

## Does the Web Today Keep the Doctor Away?

How information dissemination is changing our intended behaviors concerning online alternative health information.

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## ~ Introduction ~

*“Every great advance in natural knowledge has involved the absolute rejection of authority “*

*– Thomas Henry Huxley*

### **1.1 Abstract**

The purpose of this thesis is to begin to determine whether and to what extent various endorsements influence a user’s intended behaviors concerning online alternative health information. An online video survey was conducted in which [alternative health information](#)<sup>1</sup> was endorsed by one of the following: (a) a traditional expert authority, (b) broader online [social-media](#) authority, or (c) by no authority at all. A literature review that focused on online [credibility](#) and [authority](#) led the author to highlight trends in [information dissemination](#) across myriad fields; notably the [World Wide Web](#), and the field of health, wellness and medicine. Research results are discussed, along with their broad reaching implications for further research, and the field of health and medicine as a whole.

### **1.2 Overview**

The [Internet](#) has significantly changed the ways in which we seek, perceive, and interact with information found both on and off of the World Wide Web. The desired acquisition of information is shifting from [centralized authority](#), in the form of field-specific “experts,” to [decentralized authority](#), where peer-to-peer Internet users have virtual Internet access to the same information once reserved for the few

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<sup>1</sup> Major terms are hyperlinked throughout the text to Appendix A, where they are defined.

experts in a certain field. This shift in authority is facilitated by the mechanism of the Internet, which naturally disseminates information, but the *existence* of that mechanism itself reflects the growing social desires for decentralized points of reference and collaborative information. Therefore, the Internet is in many ways both the *reason* for this dissemination shift, and the *result* of the collective, perhaps unconscious, desire that such a medium for decentralized authority exist. (This concept is discussed further in section 3.3, [Unseen Influences on Source and Message Credibility](#))

In this thesis, [alternative health](#) refers to all forms of health and wellness that are not currently acknowledged and supported by or included in [western medicine \(allopathic medicine\)](#) and its treatments. Simply stated, alternative health modalities are largely characterized by preventive and non-invasive interventions while allopathic medicine is largely characterized by pharmacological and surgical interventions. In the past century, medicine in the west has been monopolized by these allopathic interventions and therapies, while support for other therapies has been simultaneously neglected and, at times, vilified. But now we begin to see a shift to the field of alternative health, and this presents both great challenges and opportunities. The unregulated nature of the Web makes it difficult to monitor the accuracy and integrity of (as well as provide context for) alternative health information. Yet the broad reach of the Internet enables this information be broadcast widely, and provides a platform for users to engage with and shape this information like never before (Eysenbach, 2008).

This thesis explores certain aspects of the Internet users' experience with alternative health information, and draws some conclusions about the implications of health information encountered online.

## ~ Background and Parallel Themes ~

### **2.1 The Rise of the Internet; An Ever-Shifting Phenomenon**

*“The Internet is becoming the town square for the global village of tomorrow.”*

*~ Bill Gates*

The [Internet](#), which began as a means of sharing information among the U.S. government and top research institutions, has grown to be the largest information warehouse in the world. Not only that, but the function of the Internet is shifting from a locus for static information (much like that of a printed book or news article) to one for vibrant real-time discussions that both provide context for existing information, and *shape* the information itself. This shift has absolutely changed the way we approach Web-based information, if not information offline as well.

The World Wide Web has become a place for information of both high and low quality, and even no quality; pertinent and irrelevant, mundane and fascinating; the information may be valuable or effectively worthless, cutting-edge or out-dated, easily found or practically inaccessible. Naturally, navigating through this vast information landscape has become a daunting (if not impossible) task for even the well-equipped and savvy Web enthusiast. Personal computing and networking expert Mitch Kapor is quoted as saying that “Getting information off the Internet is like taking a drink from a fire hydrant.” Similarly, mathematician John Allen Paulos, noting the difficulty in finding information on the Web, states, “The Internet is the world’s largest library. It’s just that all the books are on the floor.” (Quote Garden,

2011). With need for contextualization and navigation, the second generation of the Internet, often termed [Web 2.0](#), has grown to include systems that facilitate the search for information and encourage its co-creation.

Web 2.0 is marked by applications and networked systems of communication that allow for the emergence of information because of the *interactions* it facilitates. Whereas the first phase of the Internet is often categorized by so-called “static” information, Web 2.0 provides opportunities for collaboration and therefore has ever-changing information as a result of multiple, ongoing, and real-time authorship. In the article “Mass Media Use and Social Life Among Internet Users,” the authors aptly note, “The Internet is not only an information highway. As a medium, the Internet might be considered more like a telephone than a TV, as it tends to increase social interactions instead of ‘stealing’ time away from it” (Robinson, Kestnbaum, Neustadt, & Alvarez, 2000). And a major leader in the [health informatics](#) and open access publishing fields Gunther Eysenbach reminds us that in the second generation of the Internet, “users can and should corroborate information on the Web” (Eysenbach, 2008, p. 143). These important points of co-creation parallel similar shifts taking place across other disciplines like in the fields of health, wellness and medicine.

**Figure 1.** Information Dissemination as support and enabled by the Internet

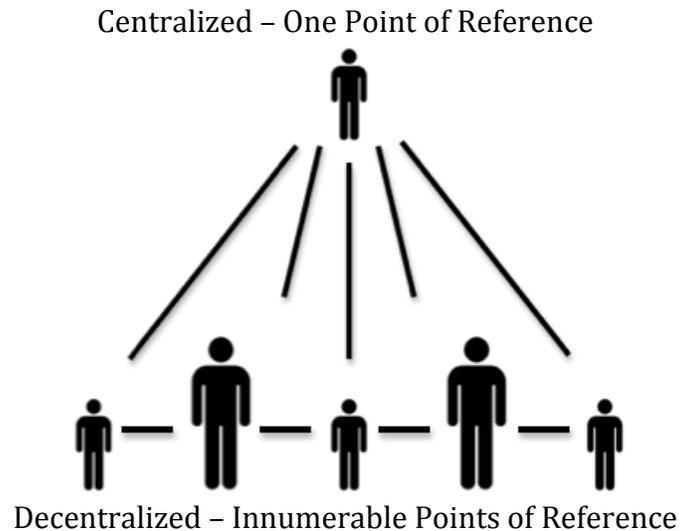


Figure 1. Shows how information has moved from a centralized, singular and hierarchically-placed point of reference, to decentralized and multivariate points existing on the same non-hierarchical level.

## 2.2 A Shift in Health, Wellness and Medicine

*“The doctor of the future will give no medicine, but will interest her or his patients in the care of the human frame, in a proper diet, and in the cause and prevention of disease.”*

*~ Thomas Edison*

Over the last century, illness in the United States has largely shifted from acute and infectious conditions to long-standing and chronic diseases (Prevention, 2011). This shift has taken place for many reasons, not the least of which are attributed to scientific medical advances like vaccines that have practically eradicated once life-threatening conditions like polio and tuberculosis. But with a

drastically different medical landscape predominating in the 21<sup>st</sup> century, the current medical model – adept at treating and curing acute and infectious conditions – often falls short in its ability to control, treat and even cure *chronic* disease. Many conditions cannot be cured by medicine, surgery or short-term intervention; they require diligence, sweeping lifestyle modification, and the support and continued attention of one or more practitioners.<sup>2</sup> Alternative health practitioners often recognize this plight and are ready to give ample time to their patients and to work alongside other kinds of practitioners.

This shift to chronic disease coupled with a growing desire to seek out non-pharmacological and less-invasive treatments, has led people to begin seeking [alternative health](#) options in lieu of or in addition to their more traditional healthcare options. Use of complementary and alternative medicine (CAM), the term used to describe healing modalities outside the scope of western medicine, has increased significantly over the past 15 years (Tindle, Davids, Phillips, & Eisenberg, 2005). Instead of seeing *solely* a primary care physician, people seem to use many practitioners and seek out numerous points of view to determine how to go about treating a health condition. This desire for disseminated and multifaceted information is changing collective perceptions of authority in health information.

Where once *one* [centralized authority](#) was sought for health information (often the

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<sup>2</sup> Within the existing medical model, even the well-intentioned [physician](#) is not allowed the time to attend to patients in this way as a result of the delivery and payment system in place. Neither do physicians often have the training necessary to effectively support a patient through the subtle but major lifestyle changes (including dietary, physical fitness, sleep, and therapeutic counseling) necessary to ensure lasting changes and attainment of health. And finally, if the physician exists inside a framework he does not believe is flawed, he or she may not only neglect to direct his patients to countless other useful resources, but may actively discourage a patient from seeking information and healing outside of the physician's office.

family doctor, the prevailing medical establishment, and/or a national governing body of health information like the Food and Drug Administration) now *many* viewpoints are consulted (physicians, friends, peers, alternative health practitioners, and the [Internet](#)) thus representing multivariate [decentralized authority](#). Not only do these occurring shifts reflect the people's desires, but multiple perspectives are extremely important for the evolution of our health and even our social consciousness. A more detailed discussion of authority shifts and its implications ensues in Section 3.4, [Authority Shifts](#).

**Figure 2.** Shift in Sought Health Information

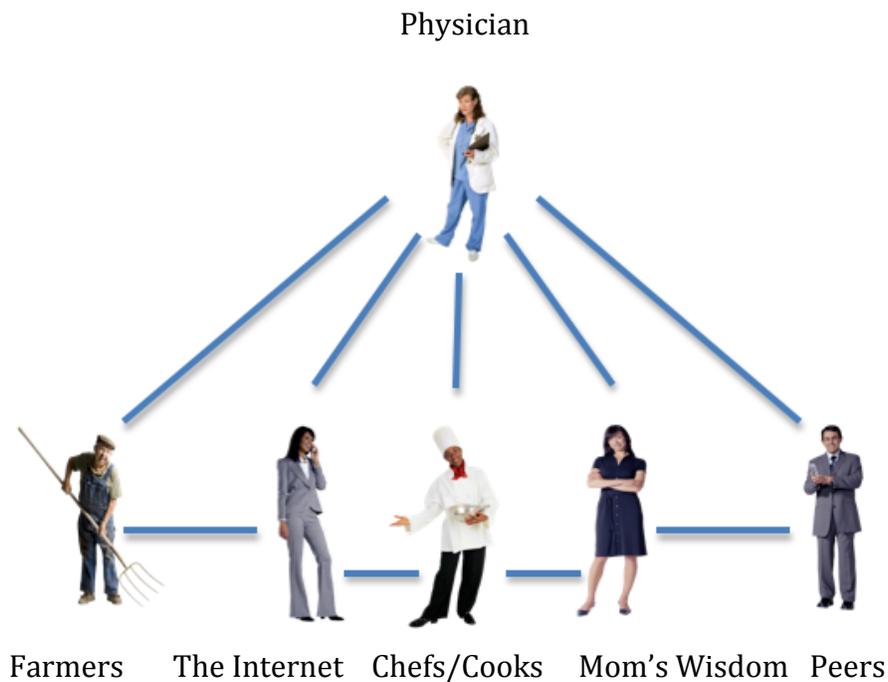


Figure 2. Shows the same process of information dissemination, but specifically represents the shift in sought health information. In this figure, centralized information at the top is represented by a physician, where decentralized information is represented by farmers (those who grow our food), the Internet (where health information is sought), chefs and cooks (those who prepare our food), mom's anecdotal health knowledge, and our peers. Of course, these are merely examples of the many possible decentralized points of reference.

