiver's knowledge than information that confirms the receiver's knowledge	Refuted
H9	When covering, the sender is more likely to communicate information that is expressed with uncertainty than information that is expressed with certainty	Largely Supported
H10	When covering, the sender is more likely to communicate information that is of greater economic value than information of lesser economic value	Refuted
H11	When covering, the sender is more likely to communicate information that contains terms consistent with previous communications (unambiguous) than information that uses inconsistent terms (ambiguous)	Not Supported
H12a	When covering, a sender is more likely to communicate information that concerns important product attributes (and thus is intended to be helpful in nature) to a male receiver than a female receiver	Not Supported
H12b	When covering, a sender is more likely to communicate information that is of greater economic value (and thus is intended to be helpful in nature) to a male receiver than a female receiver	Supported
H12c	When covering, a sender is more likely to communicate information that contains terms consistent with previous communications (unambiguous) (and thus is intended to be helpful in nature) to a male receiver than a female receiver	Refuted
H12	When covering, the sender is more likely to communicate information that is intended to be helpful in nature to a male receiver than a female receiver	Not Supported
H13a	When covering, a sender is more likely to communicate information that disconfirms the receiver's knowledge (and thus is intended to be hurtful in nature) to a female receiver than a male receiver	Supported
H13b	When covering, a sender is more likely to communicate information that is expressed in an uncertain manner (and thus is intended to be hurtful in nature) to a female receiver than a male receiver	Supported
H13	When covering, the sender is more likely to communicate information that is intended to be hurtful in nature to a female receiver than a male receiver	Supported

It must be noted that the results for hypothesis 12 and hypothesis 13 should be considered together. As described in the development of the theoretical framework these two hypotheses are reflective of the same underlying cognitive process in the sender. To ease the discussion this behaviour has been presented in two hypothesis

distinguished by how the sender would consider the use of information characteristics. Information that is considered covert in nature is treated in a negative light with the aim to cause harm (i.e. be hurtful), while that considered to be overt in nature are used to do good (i.e. be helpful). The lack of support for hypothesis 12 suggests that this more complex behavioural model is not used by the sender at a gender specific level. However, the clear results for certain sub-hypotheses suggest that the sender is using some mechanism to differentiate between receivers based on gender.

With these results in place it is now possible to return to the original aims of this research and examine how these results have addressed them.

8. Discussion

This research addresses its two main objectives. The first being the provision of a theoretical framework to understand the sender's decisions regarding what information to disseminate by WOM; and the second an initial testing of this model using the covering and assisting classes of WOM. This chapter provides discussion regarding how these objectives have been addressed and the implications of this for the WOM literature.

8.1 A Model of Sender Behaviour

The first objective established for this research was to develop a comprehensive theoretical framework to understand the sender's decisions regarding what to communicate by WOM. This model was to accommodate the various behaviours comprising the sender's decisions including the sender's decisions regarding with whom they want to communicate, the particular medium with which to communicate, and the nature of the information to be communicated. The theoretical framework proposed achieves this objective

The framework asserts that a particular *environmental context* gives rise to a sender selecting a range of rewards that they wish to obtain from a potential WOM exchange. The context is mapped based on the sender's orientation to the receiver, the issue or product being discussed, and to themself. Each of these dimensions was identified as a minimum component of any WOM environment.

Given these orientations a sender may choose to *pursue rewards* from *influencing the receiver*, both through his or her decision quality and the receiver's satisfaction with the purchase decision; *influencing the product or issue being discussed*, both through the observed (purchase) outcome for the product and the product representative's satisfaction; and, finally, *influencing themself* through impacting

their own future decision making ability. The rewards chosen simply maximise the innate utility of the sender possible for that context. While not necessarily comprehensive these rewards reflect what literature has presently considered regarding what a sender may seek from a WOM exchange. Further research is able to elaborate upon this minimum as necessary to understand other types of WOM processes.

The selection of a set of rewards provides a mechanism by which to understand the motivations driving WOM exchange. With the rewards in place the sender would then *choose a behaviour* that maximises the probability of obtaining these sought rewards. These behaviours directly map onto the original objective and include the *choice of receiver*, *medium*, and *message*. Each of these choices can then be further decomposed with each receiver, medium and message decomposed into its individual characteristics. The decomposition of WOM behaviours allows researchers to understand what characteristics of each are being used to drive the sender's decisions.

This new model of WOM overcomes many of the limitations present in prior models. Previously, strong assumptions regarding the motivations of the sender had to be made, or the motivations were held constant with no attempt to understand how a sender arrived at them (Dichter, 1966; Frenzen & Nakamoto, 1993; Gilly, et al., 1998; Greenacre, 2005). This new model allows a researcher to examine the selection of motivation as a function of the rewards chosen, in addition to WOM behaviour, providing a new avenue to more comprehensively study WOM processes.

A benefit of the theoretical framework is its compatibility with both individual level and aggregate level WOM research. The existing individual level literature has largely recognised that complete information cannot be communicated by WOM, however it does not provide a mechanism to understand the choices that would have

to result (Frenzen & Nakamoto, 1993; Gilly, et al., 1998). Building on that recognition of the need to understand the sender's decisions making this research has proposing the theoretical framework described above. Furthermore, by emphasising the role of the sender in the WOM process, this research highlights the critical role that senders play as gatekeepers in information flow in WOM networks. As a gatekeeper, the sender can control what is communicated even in spite of a receiver's requests, establishing them as the central figure in WOM flow. This model provides a dramatic shift from the present emphasis on a receiver's information search behaviour (Gilly, et al., 1998; Gooding, 1996; Roloff, 1981; Sanders & Walsh, 2009; Verlegh, et al., 2005; Yale & Gilly, 1995).

In contrast, the aggregate level WOM literature largely only considers how groups of interconnected people interact and communicate. Drawing heavily on social network and systems based theories it provides accounts of how specific social structures form and then permit the flow of information from one area of a network to another (Alexandrov & Sherrell, 2006; Burt, 1980, 1982; Granovetter, 1973, 1982; Marsden & Lin, 1982; Rogers, 1995; Whyte, 1954). While highly critical to understanding the structural components to WOM flow this literature has failed to incorporate the impact of individual level communication behaviour on aggregate information flow. The theoretical framework in this research permits the development of this link. By examining the choice of information by sender consumers using discrete choice models, the probabilities of the manifestation of specific behaviours can be calculated. This provides the necessary input to models of aggregate level WOM behaviour, establishing the link between the individual and aggregate level literatures. No link between individual and aggregate level literatures regarding information choice has been attempted prior to this research.

With the development of a theoretical framework of a sender's decisions regarding their WOM behaviour, the first objective of this research has been satisfied. This

offers new opportunities for understanding the complex and interesting phenomenon of interpersonal communication.

8.2 Covering and Assisting in WOM

The second objective of this research was to test the proposed theoretical framework using the covering and assisting types of WOM. This testing provides initial insight into the suitability of the theoretical framework for understanding individual level behaviour, and also gives new insight into the nature of the behaviour comprising two forms of WOM communication.

The use of the theoretical framework developed in this research can be considered a success. By providing the necessary links between motivation and behaviour it permitted the development of a range of hypotheses regarding the nature of covering and assisting type WOM. Significant results were recorded for each of these, confirming the theoretical underpinnings that literature has suggested for each type of WOM. While some of the hypotheses were refuted, the presence of a significant result in either direction is a clear indication that the underlying framework on which the theory of WOM was grafted is robust within the falsificationist paradigm (Bartels, 1988; Blair & Uhl, 1976; Chalmers, 1999).

8.2.1 Assisting in WOM

Assisting type WOM is generally described as when a sender chooses WOM behaviour that is in the best interest of the receiver. In many ways this can be considered a weaker form of altruistic type WOM due to the focus of the exchange being on the receiver's outcomes. It must be noted though that the focus on the receiver does not preclude other focuses also, just that helping the receiver is the dominant drive, with other drives being negligible *on average*.

Assisting type WOM was selected for inclusion in this research as it is one of the most consistently identified in WOM studies (Chung, 2007; Dichter, 1966; Gilly, et al., 1998; Phelps, et al., 2004; Roloff, 1981; Rubin & Martin, 1988; Sanders & Walsh, 2009; Walsh, et al., 2004). The aggregate level WOM literature also indicates that this form of positive behaviour is one of the most common in social networks (Granovetter, 1985; Heide & John, 1992; Shapiro, 1987). Such positive behaviour is a necessary condition for successful ongoing relationships. Without the dominance of this positive behaviour, relationships would begin to break down due to mistrust leading to inevitable societal collapse.

Considering assisting type WOM within the proposed theoretical framework, the reward drives that would be present for the sender arise from positively influencing the quality of the decision outcome for the receiver, and the receiver's satisfaction with that decision. This was due to the necessary positive orientation of the sender towards the receiver, which is a key characteristic of the context for this type of WOM. A number of hypotheses regarding the information that would be selected for communication by the sender and the potential moderating role of the receiver's gender were developed based on the literature in this area.

Results from this research largely confirm the hypothesised effects. Senders do attempt to assist receivers by communicating information about relatively important product features, by confirming receivers' existing knowledge making them more certain in their beliefs, by expressing the facts in the information with certainty, and using language that is unambiguous through the use of terminology consistent with previous communications.

One mechanism of assisting was refuted in the results. It was demonstrated that a sender would actually choose to communicate information of lower economic value even when assisting. This presented quite a surprising outcome for this research.

More recent research into interpersonal communication may be able to give insight into this unusual result.

Recent research indicates that sender's are remarkably risk averse when communicating by WOM, even when trying to be helpful (Young, et al., 2008). There is increasing evidence that such risk aversion manifests itself in conservative behaviour on the part of the sender in some aspects of their WOM behaviour. A sender does not wish to provide information that has even the slightest chance of causing harm to the receiver when assisting (Awad & Ragowsky, 2008; Chung, 2007; Denize & Young, 2007; Dichter, 1966; Gurtman, 1992; Shapiro, 1987; Slonim & Garbarino, 2008). As a result the sender may occasionally choose to communicate less impactful information as a risk management strategy, allaying their own fears that they may accidentally influence the receiver in a negative way. The choice of information of low economic value is reflective of such a potential decision strategy. The result indicating that confirming information tends to be communicated over disconfirming information may indeed be further evidence of risk averse behaviour on the part of the sender. Disconfirming a receiver's preferences can be quite a risky strategy for a sender, even when called for, as it asserts that the sender should be believed over the receiver him or her-self during the receiver's decisions. These results suggest a complexity in the sender's assisting behaviour not widely recognised in the literature at this time.

The implications of these sender behaviours for receivers are quite profound. The clearly helpful nature of this type of WOM would provide receiver's with considerable advantage during decision making. A receiver that relies more heavily WOM content will receive information of great assistance, with the notable exception of economic or cost information.

The final aspect of assisting type WOM behaviour considered in this research is the potential moderating role of the receiver's gender on the sender's choice of

information to communicate. Literature examining gender differences in communication has indicated that females are more trusting of WOM information, and also more prolific users of interpersonal behaviour (Awad & Ragowsky, 2008; Kirlidog, et al., 2009). This suggests a sender deriving their rewards from improving decision quality and offering satisfaction would offer the most helpful information to females, who would make better use of the information. This tends *not* to be the case as indicated in the results. Indeed, *males tend to be greater recipients of information that is helpful*. Males tend to receive information regarding the most important product attributes, that which is expressed with the most certainty and that which is expressed in an unambiguous manner. It is important to note though that no gender difference was found regarding the economic value of the information or by whether the information confirms existing knowledge.

The gender results are quite surprising and indicate a need to revise the theory of gender differences in communication behaviour. Two initial ideas regarding how these unusual results may have come about can be offered. The first idea is that this may be an artefact arising from a more complex interaction between both sender-respondent gender, actor-receiver gender and information choice. There may be a sender-respondent gender type effect with male senders behaving differently for male and female actor-receivers, and likewise for female senders. Such a complexity has never really been considered in great depth within the individual level literature and presents an exciting avenue of investigation. This research did not block the sample by gender, but with an increase in sample size this effect may be able to be considered in the future.

The second idea regarding this unusual result for actor-receiver gender relates to how utility is maximised. The original theory for assisting indicated that a sender would obtain utility by helping the gender in the best position to achieve the best decision. The hypotheses were then developed from the discovery that females are

typically in this position. That is, give the person most likely to succeed, such as a trusting and highly interpersonal female, the most helpful information. In fact, an alternative mechanism for maximising utility may arise from offering help to someone in the worst position, such as a less trusting and less interpersonal male, to achieve the best decision they can. That is, give the most helpful information to the person who is the least likely to succeed. This in effect suggests that utility may be maximised from the sender moving receivers away from achieving bad decision outcomes more-so than moving receivers towards making the best decision outcomes. The concept of utility maximisation through harm minimisation presents a highly interesting area for future research.

With these results in place another aspect of objective two has been satisfied. This presents the first comprehensive account of the sender's decision regarding what to communicate by WOM when assisting.

8.2.2 Covering in WOM

Covering type WOM can generally be described as when a sender chooses WOM behaviour that negatively influences the decision outcomes of the receiver. Moderating this behaviour is their desire to protect their own future decision making by not getting caught in exerting this negative influence. This presents a form of human behaviour that could be colloquially described as simply trying to be mean to someone and trying to get away with it.

Covering type WOM was selected for inclusion in this research because it is considered an exception to typical WOM behaviour. The negative intention of the sender towards the receiver present in this WOM type would be relatively rare, as the relationship between the sender and receiver is more likely to break down compared to its more positive counterparts. It is still a realistic type of WOM for research purposes because the concealment of the negative intentions on the part of

the sender is likely to prolong the life of the relationship (Granovetter, 1985; Heide & John, 1992; Shapiro, 1987). This type of unusual WOM presents a strong test of the general model of WOM behaviour and an interesting form of WOM with scant previous research addressing it.

Considering covering type WOM within the proposed theoretical framework, the reward drives for the sender arise primarily from negatively influencing the receiver's decision quality. This reward drive is accompanied by another reward drive arising from the sender seeking to protect his or her own future decision making ability. The protection of future decision making is described as achieved by giving the receiver a satisfying decision outcome, thereby preventing the receiver from retaliating against the sender. Based on these reward drives a number of hypotheses were developed regarding the information that would be selected for communication by the sender and the potential moderating role of the receiver's gender.

