INFLUENCE OF ENDORSER CREDIBILITY AND MODALITY OF STATEMENT DELIVERY IN PERSUASIVE COMMUNICATION

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INFLUENCE OF ENDORSER CREDIBILITY AND MODALITY OF STATEMENT DELIVERY IN PERSUASIVE COMMUNICATION

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ABSTRACT

INFLUENCE OF ENDORSER CREDIBILITY AND MODALITY OF STATEMENT DELIVERY IN PERSUASIVE COMMUNICATION

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In the present investigation, we aimed at determining the persuasive effectiveness of different kind of endorser expertise and different delivery modalities of endorser statements. We presented 100 working professionals and advanced graduate students in the area of Speech Language Pathology/Communication Disorders with a statement made by an applied expert from their midst who possessed practical knowledge about a promoted product or with a statement made by an academic expert who possessed knowledge about this product technology due to research and scientific consideration. We delivered the statements either as written text or as video clip. Persuasive effectiveness entailing recommendation intention for the new product, retention of information about the product, behavioral intentions, attitudes towards these intentions, normative beliefs, and perceived behavioral control was assessed in a Web experiment. Results revealed no significant differences for the four treatment conditions for most of the assessed
variables. Only for retention of information endorser expertise and modality interacted significantly.
CHAPTER I

INTRODUCTION

Background

Tracing back to ancient Greeks, persuasive communication has attracted academic attention up to the present day. While back then persuasion was mainly a subject for rhetoricians and philosophers, nowadays scholars from various disciplines analyze persuasion as particular field of human communications (Briñol & Petty, 2009). Examples are communication science, social psychology, economics, and marketing.

Especially the latter is highly interested in persuasive effects—not surprisingly, given that entering the market with a new product is always a risky endeavor for companies (Jain & Posavac, 2001). Marketing research may assess beforehand needs and demands of the desired target purchasers. Whether they accept the product, buy and use it at the end, is impossible to state with certainty. However, in order to reduce this uncertainty, professional marketers have developed myriads ways to address prospect customers (Buda & Zhang, 2000). Examples range from attending a customer directly in stores, over guerilla marketing with unusual and attention-catching approaches, to classical TV or radio commercials. Despite being very different prima facie, all these means of communication have one thing in common: they are used to exert influence on individuals or groups of individuals. By applying these communication
strategies, marketers intend to persuade people to show a certain behavior—the behavior of buying a product.

On the other side, scholars from various fields in academia have assessed which aspects make communication and communicators persuasive. In a marketing setting, these sources of communication are often endorsers who speak in favor of a particular product, brand, or service. It is well understood that selecting an appropriate endorser is important but difficult task (Ohanian, 1990; Priester & Petty, 2003; Siemens, Smith, Fisher, & Jensen, 2008; Till & Busler, 1998). But: “[W]hat attributes are desirable for an endorser to possess?” (Priester & Petty, 2003, p. 408). One attribute which “has a rich history in persuasion research” (Tormala, Briñol, & Petty, 2006, p. 684) is an endorser’s credibility, more specifically, his or her expertise.

Taking on the historic comparison with Greek philosophers, another difference in persuasive communication between back then and nowadays becomes obvious: the way a persuasive message is conveyed. Face-to-face communication has become more and more substituted by mediated communication, opening a new scientific field for persuasion scholars: the modality of message delivery and its influence on persuasion (e.g. Andreoli & Worchel, 1978; Booth-Butterfield & Gutowski, 1993; Chaiken & Eagly, 1976; Pfau, Holbert, Zubric, Pasha, & Lin, 2000).

The present investigation was interested in this particular intersection which combines source characteristics and communication modalities. It aimed at contributing to the rich history of research of source expertise, by adding the realm of communication delivery.
Problem Statement and Relevance of the Investigation

The general research interest of the study at hand was derived from two major lines. The first one referred to scholarly considerations and empirical studies on the effectiveness of endorsers in persuasive communication and a particular so far unanswered question in this body of findings. The second one was connected to the applied setting the present investigation was settled in: The goal of working with an existing company\(^1\) was to find the most appropriate way to approach new customers. For this, we conducted a preliminary study in order to get to know the target purchaser group of the product to be launched from which have arisen new questions. Hence, in the following, we will elaborate first on expertise, then on modality, both regarded from our theoretical as well as applied point of view.

**Expertise—Expertness—Expert**

When reviewing literature on expertise, mainly cognitive psychology has delivered a huge body of research. Here, it is well agreed on what an expertise entails (Chi, Glaser, & Farr, 1988; Ericsson & Charness, 1994). A similar large amount of studies on expertise can be found in persuasive communication literature. Here, expertise—or often interchangeably referred to as expertness—is described as one of the major characteristics a communicator has to possess when desiring to successfully

\(^1\) The company was a publishing house which developed an application (hereafter referred to as the App) for portable tablets. The App was designed as tool for vocabulary acquisition for patients with speech and language disorders of all kinds. Desired purchaser group of the App was Speech and Language Pathologist who should use the tool in sessions with their clients.
influence other people (Petty & Briñol, 2008; Tormala et al., 2006). However, compared
to the understanding of expertise in cognitive psychology, persuasion research has
created a rather heterogeneous understanding (Ohanian, 1990). Friedman and Friedman
(1979), for example, found experts endorsing a new product more persuasive than
celebrities. Homer and Kahle (1990) reported a higher persuasiveness of a
communication source when receivers were highly involved and when the communicator
was introduced early in the persuasive act. Braunsberger (1996) found a communicator
with high level of expertise more persuasive than a communicator with low level of
expertise with regards to attitude towards advertisement and the communicator. Chaiken
and Maheswaran (1994) reported the result of people tending to put more weight on a
message made by an expert than a non-expert. However, there were also findings
indicating the opposite (Tybout, 1978).

One reason for these contradicting findings was fuzzily used definitions and
operationalizations (Braunsberger & Munch, 1998). Hovland, Janis, and Kelly (1953), for
example, described expertness as “the extent the communicator is perceived to be source
of valid assertion (his expertness)” (p. 21). Alba and Hutchinson (1987) defined it “as
ability to perform product-related tasks successfully” (p. 411), and Ohanian (1990) found
“adjectives such as ‘trained-untrained’, ‘informed-uninformed’, and ‘educated-
uneducated’” (p. 42) to be used to measure a dimension of expertise. Without a doubt,
researchers have been remiss in delineating the specific characteristics and differences of
the concepts they used.
Yet having a closer look at these definitions and operationalizations, we were able to identify two repeatedly mentioned dimensions which Jacoby, Troutman, Kuss, and Mazursky (1986) called “conceptually orthogonally” (p. 469): expertise and experience. However, they seem not to be used distinctively. Against that backdrop, Braunsberger and Munch (1998) reasoned that they were two different concepts which “might have differential effects on individuals exposed to persuasive communication” (p. 25). Although they found participants to be able to differentiate between both concepts when checking the manipulation of the study, they did not find significant main effects for source experience nor source expertise. To the best of our understanding, that study was the only one assessing expertise and experience as two concepts. Moreover, Siemens et al. (2008) stated that “little research is available on the role of different ‘types’ of expertise (with a product or within a profession) and their effects on persuasion in an endorser context” (p. 160).

The present study used exactly these notions as a starting point. We manipulated endorsers’ characteristics with regards of different types of expertise. Looking into the applied setting of the investigation at hand, we can specify on the two types of expertise.

The company we were working with defined Speech and Language Pathologist (SLP) as the main target audience for purchasing a new application. With only 136,000 certified SLPs in the United States (American Speech-Language-Hearing Association (ASHA), 2013), SLPs represent a rather small group of potential customers. Moreover, the company partner had at this point of time no data on consumer behavior in
this particular field. Hence, it was necessary to reveal general patterns of technology use in speech pathology, information seeking behavior with regards to technological advances in the professional field of SLPs, and other characteristics. For this reason, we conducted a survey at the biggest annual conference for SLPs, held November 11th to 15th in Atlanta, Georgia (Appendix A). Being asked to whom participants \((n = 24)\) referred most when looking for technical innovations in their field, 71\% stated to ask colleagues, 67\% consult published journals and publication of their professional association American Speech Hearing Language Association (ASHA) (multiple answers possible).

Against the backdrop that finding adequate endorsers for a product is an important but difficult task, it was interesting to transfer these numbers to the context of persuasive communication in a marketing setting. By doing so, we could derive importance of the investigation at hand from an applied point of view. Who would be more persuasive as an endorser for the App designed for SLPs? An applied expert from their midst who possesses practical knowledge about technological innovations and experience with it because he or she uses them every day at work? Or an academic expert whose knowledge about technological advances is based on research and scientific consideration? This set of questions formed a first block guiding research questions for the current investigation.

**Communication Modality**

Persuasive messages do not only differ by whom they are presented but also how they are delivered—the so called communication modality. It refers to the format in which the message is presented, i.e. written, audio, or video or the sensory channel which
information is communicated and received, i.e. in a visual, auditory, or audiovisual way. With technological progress, more and more modalities became available for practitioners what in turn was reflected in an increase of scholarly consideration of this subject. Especially the advent of moving images, made scholars wonder about persuasive effectiveness of different modalities and made them compare, for example, auditory and audiovisual persuasive messages (Pfau et al., 2000).

Similarly to studies on source expertise, investigations on communication modality have created a body of contradictory findings (Stiff & Mongeau, 2003). In one of the first studies on modalities, Wilke (1934) compared persuasive effects of messages either delivered by the speaker in a face-to-face situation, as a transcribed message, or presented over speakers only. He found that the speech led to more attitudinal change than the via speaker transmitted message than the transcribed message. McGinnies (1965), however, found that participants who were presented with a written text reported to be more persuaded than participants who were presented to the same message in audio mode. Including audiovisual stimuli in their experimental design, Chaiken and Eagly (1976) conducted a study on persuasion and message comprehension. Their results indicated that a difficult message was more persuasive when participants read the message rather than listening or watching it. Yet participants were found to be most persuaded in the easy message condition when they watched a video clip, least persuaded when then read a text.

The more studies were run comparing communication modalities, the more it became apparent that modality interacts with other variables such as communicator or
receiver characteristics. Andreoli and Worchel (1978) reasoned that contradictory results stemmed from channel characteristics. Comparing a trustworthy and an untrustworthy speaker, they reported that the trustworthy speaker was more persuasive in the audiovisual condition than in the audio condition or the written condition. Moreover, it was found that the untrustworthy speaker was more persuasive in the written condition than in both the audio and audiovisual condition.

More recently, Braverman (2008) ran a study on health messages promoting a special diet. Her work aimed at testing the effectiveness of testimonials compared to informational messages with regards to modality and receiver characteristics. Messages were presented through different modalities (written vs. audio) to recipients with different levels of involvement (high vs. low involvement; high need for cognition vs. low need for cognition). Findings of in total three independent experiments showed “that testimonials are more persuasive when presented through the audio mode rather than when presented through the written mode” (Braverman, 2008, p. 666). Moreover, she concluded that some of those factors were moderating effects in her study: modality of the delivered message and individual involvement. In order to gain more insight into how these factors moderate, Braverman (2008) suggested to go on with this kind of research and concentrate further investigation on “other modalities (e.g., video) or a combination of multiple modalities” (p. 691).

Explicitly in a marketing context and applying audiovisual stimuli, Appiah (2006) contrasts two modalities of online advertisement using endorser: audiovisual ads vs. text-picture ads. Amongst other results, he found out that customers’ intention to
purchase an advertised product was higher when browsing a webpage containing audiovisual endorser statements than text-picture based statements. The results of his study suggested that companies would benefit from preferring an audiovisual modality over a written one. However, Appiah (2006) limited his results when he acknowledged that persuasion in general may not be determined by single factors. Rather, we deal with more complex processes which entail several factors. Therefore, Appiah’s (2006) suggestion “to consider including additional conditions” (p. 85) seemed to be justified.

Following past research and Appiah’s (2006) notion, we aimed at comparing two different modalities in the present investigation: video and text. Hence, statements made by an endorser who possessed the above explained characteristics were presented either as audiovisual clip or as a written text.