## 2.3 Parallel Dissemination of Information

*“The business of a scientific school is the dissemination of useful knowledge, and this is a noble enterprise and indispensable withal; society can not exist unless it goes on.”*

*~ Albert J. Nock*

Interestingly, these shifts both in sought information (as enabled by the Internet) and in the fields of health, wellness and medicine parallel one another in that they both represent a collective desire toward disseminated information and multivariate points of reference; the Internet itself represents such information dissemination, and the shift from infectious to chronic disease has encouraged patients to seek multiple treatment options. Naturally, then, the medium of the Internet both directly and indirectly supports the burgeoning field of alternative health.

But this shift with the Internet simultaneously necessitates personal reflection and contextualization. As the saying goes, “with knowledge comes great responsibility.” For now that information virtually lies in the user’s hands, the onus does as well. David Lanks (2008), professor of Information Studies notes the following about this concept:

*This is the great paradox in information self-sufficiency on the Internet: end users are becoming more responsible for making information determinations, but because they have fewer physical cues to work with,*

*they are becoming more dependent on the information provided to them by others (p. 10).*

Internet users themselves are now responsible for discerning what is credible and true in the sea of available information. For some, this is an uneasy proposition. Users might think, “What if I misinterpret the information or believe false information that I find online?” Or concerned parties might say, “Will users be able to digest and contextualize the information they find?” And some practitioners may wonder, “Will there be a need for me and my expertise?” These fears, though valid, can cause people to resist change and cling to their previous ways of accessing information. But the Internet is ubiquitous and likely a permanent tool we must learn to use and to shape.

Nick Bilton, author of “I Live in the Future and Here’s How it Works”, assuages our fears when he explains that this visible dissemination of information has previously occurred. The printing press, for example, brought to the masses information once restricted to those with both literacy and access to the few copies of hand-written books in existence. Similarly, the telephone, radio and phonograph brought communication, news and music to the many, and people originally feared there would be no more use for actually attending the symphony or for in-person conversation; Lastly, the railroad brought about mass advances in travel, mail distribution and industrialized progress but was initially met with fears that people traveling over 20 miles per hour would actually be fatal to humans (Bilton, 2010).

Needless to say, once over our fears, we can recognize this shift to online acquisition of information as a great advance in natural knowledge.

The question then becomes how can those with knowledge and reliable information help provide Internet-capable replacements for those physical cues that will guide users to the most appropriate information? This research study seeks to determine which physical cues users respond to, such that others can work to provide those clues online and can direct users to accurate, relevant, and contextualized material.

## **2.4 Importance of Research**

### *Research*

Traditionally, one determined the credibility of information by consulting an “authority.” However, with the emergence of the Internet not only has information presentation itself begun to change, but so too has the manner in which we determine. Naturally then, it is important to study and understand what constitutes credibility in this new world of decentralized health information.

Prior health informatics research supports the need for *even more* research in this emerging and changing field of Web 2.0/health information. Gunther Eysenbach says that understanding “how people assess the credibility of a site, source, or piece of information is a key task in the development of any health education or health promotion undertaking and, thus, an important area of research” (Eysenbach, 2008, p. 125). Beyond the implications for traditional health education and health promotion, future credibility research may indicate how

online health information can specifically support (or even undermine) the field of alternative health. Furthermore, how people assess credibility online actually affects how the development of the Internet at large will continue.

As the Web continues to evolve, it will become increasingly important to have an understanding of who is shaping it, and how. By understanding the trends in the Internet, and specifically the next-generation's interaction with it, we can better predict where online information is headed and how it will be used. David Lanks, professor of Information Studies notes the following in his paper "Trusting the Internet: New Approaches to Credibility Tools" -

Migration to social applications on the Internet is in part due to the very nature of learning. Conversation theory ... proposes that learning and knowledge are gained through the interaction of agents around ideas as they go back and forth describing an idea.... As youth engage in conversations they learn ... The tools they seek out do not simply present credibility information, or third-party credibility assessments, but instead allow youth to participate in the conversation, and therefore the process of credibility verification and knowledge creation.... It is not surprising that the distinctions between information seeking, learning, and communicating are breaking down.... Given what is happening on the Web in terms of social uses and applications, it appears that users are looking to talk with others in order to better evaluate what they find and to

synthesize this information into actionable knowledge.... The Internet and digital networks that allow for community participation in the construction of the underlying network and infrastructure have become the predominant model for existing and future digital media, and how this has led to credible assessments by reliability rather than by authority.

(pp. 112-114)

This thesis seeks to augment this important point: that personal communications (and the networks that facilitate them) will inevitably lead to assessing credibility in new and more collective ways.<sup>3</sup>

The author hopes to direct future credibility and alternative health information research through this thesis as both fields continue to gain attention and traction on the World Wide Web. Credibility discussions will inevitably change with the advent of Web 2.0 and social media metrics that shape how people engage with online information, and credibility discussions should continue accordingly. Future online health research (into both traditional and alternative health information) should attempt to determine what users really care about when choosing to engage with information online. Also, alternative health advocates can determine where to place their efforts and energy to further a true representation of

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<sup>3</sup> Though the Lanks' excerpt is a discussion of youth in particular, youth represent the shift to a future that both they and we will inhabit. By looking at the online information seeking habits of the youth we can better predict the future of online information.

their field.<sup>4</sup> And finally, the field of alternative and integrative health writ large can confidently establish a solid and credible presence on the Internet knowing what information is important to the users themselves.

### *First-Hand Importance*

After spending my summer graduate internship working for an alternative health Web start-up company, I realized how necessary is this research. Daily conversations, debates, and decisions centered around the following question, “How do people come to consume and believe what they read about alternative health treatments online?” The website began as a Wikipedia-like site, with densely researched and annotated articles describing scientific studies that backed these alternative treatments. Eventually, through enough user-testing, we saw that people rarely looked at the citations. Instead, they based their judgments about credibility on their subjective perceptions about the writing and the authors.

They would, for example, say, “Well I suppose it seems real, and it was well written, so I believe it.” Or they might say, “I’m not sure I believe in this treatment, but this writer has obviously written a lot of content, and they look credible, so it’s likely to be true.” We were surprised, but continued to receive this kind of feedback. The users’ decisions on whether or not to believe the health information they read was often not based on scientific studies or a physician’s endorsement. Instead,

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<sup>4</sup> For example, should a traditional endorsement (represented in this study by the American Medical Association) result in more user acceptance and participation, then more efforts to gain traditional acceptance from the established medical community should be sought. Instead, if the social media endorsement (represented in this study by Youtube.com views and “likes”) results in more user participation, or this trend is noted over time, then perhaps efforts to engage the online community and to advance alternative health information visibility should be sought.

readers cared about the plausibility of the treatment and the perception of the *person* behind the article.

Thus I began to swim through the sea of online health information, health informatics, Web 2.0, and credibility research, eventually to arrive at the research conducted here. Experts along the way encouraged me and validated the need for this work (D. Mailey, personal communication, January 20, 2011) (R. Sharma, personal communication, November 22, 2010). I spoke with people on the street, who desired a community-based network for substantiating alternative treatments. I read stories through my company's website of people seeking healing, who wanted to hear from direct sources for whom the treatments actually worked, not what had been published and cached away. During my research process a study was released, that revealed that in 10 out of 12 categories, people preferred to seek their online health community's information to that of their doctor's (see the section on Peer-to-Peer Healthcare and [Appendix E](#))(Fox, 2011). Along with the research reviewed, these personal experiences confirmed both a need for this work and my desire to conduct it.

## ~ Literature Review ~

### **3.1 Overview**

The trends discussed above were formulated after compiling research and readings from myriad fields including social media, website credibility, consumer health informatics, trends in trust and believability, authority, advertising, and endorsements. Starting with Google Scholar, PubMed and searches through the California Institute of Integral Studies online database, the research ended up spanning many academic journals (including the *Journal of Communication*, *British Journal of Medicine* and *Alternative Therapies in Health and Medicine*) as well as documents released by health organizations and conferences. Personal references and main-stream schools of thought (as assessed through popular non-fiction articles and books) were also considered when seeking to understand the trends in health, medicine, and the Internet today.

### **3.2 Defining Credibility in Web and Electronic Health Research**

*“All credibility, all good conscience, all evidence of truth  
come only from the senses.”*

*~ Friedrich Nietzsche*

Credibility on the Web has been extensively studied, but to refer to “credibility” is to speak somewhat vaguely because definitions vary widely. (This is especially true for credibility discussions of online health information research

specifically.) Examples of varying “credibility” definitions for online information research in general are listed in Table 1 in [Appendix B](#).<sup>5</sup> As is noted in the table, credibility can denote *accuracy* (usually defined as being the same information as that of the prominent authoritative body), *trustworthy*, *fairness*, *reliability*, and *temporality*, and as being necessarily enmeshed with the *receiver’s motivations*, *source credibility* and *message content*. For the sake of this thesis, credible information is defined as, *anything thought by a person reading the information to be believable, trustworthy, accurate, plausible, timely and written in good-faith*. To be clear, credibility in this thesis is in no way defined as information that necessarily aligns with the endorsements of the established medical community.<sup>6</sup>

[E-Health](#) (electronic health) information has likewise been the focus of much research, and it suffers the same handicap as “credibility” research in that definitions vary widely (Oh, Rizo, Enkin, Jadad, & Phil, 2005). Determining *credibility* for online health information specifically has often been when “judged against rigorously developed, peer reviewed, and published guidelines” (Kunst, Groot, Latthe, & Kahn, 2002). That is to say, credibility was defined as information that aligned with traditional medical markers of authority for which “rigorously

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<sup>5</sup> It is worth noting that some of the definitions discussed both in Table 1 and in this paper were created specifically for *blog* credibility, and many for politically invested online content as these topics represent a bulk of online credibility research.

Additionally, some sources site “opinionated writing” as lowering credibility (Metzger, Flanagin, Eyal, Lemus, & McCann, 2003) while others say opinions add to credibility (in the online blogging world specifically.) (Brunns, 2006; Banning & Trammell, 2006). One assessment by Johnson et. al. (2007) states that opinionated sites “scored highest for depth and lowest on fairness, but scores for all credibility measures (accuracy, depth, believability, and fairness) were higher for blogs than for mainstream or portal sites” (Johnson, Kaye, Bichard, & Wong, 2007, p. 3).