Examining the results for this research it can be seen that the behaviour exhibited by the sender during covering type WOM is at times quite different to that theorised. Even during covering behaviour the sender seems to largely provide information that is of assistance to the receiver. Such assistance includes providing information concerning important product attributes, and information that confirms existing beliefs about a product thereby decreasing preference variance. Much like assisting type WOM, the sender appears to communicate in a risk averse manner choosing to communicate information of relatively low economic value. Such helpful behaviour within covering type WOM ensures that the sender's negative intention is unlikely to be detected by the receiver when they also choose to communicate unhelpful information.

There are two subtle yet critical differences between what a sender would choose to communicate when assisting versus when they are covering. The first is that, when

covering, the sender chooses to express him or her-self in an uncertain manner. This remarkably subtle change in communication behaviour can have a considerably negative influence on the receiver. By expressing information in an uncertain manner, all of the factual content of that information now needs to be verified by the receiver before its diagnostic properties come into full effect. The receiver is thus forced to seek additional information from other sources to triangulate the now uncertain information they possess before making a purchase decision. This undermines the very purpose of the WOM exchange as it has now likely increased, or at least minimally decreased, the information needs of the receiver. Considering the primary purpose of WOM is to satiate the need for information, such an increase in information needs offers the sender the sought rewards from undermining the receiver's decision making process and outcomes. The added benefit to the sender by communicating in this way is that it is for all intense purposes undetectable by the receiver. The receiver would never be able to distinguish this deliberate act of obfuscation from the real problem of being unsure during communication. The expressed certainty of the information communicated this presents as one of the most covert mechanisms to manipulate information quality.

The second difference between assisting behaviour is the sender's choice of information that uses more ambiguous language compared to assisting. For assisting type WOM the sender chose to use unambiguous language, that is, language using terminology consistent with prior communications. For covering the sender ceases to have this preference for unambiguous language. They switch to using a mixture of ambiguous and unambiguous terminology. This small change can have a considerable negative effect on the receiver, as desired by the sender. Ambiguous terminology is harder for the receiver to process as they are less likely to understand what specifically the sender is referring to during exchanges. This reduces the effectiveness of the exchange for the receiver as the likely increase in confusion would lower subsequent decision quality.

It is important to note that *the original theoretical classification of helpful and unhelpful information that gave rise to the hypotheses has also been refuted, particularly for the covering context.* The results from the assisting class of WOM suggests that the potential moderating effect of the risk aversion of the sender needs to be accommodated for a more successful classification to be undertaken. It is also important to note that the misclassification of the information characteristics as either helpful or unhelpful affects the gender specific results. Despite this the premise of covering type WOM containing a mixture of both helpful and unhelpful information has been supported by the results.

Based on the results it can be seen that the adage that it is better to sandwich a lie between truths seems to hold behavioural credence. During covering type WOM the sender offers considerable helpful information to cover their negative intentions. All the while the sender is attempting to negate the entire WOM exchange by communicating uncertain information and increasing the confusion of the receiver by mixing ambiguous information into the communication. Such insights have never been garnered for covering type WOM in previous literature. This presents a considerable extension of our present understanding of WOM behaviour.

The other aspect of covering type WOM investigated in this research is the potential moderating role of the receiver's gender on the sender's communication behaviour. Looking at these results it can be seen that there are often gender specific communication behaviours. What is surprising about these gender specific behaviours is that they were not in the directions anticipated. Leaving behind the original flawed classification of information as either more or less helpful it can be seen that males are generally more likely to receive information of marginally greater economic value, that which is expressed in a certain manner, and that expressed less ambiguously. Females are generally more likely to receive information that tends to confirms prior beliefs.

In all of the results for covering type WOM there are overwhelming similarities between the genders. Senders generally communicate to the different gender receivers in a similar manner. The differences are only in the magnitude of the preference for specific information types. This indicates that there are nuances to communication behaviour based on the receiver's gender, but no extreme differences. The presence of such similarity is re-enforced by the sender's use of the importance of the attribute that the information concerns in the same manner for both genders.

With these insights into covering and assisting type WOM in place it can be said that the second objective of this research is now satisfied. As such, the purpose of this research has been fulfilled and new insight into WOM behaviour provided.

9. Conclusions

With this new insight into WOM behaviour provided it is now possible to reflect on the implications of this research to our immediate understanding of WOM, the practice of using WOM in real applications, and the possible future directions that should now be pursued as a consequence. This chapter considers these issues to help frame the present research in the context of the broader stream of WOM research. To achieve this, the immediate contributions of this research are outlined. This is followed by a discussion of the implications of this research for practitioners, the limitations present in this research, and the future opportunities for research that arise from this project.

9.1 Contributions of this Research

Five main contributions have been made by this research to the discipline of WOM research. Two of these contributions directly reflect the objectives of this research with the others emerging from them. These contributions are the development of an underlying theory of a sender's decisions to communicate by WOM, the ability to integrate individual and aggregate level WOM research, placing a new emphasis on the sender in WOM communication, the specification of a measurement model reflecting this underlying theory, and the examination of the covering and assisting types of WOM.

The development of an underlying theory for a sender's decision to communicate by WOM presents a considerable departure from present WOM literature. Presently most individual level WOM research is delineated by characteristics of the exchange. The medium used by the sender is one such delineation, with the research regarding web-blogging being separate from research regarding interpersonal WOM, email communication and viral videos (Carl, 2006; Casalo, et al., 2007; Cotten & Gupta, 2004; Datta, et al., 2005; Doh & Hwang, 2009; Helm, 2000;

Khermouch & Green, 2001; Leskovec, et al., 2007; Lin, 2007; Phelps, et al., 2004). Another delineation is by message content, such as the commonly described positive and negative WOM themes (Arndt, 1967; Doh & Hwang, 2009; Gremler, et al., 2001). Even the motivation driving the behaviour can be used as a delineation between major research works in some cases (Brown & Reingen, 1987; East, et al., 2005; Fehr & Schmidt, 2003; Frenzen & Nakamoto, 1993; Horowitz, et al., 2006; Phelps, et al., 2004). This offers a relatively fragmented view of the diverse behaviour that all come under the umbrella of WOM. The model developed in this research is able to serve as a framework to integrate these relatively fragmented areas of the literature by making a firm link between different motivations and behaviour, and by offering an account that accommodates the full range of behaviours necessary for any type of WOM exchange to occur.

This research has also contributed a measurement model and experimental process to understand WOM. This research has demonstrated that WOM, and sentence construction conforms to Random Utility Theory. This finding opens up a new set of theoretical and methodological considerations for evaluating WOM communication. Presently a lot of WOM research is contingent on data availability from interpersonal communication mediums such as web-chat sites. The risk of relying on such sources is that any resulting models run the risk of being over specified to a single context, namely that one data source. By providing a measurement model and process that is able to be readily replicated, researchers are able to seek additional data to further understand sub-groups of people or types of WOM that are of particular interest to their research. This allows for the rapid expansion of our understanding of various types of WOM in numerous contexts.

An added benefit of this model is its ability to be integrated with aggregate level literature. There is presently a large divide between the individual level and aggregate level WOM literatures regarding information choice and dissemination decisions. This is due to the relatively divergent aspects of WOM phenomenon they

consider. This model of individual level behaviour is, for the first time, compatible with the aggregate level theories and methodologies employed. Aggregate level theories and methodologies are largely concerned with how individual behaviours interact to generate network or systems based phenomenon. By providing a theoretical framework consistent with discrete choice models, the probabilities associated with various individual level behaviours can now be estimated and incorporated into aggregate level models. This makes an important first step in bringing these two literatures together.

Another key contribution of this research has been the shift in focus towards the sender, and their role as a gatekeeper of information. Considerable research has examined how a receiver seeks and integrates information to inform his or her decision making (Gilly, et al., 1998; Gooding, 1996; Grewal, et al., 1994; Hagerty & Aaker, 1984; Henningsen & Henningsen, 2003; Iacobucci & Hopkins, 1992). Although highly insightful, this research wrongly places the emphasis on the receiver. While the receiver may have preferences for information, it is the sender that ultimately determines the nature of the flow of information to the receiver (Frenzen & Nakamoto, 1993). Only once that flow has been established by the sender can the receiver then choose what to listen to and integrate. By shifting focus onto the sender and their decisions regarding the nature of this flow, a critical aspect of the WOM communication process can now be more fully understood. This allows research into information search and integration on the part of the receiver to be more appropriately framed within the dissemination decisions of senders.

The final major contribution of this research is an understanding of the communication behaviour common to the assisting and covering types of WOM. No research has previously considered the nature of the information likely to be communicated during covering or assisting. Typically research has made strong assumptions regarding the nature of the information communicated during WOM processes, or examined it under restrictive assumptions regarding the motivations of

the sender and/or receiver (Frenzen & Nakamoto, 1993; Greenacre, 2005). By going beyond these assumptions new insight has been gained into how consumers actually use WOM every day.

9.2 Managerial Implications

There are a number of implications of this research for managers and marketing practitioners. By far the most important of these implications is that practitioners now have a theory based mechanism on which to develop an understanding of how WOM functions within their target markets. WOM has long been recognised by practitioners as one of the most critical component to a marketing strategy due to its high level of reach and credibility among consumers (Cotte, et al., 2005; Grewal, et al., 1994; Whyte, 1954). Using the theoretical framework in this research, managers are able to develop and test marketing information for its propensity to be communicated thereby allowing them to encourage *effective* WOM communication among consumers. This permits marketers to take full advantage of this invaluable marketing communication tool.

Another implication for practitioners is that this research provides a simple mechanism to evaluate the propensity for existing marketing messages to be communicated by WOM. Marketers typically employ slogans or standard product information sets when trying to communicate with consumers. It is reasonable to assert that some versions of these are more likely to be communicated by WOM than others. Until now a marketer could only rely on their intuition regarding which information may be picked up by WOM. Now a marketer is able to employ a choice based experiment, like the one described in this research, to evaluate their existing marketing messages for WOM propensity. Although less powerful than experimentally designing the ideal information for WOM communication, it offers marketers a useful first step for evaluating existing messages.

This research has also provided insight into the nature of the information that is likely to be communicated by WOM. It is found that when assisting others people communicate information about relatively important product features, they confirm receivers' existing knowledge making them more certain in their beliefs, they express the facts in the information with certainty, and use language that is unambiguous through the use of terminology consistent with previous communications. This highlights to practitioners that this type of information is likely to flow among their consumers, particularly as helpful, or assisting, type WOM is considered one of the more dominant forms of WOM in networks (Granovetter, 1982; Greenacre, 2005). Thus marketing efforts should reflect this natural tendency among consumers with complimentary marketing messages that take full advantage of consumer WOM. Practitioners need to be aware though that economic information is unlikely to flow naturally by WOM, thus compensatory marketing efforts to reveal this information would be needed.

If dysfunctional relationships started to permeate their community of consumers, such that covering type WOM my result, practitioners now also know how the information content communicated will change. Consumers will now communicate with greater uncertainty and use more ambiguous language. This dysfunctional communication would require the practitioner to compensate considerably through more traditional marketing efforts to ensure their consumer base is receiving information that is likely to influence consumption behaviour.

Another implication for practitioners regarding the nature of the information content communicated by WOM arises from the findings about the important moderating role of gender. Males are much more likely to receive information that assists their decision making. While advantageous if targeting male consumers, if the desired target market is female less effective WOM is communicated. This indicates that traditional marketing efforts will be needed to supplement. Practitioners also need to consider that there is likely an interplay between the gender of the sender and the

gender of the receiver, thus a more complex monitoring plan is needed to fully evaluate what information is being communicated by WOM.

If dysfunction covering type WOM is permeating the target market then practitioners also need to be aware of the changes in how gender moderates communication behaviour. While there are substantial similarities in the nature of the information communicated there are differences in the degree to which information is communicated. In general males receive information that is of marginally greater economic value, that which is expressed in a certain manner, and that expressed less ambiguously. Females are generally more likely to receive information that tends to confirms prior beliefs. Such unusual gender specific differences are highly important during segmentation and targeting of marketing effort. With these results customisation of marketing messages is now able to be carried out in a more effective manner.

The final major implication of this research for practitioners relates to the medium used to promote WOM communicate among consumers. Industry is presently very interested in developing environments, particularly online environments, which facilitate WOM communication. From discussion boards on company websites through to at-home product sharing events, each medium offers different benefits to the marketer. Each is also likely to be used in vastly different ways by consumers. Through the incorporation of communication medium selection into the theoretical model used in this research, marketers are now able to consider the optimal medium for the promotion of WOM communication. Mediums are now able to be evaluated for their impact on the nature of the information communicated, and, with the inclusion of a 'no choice' option in experiments, the likely impact of medium on the volume of information communicated.

These implications give marketers new ways to understand and predict WOM in real markets. With this understanding comes a new ability to use WOM in marketing strategy.

9.3 Limitations and Future Research Opportunities

A number of opportunities arose during this research that present possibilities for future research. These opportunities arose from a clear need for revised theory regarding WOM behaviour, the assumptions made to limit the scope of this research, phenomenon identified during pre-testing, and the possible incorporation of alternative perspectives into the research. Each provides interesting avenues for future research in the WOM stream. They suggest the presence of a complexity in WOM that will be quite exciting to explore.

The results of this research demonstrate that there is a substantial need for new theory into WOM behaviour. The refutation of many hypotheses, especially those regarding covering type WOM suggests that the underlying theory used to generate those hypothesis is somewhat flawed. The hypotheses in this thesis were developed largely based on how a sender may wish to help or hurt a receiver in different ways depending on the communication context. Unfortunately, the theory within the communication literature has not readily addressed blended motivations, and the subsequent impact of such blends on communication behaviour. These blends are clearly suggested by the research results where both helpful and hurtful communication can be seen simultaneously in any instance of communication. New theory is needed in this regard as present conjecture, which was the basis for many of the research hypotheses here, is clearly insufficient at this time. Future research should consider game theory, or similar theories of conflict and/or competing goals, when examining motivation blends and their impact on communication behaviour. This will allow confirmatory research to be undertaken to further elaborate on the exploratory work done here.

One such avenue for theoretical development is the blend of motivations for improving or reducing the decision satisfaction of the receiver, which simultaneously improving or reducing the quality of the receiver's decision. This two my two matrix of possible combinations is suggested by the discovery of findings for covering and assisting, which presently reflect two combinations in this matrix. Future research can consider these other two motivation blends. In particular, reducing the satisfaction of the decision maker while improving their decision quality, and reducing both their decision quality and satisfaction. An example of when the first of these may arise is when medical advice is offered; a person may be advised that a medication is good for their health (i.e. a good quality decision to make), but may taste awful (i.e. a decision that will lower satisfaction). The second could involve situations where a person is acting out their own desires through the behaviour, such as a 'helicopter parent', whose advice lowers their children's decision quality and satisfaction.