The relevance of this part of our research interest was also reflected in the applied setting. Mass media communication as one way of many to contact customers also makes use of different modalities: visual, audio, or audiovisual which are all associated with different media such as written text, radio, or video. Which of these media to choose, was especially interesting for the associated company, as it planned to accompany the launch of the app with a new Web site where different media could be included. Hence, the second block of overarching research questions referred to the issue which communication modality served best to persuade potential purchasers in the area of Speech Language Pathology.
The Present Investigation

In sum, the purpose of the present investigation was to determine the effectiveness of endorsers varying in their kind of expertise (applied expertise vs. academic expertise) and presenting a persuasive message through different communication modalities (video vs. text). By doing so, we aimed at contributing to the body of literature on expertise in persuasive communication. Against the backdrop of dealing with the multidimensional construct of expertise, we tried to identify a potential gap in this body—and to help to close it. Additionally, from a more applied point of view and in the context of a given problem encountered by an existing company, our goal was to develop recommendations for the company how to address the desired target audience of SLPs best. Being derived from theoretical considerations and based on former research findings in the field of persuasive communication, we wanted these recommendations to be tightly connected with the theoretical and empirical goal one of the given study.

To find answers to the research questions at hand, we presented volunteer Speech and Language Pathologists and advanced graduate students of Speech Language Pathology or Communication Disorders with a statement made by an endorser speaking about a new application. The statement was either made by an endorser possessing academic or by an endorser possessing applied expertise. Additionally, we delivered the statement in two different modalities: either as a written text or as video clip. After

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2 Hereafter, Speech and Language Pathologists and advanced students in the area of Speech Language Pathology and Communications Disorders will be referred to as SLPs, unless it is important to differentiate between working professionals and students.
watching or reading the statement, participants were asked to fill out a questionnaire addressing their intentions to buy and use the App, intention to recommend it to colleagues, and various attitudes with regards to buying and using it. Furthermore, participants were asked to write down what they remembered from the statement they had been presented with. These variables served as the depend variables in our study. Also several demographic questions and questions regarding participant’s work as SLPs addressing age, gender, years spent working as a professional, and familiarity with apps were asked. We conducted the present study as a Web experiment, i.e. treatments as well as questionnaire were delivered with a Web site designed for that particular function.

In the following, we will first give a review on existing literature on persuasive communication. We will focus on different factors in persuasive communication: source factors, message factors, and receiver factors. Then, we will present a theory of attitude and behavior which are understood to be the aim of persuasion in order to gain a change. Finally, the Elaboration Likelihood Model as a model of persuasion will be explained. Against the backdrop of these theoretical considerations and the overall aim of the present investigation, we will present our hypotheses. The subsequent chapter about methodology will introduce design, participants, experimental material, and procedure we used in this study. After the presentation of results and findings, they will be discussed, together with limitations of the study at hand. We will conclude with an outcast for further research.
CHAPTER I

LITERATURE REVIEW

Introduction

Persuasion seems to be as old as human communication. Ever since humans have been able to interact with other human beings, they have also tried to influence their communication partners. This notion is reflected in the long history of scholarly consideration of a particular communicative phenomenon called ‘persuasion’. Over the course of the millennia, academics have dedicated their interest of research to persuasion, its application and mechanisms. Aristotle, for example, focused in his opus *Rhetoric* on opinion-forming discourses. Although only verbal communication was the subject of consideration in this ancient book, it is still the base for the whole spectrum of persuasive communication, nowadays including all means of communication such as text, pictures, or moving images and all kind of academic branches (Dillard & Pfau, 2002).

Being subject of study in different areas of research, we cannot be surprised to find so many differing definitions of persuasion depending on the disciplinary. Gass and Seiter (2010) illustrated this assertion by collecting around 20 definitions from research of the last three decades. Yet there is a general consensus that persuasion is an activity in which a communicator tries to change beliefs, behaviors, or attitudes of another individual or of a group of individuals (Perloff, 1993). This change is accomplished
through conveying a message that entails a particular content and other characteristic elements. Against the backdrop of this general consensus, Perloff (1993) suggested a definition of persuasion. He regarded it as “a symbolic process in which communicators try to convince other people to change their attitudes or behavior regarding an issue through the transmission of a message, in an atmosphere of free choice” (p. 14). In the present investigation, we took this definition as a basis.

With regards to this understanding of persuasion we used for the present investigation, we will further scrutinize different aspects of this definition in the following literature review. First, we will concentrate on various elements of the persuasive communicative act itself, e.g. elements of the symbolic process, its originators and receivers. Definitions, developments and study results will be explained and contrasted. Second, we will analyze indented outcomes of persuasive communication and present two theories of attitudes. Third, taking all that into account, the most influential model of persuasion will be presented: the Elaboration Likelihood Model.

Factors of Persuasive Communication

As mentioned above, persuasion can be regarded as a particular phenomenon of human communication. Without exploring further details on human communication in all its diversity, one way to describe an act of communication is to answer the following questions in accordance with Lasswell (1948): who (says) what (to) whom (in) what channel (with) what effect? This so called Lasswell Formula can be applied to considerations about persuasive communication in general.
The formula also goes hand in hand with five variables which McGuire (1978) described to compose an act of persuasion. The five variables are: source, message, channel, receiver, and destination variables. By combining the Lasswell Formula with McGuire’s five variables, we gain a better understanding of what exactly an act of persuasive communication entails: source factors—the ‘who’—, message factors—the ‘what’ and to some extent the ‘in what channel’—, channel factors— the ‘in what channel’—, and receiver factors—the ‘whom’—, and outcome of communication—the ‘what effect’. Within these categories, all factors can be divided into several subordinate aspects depending on the scientific field (Dillard & Pfau, 2002; Perloff, 1993). In the following, those factors which are essential for the investigation at hand will be regarded.

**Source of communication**

Analyzing what characteristics make a source of communication (i.e. the communicator) persuasive is one of the main foci of research about persuasion (Perloff, 1993). Examples of such characteristics are gender, status, physical attractiveness of a communication source as well as liking, similarity or credibility attributed by receivers.

**Credibility**. Credibility is one of the communicator’s characteristics which has been in focus of many scientific investigations. Starting in the 1950s, Hovland and his colleagues conducted the first studies of source credibility with regards to persuasive effectiveness in social sciences (Hovland et al., 1953). These studies are still ranked among the most influential studies in persuasion research as Hovland’s so called *Yale Attitude Change Approach* and its associated researchers were the first group of scientists
who developed a systematic and experimental research program to analyze variables which promoted or inhibited persuasion.

Although O'Keefe (1990) proposed a single definition for perceived source credibility as “the judgment made by a perceiver (e.g., a message recipient) concerning the believability of a communicator” (p. 131), he emphasized at the same time that there was actually not that unitary construct of credibility which can be easily assessed. In other words, source credibility is not mono-dimensional. Rather, it is wildly agreed on that credibility is a multidimensional construct (e.g. Petty & Wegener, 1998; Stiff & Mongeau, 2003; Tormala et al., 2006); yet which dimensions constitute source credibility is controversially discussed (Pornpitakpan, 2004). For example, Applbaum and Anatol (1974) measured the dimensions objectivity, dynamism, expertness, and trustworthiness. Others (e.g. Berlo, Lemert, & Mertz, 1969) listed safety, qualification, and dynamism.

Despite such seemingly different dimensions, Ohanian (1990) stated that most research about credibility could be traced back to the “landmark study of Hovland and associates (1953)” (p. 41) who split credibility into two factors: expertness—also often labeled as expertise—and trustworthiness. Hovland et al. (1953) defined expertness as the “extent to which a communicator is perceived to be a source of valid assertion” (p. 21) and trustworthiness as the degree to which an audience regarded a statement made by a communicative source to be valid.

**Expertness.** The source factor of expertness has been analyzed in many studies as well. Generally speaking, a source with much expertness was found to be more persuasive than a source with less expertness (Briñol & Petty, 2009; Chaiken &
Maheswaran, 1994; Clark, Wegener, Habashi, & Evans, 2012; Homer & Kahle, 1990; Ratneshwar & Chaiken, 1991). Yet, when looking, for example, at the study by Ratneshwar and Chaiken (1991), it becomes obvious that splitting source credibility into expertness and trustworthiness may have not been fine enough. Here, a fictitious source which was designed to possess either high or low expertness was described by the participants as competent, intelligent, or knowledgeable when asked how they had perceived the communicator.

Above we have illuminated how blurred the construct of source credibility is. Adding the example Ratneshwar and Chaiken (1991), we can assume that this blur is not resolved even when splitting this construct into various dimensions. As an attempt of bringing more theoretical clearness into these entangled definitions and operationalizations, Ohanian (1990) probed into the dimensions of credibility with three goals in mind, all of them equally important for the current investigation. First, the researcher intended to “replace the plethora of single-item measures” (Ohanian, 1990, p. 49). Second, the scale should also be useful for experimental manipulation to compare high- and low-treatment groups. The third intention addressed the need of advertisers and other professionals in the field of persuasive communication of an applicable scale in order to facilitate decisions on important character traits of an endorser or spokesperson.

Using 72 semantic differential items derived from the literature, Ohanian (1990) first conducted a principle component analysis, yielding at a three factor solution for source credibility: expertise, trustworthiness, and attractiveness. For the research question at hand especially the first component is interesting. Here, eleven items which
had loading of 0.6 or higher on this factor were determined. In order to create a handy scale, these 11 items were reduced to five by deleting those items which had the lowest item-to-total correlation. Finally, a subscale of expertise as part of source credibility was maintained which consisted of expert – not an expert, experienced – not experienced, knowledgeable – unknowable, qualified – unqualified, and skilled – unskilled. This subscale had a “reliability coefficient of 0.8 or higher” (Ohanian, 1990, p. 44).

Another study which was conducted against the background of lacking precise definitions and operationalizations of source credibility is the investigation by Braunsberger and Munch (1998). According to them, the two terms expertness and experience were often confused and used interchangeably. Based on a suggestion by Jacoby, Troutman, Kuss, & Mazursky (1986) that expertise and experience are “conceptually orthogonal” (p. 469), Braunsberger and Munch (1998) tested the differences of effectiveness of source expertness and source experience in a persuasive setting. In doing so, they contrasted two of the factor items proposed by Ohanian (1990) without actually referring to her. In their study, Braunsberger and Munch compared sources with different level of expertness and experience (for each low and high) in advertisement for a medical facility. Pre-testing and manipulation checks for both expertise and experience revealed that participants were able to distinguish between both characteristics. Nevertheless, none of the hypothesized main effects for expertise or experience was found significant. Moreover, additional analyses revealed that the level of experience does not have significant effects on purchase intentions. They concluded that it might be easy for participants (i.e. prospective customers) to evaluate expertise of an
endorser (a physician) by assessing his or her medical knowledge. In contrast, they assumed that the experience of endorser was rather difficult to perceive. Hence, “subsequent categorization of an endorser as being experienced or inexperienced appeared to be problematic” (Braunsberger & Munch, 1998, p. 32). Against the backdrop of these results, they recommended further research.

After presenting these two factors of a source which can have influence on a person receiving a persuasive message, we will have a closer look on message factors in the following.

Message factors

Message factors of persuasive communication refer to the actual content of a message and the way it is designed (Perloff, 1993). Therefore, in accordance to the Lasswell formula, we deal with the ‘what’. This question concerns the topic how “a message might be designed to produce the greatest suasive impact” and “lie[s] at the very center of persuasion research” (Dillard & Pfau, 2002, p. xvi). As the investigation at hand is embedded into an applied setting of a marketing context, this notion is of crucial importance because it allows deriving recommendations about how to create a persuasive message best.

The assertion made above that researcher put weight on different aspects when analyzing source factors can also be stated about the factors. Perloff (1993) identified three larger groups in which he suggested to categorize scientific investigations: first, those which are related to the message content itself; second, those
which pertain to the message structure; third, those which concentrate on the language of
the message such as use of rhetorical devices.

One research branch which is categorized into the first group is concerned
with so called evidences. Evidences are one approach of creating a persuasive message to
underpin a source statement. They are assertions which stem from another person or
corporate body than the communicator of the persuasive message. In other words, the
actual communicator uses a statement, fact, or object not produced by him or her in order
to enhance his or her own persuasive message (McCroskey, 1969). Those third party
communicators can be for instance endorsers (e.g. famous actors, experts, or everyday
users), factual statements (e.g. conveyed by spokesmen), or statistics. Over the course of
years of analysis of persuasive communication, researchers have contrasted these
evidences intensively. Especially contrasting testimonials and statistic evidence have
created a huge body of work (e.g. De Wit, Das, & Vet, 2008; Reynolds & Reynolds,
2002) allowing a general statement regarding the effectiveness of evidence use: including
some form of proof for an assertion in a message consistently increases persuasion
(Reinard, 1988)—a finding Perloff (1993) was not surprised about, given the rather broad
definition of evidence that was stated above. Kellermann (1980) was even more critical
when he stated that “definitions of ‘evidence’ are almost as numerous as the individuals
who work in the area” (p. 162). He concluded the same problem for the
operationalization of evidence.