<sup>6</sup> Much credible information about alternative health modalities is not formally endorsed by the American Medical Association, Food and Drug Administration, Centers for Disease Control and Prevention, or similar agencies; neither has it been studied and published in major academic journals. Though these facts do not necessarily change the information’s credibility or accuracy.

developed” guidelines and “peer reviewed” information are the focus (examples include The Centers for Disease Control and Prevention and/or The New England Journal of Medicine). Needless to say, if credibility is only to be judged by western medical standards, alternative health information will rarely be deemed credible even though western medical endorsements do not necessarily reflect a piece of information’s actual credibility or applicability.

Though research on veracity and credibility exists in the online health information literature, the survey conducted in this thesis did not focus specifically on perceptions of credibility. Rather, *engagement* with information is emphasized through the rating of intended behavior, as opposed to the measuring *perceptions* of the “quality” or “credibility” of that information. For example, survey participants were asked whether, after seeing a video about traditional Chinese medicine and depression, they would do more research on the content of that video, would “like” or leave a comment on the video, and/or would send the video to a depressed friend. (See [Appendix C](#) for the list of survey questions and possible responses.)

A centralized, traditional authoritative endorsing body for alternative health information does not exist, so people often look to the traditional western medical endorsing bodies (like the Centers for Disease Control and Prevention, the Food and Drug Administration, the National Institutes of Health etc.) to determine the credibility of *all*, even alternative, health information. However, little research has been conducted on how these *traditional* authoritative markers of medical credibility affect the perceptions of *alternative* health information in particular. And, as is true for the study of online information generally, little research exists on how

the emergence of Web 2.0 and social media factors specifically influence the user's intended behaviors regarding information (specifically alternative health information) found on the Web. Therefore, this study focuses on the difference in intended behaviors between centralized and traditional medical endorsements versus decentralized and subtle Web 2.0 endorsements of online alternative health information.

Lintonen et al (2007) state that, "There is a call for more research on the role of information and communication technology within health promotion, especially focusing on the societal and community perspective" (p. 70). Though this statement is referencing traditional health promotion initiatives, complementary and alternative healing modalities will likewise benefit from further research in this vein. And Gunther Eysenbach repeatedly requests that less time be spent doing research that is focused on and the defining of specific terms like credibility (Eysenbach, 2008). His call to move away from definition studies and toward more behavior-based studies supports this thesis, and was indeed a major influence on the decision to focus on *intended behavior* rather than *perceived credibility* in this research study.

### **3.3 Unseen Influences on Source and Message Credibility**

*"The world is not an ideology nor a scientific institution,  
nor is it even a system of ideologies; rather, it is a structure  
of unconscious relations and symbiotic processes."*

*~ William Irwin Thompson*

As the saying goes, “you don’t know what you don’t know,” and the same can be said for the subtle or invisible influences that affect one’s perceptions of online source and message credibility. Tangible, but largely unseen and unstudied, determinants like browser and modem speed (Lanks, 2008) exist alongside more metaphysical forces including user motivation, latest context clues including [Web 2.0 factors](#), and the medium of the Internet itself.

In his article “Trusting the Internet: New Approaches to Credibility Tools,” David Lanks notes that the invisible *infrastructure, applications, and information services* have a large influence on a user’s ability to trust information encountered on the Web. *Infrastructure*, according to Lanks, comprises the hardware like routers, and organizations like the Internet Service Providers, that bring the Internet to the user. *Applications* include software like browsers and instant messaging programs. And finally, *information services* includes algorithmic search-engine results like those found on google.com (Lanks, 2008, pp. 105–6).

Motivation is among the strongest of invisible influences on credibility perceptions.<sup>7</sup> As has been studied, those with a higher motivation or a more vested interest in the content (which is often the case for those looking to treat a health

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<sup>7</sup> Traditional persuasion theories, like the Elaboration Likelihood Model (ELM) note that *motivation* largely affects whether or not users look to message content or context clues (like source and endorsements) to make decisions about message information. Further discussed as *central vs. peripheral route* processing in ELM (Petty & Cacioppo, 1986), the Heuristic-Systematic Model (HSM) similarly notes two different information-processing mechanisms (Dutta-Bergman, 2004); in HSM people use either heuristic (“superficial” clues that take little effort to assess) or systematic (“comprehensive effort to analyze and understand information”) processing, to arrive at a judgment about information (Griffin, Neuwirth, Giese, & Dunwoody, 2002, pp. 706-7) Finally, translated into Internet lingo, these two cognitive motivational routes are described as “surfing” versus “searching,” where surfing indicates low involvement in information seeking, whereas searching indicates high involvement (Dutta-Bergman, 2004, p. 255).

condition or disease) will approach their search more diligently than those with lower motivation or for whom their personal health and safety is not in jeopardy. Internet surfers would care more about context clues like preconceived source credibility, aesthetics, and navigational simplicities, whereas searchers will more carefully scrutinize the strength of the message itself, and likely forgive or neglect other more “superficial” context clues (Petty & Cacioppo, 1986, p. 154; Dutta–Bergman, 2004, p. 255). Additionally, it is important to note that personal perceptions, just like motivation, are important determinants of credibility as people “primarily seek and consume information on the Internet to meet their own information needs” (Lanks, 2008, p. 106).

As discussed in the [Research Study](#) portion of this thesis, source perceptions are assumed to have influence on the perceived credibility of health and other online information. However, in addition to *source* perceptions affecting *message* perceptions, online information seekers see the completeness of any given *message* as also affecting perceptions of the *source’s* credibility. Melican & Dixon (2008) state that this implies “a complex Web of intertwined relationships between source and content characteristics.” Similarly, Dutta–Bergman (2004) states, “*Source* perceptions are enmeshed with assessments of *message* characteristics” [Emphasis added] (p. 266). Naturally then, prior experience with the information or source will affect the perceptions of that particular piece of information or source in the future.

The final and perhaps least seen and most metaphysical influence on one’s perception of online information is none other than the Internet itself. Canadian philosopher Marshall McLuhan’s famous aphorism “The medium is the message”

can be used to describe this concept. According to McLuhan, the *medium*, in this case the Internet itself, had an effect on the user, the effect being what he calls the *message*. The inexplicable ways in which the Internet has changed our means of relating to and experiencing information is itself a significant factor in our acquisition of knowledge. Interestingly, though perhaps not ironically given his work, McLuhan is noted as having predicted the World Wide Web a quarter century before it emerged – yet another case for the emergence of the Internet as a result of a collective longing for its existence (Levinson, 1999).

### 3.4 Authority Shifts

#### *A Small/Tall Illusion*

*A Poem by S. Showalter*

*The grandest site the forest sees,  
Are stately, elder, wise oak trees.  
For it is they alone who stand  
So tall, surveying all the land.*

*But though it's true these trees stand tall,  
It's only due to life that's small;  
Who toil the forest's floor below  
And make it so the grand can grow.*

Studies noting a change in how we come to actually *trust* (and eventually *engage with*) certain health information were most influential in developing this research study. Health and medical information in the United States has both benefited and suffered from trust in the traditional authoritative body. The rise of the Internet seems to both cause and perpetuate a shift to a new type of authority. Similar to the shift in disseminated information discussed in the [Background and Parallel Themes](#) section, a similar shift is occurring from gated, often singular [centralized authority](#) to [decentralized authority](#) characterized by multivariate points of reference.

For clarification, [authority](#) is defined in this thesis as any governing body or learned or skilled individual that holds extensive knowledge of a subject. This term is further delineated into *centralized vs. decentralized* authority. Centralized authority represents a single expert entity, single credibility marker, and gated information, whereas *many* experts represent decentralized authority as being multi-faceted, and often open-sourced. (Additional descriptor for centralized authority may in some instances include prior *established reputation*) (Metzger M. , 2007). Either term can be applied to a single person, organization or group of people and/or organization, though the implication is that a smaller number of more highly ranked people represent centralized authority and larger number of (seemingly) lesser-ranked people, represent decentralized authority.

Gunther Eysenbach's work talks about how decentralized authority, supported through social networking sites, will help shape the future of health information online.<sup>8</sup> He states that "engaging and credible Web sites are about building community," and that they should allow people "to be creators of content, rather than conceive of them as merely an audience to 'broadcast' to." Additionally he states that these community systems "can help users navigate through the onslaught of information afforded by networked and digital media, giving additional credibility cues and supplying further metainformation." The future of online health information will be supported and created by consumer ratings, collaborative filtering, "and other second-generation Internet-based services and tools that let people collaborate on a massive scale and share information online in new ways" (Eysenbach, 2008, p. 146)

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<sup>8</sup> His term for this concept as it applies to the Web is "[apomediation](#)."

Another example of disseminated authority occurring across other disciplines, the Edelman Trust Barometer, is primarily used to assess trust in companies and governmental organizations. It notes that as of 2005, trust shifted from “authorities” (their definition of authorities is akin to *centralized authorities* in this paper) to peers (Edelman Trust Barometer, 2011), and peers, (non-hierarchical points of reference) are another way of describing decentralized authority.

So now, anyone with [Web fluency](#) and access to the Internet can find the same information as any other fellow patient, or even most physicians. Bringing both the potential for personal empowerment as well as wrongly prescribed treatments and misinformation, the lowered entry-point for information shaping on the Internet has great implications. In a decentralized network, the individual user has the ability to become one of many experts working side-by-side to understand and create information. For alternative health, which often focuses on collaboration in both the physician-patient relationship and among treatment modalities, the Web can in many ways facilitate these interactions. As was noted by David Lanks, the future of the Internet will support the co-creation and collaboration of information, thus granting more connection and viable idea generation than was possible before these systems were in place (Lanks, 2008). Lanks (2008) states the following:

Society may soon be at an inflection point in terms of how people, particularly youth, identify credible information, abandoning traditional methods of determining credibility that are based on authority and hierarchy for digital tools and new network approaches. Far from being a negative development, new methods and tools for determining credibility

may reflect a more distributed and open approach than in the past. Such an approach has important implications for how youth are educated, how policy is determined, and how future information systems are built (p. 101)

This desired disseminated authority aligns with an [integrative medicine](#) model more than in western medicine, in that multivariate points of contact are encouraged in integrative medicine. As noted above, this behavior is now shaping and changing both western and alternative health fields as barriers to information break down and people can access multiple points of health reference. With the advent of the Internet, health information seekers can again take personal responsibility for learning and understanding their health process, can connect with others to gather support and resources, and can even take on the joyful task of *engaging themselves* in their own healing process.