This research has also only been applied to a weak tie relationship (Granovetter, 1973, 1982). This has been sufficient to demonstrate that the experimental approach is appropriate for examining the choice of information for communication by WOM. Further research into differences between the choices made between strong and weak ties is possible. This presents an exciting avenue for future research.

One of the underlying assumptions of this research approach was that there is a typical type of information communicated given a context and reward choice by the sender. One of the potential flaws in this assumption is that the selection of information as a flow progresses through a WOM network may be chaotic (Mason, 2008). The presence of a chaotic system would indicate that the sequencing of the nodes, or people, in the WOM network produces dynamic results. The information flow would thus be contingent on the position of the people in the network. Further complicating this would be that the position of the people themselves would also be

dynamic (Diamond, 1993; Oliva, 1997). If WOM did have chaotic properties then the results of this research show the possible types of information that are selected as bounded within the chaotic system (Diamond, 1993; Mason, 2008). The type of experimental based work undertaken in this research is still a considerable avenue of interest even if such a chaotic system is present. This is because although the system may be chaotic it is still bounded by information availability and the behaviour that consumers deem as possible choices. The limited number of possible WOM behaviours resulting would present as attractors in the system. It is the parameters of these attractors that have been be found if chaos is present. Therefore the results still make a significant contribution to literature even in this circumstance, yet future exploration along these lines is possible.

A further complication on the specification of a typical type of information communicated is the potential for expertise to moderate information selection. The expertise of the sender has an obvious ability to limit the type of information that can be communicated (Frenzen & Nakamoto, 1993). If the sender does not know a piece of information themself they cannot communicate that information to others. In addition, the sender may consider the expertise of the receiver when determining what information to communicate (Gilly, Graham, Wolfinbarger, & Yale, 1998; Greenacre, 2005). Research is needed to determine how influential these expertise moderators are, and whether individuals respond differently given their own expertise and the perceived expertise of the receiver.

Further considerations can also be made regarding the assumption of a typical form of WOM. Some WOM theorists consider information communication as a process of co-creation (Needham, 2008; Pattinson & Low, 2008). Co-creation suggests that communication occurs at the meeting of the minds of the consumers, and that for the examination of communication to be successful the mental overlap between the sender and receiver needs to be the focus of research (Needham, 2008; Pattinson & Low, 2008; Tsai & Ghoshal, 1998; Unknown, 2005). While this can be a useful

framework to understand WOM processes, the research in this thesis has adopted a more individual centric approach to WOM, in particular by examining the sender's decision to communicate by WOM. Extending on this notion, there is a subsequent process of the receiver's decision to accept and integrate information, after which there are sequences of individual choices by both parties acting as senders and receivers in turn. This rotating choice of the individuals was selected as the framework for this research as it is compliant with the measurement methods needed to develop a precise understanding of the probability of various communication behaviours. The co-creation methodologies, while often fruitful, do not offer the precision that the approach used in this research does. An opportunity exists for future research to compare the results of these two approaches to identify if the results approximate each other. This would offer considerable validation for both methodologies.

A separate potential limitation of this research emerged during the construction and testing of the statements offered to the sender for communication to the receiver. Five information characteristics were used to design these statements, as outlined in the research. A difficulty arose in that some levels of the information characteristics seemed linguistically incompatible. The incompatibility typically presented in testing as a single information characteristic proving non-significant for the necessary experimental level. Although overcome in this research through replication across product contexts, this difficulty indicates a complexity in language structure not previously considered in the WOM literature. It appears there may be natural correlations among some linguistic structures that prevent the naturalistic manipulation of some information characteristics. Further understanding of this phenomenon is needed as the formative approach to WOM research used in this case needs to be able to accommodate such effects to prove successful.

Additional research methodologies have also been suggested in the literature for examining WOM phenomenon. One of particular interest is the scrambled sentence

test (Bargh & Chartrand, 2000; Srull & Wyer Jr., 1980). The scrambled sentence test provides respondents with select words that they then form into sentences (Dopkins & Ngo, 2005; Srull & Wyer Jr., 1980). Such a method has obvious application in WOM research, especially with regard to the choice of information to communicate by the sender. It permits a more natural construction of the information in sentences overcoming some of the limitations with experimentally controlling the nature of the information. The difficulty with the scrambled sentence test at this time is that it is largely only analysed using qualitative approaches, or with quantitative approaches that do not provide probabilistic outputs for WOM behaviour (Bargh & Chartrand, 2000). Future research should consider the development of models that are able to examine the construction of these information assortments, as it is an area that presents considerable potential.

The final area of research potential that can be considered in light of this research arises from the incorporation of the receiver's perspective in the WOM model. As previously described the approach used in this research implies a communication rotation between the two actors with one acting as a sender and the other a receiver at any given moment. Although this research has provided insight into what the sender would choose to communicate, it has not considered what the receiver would choose to listen to and integrate of this communicated information. There is, in essence, another information gate in the network with which the receiver is able to filter out information prior to using it him or herself. This ignored or unprocessed information would cease to be perpetuated in the broader network through the actions of the receiver, despite the sender's wishes. By building simultaneous models of information dissemination by a sender and information collection by a receiver considerable advancement in WOM research will be able to be made.

This research has shed new light onto the importance of the sender when determining the nature of the information communicated by WOM. Future research

can now include these insights and elaborate upon them to offer a greater

understanding of the processes underlying WOM communication.

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Appendix A: Pre-testing of Actor-Receiver Audio Requests

A series of surveys was needed to design the request from the actor receiver for inclusion into the main experiment. This appendix details this design process and the testing that was undertaken to assure the manipulations needed.

A.1 Objectives

Due to the need to manipulate both an actor receiver's gender and likeability for the main experimental procedure, this research has four objectives. These objectives are to develop audio recordings that:

Present a likeable female requesting information

Present a dislikeable female requesting information

Present a likeable male requesting information

Present a dislikeable male requesting information

These audio recording must be suitable for each of the four product categories used in this research. The product categories are a holiday package, a home delivery service for local restaurants, a personal computer and a laundry detergent. With the satisfactory achievement of these objectives this component of the main experiment will be ready for the field.

A.2 Method

The general research method involved the recruitment of a male and female voice actor. Each of these voice actors was provided a series of scripts designed to achieve the manipulations specified in the objectives. The recordings were made with instructions for the actor-receiver to play into the likeable and dislikeable roles. The details of these instructions will be outlined further in the next section.

These manipulations were then confirmed using surveys of how consumers perceive the recording using rating measures of interpersonal characteristics.

This general method is decomposed into the two primary steps employed: the creation of the audio recordings; and the confirmation of the manipulations using surveys.

A.2.1 Audio Recordings

A generic set of scripts was provided to both voice actors. The scripts were composed of an initial expression that was either antagonistic of congratulatory in nature towards the respondent-sender. These expressions can be found in Table A1. This provided a basis to ensure the likeability manipulations.

Likeability	Manipulation Sentence
Likeable	Hi, I just wanted to call you up because I heard about your work on the Forbin job, congratulations, I heard you did some great work on it.
Dislikeable	Hi, I just wanted to call you up because I heard about your work on the Forbin job, ouch, you really stuffed everyone there on that one didn't you. Ah well, as long you don't do it again I suppose.

Table A1: Script Expression for Likeability Manipulation

Following the likeability manipulation in the script was an expression designed to make the request for assistance for each product context explicit. These expressions can be found in Table A2.

Category	Product Request
Holiday Package	Actually, while I've got you I wanted to ask you something. I'm looking into taking a trip away and I'm considering going to the Island of Indri. I saw a blurb about it in the paper and wanted to know what you thought about the idea?
Home Delivery	Actually, while I've got you I wanted to ask you something. I've heard about a new food delivery service in the area called Fast-a-way that might be worth using. I saw a blurb about it in the paper and wanted to know what you thought about the idea?
Laundry Detergent	Actually, while I've got you I wanted to ask you something. I bought a new washing machine and it needs a special liquid detergent and I'm considering using the Supacleen detergent. I saw a blurb about it in the paper and wanted to know what you thought about the idea?
Personal Computer	Actually, while I've got you I wanted to ask you something. I'm looking into buying a new computer and I'm considering the new Indrec model. I saw a blurb about it in the paper and wanted to know what you thought about the idea?

Table A2: Script Expression for Product Category

With these two expressions the script for each manipulation was complete. In total there were eight scripts for each of the two actors to read and record. The general theme used in the creation of the scripts was to maintain a degree of informality that would come with some level of familiarity associated with an existing relationship. The positioning of this research to deal with only weak tie relationships ensures that a greater degree of familiarity in the relationship is not needed.

The instructions given to the voice actors were that they were to attempt to maintain similarity in timber of their voice for each script so as to introduce as few extraneous factors as possible. Each actor made several versions of one recording using a variety of expression styles so that the most natural style could be identified. Once this most natural expression style was identified all recordings were made using this style.

For the (dis)likeable manipulation actors were asked to visualise a person that they either liked or disliked in their own workplace. Such a visualisation technique was found to be necessary after some initial attempts by actors to be both likeable and dislikeable using the same style of expression. Without this instruction actors tended to be too dislikeable in the manipulation, resulting in a more aggressive

'meanness' in the approach. Such an extreme was inconsistent with the context adopted in this research.

Once the recordings had been developed they were converted to a waveform audio file ('.wav'). This file format was selected as it is one of the most universally recognised audio file formats among both PC and Mac computers. Although compression on this file format is limited the short duration of the recordings meant that this was of little concern. The download time of the file would remain reasonable either compressed or uncompressed.

A.2.2 Survey Confirmation

Prior to the use of these audio recordings in the main instrument it was felt necessary to confirm that respondents perceived the manipulations as they were intended. Such testing offers assurance that the manipulations have been successfully achieved and minimal extraneous variables were introduced. The testing was undertaken in three phases, a qualitative study to offer first insights into the recording, followed by a small quantitative study where academics rated the recordings on a number of interpersonal perceptions, and, where necessary, a follow up quantitative study on respondents.

The initial qualitative phase involved the recording being played to at least two people. These people were typically PhD students or researchers within the department. The recording was presented in a short survey much like the described in the next quantitative component. This presentation was selected as the questions about interpersonal perceptions would prompt the respondents to consider these more explicitly. The respondents were then asked to comment on the suitability of the recording for the intended manipulation. By using this qualitative method any unexpected extraneous variables had the opportunity to be detected prior to the inclusion of the recordings in the main study.

The next quantitative phase involved a more formal survey of perceptions among academics of the person (actor) in the recording and the interpersonal motives present. A separate survey was used for each recording. A small sample of between two and six academics was used for each survey as this was only done to confirm the results of the qualitative phase. Each survey prompted the academics to rate the recording on a number of scales. These scales were five point likert scales ranging from strongly agree to strongly disagree. The items included whether the actor was: a sincere person; a likeable person; a cold person; a friendly person; and, an arrogant person. A best worst methodology was considered for this research but was not possible as the items being examined were audio recordings, and thus difficult to implement within a best worst framework.

If the first two phases of the process suggested that the manipulations were somewhat present but were not conclusive then a final quantitative phase was used. This involved a repetition of the prior quantitative survey using a minimum of ten respondents supplied by a list provider. There were no specific sample requirements established beyond the respondents not being employed in the industry relevant to the product categories in the study. The larger sample size and more naive observations by respondents offer a strong final test if any doubt was present based on the previous results.

The analysis of the qualitative data was done using general issue analysis, with further probing undertaken if initial comments regarding the recordings were unclear. The analysis of the quantitative round with academics was simple frequency analysis for each of the rating scales. This limited form analysis was used due to the small sample sizes available.

To examine the data collected in the final quantitative phase an independent samples t-test was conducted comparing each item across the likeable and

dislikeable manipulation for each product context. This method identifies whether the recordings are significantly different from each other in relative terms. Independent samples tests were chosen over one samples tests as the nature of rating scales made it problematic to attempt to identify absolute measures of likeability due to possible confounds from how respondents use the scale.

A.3 Results

For some of the recordings a couple of iterations of re-recording and testing were required to achieve the desired manipulations. The results shown here are for the final round of testing for each. The results are presented for each actor one at a time.

A.3.1 Male Actor

The qualitative results for the male actor largely supported the intended manipulations. For the audio recordings that had a friendly approach to the request for information the academic respondents largely only made general comments about the language or linguistic style used by the actor. These comments were largely of an inconsequential nature such as noting that the actor had a "slight accent" (Respondent 2, survey FMH) or "may have a lisp" (Respondent 1, survey FMH). The friendliness of the actor seemed largely unnoticed indicating that it was generally naturalistic and not particularly noteworthy. This offers strong evidence that the friendly manipulation was successful.

The audio recording that used an unfriendly approach were clearly noted as unfriendly by the academic respondents. Comments such as "rather straight forward and lacking friendliness" (Respondent 2, survey UMH) highlight the success of this manipulation. The comments regarding language and linguistic style that were present for the likeable condition are considerably reduced with only minor

notations regarding the regal tone of the actor, "he was very posh" (Respondent 6, survey UMH).

To offer further evaluation of these recordings a quantitative assessment of the recordings was done on a range of interpersonal perception scales. For simplicity of presentation only the results for the items regarding 'friendliness' and 'likeability' are presented in Tables A3 and A4. These items are representative of the broader perceptions regarding the degree of friendliness in the approach.

		St Agree	Agree	Neither	Disagree	St Disagree
Friendly Manipulation	Detergent	1	1	1		
	Holiday Package	1	5	3	1	
	Home Delivery	1	2	1		
	Personal Computer	2	1	1		
Unfriendly Manipulation	Detergent			2		
	Holiday Package		2	5	3	1
	Home Delivery				4	
	Personal Computer		1	2	2	

Table A3: Frequency results for 'friendliness' item across the (un)friendly manipulation.

From Table A3 it can be seen that the ratings for the perceived friendliness of the actor are in line with the intended manipulations. Although some deviation from expectations can be noted, across the majority of recordings there are no major concerns. Due to the similarity of the recordings the frequencies can also be considered collectively. With this collective interpretation of the frequencies a clear distinction between the friendly and unfriendly manipulation can be seen for this actor, for this item.