Thus, it is necessary to distinguish different kinds of evidences used in
persuasive communication when we want to talk about different effectiveness and to
focus on that one which is relevant for the current research question. Hence, against the backdrop of the particular research interest of the investigation at hand, only endorsers as one way to enhance the effectiveness of a persuasive message are further regarded, since “understanding the effectiveness of endorsers is an important issue for both practitioners and academics” (Till & Busler, 1998, p. 576) and therefore will help to answer the twofold approach of this investigation.

**Endorsers.** According to Stern (1994), we have to differentiate between two types of communicative sources in an advertisement setting: a sponsor and a persona. The former refers to the company which wants to make advertisement for a product and pays for this advertisement, the latter refers to a fictional or non-fictional character who is within ad communicator and mostly gets paid for his or her endorsement. Because of that, this persona is also called endorser.

Friedman and Friedman (1979) distinguished between three different kinds of endorsers which were used in promotional contexts: celebrities, professional experts, and typical consumers. For the investigation at hand, only professional experts are in the realm of interest. These professional experts are defined as “an individual or group possessing superior knowledge regarding the product class endorsed. The endorser has obtained this knowledge as a result of experience, study or training” (Friedman & Friedman, 1979, p. 63).

Stern’s (1994) as well as Friedman and Friedman’s (1979) definitions of an endorser goes hand in hand with the above stated definition of evidence as third party communicator. The present investigation’s understanding of an endorser is based on this
differentiation between sponsor and endorser. Looking at this definition, we can find similarities to definitions that were stated for the source characteristic of credibility, more precisely on source expertness. Moreover, at this point of analyzing factors of persuasive communication it becomes obvious that there are overlaps between endorser characteristics and communicator characteristics. Indeed, many investigations on effectiveness of endorsement did not account for the different levels of analysis. Rather, they tacitly transferred results from studies about communicator expertness on studies of endorser expertness (Stern, 1994). Acknowledging that there are different levels of analysis between sponsor, i.e. out of ad communicator, and endorser, i.e. within ad communicator, we stress that only the latter was the subject of investigation in the present paper.

**Channel factors**

Next to source and message factors studies on channel factors have been analyzed by persuasion researchers. Following the Lasswell Formula, we reach the part of ‘in what channel’, which in more recent persuasion research is often associated with communication modality. Communication modality pertains to the sensory medium through which information is communicated as well as received. In an advertising context, the most important modalities are visual and auditory as the “managerial relevance of modality stems from its close correspondence to advertising media vehicles. Thus, radio utilizes the auditory mode, print utilizes the visual mode, and television incorporates both (i.e., is audio-visual)” (Mani & MacInnis, 2000).
It is widely agreed on that modality has influence in persuasive communication (Andreoli & Worchel, 1978; Chaiken & Eagly, 1983; Perloff, 2010; Worchel, Andreoli, & Eason, 1975). Yet, studies on this impact of modality showed a common pattern with studies on other factors of persuasive communication: the results were often contradictory (Pfau et al., 2000). There was no clear tendency which indicated that one modality has more persuasive power than another. However, comparing results of more recently published studies, it can be concluded that modality may not operate as a single main effect in persuasive communication but in interaction with other factors (Andreoli & Worchel, 1978; Booth-Butterfield & Gutowski, 1993; Chaiken & Eagly, 1983).

One reason for these again mixed results of persuasive effectiveness of different communication modalities is the fact that the above described media vehicles are inseparably connected to modalities. This makes analyses on persuasive impact of different media difficult (O’Keefe, 1990). Communication media such as radio or video entail bundles of various attributes which in experimental research are not easy to untangle to conclude “which attribute (or set of attributes) is responsible for any observed differences between media” (O’Keefe, 1990, p. 1984). Video or television, for example, entails spoken words and other sounds as well as still and moving images; hence, an audiovisual medium is perceived with both auditory and visual sensory channels.

Moreover, next to being bound to certain sensory channels, different media have other unique characteristics. When comparing written statements with spoken statements, for example, we have to bear in mind that reading is self-paced; information
presented in audio or audiovisual modality is not (Corston & Colman, 1997). This
difference is crucial when identical statements are presented in an experimental study
with the goal of comparison. Here, it is tricky if not even impossible to control for
exposure times. While participants who are presented with written statements can take
their time to read and even to re-read a text, participants in other conditions often have no
control over the pace of presentation. Thus, they lack the advantage of repetition (Corston
& Colman, 1997). In this context, results such as learning superiority of complex
persuasive written material are not surprising (Chaiken & Eagly, 1976).

Receiver factors

One last important factor in the process of persuasive communication is the
receiver of persuasive messages. O’Keefe (1990) offered a definition of what to
understand by receiver factors and subsumed under this category “enduring receiver
characteristics (such as sex and personality traits), induced receiver factors […], and
contextual factors” (p. 175).

Amongst these enduring factors, there is also a concept—or rather a bundle of
similar concepts—which is subsumed under the term of involvement. There are four
main lines of research, depending on academic discipline, that we can classify as
involvement (Schenk, 2007). The first one describes involvement as a personality trait:
individuals with high involvement principally tend to become more concerned about
decisions.

The second category regards involvement as a stimulus property. Here,
involvement refers not to the receiver characteristics but to the advertised product. This
interpretation is mainly used in marketing, assuming that some product classes (e.g. cars) are more involving than others (e.g. butter) (Kroeber-Riel, Weinberg, & Gröppel-Klein, 2011). The third category sees involvement as an individual internal state. Here, involvement does not refer to products and brands, but to general attitudes and values towards them. One example within this category is the concept of ego-involvement, a concept originating from social psychology literature. In the context of the Social Judgment Theory by Muzafer Sherif and colleagues (e.g. Sherif & Hovland, 1961), so called ego involvement was introduced to describe the totality of motives, feelings and attitudes by which an individual sets his own role and his own status in relation to others.

The last category regards involvement as a stimulus salience. It is interpreted as personally perceived importance of an object or a situation. This understanding formed the base for involvement as it was in the so called Elaboration Likelihood Model (e.g. Petty & Cacioppo, 1981, 1986a, 1986b), one of the most prominent models in persuasive communication.

Although Schenk (2007) amongst others tried to categorize the concepts of involvement, until now there is no agreement how to define involvement exactly. Moreover, the concept has been operationalized in many different ways depending on academic discipline and focus of the particular study, contributing even more to the fuzziness of the concept (Buchholz & Smith, 1991).

In sum, we can state that over the course of years scholarly consideration on persuasion has become more and more complex, ranging from first basic research interests of comparing experts and non-experts, for example to highly complex
experimental designs including several of the above explained factors (O’Keefe, 2008). Importance of results of the latter notwithstanding, it has also led to some contradictory and troublesome results. Therefore, after explaining a theory of persuasive outcome the following chapters will be dedicated to a model which aims at systematizing the influence of persuasion factors.

Attitudes and Theories of Attitude

After having presented particular elements which play a role in the effectiveness of a persuasive process, the next step is to look at the goal of persuasion. According to the definition of persuasion which is used for the current investigation, persuasion aims at changing a receiver’s attitudes or behavior regarding a particular subject (Perloff, 1990). Therefore, it is indispensable to dedicate a part of the theoretical embedding of the study at hand to attitudes.

Basic Assumption of Attitudes

In order to understand which role attitudes exactly play in persuasive communication, it is essential to know more about the nature of attitudes. As the study at hand is an empirical investigation, it is also important to discuss how they can be measured. Both characteristics and measurement of attitudes will be briefly discussed in the following paragraphs.

Definition. Similar to other constructs, attitude has been so far defined in many different ways. Eagly and Chaiken (1993) defined it as “a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor”
Almost fifteen years later, they reviewed their highly cited definition and specified it by calling it an “abstract—or umbrella—definition [...] which posits three essential features: evaluation, attitude object, and tendency” (Eagly & Chaiken, 2007, p. 583). Evaluation includes all evaluative responding made by a person. They can be overt, covert, cognitive, affective, or behavioral and have a tendency, also called valence. Moreover, attitudes differ in their intensity: regarded on a continuum, they can be strong or weak or at any point in between (Maio & Haddock, 2009). Both valance and strength can change over time and due to certain influences such as persuasive messages.

**Measurement.** Attitudes are constructs which are not directly observable. Hence, other methods are needed. We can broadly distinguish between two groups of measurements: direct and indirect ones (Eagly & Chaiken, 1993). The former refers to methods with which study participants are simply asked to state their attitude towards the entity at regard. Often one-item rating scales such as the so called Likert scale or Thurstone scale are applied and used in questionnaires. Indirect measurements refer to methods with which researchers do not ask participants directly. Rather, attitudes are inferred from behaviors, reactions, or judgments. Examples are Implicit Association Test or physiological measures (Maio & Haddock, 2009).

**Attitudes and Behavior**

One focus of attitude research is placed on the question of the relationship between attitude and behavior. Especially in the fields of health promotion, politics, or marketing and advertising, researchers as well as practitioners have always been highly interested if and how attitudes predict behavior.
Challenging early assertions on the relation of attitudes and behaviors, contemporary approaches do not postulate anymore a “one-to-one correspondence between attitude and behavior” (Fazio, 1986, p. 205). That is, attitude predicates behavior. Nowadays, this assumption is substituted by the notion that predicting behavior from attitudes in a one-to-one fashion is not possible as “people are especially unlikely to translate attitude into behavior when norms and scripts operate, they ambivalent about the issue, or they regard themselves as high self-monitors” (Perloff, 2010, p. 105). Hence, we can say that attitudes may guide behavior—but only under certain conditions and in certain fashions. For that, several models, frameworks, theories have been developed in order to account for these conditions and fashions.

**Theory of Reasoned Action and Theory of Planned Behavior**

One of the best-known theories of all these approaches is the so called Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1977, 1980; Fishbein & Ajzen, 1975) and its direct successor Theory of Planned Behavior (TPB) (Ajzen, 1991). In the following, the original theory is presented, before adding the essential innovations of the TPB.

**Theory of Reasoned Action.** Ajzen and Fishbein based the TRA on the assumption that volitional behavior—and the theory explicitly included only voluntary acts—is based on an individual’s intentions as an “intermediate determinate of action” (Ajzen & Fishbein, 1980, p. 5). Intentions are functions of two factors: The first one refers to personal attitudes of the individual toward the behavior in question. The second one are so called subjective norms (Ajzen & Fishbein, 1980). The former are evaluations
or judgments regarding an intended behavior in the sense of ‘buying this new product is good/bad’. The latter refer to the perceived and anticipated reactions and responses the personal environment of an individual utters with regard to the intended behavior. An example subjunctive norms are responses of family towards someone’s buying a new product.

In contrast to other understandings of attitude, Ajzen and Fishbein (1977) stressed that they regarded attitude as being directed to performing a particular behavior and not to a physical object. Again, the realm of marketing is suitable as an example. Ajzen and Fishbein referred to cars respectively buying a car. In the context of TRA, not the car itself as an attitude object was regarded but one’s attitude towards purchasing the vehicle.

In order to understand better why individuals have certain attitudes towards a behavior and particular subjective norms, Ajzen and his colleague introduced two other terms: behavioral beliefs and normative beliefs. Behavioral beliefs are “beliefs that underlie a person’s attitude toward the behavior” (Ajzen & Fishbein, 1980, p. 7). In short, a person believing that showing a particular behavior would lead to good results will hold a positive attitude towards this behavior and vice versa. Normative beliefs, on the other hand, underlie subjective norms and are defined as one’s perceived expectation of how significant others assess performing this behavior.

According to Hale, Householder, & Greene (2002), the TRA was used in various field of scientific research such as sports, health, or nutrition. They counted at least six different meta-analyses which scrutinized diverse studies in order to test the
theory and to see if the TRA predicted behavior adequately. Sheppard, Hartwick, and Warshaw (1988), for example, found “strong overall evidence for the predictive utility of the model” (p. 325).

However, criticisms were uttered regarding the relation between normative beliefs and attitudes, the probable insufficiency of predictors proposed by the TRA, volitional control of all behaviors (Hale et al., 2002). As a reaction to these, Ajzen (1991) proposed with the Theory of Planned Behavior an extension of the TRA.