### **3.5 Peer-to-Peer Health Care**

*“Never before in history has innovation offered promise of so much to so many in so short a time.”*

*~ Bill Gates*

In addition to being a superhighway of published information and expert views, the Internet is a platform for the individual experience. In the beginning, personal blogs gave individuals a platform for their unique voice. Next, forums became a way for like-minded individuals to center their discussions on certain topics, and to interact with

other members of those particular forums. This interaction among online users eventually gave way to the social-networking sites that are vastly changing the face of the Web.

The term [Web 2.0](#) refers to the second generation of the Internet and is marked by applications and networked systems of communication that allow for the emergence of information because of the interactions it facilitates. In a tangible healthcare example, consider a conversation between patient and practitioner where the practitioner acknowledges the patient's symptoms and experience, and subsequently offers treatment information. With the structures of Web 2.0, this information is now available to the masses, enabling the benefits of that communication to reach beyond the two original conversation participants. Then, a third party, having read this original communication, can also comment against that information, creating a richer context to the original two-pronged dialog. Additionally, we can consider that if each of those original points is consulting numerous other sources (an example of our desire for disseminated information and authority) the information available becomes more comprehensive and contextualized.

The value of offline support groups has long been seen as an integral piece in successful treatment regimes and health care. With the advent of the Internet and the networking abilities of Web 2.0, in many cases these support groups have moved online (Wangberg, Andreassen, Prokosch, Vagos-Santana, Sorensen, & Chronaki, 2008; Lewis, Esenbach, Kufafka, Stavri, & Jimison, 2005). The interactions among the users are studied and known as patient-to-patient communications or, more formally, as Peer-To-Peer Health Care (Fox, 2011). A recently released Pew Internet Study published by the Journal of Participatory Medicine actually found that though people still see their

specialist or MD as being the best resource in two categories (*Diagnosis* and *Advice on Management After Diagnosis*), online support groups were rated as being the best resources for the other ten categories (such as *Best In-depth Information on My Condition*, *Best Practical Knowledge of My Condition*, and *Best for Helping Me Find Other Medical Resources*). (For a copy of this report see [Appendix E](#).) Needless to say, and as studies show, online social support for health conditions is a much utilized and coveted space that only continues to grow with increasing internet use.

## ~ Research Study ~

### **4.1 Purpose**

The purpose of this thesis was to determine whether and to what extent various endorsements (one representing online social media factors and the other traditional authoritative expert endorsements) influence users' online behavioral intentions and credibility perceptions. It is hypothesized that both social media and traditional expert endorsements would have varying degrees of influence on the behavioral intentions of Internet users exposed to an alternative health informational video on the Web. The prediction is that these endorsements, these credibility markers, will increase the user's behavior intentions.

Up to this point, the credibility perceptions of alternative health information within the Web 2.0 online space have not been studied. With the changing nature of the Internet, coupled with the growing interest in alternative health modalities, this important research will begin to assess the credibility landscape for online alternative health information endorsements.

### **4.2 Research Design**

This single-factor experimental research design involved showing participants an alternative health information video (on traditional Chinese medicine treatments for depression), and giving them an online questionnaire to assess their intended behaviors, demographic information and general reaction to the video.

Specific behaviors in question included the user's desire share that video link with a friend via email, share the link on a social networking site, research Traditional Chinese Medicine further, contact the practitioner highlighted in the video, and to "like" or "comment" on the video. (For a full list of behaviors assessed, see the Table 2 in section 4.5). It was hypothesized that various markers of Internet health credibility would have varying degrees of influence Internet users' online behaviors.

Because one of the goals of this article was to clarify the difference between traditional centralized medical authoritative endorsements and Web 2.0 based decentralized multi-reference point authority, the survey included one group with either endorsement, and one group with neither endorsement.

### **4.3 Sample**

A convenience "snowball sample" was used to gather as many participants as possible. In this type of sample generation, the initial participants are gathered (in this case, through the researcher's personal network) and these participants are then encouraged to recruit additional subjects themselves (through email, Facebook postings and other means of contact). Participants agreed to being 18 years or older, so only those under 18 were (potentially) excluded.

This method of gathering participants does have its limitations: we were not able to ensure an even distribution among different demographic groups, nor control for participants' *intention* or *motivation*; there is no way to know what the response rate was as the number of people who had the opportunity to take the survey was not known; finally, there is chance of participants discussing the details of the survey with their friends before they then take the survey themselves.

Though this sampling method is recognized as having limitations, one major factor supports use of a snowball sample for this particular study; Since the study was aimed at assessing the desired levels of engagement with online information, a snowball sample of users reached through online methods naturally produced this desired population. Since Internet literacy and basic Web–navigation skills were a requirement to take the study, those who find out about the study via online mediums were inherently that desired population.

#### **4.4 Method**

An email was sent out to all the researcher’s personal contacts asking them to take the survey, and that they ask anyone in *their* network(s) to take the survey as well. (The researcher is a 26 year-old Caucasian graduate student, living in California, who accesses the Internet and Web 2.0 social media sites more than one time per day.) A posting of the survey’s link was also shared on Facebook.com by the researcher, with a call for her 1,243 “facebook friends” to take the survey, and to post the link to the survey on *their* Facebook.com page. In total, the link was shared on Facebook.com at least 18 times between the researcher and her network, was sent to more than 100 people via email, was announced at two public San Francisco events, and these efforts resulted in 250 survey participants in a 12 days time. It cannot be known how many people actually heard about the survey.

Once participants clicked on the link, they saw a Welcome and Consent Form page, where they had to agree to take the survey. Then, participants were randomly assigned to one of the three groups without them knowing that they had been assigned. All participants watched one of the three versions of the video, and then answered the

intended behavior and demographic questions. Finally, the Thank You and Clarifications page explained the premise of the experiment, and included contact information for the researcher. This final page also encouraged participants to acquire more participants by emailing their friends and/or posting a link to the survey on their Facebook.com wall. (Please see Table 2.)

The website weebly.com was used to create the online survey and aggregate the survey data. All survey participants were given the same Web address, and using Google Analytics functionality participants were blindly and randomly assigned to one of the three video versions. Other than a different video (with different embedded qualifying video messages) all participants saw three pages containing a consent form, a minimally designed questionnaire with the video, and after completing the survey saw a clarification page (clarifying that the video did not actually appear on any site other than this one for the survey.)

#### **4.5 Measures**

Participants used a 5–point Likert–type scale to assess nine intended behaviors after seeing the video; 1=*Strongly Agree*, 2= *Somewhat Agree*, 3= *Neither Agree Nor Disagree*, 4=*Somewhat Disagree*, 5= *Strongly Disagree*.

Table 2. Survey Questions

Number	Question	Type*
1	After seeing this video, I consider Traditional Chinese Medicine to be an effective way of treating health conditions	C
2	After seeing this video, I would do further research on Traditional Chinese Medicine	IB
3	If contact information were made available, I would contact the practitioner seen in this video for more information on Traditional Chinese Medicine and/or depression	IB
4	After seeing this video, I would contact a Traditional Chinese Medicine practitioner in my area to set up an appointment.	IB
5	I would send a link to this video to a depressed friend or family member	IB
6	I would share a link to this video on a social media page (examples include a personal webpage, Facebook, Twitter, LinkedIn, or Digg account)	IB
7	I am generally inclined to believe the content of this video to be accurate and true	C
8	If it were an option I would click the “like” or “dislike” button for this video	IB
9	If it were an option I would leave a comment about this video	IB
10	Which of the following best describes your gender identification?	D
11	What is your age?	D
12	Which option best describes your annual household income?	D
13	Which of the following best describes your highest level of completed education?	D
14	Which of the following ethnicities do you identify as being?	D
15	Where do you live?	D
16	Which option best describes your experience with depression?	D
17	Have you ever seen a Traditional Chinese Medicine practitioner, received acupuncture, taken Chinese herbs, and/or practice Tai Chi or Qi Gong?	D
18	Had you heard of Traditional Chinese Medicine before seeing this video?	D
19	How often do you use the Internet/World Wide Web?	F
20	Which of the following best describes your involvement with social networking sites?	D
21	Which of the following best describes your voting/rating/liking habits?	F
22	Which of the following best describes your commenting habits?	F
23	Which of the following best describes your online health information seeking habits?	F
24	Which of the following best describes your online lifestyle and/or alternative health seeking habits?	F
25	Video Version Variable (Not actual question)	V

\* Credibility, Intended Behavior, Demographic, or Frequency Question, Video version (variable invisible to participants).

The main variable being assessed was the version of video the participants saw.

All participant videos began with the message, “The video you are about to watch describes how Traditional Chinese Medicine views and treats a diagnosis of depression and how it can be tailored to help each person with depression in a personalized way.”

Additionally:

- Version 1 of the video included the following message before the video began, “This video appears on the American Medical Association’s website, and many of

the treatments discussed in the video are endorsed by the Food and Drug Administration.”

- Version 2 of the video included the following message before the video began, “This video appears on the popular video website YouTube. It has over 1,000,000 views, 10,000 likes (a few hundred “dislikes”) and nearly 13,000 comments.”
- Version 3 had had no qualifying message.

In addition to comparing the three video versions, demographic and online activity frequency variables were also gathered. Age, gender, location, frequency of Internet use, participation in social media networking sites, and online health information seeking frequencies were assessed. Prior knowledge of and experience with traditional Chinese medicine as well as relationship with depression were also assessed in the questionnaire. For a visual of the experience, see [Appendix C](#).

## **4.6 Results**

The snowball sampling efforts produced 253 survey participants. Data were analyzed using SPSS v 16.0. Responses from three participants were excluded, as they did not fully complete the survey. Therefore 250 participants were included in the data analysis. Specific questions that were left blank were eliminated when running specific significance tests. Crosstabs, Chi-Square and One-Way ANOVA tests were performed in SPSS to determine possible statistical significance of relationships.

Nine Intended Behavior questions were assessed against a number of different Variables (video versions, demographic, and Internet frequency assessments) and significant findings are reported below

### *Demographics*

Respondents spanned every category for each demographic question, though the samples were not evenly distributed throughout. For gender, 95 men (38% of respondents), 152 (61%) women, and 1 (.4%) transgender individual took the survey. 202 participants (81%) were Caucasian, 20 were Asian (8%), 9 were Hispanic or Latino (4%), 13 identified as Other (5%) and the remaining were split. The vast majority of people, 235 participants (94%) lived in the United States or Canada, and 224 participants (90.0%) hold a bachelor's, master's, or doctoral degree. One hundred sixteen participants (47%) identified as having a close friend or family member who suffered from depression, and 233 (94%) of participants had heard of traditional Chinese medicine before seeing the video. Most people, 224 participants (90%) use the world wide web more than once per day, and 179 of them (72%) are involved in 1-3 social networking sites.