		St Agree	Agree	Neither	Disagree	St Disagree
Friendly Manipulation	Detergent	2	1			
	Holiday Package		7	3		
	Home Delivery	1	1	1	1	
	Personal Computer	1	3			
Unfriendly Manipulation	Detergent			1	1	
	Holiday Package		1	5	3	2
	Home Delivery				4	
	Personal Computer			2	3	

Table A4: Frequency results for 'likeability' item across the (un)friendly manipulation.

From the results in Table A4 there is also clear support for the presence of the manipulation. The results for the likeability item map very similarly to the previous friendliness item.

Based on the successful manipulation along the friendliness dimension the recording for this male actor were retained for use in the main survey instrument. It is now possible to consider the results for the female actor.

A.3.2 First Female Actor

The qualitative results for this female actor supported the presence of the friendly/unfriendly manipulation in the recordings. Much like with the previous male actor the academic respondents noted only minor language or linguistic issues with the recording for the friendly manipulation. The unfriendly recordings also proved highly successful with respondents noting that the actor was 'mean' and 'nasty' in numerous instances.

One area of concern that arose in both the friendly and unfriendly recordings was that the speaker did not sound natural and spontaneous. While this was of little concern in of itself it was coupled with a number of comments from respondent regarding an apparent sexy aspect to the voice. One respondent went so far as to say

that the recording sounded like it had been made by "a phone sex operator" (Respondent 1, General Feedback). This sexy tone was present in both the likeable and dislikeable manipulations, and appeared to confuse respondents. This weakened the perceived presence of the manipulation. For this reason it was decided to discontinue the testing for this actor and seek a new female voice actor for inclusion in the main instrument.

A.3.3 Second Female Actor

With the exclusion of the first female voice actor a second voice actor was sourced. The same development procedure applied to the first female actor was applied to this new second actor. The results for this new actor can be found below.

The qualitative results for the new female actor largely confirmed the presence of the friendly/unfriendly manipulation. For the audio recordings within the friendly version of the manipulation the respondents primarily noted the possible presence of an accent, and other linguistic feature of the actor's voice. The request was generally perceived in a relatively normal manner though with no overt problems. Some respondents did note that the receiver sounded particularly nice and friendly, "they were very friendly" (Respondent 3, Survey HOFEFR2). This offered strong initial support for the presence of the intended manipulations.

For the recordings within the unfriendly version of the manipulation respondents clearly noted that the actor was somewhat unpleasant. Numerous comments were made about how the person seemed rude during the recording and perhaps even a person to distrust. Comments such as "(the actor was) very short and straight to the point. Cordecending [sic]" (Respondent 2, Survey DETFEFO2) and "very blunt and attacking" (Respondent 18, Survey DETFEFO2) illustrate this. This again supports the presence of the desired unfriendliness for this manipulation.

Due to the failure of the first female actor it was decided to move straight to the final round of quantitative testing, bypassing the quantitative round with academics. The final round used a larger sample of respondents providing a much stronger test of the recordings. The female voice actors seemed to be perceived in a more complex manner than the male. The use of consumer respondent perceptions was deemed more appropriate as they are the final users of the main instrument into which the recordings were placed.

To offer the most elaborate testing for the recording each product category was tested individually. An independent samples t-test was performed on each item in each category across the likeable/dislikeable manipulation. In this way it could be confirmed that the manipulation was present and no unexpected covariates were present. A number of audio recordings were made for each product category. The results for the most successful of these recording are shown below. These are the recordings used in the final instrument.

The results of the analysis for the Personal Computer context are show in Table A5.

	Variances Assumed	Levene's Test for Equality of Variances		t-test for Equality of Means (friendly - unfriendly)		
		F	Sig. (0.10)	t	Mean Difference	Std. Error Difference
A sincere person	Equal	.058	.811	7.092	2.067	.291
	Unequal			6.984	2.067	.296
A likeable person	Equal	3.680	.067	8.407	2.291	.272
	Unequal			8.887	2.291	.258
A cold person	Equal	.010	.922	-9.334	-2.315	.248
	Unequal			-9.423	-2.315	.246
A friendly person	Equal	.010	.921	7.814	2.315	.296
	Unequal			7.801	2.315	.297
An arrogant person	Equal	.231	.635	-6.179	-2.042	.331
	Unequal			-5.950	-2.042	.343

Table A5: Personal Computer Independent Samples Test

The relevant t-statistics in Table A5 are indicated, with these statistics chosen based on the result for the Levene's Test for the Equality of Variances for each item. Across all of the items in this context it can be seen that there is a significant difference in the mean ratings for each item across the likeable/dislikeable manipulation. These differences are all in the directions that would be expected by the manipulation offering strong evidence to support the presence of the intended manipulation. It is now possible to consider the Home Delivery context in Table A6.

	Variances Assumed	Levene's Test for Equality of Variances		t-test for Equality of Means (friendly - unfriendly)		
		F	Sig. (0.10)	t	Mean Difference	Std. Error Difference
A sincere person	Equal	.000	.990	4.902	.985	.201
	Unequal			4.898	.985	.201
A likeable person	Equal	.055	.817	5.518	1.272	.231
	Unequal			5.499	1.272	.231
A cold person	Equal	.015	.902	-3.676	-1.050	.286
	Unequal			-3.701	-1.050	.284
A friendly person	Equal	7.050	.012	8.229	1.483	.180
	Unequal			8.094	1.483	.183
An arrogant person	Equal	.303	.586	-2.461	-.808	.328
	Unequal			-2.470	-.808	.327

Table A6: Home Delivery Independent Samples Test

The t-statistics that are relevant for this analysis are highlighted in Table A6. As done previously these were chosen based on the results of the Levene's Test for the Equality of Variances for each item. Looking at these t-statistics it can be seen that they are all significant at the 0.05 level. This indicates that there is a significant difference in the mean rating for each item across the likeable/dislikeable manipulation. These differences are all in the expected direction offering evidence that the manipulation is present for this category. With audio recordings proving successful for the manipulation the next recording for the detergent context was considered. The results for the detergent context can be seen in Table A7.

	Variances Assumed	Levene's Test for Equality of Variances		t-test for Equality of Means (friendly-unfriendly)		
		F	Sig. (0.10)	t	Mean Difference	Std. Error Difference
A sincere person	Equal	2.716	.104	4.091	1.156	.282
	Unequal			4.563	1.156	.253
A likeable person	Equal	14.767	.000	5.568	1.578	.283
	Unequal			6.795	1.578	.232
A cold person	Equal	7.466	.008	-8.061	-1.989	.247
	Unequal			-10.404	-1.989	.191
A friendly person	Equal	3.234	.077	6.749	1.844	.273
	Unequal			7.091	1.844	.260
An arrogant person	Equal	.481	.490	-6.373	-1.844	.289
	Unequal			-6.738	-1.844	.274

Table A7: Detergent Independent Samples Test

The pertinent t-statistics for this analysis are highlighted in Table A7 based on the results from the Levene's Test for Equality of Variances. Looking at theses t-statistics it can be seen that they are all significant at the 0.05 level and in the direction that would be expected given the manipulations. Based on this it can be said that the likeable/dislikeable manipulation in the audio recording is successful for this product category also. The final product category considered was that of a Holiday Package. The results for this can be seen in Table A8.

	Variances Assumed	Levene's Test for Equality of Variances		t-test for Equality of Means (friendly-unfriendly)		
		F	Sig. (0.10)	t	Mean Difference	Std. Error Difference
A sincere person	Equal	3.137	.092	4.647	1.400	.301
	Unequal			4.795	1.400	.292
A likeable person	Equal	2.134	.160	7.385	2.000	.271
	Unequal			7.688	2.000	.260
A cold person	Equal	10.819	.004	-3.636	-1.333	.367
	Unequal			-3.878	-1.333	.344
A friendly person	Equal	1.703	.207	6.723	2.017	.300
	Unequal			6.933	2.017	.291
An arrogant person	Equal	3.754	.067	-5.158	-1.550	.300
	Unequal			-5.471	-1.550	.283

Table A8: Holiday Package Independent Samples Test

The t-statistics that are relevant to this test are highlighted in Table A8. These relevant statistics were identified based on the Levene's Test of the Equality of Variances. Looking at these t-statistics it can be seen that the mean difference in rating between the likeable/dislikeable manipulation is significant for each item. The differences are also in the direction that would be expected.

Based upon these results it was noted that all of the product categories had the likeable/dislikeable manipulation present in the audio recording.

A.4 Conclusion

This testing successfully demonstrated that the intended likeable/dislikeable manipulation was present for the actors. With the male actor this was demonstrated through a successful evaluation of the recordings using a qualitative and quantitative methodology using a small sample of academics. In both cases no obvious covariates were detected in the audio recordings and the respondents perceived the manipulations to be present in each case.

The success of the second female actor was demonstrated through a qualitative study using academics and a formal quantitative round using general respondents. The quantitative round used a larger sample of respondents as this offered a stronger test of the recording. This was thought to be necessary after the failure of the first female actor. The qualitative round found that no obvious covariates had been introduced into the audio recordings, and the quantitative round demonstrated the presence of the manipulation. With this testing completed the audio recordings of both the male and female voice actors were ready for inclusion into the main experiment.

Appendix B: Fractional Factorial Used to Define the Experimental Statements

	Information Characteristic				
	Importance of the product attribute the information concerns	Impact on preference variance through dis/confirmation	The certainty of the facts the information contains	The economic value of the information	The consistency of the words with previous communications (ambiguity)
Statement 1	1	1	1	1	1
Statement 2	1	-1	-1	-1	-1
Statement 3	-1	1	-1	-1	-1
Statement 4	-1	-1	1	-1	-1
Statement 5	-1	-1	-1	1	-1
Statement 6	-1	-1	-1	-1	1
Statement 7	1	1	1	-1	-1
Statement 8	1	1	-1	1	-1
Statement 9	1	1	-1	-1	1
Statement 10	1	-1	1	1	-1
Statement 11	1	-1	1	-1	1
Statement 12	1	-1	-1	1	1
Statement 13	-1	1	1	1	-1
Statement 14	-1	1	1	-1	1
Statement 15	-1	1	-1	1	1
Statement 16	-1	-1	1	1	1

This design accommodates both main effects and two way interactions. All three way interactions are confounded with two way interactions, the four way interactions are confounded with the main effects, and the five way interaction is a constant. Due to this these higher order interactions are assumed to have no effect in this research.

The levels for each attribute are provided in the table below.

Attribute	Level -1	Level 1
Importance of the product attribute the information concerns	Relatively unimportant	Relatively important
Impact on preference variance through dis/confirmation	Decreases variability (through confirmation)	Increases variability (through negative disconfirmation)
The certainty of the facts the information contains	Uncertain facts	Certain facts
The economic value of the information	Relatively low value	Relatively high value
The consistency of the words with previous communications (ambiguity)	Consistent (unambiguous) terminology	Inconsistent (ambiguous) terminology

Appendix C: Statements for the Home Delivery Product Category

Newspaper Article Text:

Fast-a-way food delivery has been operating in the local area for some time now. Fast-a-way takes your order for a meal from the menu of one of the many local restaurants by phone, and then goes to the restaurant to collect it and brings it to your door. They deliver really quickly with meals arriving within 30 minutes.

An advantage of the company is that they store your personal delivery details on their computer system making it easy to re-order from them saving you time on their hotline.

Statement Number	Statement
Statement 1	I know that articles requested will be slowed because of road repairs in the area, and long transfer times incur extra fees.
Statement 2	I think that the food you order should be delivered within the 30 minutes they say, as the delivery drivers are pretty reliable.
Statement 3	I think you might still need to give your delivery details when you order, as their computer system sometimes malfunctions.
Statement 4	I know you only need to give your delivery details the first time you call their shop, as they are stored on their computer.
Statement 5	I think you only need to give your delivery details the first time you call, possibly saving you extra call charges to your phone.
Statement 6	I think one only must provide your transfer address when you first order, as they should recall the transfer details of clients.
Statement 7	I know that the food ordered will arrive a bit later that the 30 minutes estimated, as there are some roadworks in the area.
Statement 8	I think the food order may be delayed a bit by roadworks in the area, and long deliveries can sometimes incur an extra fee.
Statement 9	I think the article conveyance may take a bit longer than the time expressed, that's if the street maintenance is ongoing.
Statement 10	I know the delivery drivers are very good at delivering on time, and they don't accept any tips on arrival saving you money.
Statement 11	I know that the carriers do everything to cart the items you specified within the 30 minute time period apportioned them.
Statement 12	I think the dispatchers are pretty consistent at getting the items to you swiftly, saving you from large excess delivery fees.
Statement 13	I know you are always asked for your delivery details even though they store them, increasing your fees for using the hotline.
Statement 14	I know your location details are always asked after when you call their service phone-line, even though they store them.
Statement 15	I think your dispatching location may be asked for anyway when you phone, meaning you may pay a large extra calling fee.
Statement 16	I know that the staffer retains your dispatch location information, saving you saying it again on their expensive call number.

Appendix D: Statements for the Holiday Package Product Category

Newspaper Article Text:

The island of Indri is becoming known as a destination where you can relax and enjoy yourself. With it typically costing $1,200 for a 5 night hotel stay it is a great deal for many travellers going to the normally expensive Indri. The type of stay would be at a great five star hotel and would even include airfares. The hotel package would not include any organised tours on the island with visitors left to explore the local area for themselves.

There are a number of tennis courts and a golf course on the island that you can access. They are nice and close to the hotel making them easy to use. Indri doesn't have much of a night life because most visitors prefer to lie on the beach and watch the stars. The island of Indri is said to have the clearest skies in the Southern Hemisphere.