**Theory of Planned Behavior.** Keeping the component of attitude and subjective norms as well as behavioral beliefs and normative beliefs, Ajzen (1985, 1991, 2001) added perceived behavioral control and control beliefs to gain his new approach. These referred to the observation that an individual may try to perform a behavior but is not able to do it because of constraints. These constraints are outside of the sphere of control of an individual, because they are caused by external entities such as time or technology. Hence and in accordance with the above stated definition for attitude and subjective norms, perceived behavioral control was defined as individuals’ perception of their ability to perform a particular behavior (Ajzen, 1991). Perceived behavioral control exerts influence on both intentions and behavior. In turn, perceived behavioral control is influenced by control beliefs which are defined as a person’s beliefs about those constraints which is why they hinder or prevent the successful performance of a behavior.

Similarly to its predecessor, the TPB has received a huge amount of scientific consideration and application in various fields, again varying from studies on weight lost (Schifter & Ajzen, 1985) to investigation of hunting (Hrubes, Ajzen, & Daigle, 2001). A
meta-analysis of 185 studies provided “support for the efficacy of the TPB as a predictor of intentions and behavior” (Armitage & Conner, 2001, p. 489).

TRA and TPB in Marketing and Persuasion. As reasoned above, research on attitudes is particularly interesting in the field of marketing and consumer behaviors. Marketers like to know if their strategies lead to desired aim of consumers buying products or using services. The same holds true for businessmen who are interested in increasing sale figures. Bearing this field of application in mind, Ajzen and Fishbein (1980) dedicated an entire chapter of their work for use of their attitude theory in a marketing setting. Although it was written for the TRA, the following can extended to the TPB as well. Ajzen & Fishbein (1980) stated that “the typical approach to consumer behavior has attempted to identify product or brand attitudes that serve as the evaluative criteria for purchase decision” (p. 155). This common procedure was criticized. Assessing preferences for certain products and brands is not the same as assessing the actual intention to choose one of them over others. Ajzen and Fishbein (1980) illustrated their assertion with the example of cars. Although high-quality cars were more likely to be rated as one’s preferred car, they were the least likely to buy. Against this backdrop, the researchers concluded that a particular attitude toward a product may specify on the product itself, but it neglects actions, contexts, and constraints which according to the TRA/TPB influence intentions of action and actions themselves.

In sum, for Ajzen and Fishbein (1980) it was obvious that “reliance on attitude towards brands or products in inadequate as a basis for understanding and predicting consumer behavior” (p. 165). Hence, it is important to assess attitudes towards buying or
using a product and subjective norms with respect to this behavior as well as behavioral and normative beliefs associated with it. Moreover, TPB suggested including perceived behavioral controls and controlling beliefs.

Furthermore, TRA/TPB seem to be suited for studies in the context of persuasive communication as they offer constructs which can be aimed at with tailored messages. A receiver’s behavioral intentions can be regarded as targets of persuasive messages (Hale et al., 2002). While its procedures refer more to a direct way of influencing behavior, targeting a receiver’s attitudes toward a behavior and associated subjective norms or behavioral and normative beliefs may be a more indirect way.

Elaboration Likelihood Model as a Model of Persuasion

Research on persuasion has not only contributed to myriad empirical studies throughout different academic disciplines, it has also led to theoretical considerations on this phenomenon of human communication. One of the most prominent and applied models is the Elaboration Likelihood Model (ELM) by (Petty & Cacioppo, 1981, 1986a). The ELM is considered to be an example of a dual process approach with two ways persuasion taking place (Dillard, 2010). Those two ways and further main assumptions of the ELM will be examined in the following paragraphs.

Main Assumptions

The ELM describes the process of possible attitude, opinion, or behavior change as a consequence of a persuasive message. It “provides as fairly general framework for organizing, categorizing, and understanding the basic processes
underlying the effectiveness of persuasive communication” (Petty & Cacioppo, 1986b, p. 125). By that, it tries to integrate contrary research findings and theoretical movements into one broad concept. The main assumption of the ELM is that the level of elaboration of a received persuasive message can vary depending on several factors. Examples for those factors are internal factors of the message or individual statuses of being of the receiver. These factors determine to what extent a receiver engages in processing the message. By that, the likelihood of being persuaded is varied (O’Keefe, 1990). According to Petty and Cacioppo (1986b), elaboration is understood as “the extent to which a person thinks about the issue-relevant arguments contained in a message” (p. 128).

Depending on the level of a person’s elaboration, two different kinds of processing can take place. These different kinds of processing are called routes. The central route provides a detailed examination of the arguments presented in a message. Here, the recipient tackles the message actively and thoroughly elaborating in detail on its arguments. Arguments are defined as “bits of information contained in a communication that are relevant to a person's subjective determination of the true merits of an advocated position” (Petty & Cacioppo, 1986a, p. 116). Since the central route elaboration is primarily based on such arguments and on the quality of the communication, it causes recipients to compare actively the message with already acquired knowledge on the subject. Moreover, recipients also weigh and judge the amount and quality of arguments, and—on this basis—a message (or parts of it) can be either rejected from or integrated into one’s thinking.
On the peripheral route, however, there is only a very cursory consideration of the message and its content. The recipient builds up her or his opinion or attitude by relying on superficial cues of the particular message. Instead of careful consideration and detailed examination of the message, the receiver uses more simple rules to evaluate the message. These rules are called “simple cues” (Petty & Cacioppo, 1986b, p. 134), “some heuristic principle” (O'Keefe, 2008, p. 1475), or “simple decision rules” (Perloff, 1993, p. 119), depending on the author. Meaning and function, however, are the same: the receiver engages rather in marginal cues of messages—such as a persuader’s credibility or attractiveness—than the strength of his or her argument strength. They draw upon characteristics that have nothing to do with the actual content of the message. This is, for example, the case if the positive mood of a message is transferred on attitudes toward the subject matter discussed in the message or if they rely on the fact that the message is conveyed by an expert.

In short, the extent of cognitive elaboration of a persuasive message was placed “along an elaboration likelihood continuum” (Petty & Cacioppo, 1986 a, p. 8) between the extremes of high cognitive elaboration and low cognitive elaboration. Which extreme, i.e. route, is taken depends on various factors Petty and Cacioppo (1986a) also accounted for when describing their model. They stated conditions which must be given to engage either in the central or the peripheral route. Moreover, they also named what factors lead to which route taking. Petty and Cacioppo (1986a) identified several factors that have influence on the amount of elaboration of a persuasive message, and therefore also influence which route to persuasion is activated. Examples for these factors were
distraction of the receiver, repetition of the message, or relevance of the presented topic.

O'Keefe (2008) suggested a broad classification of the factors, mainly dividing them into two categories: factors which influenced elaboration motivation and factors which influenced ability to engage in elaboration.

Amongst others, one central factor that has an effect on elaboration motivation is involvement. It can be considered as a receiver factor. According to O’Keefe (1990), it is the “most studied influence on the receiver’s motivation for engaging in issue-relevant thinking” (p. 99). The concept of involvement has penetrated all different fields of application (Johnson & Eagly, 1989).

At this point of consideration, it is necessary to go back to the general thoughts about persuasion. According to Perloff (1993), the ELM “reminds us that evidence will have different effects, depending on the involvement and ability of the audience […] Messages that contain a great deal of evidence will persuade low involvement, low-ability receivers, even when that evidence is shoddy” (p. 158).

To explain persuasive mechanisms described by the ELM, it is important to look at all main assumptions of the model, i.e. central and peripheral route processing and factors influencing those processes, and integrate them into a whole model. This integration will be focused in the following chapter where the question is answered how all these factors influence persuasive outcome.
Persuasive outcomes: central vs.
peripheral route processing

As explained earlier, mechanisms of processing a persuasive message on either the central route or the peripheral route are different. Hence, the factors described above also have different effects on the outcome of persuasive messages. While both routes can lead to build up attitudes of two directions of valance, i.e. attitude in favor or against the persuasive message, and extremity, the routes differ in important qualities of the attitudes. Elaboration of a persuasive message along the central route is said to be more stable and durable. That is, it is more resistant over time and against counter communicators. Stability and durability are built up due to active and motivated elaboration of messages and in depth and cognitively demanding weighing up of arguments (Dillard, 2010).

Although elaboration along the peripheral route leads to a change in attitudes, too, the effects regarding stability and durability are different compared to the central route (Dillard, 2010). Here, attitudes are said to become more easily subject to the influence of counter communication and passing time. Reasons for that difference are a lower integration in cognitive structures and reliance on peripheral cues which are supposed to be weaker than arguments.

Criticism of the Elaboration Likelihood Model

Although the ELM has been proven to be a very fruitful model since its development, it has also been subject to several aspects of criticism. Stiff (1986), for example, criticized the ELM, respectively Petty and Cacioppo, for focusing on individual
strategies to process information while depending “upon a number of unchecked assumptions about individuals’ abilities to process information” (p. 77). He described processing of persuasive messages as a choice between two strategies, i.e. the central or the peripheral route. In other words, information processing according to the ELM functions either one or the other way—there is no simultaneous processing which allows for both processes happening at the same time. Here, persuasion is a dichotomous process. Choi and Salmon (2003) subsumed similar critical comments on the model as “the crux of the criticisms of the ELM’s theoretical foundation” (p. 51). Yet, they were able to show that Stiff’s verdict may be seen as a misunderstanding of the main assumptions, drawing upon O’Keefe’s (1990) view of persuasion as elaboration on a likelihood continuum. Central and peripheral routes are not exclusive dimensions. Instead, they suggested regarding the two routes as “prototypical extremes” (p. 51).

Researchers also reviewed empirical limitation of the ELM. Although the model was built on a large body of experimental testing, mainly the operationalization of involvement has become the subject of criticisms over the course of years (Johnson & Eagly, 1989). As already explained above, the concept of involvement lacks definitional clarity and precision. This has led to a wide range of definitions and operationalizations. Moreover, researchers also criticized that Petty and Cacioppo used involvement differently than other studies in that the field of persuasion which “consequently results in conflicting empirical results” (Choi & Salmon, 2003, p. 60).

These criticisms show that the ELM is still a model ‘under construction’ and that further elaboration on key elements is necessary to justify its fruitfulness for
research. Nonetheless, the following overview over studies on persuasion drawing on the ELM shows that the model has contributed to a large body of work and is still contributing to insights in the field of marketing. By doing so, we bring together general consideration on persuasion, attitude change, the ELM, and the overarching research questions of the present investigation.

**Persuasion in the Context of Marketing based on ELM**

After this closer look on general elements of persuasion and the Elaboration Likelihood Model, the following part sheds more light on persuasion in a certain context—the context of marketing and advertisement—in which the ELM is also widely used. Then, “given advertising’s prominence in the domain of persuasion, it is not surprising that theories of persuasion have played a central role in scholarly research on effects of advertising (and marketing communications more generally)” (Shrum, Liu, Nespoli, & Lowrey, 2013, p. 315). Marketing is understood as a managed process by which goods and services undergo a series of developmental steps. Amongst others, those steps include one part concerning the product or service itself—from the first idea to its final development. Another part entails selection of an appropriate distribution channel to reach a certain target group of purchasers. Crucial to reach this goal is to develop and implement a promotional strategy tailored to the needs and wishes of the audience and the aim of the company which is intending on selling its products (Needham, Dransfield, Shaw, Guy, & Dooley, 1998). Especially during the last step of a marketing process,
knowledge about use and effect of persuasive communication is important in order to
develop a strategy that persuades a prospective purchaser to buy the advertised product.

Due to that inherent interconnection between marketing and persuasion, the
literature on that particular area of application of persuasion presents a huge body of
work which is mainly dedicated to a theoretical understanding of how and why
persuasive processes work (Meyers-Levy & Malaviya, 1999). This interconnection
loomed already when the ELM originators Petty and Cacioppo (1980) published their
first work on the model and tested it to understand the effectiveness of messages in the
context of advertising. According to Shrum et al. (2013), the ELM has proved to be a
good model for predicting the “effects of advertising and marketing messages on
consumer attitudes and behavior. It provides a clear theoretical framework for
understanding the conditions under which typical executional (sic!) variables will have an
effect, thereby providing both a guide for how marketers can maximize the
persuasiveness of their ads and how consumers can maximize their resistance to those
ads” (p. 319).

Synthesis and Hypotheses

In sum, this literature review has covered the three most important factors of
persuasive communication: source factors, receiver factors, and channel factors. Deciding
for particular sub-dimensions of these three factors—namely expertise, involvement, and
modality—we followed the assertion by Fahr (2013) that there were many different
variables determining a persuasive act and that it was therefore impossible to regard the
process of persuasion exhaustively. Rather, it would be fruitful for research purposes to specify on particular elements. The investigation at hand did so by focusing on assessing persuasive effectiveness determined by two different types of expertise and two different types of modality.