### *Quantitative Data Analysis*

When using the 5-point Likert-type intended behaviors scale, no significant findings were found. Therefore, these five intended behaviors were recoded into where groups 1 and 2 were combined to make an "Agree" category, 4 and 5 were combined for a "Disagree" category, and 3 stayed "Neither Agree Nor Disagree." Upon this recode, significant findings were found and are discussed below.

### *Video Variable*

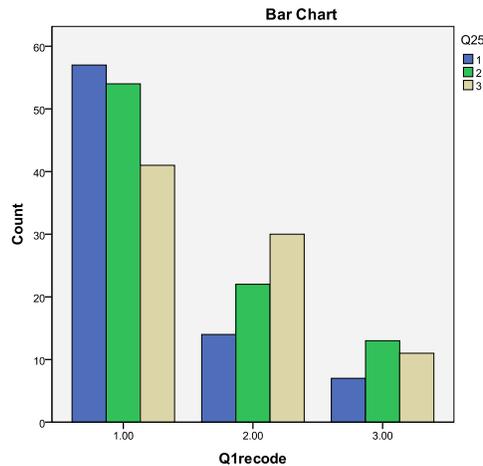
Question 1:

A Chi-Square Test was performed to examine the relation between video version and the participants' belief that, after seeing the video, traditional Chinese medicine was an effective means of treating health conditions. Participants who saw the American Medical Association endorsed video were more likely to agree than those who saw the video that allegedly appeared on youtube.com, who were more likely to agree than the participants who saw no endorsement.

After seeing this video, I consider Traditional Chinese Medicine to be an effective way of treating health conditions

	Cell Count < 5	Agree	Neutral	Disagree
1 = Traditional Endorsement Video	-	57 (73.1%)	14 (17.9%)	7 (9.0%)
2 = YouTube Endorsement Video	-	54 (60.7%)	22 (24.7%)	13 (14.6%)
3 = No Endorsement Video	-	41 (50.0%)	30 (36.6%)	11 (13.4%)

Chi-square = 10.046; df = 4 (p < .05)



Question 1:

A one-way ANOVA was used to test for agreement level differences (of the question “After seeing this video, I consider Traditional Chinese Medicine to be an effective way of treating health conditions”) among the three video versions. Agreement levels differed significantly across the three versions. The video 1 group showed the

highest degree of agreement (mean = 1.4) followed by video 2 group (mean = 1.5) with video 3 group (mean = 1.6).

(F=3.17, df=2,246, p<.05)

Question 9:

A Chi-Square Test was performed to examine the relation between video version and whether or not participants would leave a comment about the video. Participants who saw the American Medical Association endorsed video were more likely to agree than those who saw the video that allegedly appeared on youtube.com. Participants who had neither endorsement were the most likely to agree to leave a comment about the video.

If it were an option I would leave a comment about this video

	Cell Count < 5	Agree	Neutral	Disagree
1 = Traditional Endorsement Video	-	13 (16.9%)	39 (50.6%)	25 (32.5%)
2 = YouTube Endorsement Video	-	12 (13.5%)	60 (67.4%)	17 (19.1%)
3 = No Endorsement Video	-	20 (24.4%)	46 (56.1%)	16 (19.5%)

Chi-square = 8.939; df = 4 (p < .1) Approaching significance

Question 3:

A one-way ANOVA was used to test for agreement level differences (of whether or not participants would contact the practitioner seen in the video) among the three video versions. Agreement levels approached significance across the three versions. The video 1 group showed the highest degree of agreement (mean = 2.0) followed by video 3 group (mean = 2.2) and finally with video 2 group (mean = 2.3).

(F=2.88, df=2,246, p<.06) Approaching Significance

*Gender Variable*

Gender was recoded to eliminate the gender queer/transgender option, since it produced cells with fewer than 5 responses.

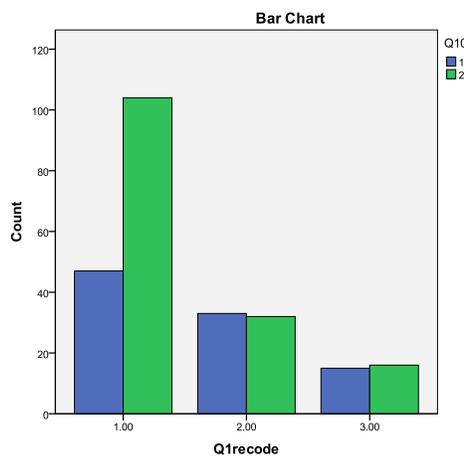
Question 1:

A Chi-Square Test was performed to examine the relation between gender and the participants’ belief that, after seeing the video, traditional Chinese medicine was an effective means of treating health conditions. Agreement levels differed significantly, with women being more likely to agree with this statement than were men.

After seeing this video, I consider Traditional Chinese Medicine to be an effective way of treating health conditions

	Cell Count < 5	Agree	Neutral	Disagree
1 = Male	-	47 (49.5%)	33 (37.4.8%)	15 (15.8.4%)
2 = Female	-	104 (68.4%)	32 (21.1.2%)	16 (10.5%)
Gender Queer/Transgender - Omitted	-			

Chi-square = 8.883; df = 2 (p < .05)



Question 1:

A one-way ANOVA was used to test for agreement level differences (of the question “After seeing this video, I consider Traditional Chinese Medicine to be an

effective way of treating health conditions”) among the gender variable. Agreement levels differed significantly between the genders. Women were more likely to agree (mean = 1.4) than men (mean=1.7).

(F=3.75, df=2,245, p<.05)

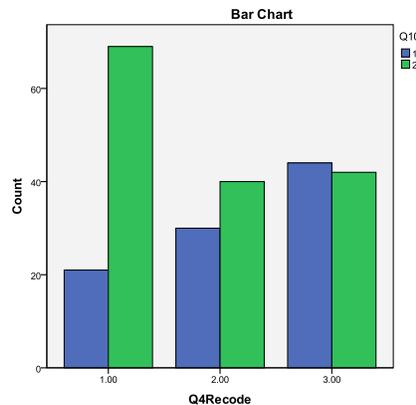
Question 4:

A Chi-Square Test was performed to examine the relation between gender and the participant’s agreeing to contact a traditional Chinese medicine practitioner in their area for an appointment. Agreement levels differed significantly, with women being more likely to agree with this statement than were men.

After seeing this video, I would contact a Traditional Chinese Medicine practitioner in my area to set up an appointment.

	Cell Count < 5	Agree	Neutral	Disagree
1 = Male	-	21 (22.1%)	30 (31.6%)	44 (46.3%)
2 = Female	-	69 (45.7%)	40 (26.5%)	42 (27.8%)
Gender Queer/Transgender - Omitted	-			

Chi-square = 15.110; df = 2 (p < .05)



Question 4:

A one-way ANOVA was used to test for agreement level differences (of whether the participants would contact a traditional Chinese medicine practitioner in his/her

area) among the gender variable. Agreement levels differed significantly between the genders. Women were more likely to agree (mean = 1.8) than men (mean=2.2).

(F=7.61, df=2,244, p<.05)

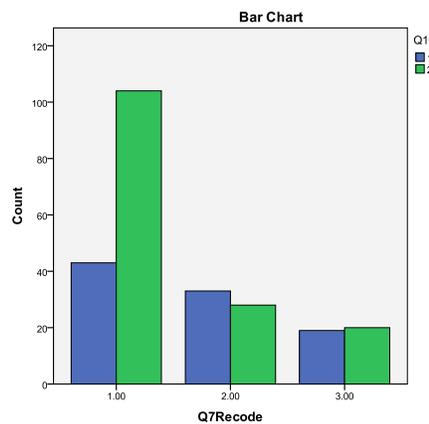
Question 7:

A Chi-Square Test was performed to examine the relation between gender and the participant’s agreeing to the question statement “I am generally inclined to believe the content of this video to be accurate and true.” Agreement levels differed significantly, with women being more likely to agree with this statement than were men.

I am generally inclined to believe the content of this video to be accurate and true

	Cell Count < 5	Agree	Neutral	Disagree
1 = Male	-	43 (45.3%)	33 (34.7%)	19 (20.0%)
2 = Female	-	104 (68.4%)	28 (18.4%)	20 (13.2%)
Gender Queer/Transgender - Omitted	-			

Chi-square = 13.303; df = 2 (p < .05)



Question 7:

A one-way ANOVA was used to test for agreement level differences (believed the content of the video to be accurate and true) among the gender variable. Agreement

levels differed significantly between the genders. Women were more likely to agree (mean = 1.4) than men (mean=1.7).

(F=5.12, df=2,245, p<.05)

### *Age Variable*

Age Variable was recoded to eliminate the 75+ years age category, since it produced cells with fewer than 5 responses.

#### Question 4:

A Chi-Square Test was performed to examine the relation between age and the participant's agreeing to the statement "I would contact a Traditional Chinese Medicine practitioner in my area to set up an appointment." Agreement levels approached significance, people 36 years and older being more likely to agree that they would contact the practitioner than those 35 and under.

After seeing this video, I would contact a Traditional Chinese Medicine practitioner in my area to set up an appointment.

	Cell Count < 5	Agree	Neutral	Disagree
1 = 18-25 Years	-	9 (27.3%)	5 (15.2%)	19 (57.6%)
2 = 26-35 Years	-	35 (35.0%)	29 (29.0%)	36 (36.0%)
3 = 36-50 Years	-	20 (46.5%)	13 (30.2%)	10 (23.3%)
4 = 50-75 Years	-	25 (35.2%)	25 (35.2%)	21 (29.6%)
75+ Years – Omitted				

Chi-square = 12.347; df = 6 (p < .1) Approaching Significance

#### Question 5:

A Chi-Square Test was performed to examine the relation between age and the participant's agreeing to the statement "I would a link to this video to a depressed friend or family member." Agreement levels approached significance, with the majority (50+%)

of all age groups agreeing except for the 18-25 year old category (who only agreed at a 29%).

Question: I would send a link to this video to a depressed friend or family member

	Cell Count < 5	Agree	Neutral	Disagree
1 = 18-25 Years	-	10 (29.4%)	5 (14.7%)	19 (55.9%)
2 = 26-35 Years	-	50 (50.0%)	11 (11.0%)	39 (39.0%)
3 = 36-50 Years	-	23 (53.5%)	9 (20.9%)	11 (25.6%)
4 = 50-75 Years	-	37 (52.1%)	14 (19.7%)	20 (28.2%)
75+ Years – Omitted				

Chi-square = 12.431; df = 6 (p < .1) Approaching Significance

Question 5:

A one-way ANOVA was used to test for agreement level differences (for sending a link of the video to a depressed friend) among the age variable. Agreement levels differed significantly between the ages. Ages 36-50 were most likely to agree (mean= 1.7) followed by the group aged 50-75 (mean 1.8), then 26-35 group (mean = 1.9) and finally age 18-25 group (mean 2.3).