Statement Number	Statement
Statement 1	I know the inns at the Port of Indri are typically low end and charge a levy that wouldn't be included in the bundle price.
Statement 2	I suspect that the accommodation at the hotel that you would be staying at on the Island of Indri would be pretty good.
Statement 3	I think there's a chance the tennis court and golf course have short opening hours, so you may have trouble using them.
Statement 4	I know there are some good tennis courts and even a golf course only a short walk from the hotel on the Island of Indri.
Statement 5	I think the golf course and tennis courts are likely be convenient, and you shouldn't be charged the normal access fees.
Statement 6	I think that adjoining to the lodge on the islet there is a sector for tennis and golf play, which should be easy to amble to.
Statement 7	I know that the rooms at many of the hotels on the Island of Indri are typically more lower-end than you would expect.
Statement 8	I think that the five star hotels on the Island of Indri may be worse than you think, and can charge you a large extra tax.
Statement 9	I think a lodging at some of the inns on Indri may be a marginally less prime compared to similar retreats around the atoll.
Statement 10	I know that the 5 star hotel you would be staying at is very good, and is cheaper than other hotels located on the island.
Statement 11	I know the quarters at the taverna that you would lodge at in this arrangement are really swell, as one would anticipate
Statement 12	I think using the quarters offered in the agreement might save you money in contrast to the alternative quarters on the islet.
Statement 13	I know that you have to travel to a sports store to rent equipment for the tennis courts and golf course, and it is expensive.
Statement 14	I know the operational times of the tennis and golf districts on the islet are distinctly short, making it hard to gain access.
Statement 15	I think the locality for golf and tennis matches may refrain from leasing gear. Athletic retailers may, but it's likely expensive.
Statement 16	I know that a nearby tennis and golf zone are only a short walk from the lodge, and are even free for visitors to the atoll.

Appendix E: Statements for the Laundry Detergent Product Category

Newspaper Article Text:

SupaCleen is a liquid laundry detergent that has been on the market for a number of years. It advertises that its special formula contains an ingredient that reduces the wrinkles in your clothes in the wash, making them easier to iron. In some cases the clothes can even be worn without ironing, which is great. It also has a special stain removing enzyme to get rid of 'tough' stains and dirt in the wash.

It comes in a 1.5 Litre bottle and you only need to use 75mL per load. This means you can get 20 washes out of the bottle of laundry liquid.

Statement Number	Statement
Statement 1	I know the fluid measurer is too large so people only get 15 cycles, not 20, this will cost you lots more money per load.
Statement 2	I think that getting 20 washes from a bottle of laundry liquid is really about right, compared to many other detergents.
Statement 3	I think that the wrinkle reducing ingredient only works a little bit, so you may still need to iron your clothes anyway.
Statement 4	I know that washing and ironing clothes is just a bit quicker, because of the wrinkle reducing ingredient in detergents.
Statement 5	I think the wrinkle reducing ingredient means you can skip ironing your clothes, maybe saving you money on energy bills.
Statement 6	I think the crinkle minimising ingredient in such a sud-cleanser may make it more possible to avoid pressing clothing.
Statement 7	I know that people only get 15 washes, not 20, from the laundry liquid, as they never measure the liquid out correctly.
Statement 8	I think many people may only get 15 washes from the laundry liquid, which means spending lots more money per load.
Statement 9	I think many users may not get the indicated quantity of cycles from the cloth soap, as they don't apportion it correctly.
Statement 10	I know that you will get all 20 washes by measuring out the laundry liquid correctly, saving you lots of money per load.
Statement 11	I know the cloth disinfectant will furnish you all of the 20 cycles, as long as you pour it out as the container instructs.
Statement 12	I think if you can set out the cloth-suds as directed you could obtain all 20 launders, possibly saving you lots of money.
Statement 13	I know you will still need to iron as the wrinkle reducing ingredient is only 25% effective, costing you money on energy bills.
Statement 14	I know the crinkle agent included in the wash soap formula is only 25% effective anyway, so you will still need to press.
Statement 15	I think pressing may still be advisable as the crinkle stopper might not work, costing you more money on energy bills.
Statement 16	I know that a crease reducing constituent in suds means you won't need to press clothing, saving money on energy bills.

Appendix F: Statements for the Personal Computer Product Category

Newspaper Article Text:

The new model of Indrec computers was recently released for $1450, which places it at the more expensive end of the computers available on the market at the moment. The computer supports 2 gigabytes of RAM giving it a good processing speed for software and is very efficient in its use of RAM. As a result it is comparable to other computers on the market. It also comes with an 80 gigabyte hard disk.

All of the computers made by this manufacturer also come with great free technical support over the telephone for the first thirty (30) days. This is just to help you set-up the computer and overcome any other problems.

Statement Number	Statement
Statement 1	I know that the terminal only comes with 1g, not 2g, even though it can handle more; with the extra costing you 100 dollars.
Statement 2	I think that this computer might be able to operate reasonably well, just like other computers that have 2 gigabytes of RAM.
Statement 3	I think that the technical support hotline may be too hard for you to get onto, you may have to wait a long time to get through.
Statement 4	I know that the staff on the technical support hotline are really very helpful and understand a lot about the computer system.
Statement 5	I think the staff on the technical support hotline might be really helpful, but expensive charges can be applied after a short time.
Statement 6	I think the official faq phone handler for the corporation might offer you some appropriate advice during the setup of the terminal.
Statement 7	I know that in this computer system you only get the 1 gigabyte, and not 2, of RAM installed, but this won't slow its operation.
Statement 8	I think this computer system might only come with 1 gigabyte of RAM installed, with the extra 1gb costing you an extra $100.
Statement 9	I think there is only 1g of internal unit memory provided in this micro-system and not 2, but I think this won't affect its operation.
Statement 10	I know that this computer makes very efficient use of the RAM, so you won't need to pay extra money to upgrade the RAM.
Statement 11	I know that this unit-station uses its installed memory very effectively, making its memory comparable with other stations.
Statement 12	I think this platform uses its set unit memory very efficiently, so you shouldn't need to pay extra for additional unit-memory.
Statement 13	I know the technical support hotline is hard to get onto with long wait times, so you'll end up paying large fees for these calls.
Statement 14	I know the corporate line for assistance is difficult to connect to with long stand-by times, making it hard to use during install.
Statement 15	I think the guidance line might be challenging to get onto with quite long hold times, and longer calls can incur large extra fees.
Statement 16	I know the handler on the faq centre line is very helpful at installation, and they give you a $50 gift cert if the call is held up.

Appendix G: Statement Pre-testing

The statements made available to the respondents in the main experiment are intended to manipulate the five specified information characteristics specified. By manipulating these characteristics insight is able to be gained into what it is about information that people are using to decide what to communicate by WOM. Prior to that phase of the research it was necessary to both construct these statements using the information characteristics specified, and then test that the intended manipulations were present in the statements. This section addresses this construction and testing phase.

G.1 Objectives

Due to the need to design the statements to manipulate the desired information characteristics the objective of this research was to *develop and test statements* that manipulate:

The importance of the product attribute that the information concerns

The impact of the information on preference variance through dis/confirmation

The certainty of the facts contained in the statement

The economic value of the information

The consistency of the terminology with previous communications (ambiguity).

With the successful manipulation of these information characteristics the statements will be able to be included into the main research.

G. 2 Method

Little prior research has addressed this type of information construction process. As a consequence of this it was decided to develop a single product category first.

Once a successful process had been established for that product category the other product categories could be evaluated in the same way. The product category chosen to be used in the development process was that of a liquid laundry detergent.

For each statement to be developed levels had to be ascribed for each of the five information characteristics being used. For the information characteristic of the importance of the attribute the information concerns the product attributes were selected based on prior research. The relatively important and unimportant product attributes for each product context can be seen in Table G1.

Product Category	Relatively Important Attribute	Relatively Unimportant Attribute
Home Delivery Service	Delivery time from call	The recording of personal details for subsequent orders
Holiday Package	Accommodation	Sporting facilities
Laundry Detergent	Number of washes in the package	Presence of wrinkle reducing agent
Personal Computer	RAM	Telephone support

Table G1: Relatively Important and Unimportant Product Attributes

The selection of the relatively important and unimportant attributes for the home delivery service, holiday package and personal computer categories was based on research by Greenacre (2005). Those findings were supported by research by Severin (2000) and Lenk et al. (1996). The important and unimportant attributes for the laundry detergent category were obtained from Swait and Andrews (2003). As testing had already been undertaken in these studies no further testing of attribute importance was undertaken.

The development phase for the product category of the liquid laundry detergent first involved the writing of draft statements. Each statement was characterised by a specific level for each of the five information characteristics. The specific ascription of levels of each characteristic to each statement was undertaken so as to conform to

the experimental design outlined in Appendix B. This first draft was undertaken using only the intuition of the researcher.

In addition to the development of the statements themself a generic product description was also developed. This generic product description was necessary to establish baseline preferences for the respondents in the main study. Also, some of the information characteristics are relative measures to these baseline preferences. For this reason all testing of statements was undertaken in conjunction with this generic product description.

The first draft of the statements was then tested using a modified Delphi approach. A Delphi study employs experts within a particular field to provide feedback regarding what should be considered relevant (Linstone & Turoff, 1975). Originally designed as a method of forecasting it has been adapted in this case to identify the language that signals the presence of a manipulation and any extraneous factors that may disrupt the experimental design (Linstone & Turoff, 1975). Two academics were asked to read each statement one at a time and report the levels for each of the four remaining attributes. The academics were provided with the list of characteristics and levels, but not the experimental design. This ensured their responses were incentive compatible. If a level was identified as not being at that intended then the academic was prompted to identify what it was about the statement that resulted in their perception. By progressing through each statement consecutively they were able to be considerably refined.

With the refinement completed the statements were then tested on a small sample of consumer respondents. These respondents were sourced from a list company and were selected to ensure that they were not employed within the industries related to the product categories to avoid any potential knowledge bias. The online instrument used a best worst method. It prompted the respondents to indicate which statement from a set of three that was most like the high level for each of the information

characteristics. This provided a metric where the performance of each statement on each information characteristic could be evaluated.

The experimental design employed in the online instrument was a balanced incomplete block design (BIBD). The BIBD organised the 16 statements into sets of 3. In total there were 80 sets with each statement appearing 15 times in the design with a pair frequency of 2. Due to the large number of sets the design was broken down into 8 smaller experiments containing 10 sets each. Breaking the experimental design down in this way assumed that perceptions of the statements were homogenous across the population. As a common perception was being sought this assumption was considered reasonable.

Several iterations of this online testing were then employed for the laundry detergent context. The final round of this testing is provided in the results section below. With the successful development of the laundry detergent category the insights gained were used to develop the statements for the other product categories. These categories were then tested using the best worst online instrument.

G.3 Results

The results for each product category are reported here in turn. Several rounds of quantitative testing may have been used to perfect the statements but to ease presentation only the final round of quantitative testing is provided.

G.3.1 Laundry Detergent Statements

With the selection of the laundry detergent product category for the initial development phrase of the statements it has both Delphi results and quantitative results. Due to the qualitative and conversational nature of the academic Delphi study only the insights gained into statement development are reported. This type of

reporting is undertaken to convey to the reader the learning that was gained from the process, as this was the key outcome sought from this study. Following the Delphi results are the results for the quantitative component.

G.3.1.1 Delphi Results

There were a number of insights gained from the Delphi study using academics. Each related to how certain language styles and terminologies manifested or obscured the desired levels for the information characteristics.

The first insight gained regarded a perceived interaction between two information characteristics. Whenever a statement was perceived to have disconfirmed existing knowledge the statement was almost always characterised as being of high economic value. In general this implies that people regard disconfirmation as having direct economic benefit. To overcome this, a specific monetary value was enumerated whenever higher economic value needed to be implied in the statement. This enabled the separation of these two characteristics.

The characteristic of the economic value of the information was also unexpectedly manipulated through another mechanism. In order to generate the manipulations of some characteristics in statements a situation mentioning re-purchase was originally chosen. For example, to disconfirm the number of washes in the load, as needed for the impact on preference variance information characteristic, it was implied that the product would run out earlier than expected. This reference to re-purchase need was nearly always interpreted as being of high economic value. To overcome this all references to re-purchase behaviour was removed, with only references to the reduction in the number of loads retained. For example statement seven of the detergent context; "I know that people only get 15 washes, not 20, from the laundry liquid, as they never measure the liquid out correctly". This seemingly trivial alteration of the expression, which when rationally observed are perfectly

equivalent and imply the same outcome, results in the correct perception of the information characteristic concerned.

Another insight gained related to the use of inconsistent terminology. It was identified that verbs could not be manipulated to produce inconsistent terminology. The academics never accurately perceived this characteristic when the manipulation was on a verb. Through trial and error it was identified that if the manipulation was placed on the nouns and pronouns in the statement the levels were perceived accurately. In addition, it was noted that this manipulation had to occur with the nouns in the first half of the statement. If the manipulation of language consistency was placed in the second half of the statement it tended not to be accurately perceived.

One particularly unexpected phenomenon was identified in this same process. If a statement used a structure that was evenly marginally different to other statements this was perceived as the presence of inconsistent terminology. This inconsistent sentence structure could include such things as placing the information characteristics in a different order, or the introduction of a grammatical change. To overcome this, a homogenous structure was used for all statements. While this presented some difficulties with implementing some combinations of levels of the information characteristics it was necessary to overcome this issue.

The final insight gained from the Delphi study with academics related to how to express the certainty of the facts in the statement, one of the intended information characteristic manipulations. It was identified that the choice of phraseology resulted in more accurate perceptions of the intended certainty. It was found that simply expressing a fact, or understanding, in a certain manner was not sufficient, if the fact itself was uncertain in nature. This presents a perceived relationship between certainty of knowledge about an outcome, and the certainty of the outcome occurring. For example, the phrase "I know about 20" would be perceived as

uncertain even though it is expressed with certainty in the use of the "I know" language. The inclusion of the uncertainty in the fact, "about 20", results in the statement being considered net uncertain. For certainty to be perceived both the expression and the fact must be certain. For example, the phrase "I know exactly 20" would be perceived as certain as the certainty is both in the expression and in the fact.

The results of this Delphi round of research provided considerable insight into how statements could be more accurately developed to manifest the intended information characteristic manipulations. With the statements updated to reflect the insight gained here it was possible to further test them with the quantitative round.

G.3.1.2 Quantitative Results

A best worst approach was used to obtain measures of the performance of statements for each of the manipulations of the information characteristics. Respondents were prompted to identify the statement from a set that most reflected the higher level of the information characteristic. Each statement was thus evaluated on four dimensions, one for each remaining characteristic. Due to the size of the experimental design the experiment was broken into eight surveys. In total four rounds of this quantitative phase were employed. As noted, only the final round is presented here.

The sample size for each survey in the final round of this quantitative phase varied slightly due to natural differences in response rates. To retain the original balance in the design ten respondents were randomly selected from each survey to be included in the analysis. The analysis performed was the construction of frequencies of each statement for each information characteristic. If the manipulations performed as intended the statements with low frequency counts should correspond to the low level of the information characteristic and the statements with the high counts

should correspond to the high level. The intended levels are all described in the experimental design provided in Appendix B. The results for each information characteristic are presented below.