Additionally, we explained two major theories which are prominent in persuasive research. The TRA/TPB is regarded as one of the “most useful attitude-behavior theories” (Slater, 1999, p. 336), covering the actual aims of a persuasive attempt: changes of attitude and/or behavior. The ELM has received similar popularity as it contributed to our understanding that persuasive outcomes differed depending on situational contexts and the interplay of various factors which composed a persuasive act (O’Keefe, 2008). Furthermore, it allowed integrating contradictory results of persuasion studies which in the first place had led to a fuzzy and furrowed field of research.

In line with Ohanian (1990) and Braunsberger and Munch (1998), we reasoned that credibility as well as its sub-category of expertise were multidimensional and that there were more types of expertise operating in persuasive communication. Combining these assumptions with the assumptions of the ELM, we can say what kinds of expertise serve as a peripheral cue which is used in circumstances of low elaboration likelihood.

By combining considerations on both the ELM and TPB for the chosen persuasive factors of expertise and modality, we followed Slater (1999) who stated that these “major theories of persuasion and behavior change are complementary and not competing” (p. 335). By doing so, it did not only give the present investigation a broader
theoretical embedding. It also allowed deriving conclusions which were fruitful for the applied setting the current study was anchored in (Slater, 1999). In the present investigation we understood the ELM as suggested by Petty and Cacioppo (1986b) as the “general framework for organizing, categorizing, and understanding the basic processes underlying the effectiveness of persuasive communication” (p. 125).

The investigation at hand was interested in persuasive effectiveness of endorsers statements manipulated in accordance with the above specified characteristics. We assessed persuasive effectiveness as recommendation intentions of the App, recall of presented information, intentions to buy and use the App, attitudes towards these behaviors, subjective norm, and perceived behavioral control. Choosing these depended variables based on the following consideration. Our first dependent variable of intention of recommendation of the App was derived from two aspects. The first one was tightly connected to the preliminary survey we conducted with SLPS. Almost three quarters of interviewed SPLs stated that they looked for information and recommendation on technical innovations relevant for their profession in circles of colleagues. This led to the second aspect as this behavior is known as word-of-mouth communication in marketing literature. It is agreed on that “word-of-mouth (WOM) communications often exert a strong influence on judgments of products […] when considering the purchase of a new product or service“ (Herr, Kardes, & Kim, 1991, p. 454). Our second dependent variable was recall of information which was chosen against the backdrop of the above explained importance of mouth-of-word communication. We assumed that the more receivers remember from a statement they have been exposed to, the more they can tell other
people about it. Moreover, “research has demonstrated that the amount of information
that one has about an attitude object is a determinant of the extent of attitude change
following exposure to new information” (Davidson, Yantis, Norwood, & Montano,
1985). Our third set of dependent variables was derived from the theory of reasoned
action (Ajzen & Fishbein, 1977, 1980; Fishbein & Ajzen, 1975) and its successor theory
of planned behavior (Ajzen, 1985, 1991). By doing so, we aimed at the persuasive goal
Perloff (1993) mentioned in his definition: “try[ing] to convince other people to change
their attitudes or behavior regarding an issue” (p. 14). However, while Perloff (1993) did
not specify on what he meant by attitude, behavior, or issue, in the current investigation,
we used the TRA/TPB as guiding framework to assess these attitudes in greater detail.

After having specified on what we understood by persuasive effectiveness, we
were able to state hypotheses from theoretical considerations and empirical findings. First
we assessed recommendation intentions of the App. We formulated hypothesis H1.1:
Receivers presented with a statement made by an endorser with applied expertise differ in
their App recommendation intention from receivers presented with a statement made by
an endorser with academic expertise. We formulated this hypothesis on the basis of
considerations and results by Braunsberger and Munch (1998). Also with regards to
recommendation of the app, we formed hypothesis H1.2: Receivers who were presented
with a statement in the audiovisual condition are more inclined to recommend the app
than receivers presented with a statement in the text condition. This hypothesis rested on
the studies by Braverman (2008) and Appiah (2006).
Second, we assessed receivers’ recall of information from the statement. Texts are self-paced whereas videos are not (Corston & Colman, 1997) which allows receivers to read at their own pace as well as to reread the entire text or parts of it. In line with this notion and results by Chaiken and Eagly (1976) who found a learning superiority of complex persuasive written material over audio-visually presented complex material, we formulated hypothesis H2.1: Retention of information presented in the statement is higher in text condition than in audiovisual condition.

Additionally, it is widely agreed on that not only communicator and channel characteristics but also receiver characteristics play a role in persuasive outcomes (e.g. Johnson & Eagly, 1989; Mackie, Worth, & Asuncion, 1990; Perloff, 1993; Petty & Briñol, 2008). The ELM posits that when motivation and/or ability to process a persuasive message are relatively high, persuasion is more likely to occur as a function of relatively careful scrutiny and consideration of the arguments presented (central route processing). However, when motivation and/or ability are relatively low, people preserve cognitive effort by relying on peripheral route processing. Hence, operationalizing ability to elaborate by assessing familiarity with apps and in line with the ELM we hypothesized: H2.2) Participants, who are more familiar with apps, recall more information about the App than participants who are less familiar with the apps.

Regarding the sets of attitudes variables derived from the TRA/TPB, we built our hypotheses on the same theoretical and empirical reasoning and stated as above: H3.1) Participants presented with a statement by an applied expert differ in their set of attitude variables from participants who were presented with a statement by an academic
experts; H3.2) Receivers who were presented with a statement in the audiovisual condition have higher attitudinal scores than participants who were presented with a statement in the text condition. H 3.3) Participants who report being highly familiar with apps will score higher on TPB variables when presented with the written statement than presented with the video statement.
CHAPTER III

METHODOLOGY

Design

In order to find answers to the research questions at hand, a study design consisting of two factors—Endorser Expertise and Communication Modality—was developed to yield four experimental cells. The resulting design was a 2 x 2 factorial design with Endorser Expertise (Applied Expertise vs. Academic Expertise) and Communication Modality (Audiovisual Video Clip vs. Written Text accompanied by Picture).

Participants

One hundred Speech Language Pathologists and advanced graduate students in the field of Speech Language Pathology/Communication Disorder were sampled as volunteers through an online recruitment procedure. Four percent of the participants were male, 96% were female. Their mean age was 34.1 years ($SD = 12.5$). Seventy-nine percent of the participants indicated their ethnicity as White, 4% as Asian, 4% as Hispanic, 1% as African American, 6% as others, and 6% did not care to state. Fifty-nine percent of the participants stated their status as working professional, i.e. SLPs, 41% indicated to be a graduate student in the field of Speech
Language Pathology/Communication Disorders. Demographic data of the SLPs revealed that they have been working in the field between one and 43 years ($M = 12.03; SD = 12.38$). Graduate students amongst the participants indicated their hours of working experience with clients as ranging from 10 to 500 hours ($M = 152.17; SD = 151.24s$).

**Recruitment Procedure**

Due to the nature of the investigation as a Web-experiment, it was important to develop an appropriate approach for contacting SLPs. Following recommendation for Web recruitment procedure (Kraut et al., 2004; Reips, 2002), first appropriate forums, social networks groups, mailing lists, newsgroups, and electronic bulletin were identified on the Internet. Selection criteria were the following: a) strictly thematically bound to Speech Language Pathology/Communication Disorders (excluding Audiology), b) professionals such as SLPs or graduate students in related fields as the only target audience of the Web page (i.e. this target audience excluded explicitly persons affected by any kind of speech disorder such as patients or parents), c) high up-to-dateness (i.e. last member activity not older than one week), and d) US-based operator.

A short text was used to call attention to the study and to invite SPLs to participate (Appendix B), published on in total ten different appropriate online locations (Appendix C). Five days after publishing the first announcements, we published a second post, announcing that the study would be online for another five days and members of these Web groups were again invited to take part but only on condition that they had not yet participated.
Experimental Materials

Experimental materials in this study consisted of a written text providing background information about the app, two different statements made by speakers, either provided as a video clip or as a written text accompanied by a picture of the speaker, a questionnaire for assessing the dependent variable of the investigation, and a demographic data sheet. We designed an experimental Web page which contained all these elements.

Background Information

A 159-word long expository text presented general information about the app, entailing its purpose, applicability, way of handling, and operating modes (Appendix D). Basis for constructing this 10-sentence long passage was the short manual provided by the company. The original 189-word long manual was shortened, omitting redundant information and ensuring coherence.

Statements

In order to develop two statements which were different with regards to the aimed manipulation of expertness but comparable with regards to their internal organizational structures, first a script scaffold was designed. It provided a firm organization for being instantiated with content and for being later presented in the two different modalities. The script started with the speaker providing personal information by introducing herself: name, current job position, professional and/academic degrees, time span working a professional, current professional interest in the field of Speech Language Pathology, and relation to the product class of apps. The second part of the
script consisted of different reasons why the speaker could recommend working with apps.

Personal information on the background story of the speaker was developed by using Ohanian’s (1990) splitting of expertise into five dimensions. In the context of our understanding that an endorser with academic expertise and an endorser with applied expertise differ in their educational background and professional setting they are working in. Moreover, they also vary in a) knowledge/skills of the particular app, b) knowledge/skills of application technology in general, c) theoretical understanding of Speech Language Pathology, and d) practical work experience we wrote two statements using Table 1 as another scaffold. It is important to keep in mind that +/- do not refer to existing/non-existing. The dimensions of expertise vary on a continuum low to high.

Table 1.

*Dimensions of expertise on a high to low continuum comparing two endorsers differing in their kind of expertise.*

<table>
<thead>
<tr>
<th>endorser with applied expertise</th>
<th>endorser with academic expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Expert</td>
<td>+</td>
</tr>
<tr>
<td>Experience</td>
<td>+</td>
</tr>
<tr>
<td>Knowledgeable</td>
<td>+</td>
</tr>
<tr>
<td>Qualified</td>
<td>+</td>
</tr>
<tr>
<td>Skilled</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Expert</td>
<td>-</td>
</tr>
<tr>
<td>Experience</td>
<td>-</td>
</tr>
<tr>
<td>Knowledgeable</td>
<td>-</td>
</tr>
<tr>
<td>Qualified</td>
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</tr>
<tr>
<td>Skilled</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Expert</td>
<td>-</td>
</tr>
<tr>
<td>Experience</td>
<td>-</td>
</tr>
<tr>
<td>Knowledgeable</td>
<td>-</td>
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<tr>
<td>Qualified</td>
<td>-</td>
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<tr>
<td>Skilled</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Expert</td>
<td>+</td>
</tr>
<tr>
<td>Experience</td>
<td>+</td>
</tr>
<tr>
<td>Knowledgeable</td>
<td>+</td>
</tr>
<tr>
<td>Qualified</td>
<td>+</td>
</tr>
<tr>
<td>Skilled</td>
<td>+</td>
</tr>
</tbody>
</table>

Note: +/- refers to high (+) and low (-)
Reasons presented in the recommendation part of the statement were derived from the preliminarily conducted survey among SLPs. In this short survey, participants \((n = 24)\) were asked—among other things—why they used apps and tablets for treating patients and which advantages they saw in these new technologies over traditional approaches used in Speech Language Pathology. Qualitative data analysis revealed seven main reasons for SLPs using apps out of which we selected the five most often mentioned ones and used them to fill up the script scaffold.

Summing up, following preliminary consideration about the nature of both speakers with regards to their kind of expertise led finally to two statements which differed content wise for personal background and wording wise of the presented reasons. Given these thoughts and theoretical derivations, the two final statements differed slightly in length. The statement given by the academic expert was 237 words long (Appendix E), the other one 249 words long (Appendix F).

**Communication Modality**

Communication modality refers to the medium through which a message is transported. The above described two statements were converted to serve in two different communication modalities: video modality and text modality (accompanied with a picture).

**Video modality.** For communication modality *video*, the result was 1 min. 44 sec. clip for the applied expert and a 1 min. 47 sec. video clip for the academic expert. In both videos, a mid-aged actress sat in an office like environment (desk with books and computer monitor can be seen in the background), speaking directly into the camera. By
using a teleprompter we reduced a possible impression of reading out aloud a prewritten
text. In the experimental conditions, we presented both videos with a size of 560x315
pixel. The actress was a mid-aged, white American playing both roles of academic and
applied expert in order to reduce confounding influences such as different attractiveness.