(F=2.58, df=4,244, p<.05)

Question 8:

A Chi-Square Test was performed to examine the relation between age and the participant’s agreeing to the statement “I click the “like” or “dislike” button for this video.” Agreement levels differed significantly, with the people over 36 being more likely to agree to clicking a button than those 35 years old and younger.

If it were an option I would click the “like” or “dislike” button for this video

	Cell Count < 5	Agree	Neutral	Disagree
1 = 18-25 Years	1 (8.3%)	8 (23.5%)	22 (64.7%)	4 (11.8%)
2 = 26-35 Years	-	28 (28.0%)	61 (61.0%)	11 (11.0%)
3 = 36-50 Years	-	21 (48.8%)	17 (39.5%)	5 (11.6%)
4 = 50-75 Years	-	33 (47.1%)	26 (37.1%)	11 (15.7%)
75+ Years – Omitted				

Chi-square = 15.276; df = 6 (p < .05)

### *Ethnicity Variable*

#### Question 9:

A one-way ANOVA was used to test for agreement level differences (for leaving a comment on the video) among the ethnicity variable. Agreement levels differed significantly between the groups. Those who identified as being Asian were the most likely to agree that they would leave a comment (mean=1.8). Caucasian participants, in contrast (mean=2.1).

(F=2.64, df=6,239, p<.05)

### *Prior experience with a TCM practitioner or TCM modality Variable*

#### Question 4:

A one-way ANOVA was used to test for agreement level differences (with the statement “After seeing this video, I would contact a Traditional Chinese Medicine practitioner in my area to set up an appointment”) among the variable for prior experience with a TCM practitioner. Agreement levels differed significantly between the groups. Those who had seen a TCM practitioner prior to seeing the video were more

likely to agree to contacting a TCM practitioner (mean=1.8) than those who had not (mean=2.1).

(F=10.95, df=1,243, p<.05)

#### Question 5:

A one-way ANOVA was used to test for agreement level differences (with the statement “I would send a link to this video to a depressed friend or family member”) among the variable for prior experience with a TCM practitioner. Agreement levels differed significantly between the groups. Those who had seen a TCM practitioner prior to seeing the video were more likely to agree to sending the link on (mean=1.7) than those who had not (mean=2.0).

(F=5.08, df=1,244, p<.05)

#### Question 6:

A one-way ANOVA was used to test for agreement level differences (with the statement “I would share a link to this video on a social media page”) among the variable for prior experience with a TCM practitioner. Agreement levels differed significantly between the groups. Those who had seen a TCM practitioner prior to seeing the video were more likely to agree to sharing the link on a social media page(mean=2.2) than those who had not (mean=2.4)

(F=5.05, df=1,243, p<.05)

#### Question 8:

A one-way ANOVA was used to test for agreement level differences (with the statement “If it were an option I would click the “like” or “dislike” button for this video”) among the variable for prior experience with a TCM practitioner. Agreement levels differed significantly between the groups. Those who had seen a TCM practitioner prior to seeing the video were more likely to agree to clicking the “like” or “dislike” button (mean=1.6) than those who had not (mean=1.8)

(F=6.94, df=1,243, p<.05)

#### *Prior knowledge of TCM Variable*

##### Question 3:

A one-way ANOVA was used to test for agreement level differences (with the statement “If contact information were made available, I would contact the practitioner seen in this video for more information on Traditional Chinese Medicine and/or depression”) among the variable for prior knowledge of TCM. Agreement levels differed significantly between the groups. Those who had not known about TCM prior to seeing the video were more likely to agree to contacting the practitioner for more information (mean=1.7) than those who had heard of TCM prior to the video (mean=2.2)

(F=4.36, df=1,246, p<.05)

#### *Involvement in Social Networking Sites Variable*

##### Question 7:

A Chi-Square Test was performed to examine the relation between involvement in social networking sites and the participant’s agreeing to the credibility statement I am generally inclined to believe the content of this video to be accurate and true. Agreement

levels differed significantly, with the people were not involved in any social networking sites being more likely to agree to agree believing the video’s content than those who were involved in at least one social networking sites.

I am generally inclined to believe the content of this video to be accurate and true

	Cell Count < 5	Agree	Neutral	Disagree
1 = I am NOT involved in any social networking sites	-	24(70.6%)	6 (17.6)	4 (11.8%)
2 = I am involved in 1-3	-	105 (58.7%)	41 (22.9%)	33 (18.4%)
3 = I am involved in more than 3	-	19 (52.8%)	15 (41.7%)	2 (5.6%)
4 = I do not understand this question	-	0	0	0

Chi-square = 9.624; df = 4 (p < .05)

Question 8:

A Chi-Square Test was performed to examine the relation between involvement in social networking sites and the participant’s agreeing to click the “like” or “dislike” buttons for the video. Agreement levels differed significantly, with the people were not involved in any social networking sites being more likely to agree or disagree to taking those actions than those who were involved in social networking sites, who were more likely to have a neutral response to that statement.

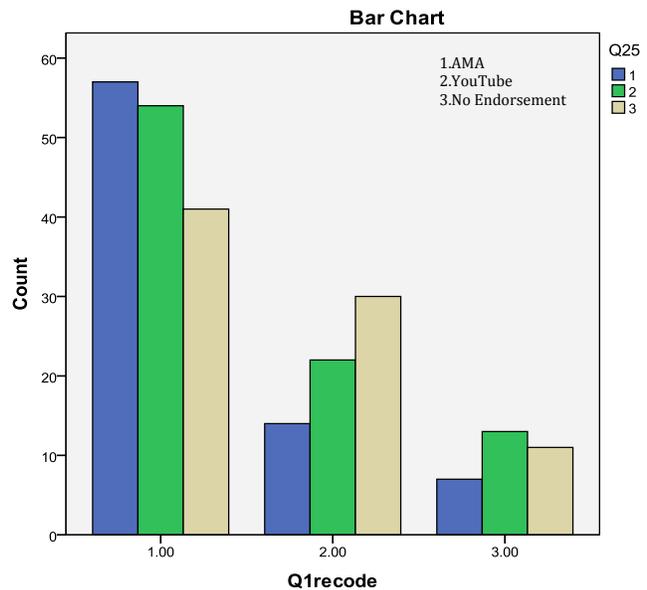
If it were an option, I would click the “like” or “dislike” button for this video

	Cell Count < 5	Agree	Neutral	Disagree
1 = I am NOT involved in any social networking sites	-	14(41.2%)	11 (32.4%)	9 (26.5%)
2 = I am involved in 1-3	-	63 (35.4%)	95 (53.4%)	20 (11.2%)
3 = I am involved in more than 3	-	13 (36.1%)	21 (58.3%)	2 (5.6%)
4 = I do not understand this question	-	0	0	0

## 4.7 Discussion

### *Video Version:*

Video variable was found to have a significant affect on credibility perceptions and intended behavior. Participants were more likely to agree that the video presented described an effective



means of treating health conditions if they saw the American Medical Association (AMA) endorsed video than either the youtube.com or no endorsement video. However, participants who saw the youtube.com video were more likely to agree than those who saw the no endorsement video. Either endorsement of the video caused participants to be more likely to agree that the video's content was effective, and the traditional medical authority endorsement, the AMA, was the most influential of the three. The author believes that this is due to participants' underlying desires and need for contextualization of online information, and their continued belief in the AMA as a reputable governing body of health information.

Video version also influenced the participant's agreeing to leave a comment for the video. Participants who saw the video with no endorsement were the most likely to agree to leave a comment about the video, perhaps due to the novelty of leaving a comment on an anonymous site. Video version did not seem to have a significant impact on the other intended behavior or credibility perception questions.

For all other intended behavior questions for which the video version variable did not show a statistically significant effect on the participants' agreement, it is the author's belief that video content, the message itself, prevailed as being the most important factor for influencing behavior intentions. This might well be a unique trait to health information, since health information is highly scrutinized both on and offline as the implications are of such information are often critical. However, other experts note the message itself as the prevailing influence for credibility, meaning people are not as influenced by endorsements or source perceptions as perhaps previously thought (Dutta-Bergman, 2004). This is especially true for those who have highly motivated reasons to seeking their health information – those who have higher stakes are using central route processing methods as discussed earlier in the [Unseen Influences on Source and Message Credibility](#) section (Petty & Cacioppo, 1986).

*Gender Variable:*

Gender was another significant influence of perceived treatment effectiveness and intended behavior regardless of video version. Women were significantly more likely than men to agree that the video's content was indeed an effective treatment, that the content was accurate and true, and more likely to agree to setting up an appointment with a TCM practitioner. The author believes this is in part due to the fact that alternative modalities, like the one discussed in the video in this study, can be argued as framed in ways that are generally more appealing to women. Alternative medicine practitioners often include discussions of diet, exercise, sleep, happiness etc., in their discussions of health, which in our western culture, can be seen as more feminine concepts. Future research might benefit from framing the video's message to be

described in more male-dominant language (examples include discussing how the modality can support sustained energy and ability to work harder and longer.)

*Age Variable:*

Age category was another influencing factor for behavior intention questions. Older participants (36+ years) were more likely to agree to contact a TCM practitioner after having seen the video. The author believes this is due to the nature of older participants being more likely to need treatment, and perhaps their readiness to try new modalities for conditions they have not yet cured. Participants aged 26 and older were more likely to agree that they would send the video along to a depressed friend or family member than were those aged 25 and younger. A plausible mediating factor linking age to likelihood to send the video along is percentage or knowledge of people who have depression in the participant's personal network. Younger participants may not know as many people with depression, either because there are fewer depressed persons in their age demographic or (as health status is a less likely topic of conversation for younger persons) participants simply do not know that they have depressed peers.

*Ethnicity:*

Participants who identified as being Asian were significantly more likely to agree to leave a comment on the video than any other ethnic group. The author speculates that this is due to prior knowledge of TCM (as it originated in Asia) and thus a desire to add comments and context to the video's information.

*Prior experience with and knowledge of traditional Chinese medicine:*

Participants who had engaged in traditional Chinese medicine (either through receiving acupuncture, taking Chinese herbs, doing mind/body exercises like qi gong or tai chi) were more likely to contact a TCM practitioner to set up an appointment, send a link to the video to a depressed friend or family member and to share a link to the video on a social media page. The author believes that those with prior experience with TCM were already more likely to be believers in (and even advocates for) this modality, thus it is not surprising they would be more likely to engage behaviors around this video.

Those who had not heard of traditional Chinese medicine prior to the video were actually more likely to contact a TCM practitioner for more information. The author believes that these participants, for whom this video contained new information, were curious to know more about traditional Chinese medicine for depression, and thus were more likely to seek additional information with the practitioner.