Statement Number	Frequency	Intended level
3	7	-1
15	8	-1
8	9	-1
5	13	-1
6	16	-1
9	18	-1
12	19	-1
2	20	-1
13	22	1
1	30	1
7	30	1
16	32	1
14	33	1
4	38	1
11	48	1
10	57	1

Table G2: The certainty of the facts in the statement

The frequencies for the information characteristic of the certainty of the facts contained in the statement can be seen in Table G2. The frequencies for each statement accurately reflect the presence of the intended level of the information characteristic.

Statement Number	Frequency	Intended level
13	11	-1
9	14	1
12	15	1
1	17	1
6	17	1
15	17	1
16	17	1
14	19	1
4	25	-1
5	28	-1
11	29	1
7	32	-1
8	36	-1
10	38	-1
3	41	-1
2	44	-1

Table G3: The consistency of the language in the statement

The results for the characteristic of the consistency of the language in the statement can be seen in Table G3. Although most of the statements are in line with expectations two errors have been highlighted. These errors were retained in the final statements incorporated into the main experiment. Their presence is discussed in more detail at the end of this section.

Statement Number	Frequency	Intended level
3	8	-1
9	8	-1
4	14	-1
14	14	-1
6	15	-1
7	17	-1
15	20	1
2	21	-1
8	23	1
1	27	1
11	27	-1
13	28	1
5	29	1
16	46	1
12	47	1
10	56	1

Table G4: The economic value of the information in the statement

Table G4 holds the results for the information characteristic of the economic value of the information. Most statements are in line with expectations. Two errors are again present and are addressed at the end of the section.

Statement Number	Frequency	Intended level
15	9	1
8	10	1
7	14	1
13	15	1
1	16	1
9	18	1
14	19	1
5	21	-1
12	24	-1
3	25	1
16	29	-1
6	33	-1
2	34	-1
4	41	-1
11	45	-1
10	47	-1

Table G5: The confirming nature of the information in the statement

The details for the information characteristic of the confirming nature of the information (to impact upon preference variance) are shown in Table G5. Although most statements are in line with expectations two errors are again present. Their presence is addressed below.

From the previous results it can be seen that the statements developed largely conform to the experimental design. Despite four rounds of testing and revision some errors still remained for some information characteristics. Through the testing process it was discovered that some higher order combinations of the information characteristics seemed to sit somewhat unnaturally with respondents. This resulted in an error being present. Any attempts to rectify this error simply resulted in the movement of the error to another information characteristic within the same statement.

It was eventually concluded that this problem could not be resolved. It likely reflects underlying language norms that establish that some information types are not to be combined in proximity in a statement. The errors shown in the above results are present in the final statements used. The presence of these errors will impact the results of the main experiment, however, as the majority of the statements perform as expected this impact is likely minimal. To further reduce the size of this impact it was reasoned that the errors could be managed such that they appeared on different statements and/or attributes between product contexts. The effect of this would be to further 'wash the error out' of the final results when the data for the product contexts are aggregated for analysis.

G.3.2 Personal Computer Statements – Quantitative Results

Using the insights gained from the development of the statements for the laundry detergent product context the statements for the personal computer context were developed. After the discovering that some errors would be present no matter the

extent of testing employed it was decided to use only a single round of testing for all subsequent contexts. Based on this test the statements would be revised but not re-tested. The results for the statements for the statements can be found below.

Statement Number	Frequency	Intended level
9	12	-1
15	12	-1
3	14	-1
6	15	-1
8	17	-1
12	20	-1
7	21	1
5	23	-1
13	24	1
16	26	1
2	28	-1
14	28	1
1	30	1
10	41	1
11	44	1
4	45	1

Table G6: The certainty of the facts in the statement

As can be seen in Table G6 two errors were detected in the context for this information characteristic. As a consequence statements 2 and 7 were revised in an attempted to remove or reduce the presence of the errors.

Statement Number	Frequency	Intended level
15	12	1
1	13	1
11	13	1
8	15	-1
14	15	1
16	16	1
7	18	-1
2	24	-1
9	24	1
10	25	-1
12	26	1
13	27	-1
6	38	1
4	41	-1
5	42	-1
3	51	-1

Table G7: The consistency of the language in the statement

From Table G7 it can be seen that there appears to be a reasonably large number of errors for the characteristic of the consistency of the language used in the sentence. It was identified that the inconsistent terminology had been overused across the statements producing a learning effect. As the respondent saw the originally inconsistent term more often it became familiar, and thus started to be identified as consistent. To overcome this new terminology was introduced to describe both the computer terminal and the CPU in the unit for the appropriate statements. These new terms for the major nouns in the statements would correct these errors.

Statement Number	Frequency	Intended level
3	5	-1
9	12	-1
14	16	-1
5	17	1
6	17	-1
4	19	-1
7	19	-1
2	21	-1
13	22	1
15	22	1
8	31	1
11	31	-1
1	40	1
12	40	1
16	40	1
10	48	1

Table G8: The economic value of the information in the statement

The results for the characteristic of the economic value of the information can be seen in Table G8. Only two errors were present for this characteristic. Minor modifications to these statements were made to remove or minimise these errors.

Statement Number	Frequency	Intended level
13	11	1
14	11	1
15	12	1
8	13	1
16	15	-1
9	17	1
3	18	1
1	22	1
5	28	-1
7	29	1
12	31	-1
2	32	-1
6	34	-1
4	37	-1
10	43	-1
11	47	-1

Table G9: The confirming nature of the information in the statement

From Table G9 it can be seen that there are only two minor errors for the characteristic of the confirming nature of the information (impacting preference variance). These two statements were modified to remove or reduce these errors.

With this round of testing and modification the statements were able to be included into the main experiment. The final statements used for the personal computer context can be seen in Appendix F.

G.3.3 Home Delivery Statements – Quantitative Results

The statements for the food home delivery product category were constructed from the insights gained during the testing of the laundry detergent category. These were then tested using the same process used for the personal computer category. A single round of testing was undertaken and the statements updated based on the results of this test. These results are shown below.

Statement Number	Frequency	Intended level
15	6	-1
9	10	-1
8	11	-1
3	15	-1
12	15	-1
6	17	-1
2	20	-1
5	21	-1
7	26	1
1	28	1
13	30	1
14	33	1
10	37	1
11	39	1
16	39	1
4	53	1

Table G10: The certainty of the facts in the statement

The results for the information characteristic of the certainty of the facts in the statements are contained in Table G9. It can be seen that all of the frequencies for the statements reflect the presence of the intended manipulations without error.

Statement Number	Frequency	Intended level
16	10	1
14	14	1
12	16	1
6	17	1
15	17	1
1	18	1
13	25	-1
8	26	-1
3	27	-1
7	29	-1
10	30	-1
11	30	1
9	31	1
5	33	-1
2	37	-1
4	40	-1

Table G11: The consistency of the language in the statement

From Table G11 it can be seen that four statements appear to have frequencies that are not in line with expectations. In this circumstance, only statements 11 and 9 had corrective actions taken with minor re-wording undertaken. It was considered that statements 13 and 8 would be appropriate once statements 11 and 9 had been corrected.

Statement Number	Frequency	Intended level
9	7	-1
14	8	-1
3	11	-1
7	12	-1
6	20	-1
12	21	1
11	22	-1
15	22	1
2	24	-1
4	24	-1
1	26	1
8	27	1
13	36	1
16	46	1
5	47	1
10	47	1

Table G12: The economic value of the facts in the statement

The results for the information characteristics of the economic value of the facts in the statement can be seen in Table G12. These results clearly indicate four of the statements are not be in line with expectations. Based on this statements12 and 15 were re-written to increase the perceived economic value of the facts, and statements 2 and 4 were re-written to lower that value.

Statement Number	Frequency	Intended level
15	8	1
1	9	1
9	12	1
12	12	-1
13	12	1
8	13	1
3	20	1
7	22	1
14	26	1
10	27	-1
5	28	-1
16	35	-1
6	39	-1
11	44	-1
2	45	-1
4	48	-1

Table G13: The confirming nature of the information in the statement

From Table G13 it can be seen that only two statements do not conform to expectations. The observed frequencies of statements 12 and 14 do not reflect the intended levels. In this case only statement 12 was updated as its correction would result in statement 14 now being classified correctly also.

With the successful testing and modification of the statements, they were ready to be included into the main experiment. The statements that were finally developed for the main experiment can be seen in Appendix C.

G.3.4 Holiday Package Statements – Quantitative Results

The final product category used, and for which pre-testing was required, was that of a holiday package. The insights that were gained from the development and testing of earlier product categories were employed in the initial writing of the statements for this category. These statements were then tested in a single round of testing,

with any modifications required being made at this stage. The results of the testing

can be seen below.

Statement Number	Frequency	Intended level
15	5	-1
3	7	-1
5	9	-1
8	14	-1
9	14	-1
2	15	-1
6	16	-1
12	18	-1
7	25	1
14	25	1
1	28	1
13	39	1
4	45	1
10	46	1
11	46	1
16	48	1

Table G14: The certainty of the facts in the statement

The results for the information characteristic of the certainty of the facts in the

statements can be seen in Table G14 for this product category. All of the

frequencies for the statements reflect the presence of the intended level of this

manipulation without error. No modifications were made to the statements based on

this characteristic.

Statement Number	Frequency	Intended level
9	10	1
1	11	1
14	15	1
16	15	1
7	17	-1
11	22	1
8	25	-1
12	25	1
10	26	-1
13	26	-1
6	29	1
5	32	-1
15	32	1
4	33	-1
3	39	-1
2	43	-1

Table G15: The consistency of the language in the statement

The next characteristic considered in this analysis was the consistency of the language in the statement. These results can be seen in Table G15. Examining these results it can be seen that the frequencies of four statements do not reflect the intended levels for this information characteristic. These statements are statements 7, 8, 6, and 15. These statements were updated to overcome these problems.

Statement Number	Frequency	Intended level
14	4	-1
4	6	-1
3	8	-1
6	12	-1
2	15	-1
7	16	-1
11	17	-1
9	24	-1
15	25	1
13	27	1
5	34	1
1	37	1
8	43	1
16	43	1
10	44	1
12	45	1

Table G16: The economic value of the facts in the statement

Table G16 above contains the results for the information characteristic of the economic value of the facts in the statements. It can be seen that all of the frequencies support the presence of the intended level of the characteristic without error. As a consequence, no modifications were made to the statements.

Statement Number	Frequency	Intended level
8	11	1
3	13	1
9	13	1
1	14	1
13	15	1
15	16	1
7	17	1
14	17	1
5	26	-1
2	29	-1
12	29	-1
16	32	-1
11	36	-1
6	39	-1
10	39	-1
4	54	-1

Table G17: The confirming nature of the information in the statement

From Table G17 it can be seen that the results for the characteristic of the confirming nature of the information in the statements is in line with intentions. All of the frequencies reflect the presence of the intended level. As a consequence no changes have been made to the statements based on this result.

With the successful completion of the testing and modification of the statements for this product context, they were ready to be included into the main experiment. The statements that were finally developed for the main experiment in the Holiday package context can be seen in Appendix D.

G.4 Conclusion

The primary objective of this research was the *development and testing of statements* that successfully manipulated the key information characteristics of:

1. The importance of the product attribute the information concerns
2. The impact of the information on preference variance through dis/confirmation
3. The certainty of the facts contained in the statement
4. The economic value of the information
5. The consistency of the terminology with previous communications (ambiguity).

This was achieved for each of the four product categories considered in this research. The first product category considered, that being laundry detergent, allowed for the development of the intuition and processes needed for the successful development of the statements for the subsequent categories examined.

Throughout the testing process the ability to successfully manipulate the information characteristics in the statements consistently improved. The final product category tested had the least number of errors of any product category. This offers strong evidence to support the assertion that statements are of suitable quality for inclusion into the main experiment.

An important caveat to this is that it was identified that in some circumstances a statement was unlikely to be successfully manipulated on all five information characteristics as needed. This may be the result of natural language structures struggling to adapt to the inclusion of some information combinations. It was in the attempt to address this that four rounds of testing were attempted in the first product category. Eventually it was acknowledged that this phenomenon would persist continuously as any attempts to correct it tended to only move the problem between the characteristics for a statement. It was this realisation that an error would nearly always be present that only a single round of testing was used in the subsequent product categories, as any further testing would not have been able to offer further improvement. The presence of such errors had the potential to generate major concerns about including these statements into the main experiment.

To overcome this problem, or to minimise its effect, it was concluded that controlling the likely errors across the product categories would prove effective. If an error was detected in one of the product categories and was unlikely to be able to be fully resolved then it was noted. Using the notations from that category the following categories were designed such that the same error did not occur there (although a *different* error may have resulted). In this way any error would be unique to each product category. When the product categories are aggregated in final analysis at the end of the main experiment, only one of the four product categories would contain that particular error. This would have the effect of minimising any harm that it may have in the final models developed as at least three

of the four categories would be performing as expected for that information characteristic for that statement.