**Text modality.** The communication modality *text* was basically the developed
script. Both texts were accompanied by a picture showing the speaker following
considerations about channel differences (see Chapter II). This 228 x 115 pixels large
picture was a screenshot taken from the video clip. In order to ensure that the taken
screenshot fitted the overall impression recipients had of the actress in the video and
reduce the possibility of choosing a screenshot which was not representative for the
speaker’s overall facial expressions and appearance, in total four screenshots were taken
and presented to a student sample gathered from volunteers from the Learning,
Cognition, and Instruction Research Groups at CSU Chico (n = 19). They ranked the four
screenshot pictures according to their opinion which of the presented pictures fitted best
the appearance of the speaker in both videos. Sixty-two percent of the asked participants
decided for the picture (*Figure 1*). Once the picture was decided for, it was added to the
written statements.
As nonverbal communication such as gestures and facial expressions as well as acoustic characteristics of one’s statement (e.g. strong intonation, fluency of speech) were found to have potential impact of perceived trustworthiness and attractiveness of a speaker (Burgoon, Dunbar, & Segrin, 2002), the actress was told at the beginning of the footage to control for the use these nonverbal and paraverbal elements of communication. Nevertheless, it was important to ensure that in both videos the speaker was perceived with the same level of trustworthiness, attractiveness, and pleasantness of voice.

Therefore, the audiovisual statement and text statements were normed by 40 undergraduate students sampled from a midsized university in the western United States (82.5% female, 17.5% male, mean age = 22.8 years, $SD = 3.41$). Fifty-two percent of the norming study participants stated Psychology as their major, 27.5% Child Development,
and 20% studied something else. We assigned participants randomly to one of the two conditions: audiovisual statements or text statements. Participants of this pilot study first watched both audiovisual statements or were presented with both text statements, and then we asked them to indicate for their opinion on the speaker’s trustworthiness (not trustworthy at all – very trustworthy) and attractiveness (not attractive at all – very attractive) as well as pleasantness of speaker’s voice (not pleasant at all – very pleasant). Visual analog scales were used instead of widespread discrete scales such a Likert Scale due to their superior metrical characteristics (Gerich, 2007; Reips & Funke, 2008). Means for trustworthiness, attractiveness and pleasantness of voice in both videos–video showing speaker with applied expertise and video showing speaker with academic expertise–were compared using paired samples t-tests. The tests revealed no significant difference in perceived trustworthiness in both videos ($M_{\text{applied}} = 3.84$, $SD_{\text{applied}} = .19$, $M_{\text{academic}} = 3.8$, $SD_{\text{academic}} = .22$, $p = .91$), in physical attractiveness of the speaker ($M_{\text{applied}} = 2.75$, $SD_{\text{applied}} = .2$, $M_{\text{academic}} = 2.46$, $SD_{\text{academic}} = .14$; $p = .09$), and pleasantness of voice ($M_{\text{applied}} = 3.21$, $SD_{\text{applied}} = .77$, $M_{\text{academic}} = 3.06$, $SD_{\text{academic}} = .77$, $p = .52$).

For the written statements we asked also for the participants’ assessment of trustworthiness and attractiveness after including the picture which was gained as a screenshot as described in the procedure above. Paired samples t-tests revealed no significant difference in perceived trustworthiness in both texts ($M_{\text{applied}} = 3.57$, $SD_{\text{applied}} = .18$, $M_{\text{academic}} = 3.31$, $SD_{\text{academic}} = 1.05$, $p = .65$) in physical attractiveness of the speaker ($M_{\text{applied}} = 2.09$, $SD_{\text{applied}} = 1.08$, $M_{\text{academic}} = 2.18$, $SD_{\text{academic}} = .63$, $p = .41$).
Subject of norming was also the perceived expertise of the speakers. We asked participants of the norming study to that in all four of the above described experimental conditions. Expertise was assessed following the five-dimension table which was explained earlier. For better understanding, participants were provided with detailed definitions of expertness, experience, skills, qualifications, and knowledge and were asked to assess these dimensions with regards to the app, apps in general, applied Speech and Language Therapy, and academic Speech and Language Pathology. Again we used visual analogue scales in this questionnaire which in total entailed 40 rating scales. We accounted for possible order effects by applying a counterbalanced questionnaire design.

In order to compare the results for both experts, the assessed five dimensions were composed for each of the four areas of expertise, yielding at four scales. Table 2 and Table 3 show means, standard deviation, and Cronbach’s Alpha for the composed scales. Paired sampled t-tests were conducted, showing significant differences between perceived expertise regarding the four areas within both modalities.
Table 2.

<table>
<thead>
<tr>
<th>area of expertise</th>
<th>applied expert</th>
<th>academic expert</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>expertise the App*</td>
<td>18.36</td>
<td>4.91</td>
</tr>
<tr>
<td>expertise apps in general*</td>
<td>10.23</td>
<td>7.51</td>
</tr>
<tr>
<td>expertise academic SLP*</td>
<td>13.08</td>
<td>5.66</td>
</tr>
<tr>
<td>expertise applied SLP*</td>
<td>22.65</td>
<td>4.43</td>
</tr>
</tbody>
</table>
* p < .05

Table 3.

<table>
<thead>
<tr>
<th>area of expertise</th>
<th>applied expert</th>
<th>academic expert</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>expertise the App*</td>
<td>21.63</td>
<td>4.72</td>
</tr>
<tr>
<td>expertise apps in general*</td>
<td>9.37</td>
<td>5.02</td>
</tr>
<tr>
<td>expertise academic SLP*</td>
<td>11.57</td>
<td>3.46</td>
</tr>
<tr>
<td>expertise applied SLP*</td>
<td>22.98</td>
<td>4.45</td>
</tr>
</tbody>
</table>
* p < .05

Experimental Website

As we designed the investigation at hand as a Web-experiment, a website was created to present participants with the experimental materials. We chose LimeSurvey Version 2.00+ as an appropriate application since this open source online tool allowed for customization such as implementing own templates and for including experimental
conditions with audiovisual stimuli. Moreover, the University of Koblenz-Landau offered students hosting for LimeSurvey studies. That guaranteed secured data collection and storage in contrast to potentially unsafe commercial third-party webhosting suppliers which literature about Web experiments often pointed out to be risky (Nosek, Banaji, & Greenwald, 2002).

The designed website consisted of 24 hypermedia pages, including: 1) welcome page providing information about involved universities, explaining participants briefly what to expect, and giving basic instructions, 2) a routing page excluding all non-SLPs, 3) a page of informed consent, 4) in total seven pages with precise instructions for following tasks, 5) a page with background information about the app, 6) four experimental pages, each presenting one the four experimental conditions, 7) three pages for assessing directly recommendation likelihood, retention and attitude with regards to the participants behavior using visual analogue scales (see Chapter II), 8) four pages with demographic questions and treatment checks, 9) a debriefing page. Figure 2 shows the site map of the designed website.
Figure 2: Site map of experimental Web site
Procedure

A link which was posted together with the above explained recruitment text in diverse Web location guided participants to the starting page of the study. These pages welcomed the participants, thanked them for their interest in the study, and their willingness to participate. A short text explained them what to expect, specified on general task demands, and on the technical requirements for successful completion of the study such as working speakers or headphones and an enabled plug-in for Adobe Flash-Player. Also the importance of carefully reading given instructions in order to account for the above explained potential constraints of a Web experiment was stressed by making this part of the welcome page particularly salient (different font and boldness). Then, participants were guided to a router question assessing whether they were or had been working professionals or graduate students in the field of Speech Language Pathology or not. Goal of this quota sampling was to get the specific sample of exclusively SLPs. Persons who were interested in the study but did not describe themselves as fitting to the desired sample were directed to a thank-you page which explained briefly why these persons could not participate in the study. Persons who described themselves as SLPs or graduate students in the field were presented with an Informed Consent (Appendix G), ensuring them compliance to APA’s ethical standards. By agreeing to its content, participants were directed to the first page of experimental content—a page with background information about the app. Then, they were directed to one of the four experimental pages, before being asked to fill out a questionnaire. Whenever necessary, pages with concrete instruction were interposed. The last page of the experimental
website included the debriefing (Appendix H). Here, we again thanked participants for their willingness and time to participate.
CHAPTER IV

RESULTS

Data Source

**Recommendation intention of the App**

A new measure of recommendation intention of the App was created by summing up two original scales: Likelihood of recommendation of the app to colleagues, ranging from 0 (*recommendation very unlikely*) to 10 (*recommendation very likely*) and percentage of colleagues participants would recommend the app to, ranging from none of them to all of them. Both items \( r = .856, n = 100, p < .001 \) were combined to form a single recommendation measurement \( \alpha = .921 \).

**Retention of Information**

After being presented with one of the experimental stimuli, participants were requested to write down everything they remember about the material. Additionally, we instructed participants to use separate lines for each thought, idea, or piece of retention and ensured them that complete sentence were not required. For final analysis of the retention statements, all written statements were coded for information units which we beforehand defined as a sentence, clause, phrase, fragment of a sentence of single words which entailed exactly one complete idea presented in the experimental stimulus. Every idea written down but not mentioned in the experimental material (fully or partially
literally) was excluded from further analyses ($n = 3$). We subsumed in this category comments, thoughts, or ideas referring, for example, to the study. In order not to miss any unit, all participants’ statements were controlled whether separate lines entailed more than one unit; if so, the lines were segmented to that point at which until the smallest possible units were left. For analyzing these units, we developed a coding scheme. Two independent coders coded the material. One of the coder was the researcher herself, the other one was an undergraduate student, trained for one hour in using the scheme and rating the material. Twenty percent of the units were coded by both coders with the aim of avoiding coder biases, yielding a Krippendorff’s $\alpha$ of .76.

We analyzed whether units were given in either the product background or in the speaker’s statement. In line with the above explained scaffold for developing the script and product background, the product background contained 14 units, each speaker’s statement 18. As described in chapter III, both speaker’s statements consisted of two parts: personal background and facts about the product. This differentiation was mirrored in the coding, too, when we second coded the units which originated from the speaker’s statement according to whether they were part of the personal background of the speaker or one of the reasons why the product is recommended for SLPs. This separation into two parts yielded at 13 possible units for the personal background and five for the product part.

**Familiarity with apps.** We created a measure of familiarity with apps, combining the two items of “familiarity with apps for professional purposes” and “familiarity with apps for personal purposes” (both were measured on a 0 to 10 scale
from very unfamiliar to very familiar), $r = .3$, $n = 100$, $p < .001$. Both items combined form a single familiarity with apps measure ($\alpha = .54$).

Theory of planned behavior variables. Five dependent measures were created based on Ajzen and Fishbein’s (1980) Theory of Reasoned Action and Ajzen’s (1991) extension Theory of Planned Behavior. First, we created a measure of behavioral intentions, combining the two items of “intention to buy the app” and “intention to use the app” (both were measured on a 0 to 10 scale from very unlikely to very likely), $r = .733$, $n = 100$, $p < .001$. Both items combined form a single behavioral intention measure ($\alpha = .844$).

Second, attitude toward this behavior was created by combining four measures, one assessing SLPs’ attitude toward buying the App, one assessing their attitude toward using the App. Both scales originally ranged from 0 (not valuable for work) to 10 (valuable for work). Two originally independent scales were also added measuring the assessment whether buying respectively by using the App was non-beneficial (0) or beneficial (0). The combined measures yielded a Cronbach’s $\alpha$ of .942.

Third, a measure of subjective norms was composed by combining six measures: 1) “Most colleagues who I respect would think I ____ buy the App for my work” (ranging from should not to should), 2) “Most colleagues who I respect would think I ____ use the App for my work” (ranging from should not to should), 3) “My colleagues would probably ____ me in/from buying the App” (ranging from discourage to encourage), 4) “My colleagues would probably ____ me in/from using the App” (ranging
from *discourage* to *encourage*), 5) “Most of my clients (or their legal guardian) would probably ___ if I bought the App for my work” (ranging from *disapprove* to *approve*), and 6) “Most of my clients (or their legal guardian) would probably ___ if I used the App for my work” (ranging from *disapprove* to *approve*). The combined measures yielded a Cronbach’s α of .925.

Fourth, *perceived control of behavior* was assessed by combining six other items. 1) “I see myself having ___ to buy the App in an online shop” (ranging from *insufficient skills* to *sufficient skills*), 2) “I see myself having ___ to use the App” (ranging from *insufficient skills* to *sufficient skills*), 3) “Buying the App in an online store would be ___ for me” (ranging from *effortful* to *effortless*), 4) “Using the App would be ___ for me” (ranging from *effortful* to *effortless*), 5) “Buying the App in an online store would be ___ for me” (ranging from *time-consuming* to *quick*), and 6) “Using the App would be ___ for me” (ranging from *time-consuming* to *quick*). The combined measures yielded a Cronbach’s α of .884.