*Involvement in Social Networking Sites*

Survey participants who were not involved in any social networking sites were more likely to believe the content of the video to be accurate and true. They were also more likely to agree to click either the “like” or “dislike” buttons for the video. The author speculates that those who are not involved in any social networking sites find the idea of clicking “like” or “dislike” somewhat novel (as these options appear primarily on social networking sites) and are therefore more inclined to do so for this video.

As discussed above, the use of a snowball sample, though convenient (and produced the desired web-literate candidates), limits the generalizability and

significance of these findings, as the study population was not evenly dispersed across different demographic categories. Motivation was largely left out of this study, as was using a controlled and standardized environment in which participants took survey. These were mostly for logistical sampling reasons.

Though future research would do well to focus the participant pool to those who are highly invested in finding the video (or other content) presented, it was still useful to include participants who weren't necessarily interested in the video's content. Just as advertisers try to market to people long before they need the product being sold, so too can alternative practitioners seek to gain credibility with people who do not yet need to seek their services.

Future research would do well to focus efforts on a specific sub-set of individuals, perhaps those who were already seeking health information online, those who had depression but had never seen a traditional Chinese medicine practitioner, and/or the younger age demographic who (in theory) will represent the online health seeking habits of the future. Though it is the opinion of the author (in tandem with Eysenbach) that *credibility* research as it currently exists is wrongly focused on perceptions instead of action, should research continue in this vein, a consideration for alternative healing modalities within the existing health information research would be beneficial. Also, consulting online advertising research could provide further insights into Web 2.0 user engagement to information found online.

## ~ Conclusion and Recommendations ~

*“The future’s made of virtual insanity...but it’s all right”*

*– Jamaroquoi*

The purpose of this thesis was to determine whether and to what extent various endorsements and other variables influence users’ online behavioral intentions around and credibility perceptions of alternative health information. It was found that a traditional endorsement, the American Medical Association, and a social media endorsement, youtube.com, were significantly more likely to cause participants to “Agree” with the statement that traditional Chinese medicine is an effective way of treating health conditions than the video with no endorsement. Among those two, the traditional authority endorsement was more likely than the social media endorsement to cause participants to agree. Knowing this, the modalities within the field of complementary, alternative and integrative health should still focus some effort on gaining recognition, acceptance and backing within those traditional bodies. With traditional endorsements, alternative modalities can gain wider visibility and acceptance.

Since women were more likely to agree that traditional Chinese medicine was an effective means of treating health conditions than men, future advocates for alternative health information (and traditional health information too for that matter) might consider better formatting and marketing their messages to appeal to men.

Three main suggestions for immediate future research are:

- *Include motivation in the study* – As previously discussed, a user’s motivation for seeking online health information has a large impact on how invested they are in finding that information, and will likely influence whether they scrutinize the message for themselves, or will look to more superficial/heuristic clues to determine credibility. Having subjects who are all invested in finding the information presented would likely change their perceptions of and intended behaviors with that information
- *Create the experience* – Instead of telling participants that the video appears on a certain site, create the experience of actually showing the video on that site and allow them to engage with the social media components. So instead of showing the video in the survey, have participants link into another tab where they actually view the video on the AMA’s website or on YouTube.com (if we use the example endorsing bodies from this study). That way, participants can *actually* engage in the conversation around this piece of information (by “liking” or “commenting” on the video) instead of *theoretically agreeing* that they would engage with it (as was the case in this study that addressed *intended* behaviors).
- *Include specifics and researched content in the alternative health message* – People in this study were asked to elaborate on why they thought the video in this study was “credible” or not, and many people took the opportunity to say that they enjoyed the video, but it was too simple; they wanted to know more about what a traditional Chinese medicine practitioner would actually *do* with a depressed patient or whether or not it has been “proven” (by scientific research) to work. It seems that participants, whatever their motivation for seeing the video, do scrutinized the content of the video and are looking for depth. In the future,

including a more comprehensive message/video with research (where possible) and specifics might differently impact the perceptions of credibility.

Additionally, future research will need to reassess the state of Web 2.0 and the frequency with which people use different online social media sites to access alternative health information (be it in the form of videos, as was the case in this study, or other forms of information.) Youtube.com was chosen in lieu of an existing and largely known Web 2.0 type of site that is focused on collectively generated health information. Should this kind of website emerge, one with user-generated information and co-created health content, this site should be used in future studies to represent the social-media endorsement.

With the sea of online health information, and people's continued desire to seek out second, third, and other medical opinions both on and off the Web, health practitioners might find themselves in a new role; no longer the gatekeepers, they will need to help patients contextualize their health information and educate about *quality discernment*. Melican and Dixon (2008) state that, "In contrast to books, newspapers, and television news...the Internet in general does not have systematic editorial and fact-checking procedures, and where such procedures exist, they may be hard to ascertain" (p. 153) Similarly, Eysenbach (2008) says "because top-down quality assurance mechanisms provided by the government and other entities are not realistic...consumer education on how to identify quality information is crucial" (p. 124). More than providing all of the needed information, medical and other health practitioners ought shift into a role of helping patients discern quality and identify individually applicable health information; they should teach patients to determine for themselves the quality of

messages and sources. Nick Belton (2010) points out that 100 years ago, the New York Times' front page printed more than sixty headlines in an effort to portray *all* the news.

He then states:

But the Times and other newspapers came to understand that their job wasn't to print every single piece of news of the day but to do a better job of filtering it. It's an editor's job to reduce what a reader's brain has to wrestle with. (p. 146)

Perhaps then, it is at least *part* of the practitioner's job to become an editor for the cacophony of information that exists on the Internet, and to relinquish the idea that they need have all that information themselves. Web 2.0 and its features are already helping to contextualize information on the Internet, but practitioners can take this discussion and personalize it to the patient sitting across from them in their office. By letting go of the quest for knowledge and answers in this digital age when such information already exists on the Web, practitioners can return to fostering the interpersonal, compassionate, loving and healing components necessary in an effective health care provider.

Nothing will ever fully replace the one on-one interaction between patient and practitioner. Patients may be able to educate themselves about their condition and possible treatment options through Internet information and peer-to-peer shared experience, but the energetic healing component inherent in the patient/practitioner relationship is one that cannot ever be moved online.



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## ~ Appendix A ~

### **Definitions:**

\* *Allopathic Medicine* – Please see *Western Medicine*.

\* *Alternative Health Information* – Defined as any broad holistic healing systems and/or the alternative, complementary and integrative medicine modalities they comprise. Examples include but are not limited to acupuncture, herbs, mind/body modalities like yoga and tai chi, Ayurveda, traditional Chinese medicine, homeopathy, reiki, massage, prayer, distance healing and many more.

\* *Apomediaries* – Term defined by Gunther Eysenbach as agents that replace *intermediaries* in the digital media context that “stand by” (apo-) instead of “in-between (inter-) users and the information they seek. “While the traditional intermediary is the ‘expert,’ apomediaries consist of a broader community ... who are networked in a digital environment.” (*Apomediation* is the verb denoting the shift from centralized to decentralized authority as seen on the Internet) (Eysenbach, 2008)

\* *Authority* – Is here generally defined as any individual and/or governing body that holds extensive knowledge of a subject. At times, this term is delineated into *centralized* vs. *decentralized* authority (both defined below), and can, in either case, be applied to a single person, organization or group of people and/or organization(s).

\* *CAM* – Complementary and Alternative Medicine (does not include allopathic/biomedicine)

\* *CAIM* – Complementary, Alternative and Integrative Medicine (*integrative medicine* implies interweaving allopathic/biomedicine with other alternative modalities – please see definition.)

\* *Centralized Authority* – Represents a single expert entity, single credibility marker, and gated information. An offline example would be a dictatorship.

\* *Credibility* – Despite the hesitation to define this term (because of unnecessary confusion brought on by varying definitions found throughout the literature review), for this thesis, credible information is broadly defined as anything thought by a person reading the information to be believable, trustworthy, accurate, plausible, timely and written in good-faith.

\* *Decentralized Authority* – Represented by many experts, being multi-faceted, and open sourced. An offline example would be democratic governance.

\* *E-Health* (or *eHealth* or *electronic health*) – Much like *credibility*, varying definitions of e-health exist among the research. Here, e-health is broadly defined as health information and online communities that deal with the fields of health, wellness and medicine. (It should be noted that historically in the research, e-health pertains mostly to allopathic medicine and its interventions.)

\* *Engagement* – Defined in the conducted study as desire to “like,” “share,” or email a certain video as well as research the content of that video further and contact the practitioner highlighted.

\* *Endorsement* – Endorsement is traditionally defined as being validated by a traditional authority, but for the purposes of this paper is broadened to include other forms of social media endorsement as well. For example, a restaurant that appears on yelp.com with thousands of reviews and a high star rating would be considered to be strongly endorsed by the social media facet of voting. That same restaurant with a high Michelin star rating (a traditional marker of fine dining establishments) would have a more traditional centralized authority type of endorsement as well.

- \* *Evidence-Based Medicine* – Please see *Western Medicine*
- \* *Health Informatics* – Generally applies to the biomedical field of algorithmic information technologies and communication systems where health data is used to help diagnose and attempt to treat disease.
- \* *Information Dissemination* – Term describing the general trend in information from a centralized expert, often singular, source to decentralized multivariate sources.
- \* *Intermediaries* – One of Gunther Eysenbach’s terms that notes an agent that stands in-between users and the information they seek; just like gatekeepers.
- \* *Integrative Medicine* – Seeks to blend western medicine and alternative modalities among both patients and practitioners through interaction, referrals across disciplines, education about differing views and approaches to healing, and collaboration. Strides are being made toward this end with the emergence of integrative medicine clinics around the country, and the growing acceptance of alternative modalities with insurance providers.
- \* *Internet/World Wide Web* – These terms are used interchangeably in this paper, and denote the world-wide network of computers that facilitate the transmission of nearly all forms of information data.
- \* *Intended Behavior* – Rated on a 5-point Likert-type scale, intended behavior questions included the likelihood someone would “like” or “comment” on one of the videos, whether or not they would contact the practitioner highlighted, or forward the video to a friend. For a list of all questions see [Appendix B](#).
- \* *Physician* – To the extent that they are licensed to practice in their state, physician means the following in the western medical model; including MD, DO, DDS, DMD, DPM, OD, DC, and DO.
- \* *Social Media Factors* – This term pertains to user-centered websites and applications and networked systems that support and create community. Examples include social networking websites like Facebook and LinkedIn, rating-supported sites like Yelp and Amazon, voting/“liking” systems as seen on Facebook and Digg, and mobile applications that facilitate human interaction and information sharing.
- \* *Web 2.0* – Term describes the second phase of the Internet, marked both by the *social media factors* defined above, and the information that comes from the communications facilitated by them. Additionally, Web 2.0 represents the sweeping shift to collective, multifaceted and crowd-sourced information sharing and generation on the Internet.
- \* *Web Fluency* – The ability to confidently navigate the many changing facets of the Internet including, but not limited to, research, entertainment and collectively generated social media features.
- \* *Western Medicine* – Defined as conventional medicine practiced here in the west often characterized by invasive (like pharmacological and surgical) intervention for acute and infectious conditions. Also known as “allopathic” or “evidence-based” medicine, the author prefers the term “western medicine” as allopathic is often used in a derogatory manner, and evidence-based does not accurately portrays all aspects of western medicine and unfairly excludes the evidenced-based modalities in non-western medicine. When used in this paper, none of the aforementioned terms are meant to have a negative connotation.
- \* *World Wide Web* – Please see *Internet*