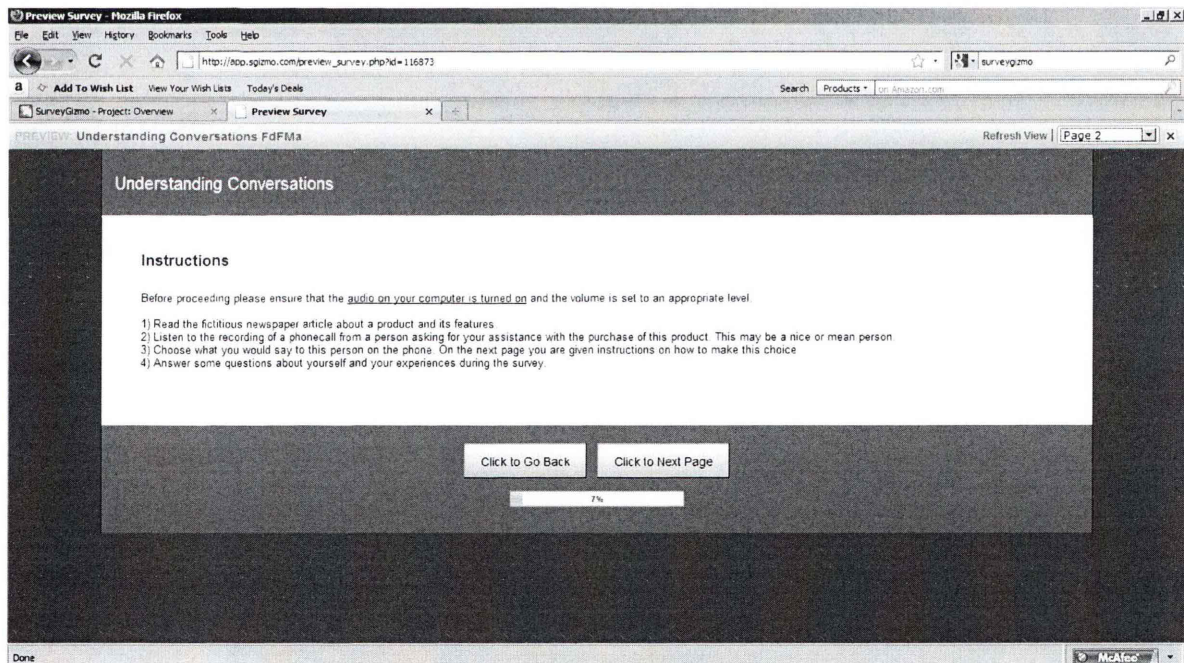With the successful completion of this phase of testing the statements are able to be included in the main experiment.
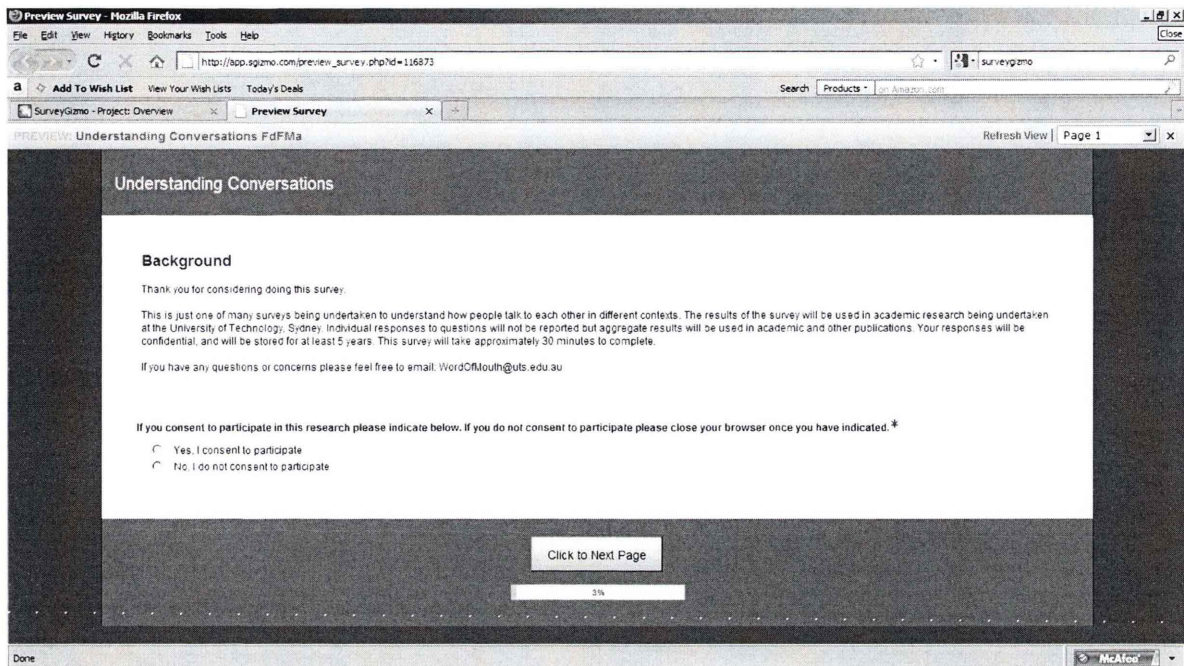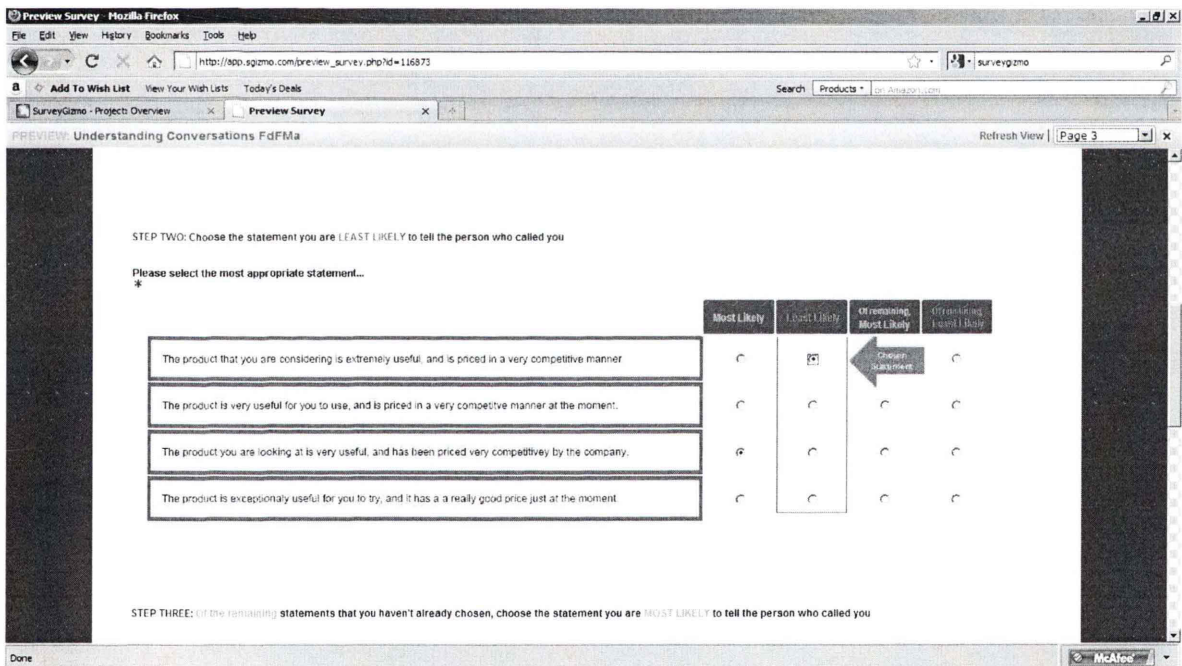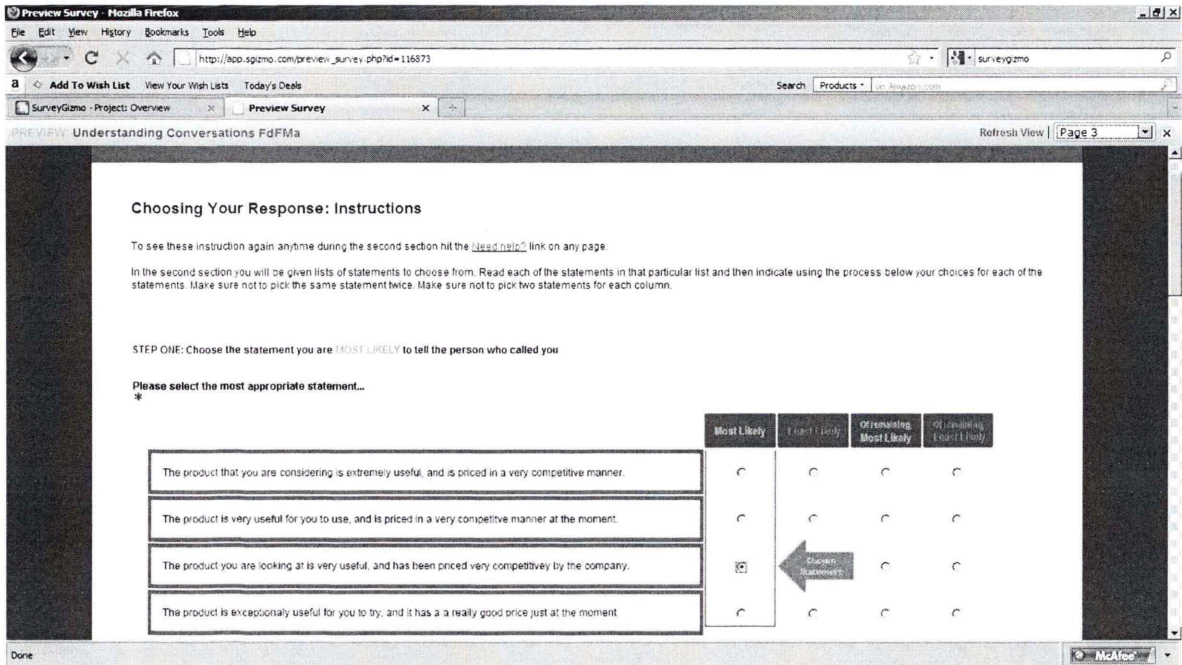
Appendix H: Balanced Incomplete Block Design

The Balanced Incomplete Block Design (BIBD) used to construct the statement (choice) sets can be found below. Each number in the design refers to the statement numbers as seen in Appendix B.

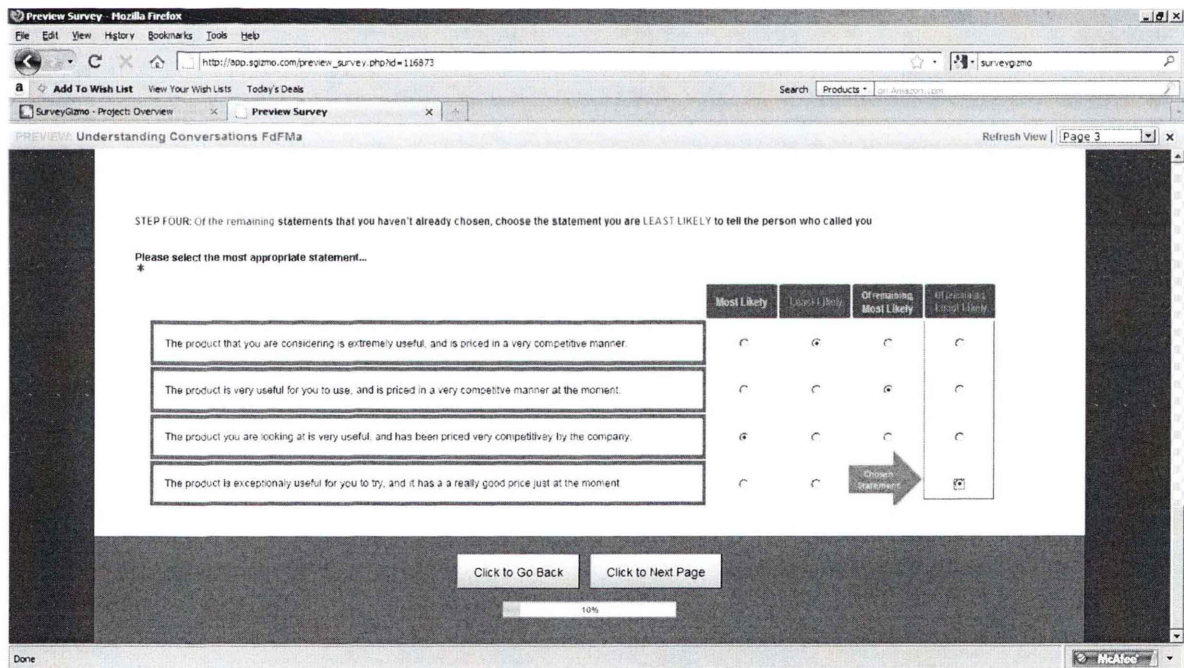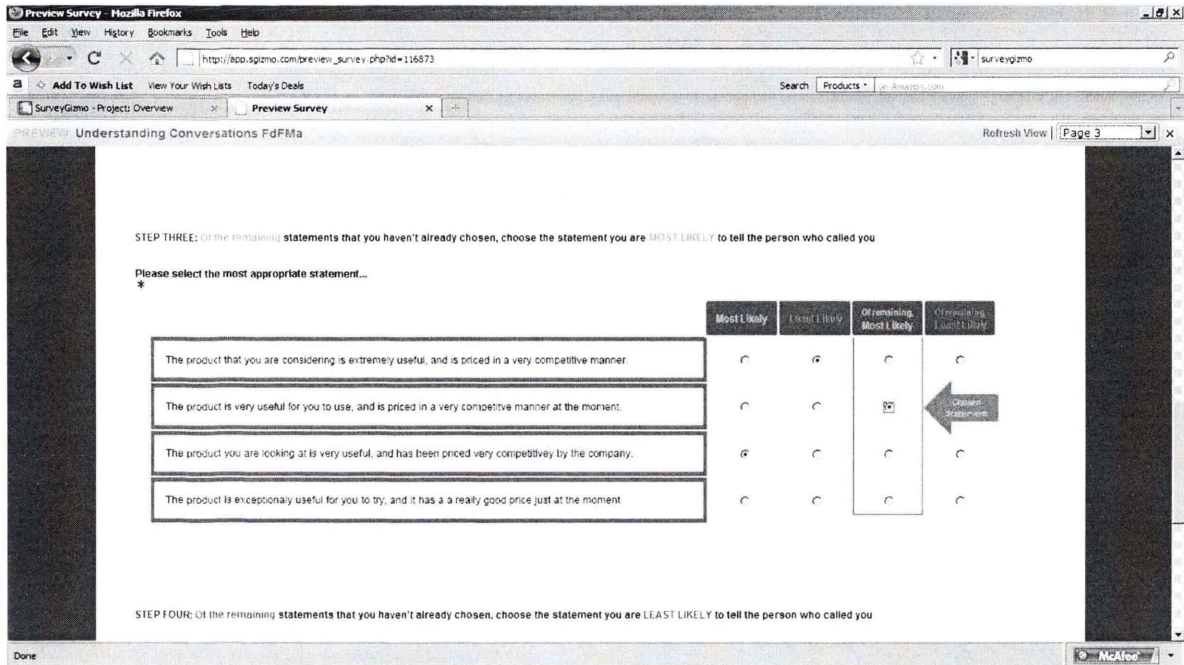|	Option1	Option2	Option3	Option4
Statement Set 1	2	5	8	14
Statement Set 2	1	5	6	7
Statement Set 3	5	9	12	16
Statement Set 4	4	5	11	15
Statement Set 5	3	5	10	13
Statement Set 6	1	2	3	4
Statement Set 7	2	6	9	11
Statement Set 8	2	7	13	16
Statement Set 9	2	10	12	15
Statement Set 10	1	8	9	10
Statement Set 11	6	8	13	15
Statement Set 12	4	7	8	12
Statement Set 13	3	8	11	16
Statement Set 14	1	14	15	16
Statement Set 15	3	6	12	14
Statement Set 16	7	10	11	14
Statement Set 17	4	9	13	14
Statement Set 18	1	11	12	13
Statement Set 19	4	6	10	16
Statement Set 20	3	7	9	15