**Analysis of Effects on Dependent Measures**

**Recommendation of the App**

A 2 (audiovisual vs. text modality) x 2 (academic vs. applied expert) factorial analysis of variance (ANOVA) was conducted for recommendation intention. The analysis revealed that neither the main effects nor the interaction reached an acceptable
level of statistical significance. Therefore, hypothesis H 1.1 and H 1.2 were not supported.

Retention of Information

**Descriptive Results.** With regards to personal background information of the speaker, participants recalled on average $M = 3.14$ ($SD = 1.94$) units, with regards to retention of App information $M = 2.16$ ($SD = 1.34$), and for retention of overall statement information $M = 5.3$ ($SD = 2.41$).

**Hypotheses Testing.** In order to test hypotheses H2.1, an independent-samples t-test was performed to compare retention scores for both information of speaker background and App information between two groups: participants who were presented with the audiovisual treatment ($M = 5.21; SD = 2.53$) and participants who were presented with the text treatment ($M = 5.38; SD = 2.33$). There was no significant difference in scores; $t(98) = .363, p = .717$. Thus, the hypothesis was not supported.

For testing hypotheses H2.2, the mean split was taken of familiarity with apps scale ($M = 12.8, SD = 6.44$) to define low and high familiarity with apps, resulting 45 participants in the low condition and 55 participants in the high condition. Then, a 2 (audiovisual vs. text modality) x 2 (academic vs. applied expert) x 2 (low vs. high familiarity) ANOVA was conducted for scores of retention of App information. No significant main effect was found for expertise, $F(1, 92) = .3.25, p = .075$. No significant main effect was found for modality, $F(1, 92) = .054, p = .817$. A marginal significant main effect was found for familiarity, $F(1, 92) = 3.7, p = .057$. The results indicated that participants who were more familiar ($M = 2.4, SD = 1.31$) with apps recalled more
information units about the App then participants with low familiarity ($M = 1.87, SD = 1.33$). Thus, the hypothesis was supported.

Moreover, a significant interaction was found between modality and expertise, $F(1, 92) = 6.97, p = .01, d = .55$. When delivered through a textual modality, the statement by the academic expert yielded a significant higher recall of App information than the statement by the applied expert ($M_{academic} = 2.84, SD = 1.21$ vs. $M_{applied} = 1.59, SD = 1.31$); however, when presented through an audiovisual mode the statement by the applied expert yielded a significant higher recall of App information than the statement by the academic expert ($M_{applied} = 2.19, SD = 1.27$ vs. $M_{academic} = 2.05, SD = 1.33$). Figure 3 shows this interaction.
Figure 1: Interaction of modality and expertise on retention of App information

Theory of planned behavior variables

First, the correlation coefficients ($r$) amongst all dependent measures were calculated (Table 4). Significant strong positive correlations were found between behavioral intention, behavioral attitudes, and subjective norms. A significant weak positive correlation was found between subjective norms and perceived control.
Table 4

Bivariate correlation matrix of dependent measures

<table>
<thead>
<tr>
<th></th>
<th>behavioral intentions</th>
<th>attitude toward behavior</th>
<th>subjective norms</th>
<th>perceived control of behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>behavioral intentions</td>
<td>1</td>
<td>.743**</td>
<td>.674**</td>
<td>.089</td>
</tr>
<tr>
<td>attitude toward behavior</td>
<td>1</td>
<td>1</td>
<td>.86**</td>
<td>.171</td>
</tr>
<tr>
<td>subjective norms</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>perceived control of behavior</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: n = 100, ** p < .01 (two-tailed), * p < .05 (two-tailed)

A simultaneous multiple regression was run to predict the most important behavioral indicator, i.e. behavioral intention, from attitude toward behavior and subjective norms. Since not correlating significantly with behavioral intention, perceived control of behavior was excluded from the regression analysis although it belonged to the set of variables derived from the TPB. Both selected variables statistically significantly predicted behavioral intention, $R^2 = .557$, $F(2, 97) = 61$, $p < .001$. It was found that only attitude towards behavior ($\beta = .627$, $p < .001$) significantly predicted behavioral intention.

A series of 2 (audiovisual vs. text modality) x 2 (academic vs. applied expert) two-way, between-groups ANOVAs was conducted on behavioral intentions, attitude toward behaviors, subjective norms, and perceived control. No significant results for
interaction for any of all TPB variables were found: behavioral intention \( F(3, 96) = 2.01, p = \cdot 16 \), attitude toward behaviors \( F(3, 96) = 1.23, p = \cdot .27 \), subjective norms \( F(3, 96) = \cdot 61, p = \cdot .44 \), perceived control \( F(3, 96) = .001, p = \cdot .976 \). No significant main effect for expertise for any of all TPB variables was found. With regards to main effects for modality, however, we found one significant result for perceived control, \( F(3, 96) = 3.98, p = \cdot 049 \). Participants watching the statement \( (M = 49.28, SD = 11.29) \) differed significantly from participants reading the statement \( (M = 53.02, SD = 6.89) \). With regards to these results, hypothesis H3.1 was not supported, H3.2 only for perceived control of behavior.

Again, the mean split was taken from familiarity with apps scale \( (M = 12.8, SD = 6.44) \) to define low and high familiarity with apps, resulting 45 participants in the low condition and 55 participants in the high condition. A one-way between-groups multivariate analysis of variance was performed to assess modality differences in TPB variables of behavioral intentions, attitude toward behaviors, subjective norms, and perceived control for only those participants who reported high app-familiarity. There was no statistically significant difference between text and video condition for the combined dependent variables, \( F(4, 50) = 1.38, p = \cdot .25 \); Wilks’ Lambda = \cdot .9. When the results for the dependent variables were considered separately, there was not a statistically significant difference: behavioral intentions \( F(1, 53) = 2.73, p = \cdot .13 \), attitude toward behaviors \( F(1, 53) = 1.02, p = \cdot .32 \), subjective norms \( F(1, 53) = 1.93, p = \cdot .17 \), and perceived control \( F(1, 53) = 2.4, p = \cdot .13 \). Hence, hypothesis 3.3 was not supported.
CHAPTER V

DISCUSSION

General Discussion

In the present investigation, we were interested in determining the persuasive effectiveness of different kinds of expertise of endorsers and of different delivery modalities. In order to assess this effectiveness, we presented 100 volunteer participants—all professionals or advanced students in the field of Speech Language Pathology/Communication Disorders—with a statement made by an applied expert from their midst who possessed practical knowledge about the promoted App or with a statement made by an academic expert who possessed knowledge about app technology due to research and scientific consideration. We delivered both statements either as written text accompanied with a picture or as video clip.

We expected to find differences in persuasive effectiveness depending on the kind of expertise the App endorser possessed. Against the backdrop that “little research is available on the role of different ‘types’ of expertise (with a product or within a profession) and their effects on persuasion in an endorser context” (Siemens et al., 2008, p. 160) we formulated non-directional hypotheses which have not been supported by our results. In detail, we did not find significant differences between the statement made by the applied or by the academic expert on persuasive effectiveness entailing intention of
recommendation of the App, intention of buying and using the App, attitudes toward this behavior, subjective norms regarding this behavior, and perceived control of this behavior. Yet disappointing, these results reflected former findings reported in one of the few studies which tried to assess the persuasive effectiveness of different kinds of expertise and experience (Braunsberger & Munch, 1998). Similarly, Braunsberger and Munch’s study did not yield significant results. Although we followed their recommendation that more research on different kinds of expertise was necessary and drew upon theoretical considerations by Ohaninan (1990), we were not able to show a significant difference between statements made by an academic and an applied expert.

Also, we were interested in the influence of modality on persuasive effects in the described context. Again, no main effects were found for recommendation intentions and recall of information. However, with regards to the depended variables we derived from the theory of planned behavior, there was one significant main effect of modality on perceived control of behavior. In line with Ajzen (1985, 1991), we understood perceived control as someone’s perception of the ease or difficulty of performing a particular behavior—here, the behavior of buying and using the App controlled by the SLP’s time, abilities, and skills with regards to new technologies. We found that participants watching the statement as a video clip felt more constrained, i.e. less skilled, less ease and more timely restrained, than participants reading the statement. One explanation for this finding might be that text and video differ with regards to pace recipients perceive statements delivered through these different modalities (cf. Corston & Colman, 1997). Hence, when reading they can take their time to read and re-read the statement,
acquainting themselves, for example, with unfamiliar terminology which reveals its meaning from the context. They could integrate new information into prior knowledge structure, by doing so comparing already acquired knowledge and skills to affordances of the product. In the audiovisual condition, due to lacking self-paced perception and no chance to repeat perceived information, this is not as easy as when reading the statement.

In line with Petty and Cacioppo (e.g. Petty & Cacioppo, 1964), we argued that also receiver factors played an important role in persuasive communication. Therefore, we also assessed familiarity with apps as a receiver ability influencing persuasive outcomes. Again, only for retention of app information a significant difference between participants with high and low familiarity with apps was found. Participants who were highly familiar with them recalled more information than participants who were not very familiar with them. Yet the analysis revealed no interaction with expertise or modality as predicted by the ELM.

Although the present investigation failed to provide significant main effects for expertise and mostly modality, we found one significant interaction for expertise and modality, namely on the retention of information about the App. Based on the notion that media dominated times like the contemporary times (Fahr, 2013) render research exclusively focusing on source characteristics almost useless, this result seems to be even more important. The results revealed that the statement by the academic expert yielded a significant higher recall of App information than the statement by the applied expert when the statement was delivered as a written text. Yet when presented with a video, the statement by the applied expert yielded a significant higher recall of App information
than the statement by the academic expert. This result is in line with research which suggests that it is not a single factor in a persuasive act which determines its effectiveness but rather an interaction of two or more factors (e.g. Andreoli & Worcel, 1978; Booth-Butterfield & Gutowski, 1993; Braverman, 2008; Chaiken & Eagly, 1983). We could conjecture on reasons for this finding, by that opening the new research questions for further investigation. One reason for participants’ recalling more information about the App when the statement was presented by the academic expert in a written text might than by the applied expert in the video may be related to real settings SLPs are confronted with such situations. When conducting the preliminary study, SLPs stated to learn about new technologies used in their professional area by colleagues as well as by published articles whose authors could be assumed to be mainly academics. Interaction with colleagues is characterized by face-to-face communication. Contact with academic experts, however, is one-sided and happens mainly through text-based publications.

In sum, our results did not support most of the beforehand theoretically derived hypotheses. Especially with regards to attitudinal and intentional variables—the most important variables in the context of persuasive communication—we did not reveal significant differences between participants assigned to our various treatment conditions. Yet—and this may be regarded as a marginal result because not being in focus of the current study—we conducted a simultaneous multiple regression for further assessing behavioral intentions which we understood to be a strong indicator of actual behavior. Partially in accordance with the theories by Ajzen and Fishbein (1980; 1985; 1975), we found attitude toward the behavior as a strong predictor for the actual behavior of buying
and using the App. Although we see this result as a rather marginal one for persuasion research, it is important against the applied context the study embedded. As SLPs are a rather unknown target audience, this result indicates a possible direction for further research. We reasoned with others (Fahr, 2013) that combining attitude-behavior theories such as the TRA/TPB and persuasion theories, which exactly aim to explain why certain factors of persuasive processes yield intended outcomes of attitudinal and behavioral changes, is a fruitful approach. Sticking to this rational, further research could analyze other factors—may it be more sharply carved out differences of expertise, modalities, or perceiver factors.

Limitations

One common limitation of studies is given due to a particular sample that was recruited. Mainly, psychological research uses participants recruited in a university setting, i.e. students. The present investigation is limited in its generability, too, due to its particular sample since we used only SLPs as participants. While this seemed appropriate and reasonable from the applied point of view the current study was embedded in and has a high ecological validity, it minimized the meaningfulness of the gained results for the context of persuasive research from an academic point of view. Although the drawn sample resembled the SLP populations with regards to gender and age—94.9 % female, mean age of 45.8 years (American Speech-Language-Hearing Association, 2013)—to some extent, it hinders generalization beyond the SLP population looking at the very particular characteristics of these groups of professionals especially with regards to sex.
Another weakness of the study imposes the pretesting used experimental material. Derived from theoretical considerations, the differences between two kinds of expertise were pretested to a sample of participants which shared very few to almost none characteristics with the sample we used in the actual study. We used 40 university students who, for example, were a lot younger (mean age: 22.8 years) than the actual sample. Moreover, none of them stated to have ever taken classes in Speech Language Pathology/Speech Disorders. The actual participants were mainly well-trained and highly educated professionals in their field. Hence, their perception of expertise may differ from students, especially as these students have been provided with definitions of how expertise was understood. Against the backdrop of our marginal results, deciding for students as norming participants due to reasons of economical research efficiency now seems doubtable. Further researchers on persuasive influence of expertise may be well advised to include manipulations checks in their study design, too.