This BIBD results in twenty sets of size four. Each statement occurs five times in the design with the pair frequency being one. When used in the main research the choice sets and options were randomised to remove any order effects that may have resulted.
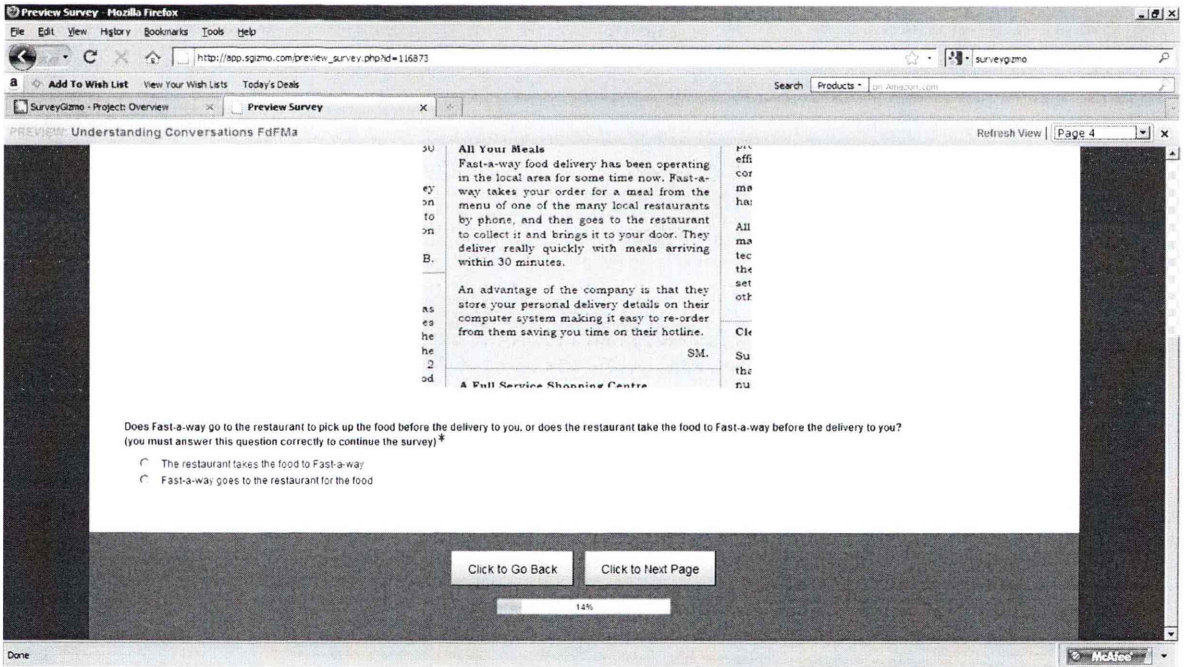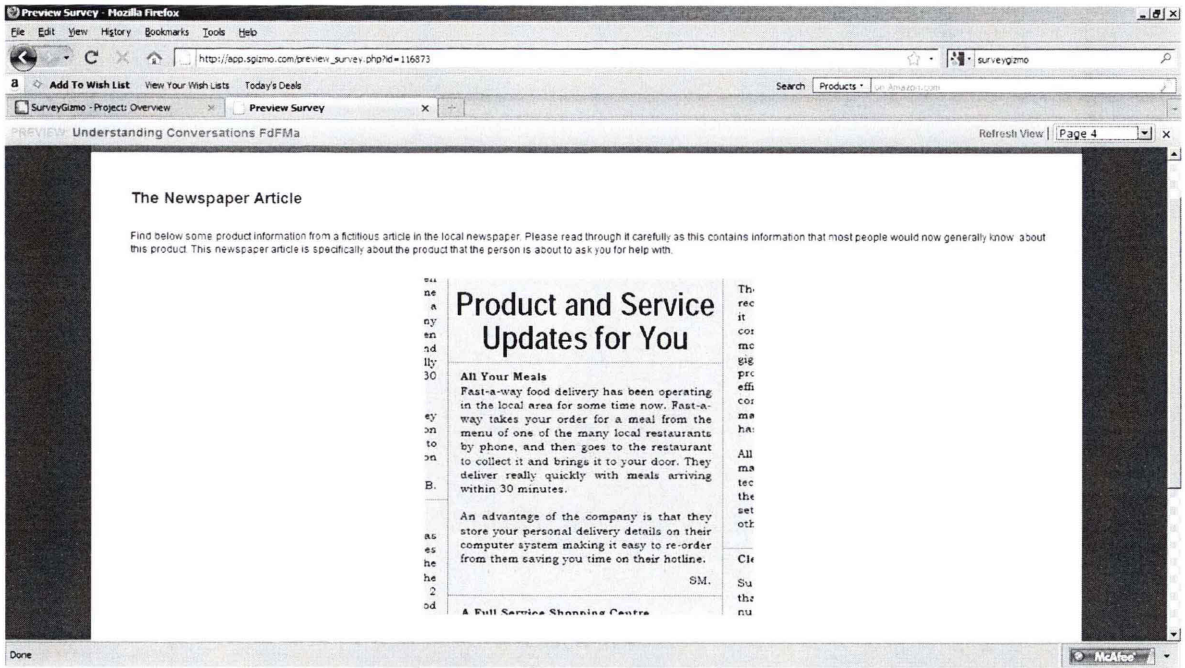
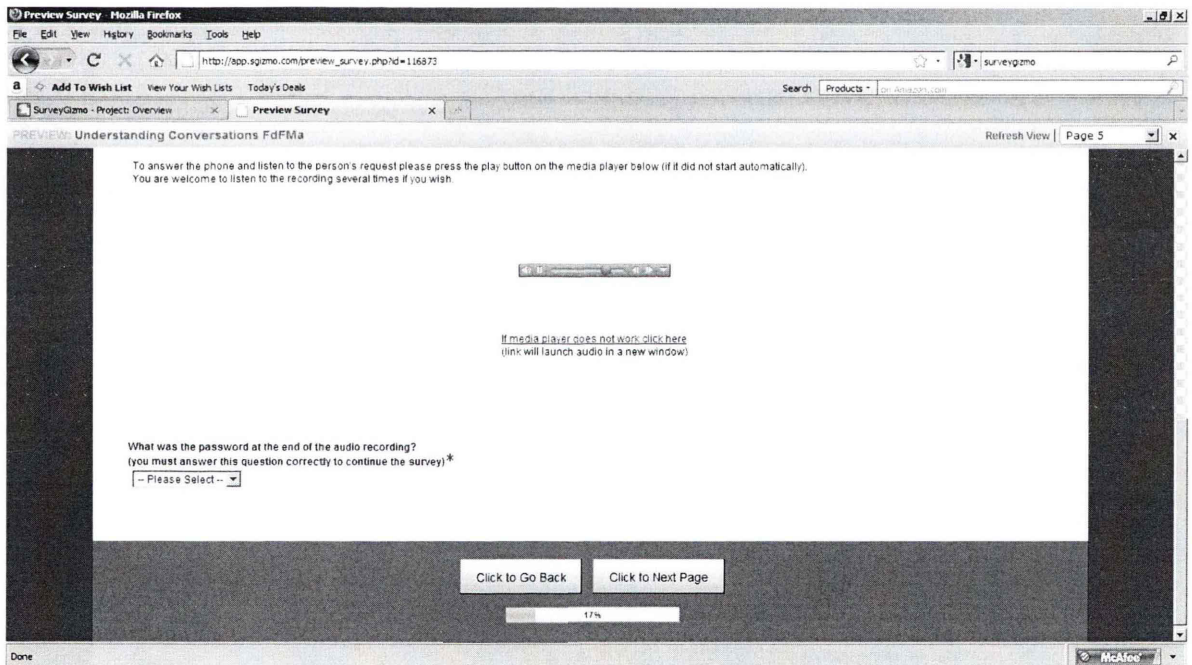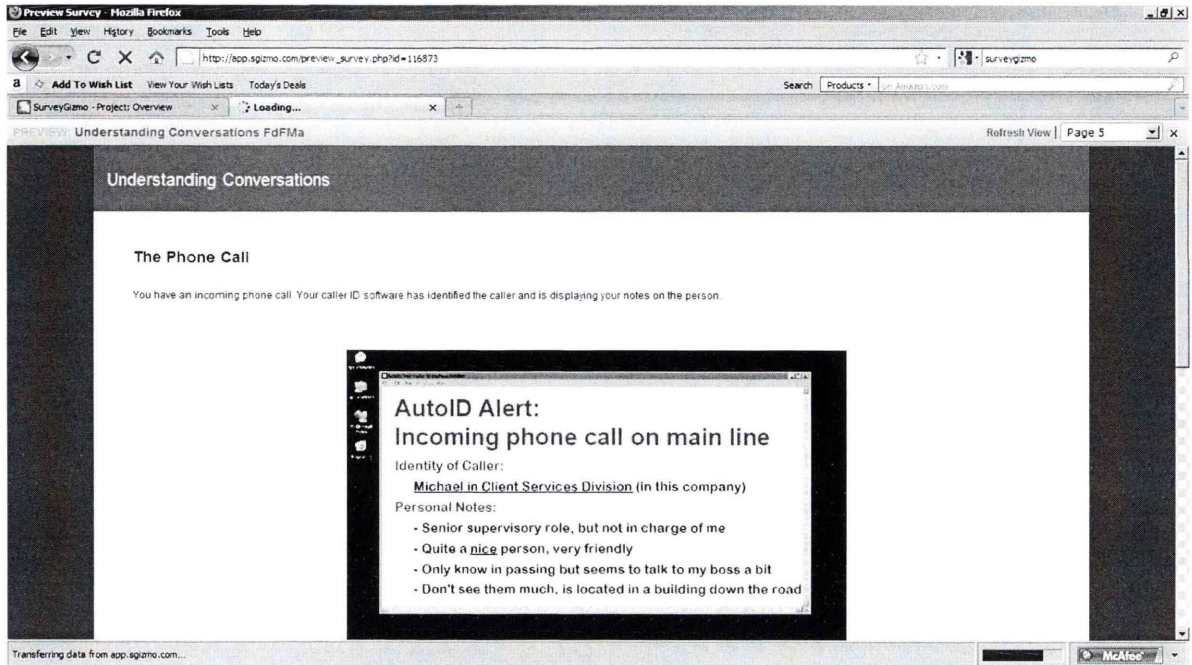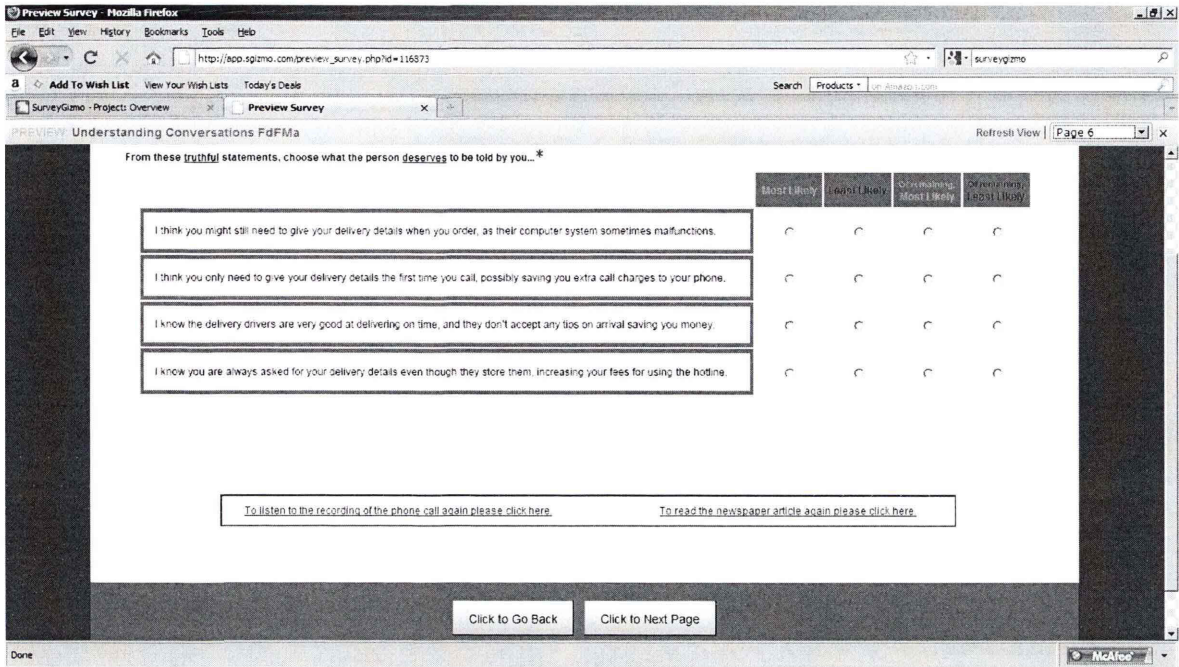## Appendix I: Sample Research Instrument (Home Delivery, Likeable Male)

A further 19 choice sets were provided as per the experimental design.

Please indicate the extent to which you think you may be similar to the caller for each of the following.

	Not at all similar	2	3	4	5	6	Very Similar
Overall lifestyle	○	○	○	○	○	○	○
Cultural background	○	○	○	○	○	○	○
Dress and appearance	○	○	○	○	○	○	○
Basic values	○	○	○	○	○	○	○

*

	Not at all similar	2	3	4	5	6	Very Similar
Outlook on life	○	○	○	○	○	○	○
Likes and dislikes	○	○	○	○	○	○	○
Tastes in products	○	○	○	○	○	○	○
Values and experiences	○	○	○	○	○	○	○

Click to Go Back   Click to Next Page

96%

A Bit About You

What is your gender? *
-- Please Select --

What is your age in years? *
-- Please Select --

Which of the following best describes your job/industry? *
-- Please Select --

Please indicate the extent you agree or disagree with the following descriptions of yourself. *

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
My friends or neighbours often come to me for advice.	○	○	○	○	○
I sometimes influence what my friends buy.	○	○	○	○	○
People come to me more often than I go to them for information about brands.	○	○	○	○	○

Click to Go Back   Finished? Submit your Survey