A last limitation of the study at hand which leads over to suggestion for further research is the lack of an actual behavior assessed by the investigation. While focusing on behavioral intentions which were developed in accordance with the TRA/TPB (Ajzen & Fishbein, 1980; Ajzen, 1985, 1991; Fishbein & Ajzen, 1975), we neglected actual behavior. However, Web experiments framed by an applied setting of online shopping, seemed retrospectively to be an adequate study design for assessing actual behavior. It is conceivable to include and assess behavior such as buying the product online or subscribing a newsletter about the App. This would not only be
valuable for the business partner associated with the given investigation, but also enriching for the scientific field of persuasion as well as attitude and behavior research.

Conclusion

In the present investigation, we sought to enhance and enrich our understanding of persuasive effectiveness of modalities and expertise. We aimed at taking a slightly different path than the one scholars have stepped on over the long course of persuasive research and compared different kinds of expertise rather than comparing sources of high and low expertise. By doing so, we took upon the questions stated by Priester and Petty (2003) about “what attributes are desirable for an endorser to possess?” (p. 408), hypothesizing to find an answer in different kinds of expertise, interacting with modality. However, as the present investigation failed to detect differences, we have to agree with Perloff (1993) who asserted that “expertise is not a panacea” (p. 141)—at least when addressing prospective customers of new apps in the field of Speech Language Pathology.
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APPENDIX A
Questionnaires for ASHA Conference

Questionnaire A

1) Do you use a tablet in your work with clients/patients?
   a. Yes
   b. No → questionnaire B

2) What type of pad do you use?

3) Which apps do you use in your work with clients/patients?

4) For what purposes? Which disorders do you treat with these apps?

5) What are the advantages for you as a SLP in using a tablet for your work with your clients/patients?

6) What are the disadvantages?

7) What are the advantages for your clients/patients when you use a tablet?

8) What are the disadvantages?

9) What are the sorts of characteristics that an app should have to make you interested in buying it?

10) What characteristic of an app would prevent you from buying it?
Questionnaire B

1) Do you intend on buying a pad in the near future?

2) Do you use other kinds of new technologies in your work with clients/patients?
   a. Yes -> 3
   b. No -> 4

3) What other kinds of new technology do you use in your work with clients/patients?
   a. Laptop
   b. Smartphone
   c. Mp3-player
   d. Others_____________________

4) What are your reasons for not using new technologies in your work with clients/patients?

Questionnaire C (after testing the App):

1) What do you think? [Please, give me the first 3 adjective that come into your mind.]

2) Please tell me how you feel operating the app.

3) What kind of clients/patients would you use this app for? (Would you consider using an app like this for older populations, too?)

4) Why? What are your reasons for that?

5) What advantage do you see in this app?
   a. [For you as a SLP]
   b. [For your clients/patients]
6) What disadvantage do you see in this app?
   a. [For you as a SLP]
   b. [For your clients/patients]

7) With regards to your clients/patients, what 3 vocabulary topics would you consider most important for your clients/patients to learn? Please rank those 3 topics from 1 to 3 (with 1 most important). [Topics see extra list]

8) Is there a topic you consider to be important to add?

Demographics:

1) Gender

2) (Age)

3) How long have you been in practice?

4) Which position best describes your job?
   a. clinical service provider (includes all direct services to clients/patients, including those in regular classrooms)
   b. Educator
   c. Researcher
   d. Consultant
   e. Administrator/director/chair/supervisor
   f. Other

5) What facility best describes the place you work?
   a. School
   b. college/university
   c. hospital
   d. residential health care facility
   e. Nonresidential health care facility (including speech-language pathologist’s, audiologist’s, physician’s offices and clinics)
   f. Others
6) What kinds of clients/patients do you serve?

7) How familiar are you in using the following technologies?
   
   [5 = very familiar, 4 = fairly familiar, 3 = neither familiar nor unfamiliar, 2 = not very familiar, 1 = unfamiliar]
   
   a. Internet
   b. PC/Laptop
   c. Smartphone
   d. Tablets

8) How do you keep yourself updated on most recent advancements in speech pathology such as apps?
   
   a. Journals: Which ones (up to 3)?
   b. Special web pages: Which ones (up to 3)?
   c. Forums: Which ones?
   d. Newsletters: Which ones (up to 3)?
   e. Conferences
   f. Conventions/fairs
   g. Colleagues
   h. Others_________________
APPENDIX B
Hello,

I’m Isabella. I’m a German graduate student of the International Cognitive Visualization Program at California State University, Chico. At the moment, I am working on my Master’s thesis with Dr. Neil Schwartz (CSU, Chico) and would truly appreciate your opinion as an SLP.

Our study is concerned with the use of new technologies among Speech Language Pathologists.

We are looking for SLPs or graduate students in the field of Speech Language Pathology who would like to participate in a short, 10 minute online study.

Your professional experience and knowledge regarding Speech Language Pathology is invaluable to us and your help would be greatly appreciated.

We also believe that our study will provide you with a unique opportunity to view cutting-edge technologies specifically for SLPs.

Again, this study does not take longer than 10 minutes and all it requires is speakers or headphones.

Please click on this link:

https://umfrage.uni-landau.de/limesurvey/index.php/477755/lang-en

If you have any questions or concerns, do not hesitate to contact me:
iglogger@mail.csuchico.edu.

Thank you for your help.

Isabella
Online locations used for announcing study

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APPENDIX D
Description of the App

The App is designed for speech and language therapists who look for an app providing practice and progress monitoring for their students with developmental disabilities and other conditions that interfere with the normal acquisition of vocabulary.

Four pictures are presented, and a verbal prompt asks the student to look at the pictures and touch the one that matches the spoken word.

The app has two modes. One is the practice mode in which the student works more or less independently. The other is the learning mode in which the app serves as a series of interactive learning prompts that are discussed by a student and the SLP.

The app has several modules. Each module of our app is based on a common theme like body parts or household items. There are ten target words in each module, with a total 320 words in all.

The App is available for tablets.
Academic Expert

“Hi, I’m Sharon Jones. I’m a full-professor for speech-language pathology at University of California. I received my Bachelor’s degree in communication technology and my Master’s degree in communication disorders from University of Southern California where I also earned my PhD. I also hold the Certificate of Clinical Competence from the American Speech Language Hearing Association.

I’ve been in academia for over 20 years. A large part of my recent research focuses on the use of new technologies for vocabulary acquisition on portable devices.

Currently, I’m interested in the benefits of interactive training tools for children and adults with a wide range of difficulties including autism, developmental delay, or other learning difficulties.

As a supervisor of graduate students in practica and having a great network in the field, I can tell you that new technologies are more often than not finding their way into speech-language therapy.

Why can I recommend apps for SLPs? Well, new technologies such as apps are highly motivating for clients. Apps are very convenient. Instead of carrying around a huge amount of flashcards, therapists can have them all in one, easy-to-use program on a portable tablet. Apps encourage clients to interact with their SLPs more personally and directly. And apps keep accurate track of their clients’ progress, and saves the results. Therapists don’t have to worry about documenting it. The use of real pictures fosters transfer of learned vocabulary from practice to daily life.”
Applied Expert

‘Hi, I’m Sharon Jones. I’m a practicing fulltime SLP in California. I have a master’s degree from California State University. I hold the Certificate of Clinical Competence from the American Speech Language Hearing Association and I’m licensed by the state of California to practice speech-language pathology.

I’ve been in the field for over 20 years; I’ve worked with both children and adults with a wide range of difficulties including autism, developmental delay, as well as other learning difficulties. Beyond private tutoring, I’ve worked in acute care and rehab services. Currently, I’m working with kids at the local school district in my hometown.

Although I have no particular background in the use of new technologies – I personally don’t even own a smart phone – working with the App has been successful. After reading the manual and testing the app for myself, I now use it for my practice sessions. Basically, I use it every day.

Why can I recommend the App for SLPs? Well, new technologies such as the App are highly motivating for my clients. The App is very convenient. Instead of carrying around a huge amount of flashcards, I’ve them all in one, easy-to-use program on a portable tablet. The app encourages my clients to interact with me more personally and directly. The App keeps accurate track of my clients’ progress, and saves the results. I don’t even have to worry about documenting it. The use of real pictures fosters transfer of learned vocabulary from practice to daily life.’
Informed Consent

Thank you for your participation in this study. This investigation consists of one session lasting no more than 20 minutes.

For this session you will be asked to:

1. Read instructions as well as a short text.
2. View a statement.
3. Complete a questionnaire about a task.

It is important for you to know that this investigation conforms to the ethical guidelines of the American Psychological Association (APA). Thus, the data we collect from you will be entirely confidential and will be used exclusively for this research. All recorded data will be kept in a locked filing cabinet. Once the data have been coded, they will be destroyed. APA also ensures that you are free to withdraw your participation at any time should you choose to do so. However, we believe that you will find this study extremely interesting and thought provoking. When you are done, you will have a chance to read a description of what the study is about, what we expect to find, and how the results fit into the existing research.

*If you choose to participate, we want to thank you again for your willingness to participate!*

If you understand the Informed Consent and agree with its contents, please check below.

☐ I agree with the Informed Consent.
☐ I do not agree with the Informed Consent.
APPENDIX H
Debriefing Note

Again, thank you for your participation in this study. You have just completed a series of tasks, all of which were ultimately intended to determine to what extent endorser expertise and presentation medium influence your perception of a new product.

Psychologists in the field of media effects, persuasion, and consumer behavior are interested in how an endorser’s perceived expertise, skills, and knowledge affect consumers’ attitudes towards a product and their purchase intentions. Tracing back to the ancient Greeks, considerations about how humans exert influence on others is anchored in a long tradition. While back then, scholarly thinking focused on face-to-face persuasion, present-day researchers are also interested in mediated communication (e.g. Briñol & Petty, 2009); that is, communication through the means of a medium, like the Internet.

In today’s study, you participated in one of four groups, differing in endorser’s expertise and in the modality the endorser’s statement was brought to you. You were either presented with a statement by a speaker with particular expertise on a new product, originating from extensive use of the product, or by a speaker with expertise on the general product class, originating from her extensive academic education. Moreover, you either received this statement as a written text or as a video clip.

Literature mostly agrees on the influence of perceived expertise of an endorser (Clark, Wegener, Habashi, & Evans, 2012). In most of the research, investigators have contrasted experts versus non-experts in their studies. However, definitions on what an expert is—and what it is not—are still lacking. Also, research so far has failed to account for different kinds of expertise (Braunsberger & Munch, 1998).

In addition, there is a large body of analyses of the effect of modality in persuasive communication—showing contradictory results (Booth-Butterfield & Gutowski, 1993). While some studies have not found any effect of modality (McGinnies, 1965), others provided that audio-visually presented messages were more persuasive than written
messages. Other studies stressed the interaction of modality with other variables such as trustworthiness of the communicator (Andreoli & Worchel, 1978).

Our study aims to close these gaps in the field of persuasive communication, by accounting for the possible influence of expertise and modality.

All the information we collected in today’s study will be confidential, and there will be no way of identifying your responses in the data archive. We are not interested in any one individual’s responses; instead, we want to look at the general patterns that emerge when the data are aggregated together.

Your participation today is greatly appreciated and will help us understand the kinds of messages we receive, as professionals, in the media. If you have any questions or concerns, or if you are interested in the results of today’s study, you are more than welcome to talk to Neil H. Schwartz, Ph.D, at 530.898.4968 (nschwartz@csuchico.edu) or Isabella Glogger, M.A at 530.566.5902 (iglogger@csu.chico.edu) of the California State University, Chico.

Again, thank you so much for your participation. Please do not discuss—online or offline—the study with any other person who might be interested in participating. They must participate in the same way as you. That is, it is essential they know nothing about the study before they participate. If you consider the study to be interesting for other SLPs or graduate students of communication disorders, you are more than welcome to forward this link https://umfrage.uni-landau.de/limesurvey/index.php/477755/lang-en.

THANK YOU AGAIN FOR YOUR PARTICIPATION.