~ Appendix B ~

**Table 1.**  
Credibility Definitions

Credibility Definition	Source
"Credibility was operationalized by looking at a combination of credibility, accuracy, objectivity, and authority measures."	(Metzger M. , 2007)
"Credibility is a perceived quality and is evaluated with at least two major components: trustworthiness and expertise."	(Rubin & Liddy, 2006, p. 1)
Credibility as defined not as a characteristic of a source, medium, or message, but as being dependent on the perceptions of the receiver.	(Berlo, Lamert, & Mertz, 1969; Dutta-Bergman, 2004)
Online source credibility contingent upon user motivations for accessing such sources and the continual reliance on such sources. Also, <i>depth</i> of information presented is a more important indicator than "fairness" in assessing credibility	(Johnson, Kaye, Bichard, & Wong, 2007)(Greer, 2003)
Believability, accuracy, fairness, bias, trust-worthiness, ease of use, completeness, reliability and attractiveness of the medium and/or news reporters or of the coverage of a specific...issue.	(Metzger, Flanagin, Eyal, Lemus, & McCann, 2003)
"Believability, a major aspect of quality, [is] measured along three dimensions: trustworthiness, reasonableness, and temporality."	(Prat & Madnick, 2008)
"Source perceptions are enmeshed with assessments of message characteristics and are not simply limited to heuristic cues such as qualifications or association with federal government or a university."	(Dutta-Bergman, 2004)
"Motivational variables [including personal relevance of the message] are also important in affecting the likelihood of message elaboration [credibility]."	(Petty & Cacioppo, 1986, p. 144)
Discuss that consistent accurate information connote trust and trusted authorities.	(Lanks, 2008)

~ Appendix B (Cont.) ~

Table 2. Survey Questions

Number	Question	Type*
1	After seeing this video, I consider Traditional Chinese Medicine to be an effective way of treating health conditions	C
2	After seeing this video, I would do further research on Traditional Chinese Medicine	IB
3	If contact information were made available, I would contact the practitioner seen in this video for more information on Traditional Chinese Medicine and/or depression	IB
4	After seeing this video, I would contact a Traditional Chinese Medicine practitioner in my area to set up an appointment.	IB
5	I would send a link to this video to a depressed friend or family member	IB
6	I would share a link to this video on a social media page (examples include a personal webpage, Facebook, Twitter, LinkedIn, or Digg account)	IB
7	I am generally inclined to believe the content of this video to be accurate and true	C
8	If it were an option I would click the “like” or “dislike” button for this video	IB
9	If it were an option I would leave a comment about this video	IB
10	Which of the following best describes your gender identification?	D
11	What is your age?	D
12	Which option best describes your annual household income?	D
13	Which of the following best describes your highest level of completed education?	D
14	Which of the following ethnicities do you identify as being?	D
15	Where do you live?	D
16	Which option best describes your experience with depression?	D
17	Have you ever seen a Traditional Chinese Medicine practitioner, received acupuncture, taken Chinese herbs, and/or practice Tai Chi or Qi Gong?	D
18	Had you heard of Traditional Chinese Medicine before seeing this video?	D
19	How often do you use the Internet/World Wide Web?	F
20	Which of the following best describes your involvement with social networking sites?	D
21	Which of the following best describes your voting/rating/liking habits?	F
22	Which of the following best describes your commenting habits?	F
23	Which of the following best describes your online health information seeking habits?	F
24	Which of the following best describes your online lifestyle and/or alternative health seeking habits?	F
25	Video Version Variable (Not actual question)	V

\* Credibility, Intended Behavior, Demographic, or Frequency Question, Video version (variable invisible to participants).

## ~ Appendix C ~

### Page 1 – Welcome and Consent Form

#### The Web and Online Health Information: A Survey

##### Welcome!

Thank you for your desire to participate in this study about health information found online. This study is being conducted by Sarah Showalter for the purpose of a master's thesis completion. The study will involve watching a health information video, answering questions about the content of that video, and providing general demographic information. Please allow 10-15 minutes to be involved in this study, and please read the Consent Form below before you begin.

##### Consent Form

Please be sure to read through the following points carefully. By clicking of the "next" button at the bottom of the page you agree to having read through this consent form.

- I recognize that my participation in this study is completely voluntary, and that I am allowed to discontinue participation at any time during the survey.
- I am not required to answer any questions I do not feel comfortable answering.
- My participation in this study is completely anonymous and my participation in this study will not be traced. Any reference to or conclusions drawn from this study will be statistical in nature and will not disclose any telling demographic information that might indicate a specific participant.
- For any questions regarding this study, please contact Sarah Showalter at showaltersarah [at] gmail.com. If participants have any concerns or are dissatisfied at any time with any part of the study, they may report their concerns (anonymously, if they wish) to the Chair of the Human Research Review Committee, California Institute of Integral Studies, 1453 Mission Street, San Francisco, CA 94103, or by telephone at (415) 575-6100 or via email to dricol [at] cis.edu.

By clicking "next" I acknowledge that I have read, understand and agree to the aforementioned notes on confidentiality and my rights as a study participant. By clicking "next" I also attest to being over the age of 18.



#### The Web and Online Health Information: A Survey

You are about to watch a 3 minute video\* on how the ancient healing system of Traditional Chinese Medicine views and would treat a patient with depression. After watching the video, you will be asked a few questions on how you might like to use this information. (Be sure to turn on your sound.)

\* Please watch the video in its entirety before answering the questions that follow.



Questions

(Page 2-Video and Questions Cont.)

## Video Questions

After seeing this video, I consider Traditional Chinese Medicine to be an effective way of treating health conditions.

- Strongly Agree
- Somewhat Agree
- Neither Agree nor Disagree
- Somewhat Disagree
- Strongly Disagree

After seeing this video, I would do further research on Traditional Chinese Medicine.

- Strongly Agree
- Somewhat Agree
- Neither Agree nor Disagree
- Somewhat Disagree
- Strongly Disagree

If contact information were made available, I would contact the practitioner seen in this video for more information on Traditional Chinese Medicine and/or Depression.

- Strongly Agree
- Somewhat Agree
- Neither Agree nor Disagree
- Somewhat Disagree
- Strongly Disagree

After seeing this video, I would contact a Traditional Chinese Medicine practitioner in my area to set up an appointment.

- Strongly Agree
- Somewhat Agree
- Neither Agree nor Disagree
- Somewhat Disagree
- Strongly Disagree

I would send a link to this video to a depressed friend or family member

- Strongly Agree
- Somewhat Agree
- Neither Agree nor Disagree
- Somewhat Disagree
- Strongly Disagree

I would share a link to this video on a social media page (examples include a personal webpage, Facebook, Twitter, LinkedIn, or Digg account.)

- Strongly Agree
- Somewhat Agree
- Neither Agree nor Disagree
- Somewhat Disagree
- Strongly Disagree

I am generally inclined to believe the content of this video to be accurate and true.

- Strongly Agree
- Somewhat Agree
- Neither Agree nor Disagree
- Somewhat Disagree
- Strongly Disagree

Please elaborate on this answer:

Definition: To "like" or "dislike" something online means to cast your vote about a product, service, picture, video or other piece of online information by clicking a "like" or "dislike" button.

If it were an option, I would click the 'like' or 'dislike' button for this video.

- Yes, I would click either like or dislike
- No, I wouldn't click anything
- Maybe
- I do not understand this question

(Page 2-Video and Questions Cont.)

Definition: "Commenting" online means to leave an online public comment about a product, service, video, picture, or other piece of online information. (Examples include commenting on sites like [facebook](#), amazon, yelp, news sites, celebrity or personal blogs etc.)

If it were an option, I would leave a comment about this video.

- Yes
- No
- Maybe
- I do not understand this question

### Demographic and Background Questions:

Which of the following best describes your gender identification?

- Male
- Female
- Gender Queer/Transgender

What is your age?

- 18-25 years
- 26-35 years
- 36-50 years
- 50-75 years
- More than 75 years

Which option best describes your annual household income?

- Less than \$10,000
- \$10,001 - \$25,000
- \$25,001 - \$50,000
- \$50,001 - \$75,000
- \$75,001 - \$100,000
- \$100,000 - \$500,000
- More than \$500,000

Which option best describes your highest completed level of education?

- I have not graduated from high school
- I have a high school diploma
- I hold an associate's or other degree from a 2 year institution
- I hold a bachelor's degree
- I hold a hold a master's or doctorate degree

Which of the following ethnicities do you identify as being?

- Black or African American
- Asian
- Native American Indian or Alaska Native
- Native Hawaiian or Pacific Islander
- Hispanic or Latino
- White
- Other

If Other, please specify

(Page 2-Video and Questions Cont.)

**Where do you live?**

- In the United States or Canada
- In Europe
- In South or Central America
- In Asia
- In Africa
- In The Middle East
- In the Pacific Islands or Australia

**Which option best describes you?**

- I currently have or have had depression myself.
- I have a close friend or family member who has had depression.
- Both I and someone close to me have had from depression.
- I do not personally know anyone who has had depression.

**Have you ever seen a Traditional Chinese Medicine practitioner, received acupuncture, taken Chinese herbs, and/or practiced Tai Chi or Qi Gong?**

- Yes
- No

**Had you heard of Traditional Chinese Medicine before seeing this video?**

- Yes
- No

## Online Activity Questions:

**How often do you use the Internet/World Wide Web?**

- Less than one time per week
- 1-3 times per week
- 3-6 times per week
- One time per day
- More than one time per day

Definition: A *Social Networking Site* is defined as an Internet site that is built on social networks/groups of people who interact with similar online information (examples include Facebook, Twitter, Yelp, LinkedIn, Quora, Digg, and Myspace).

**Which of the following best describes you?**

- I am NOT involved in any social networking sites
- I am involved in 1-3 social networking sites
- I am involved in more than 3 social networking sites
- I do not understand this question

Definition: *Voting or Rating* online means giving a public accolade (examples include "liking" as seen on Facebook or other sites, and/or star ratings as seen on Yelp and Netflix). Online, this "voting" often occurs for products, services, information, establishments, videos, and pictures.

**Which of the following best describes your voting/rating/liking habits?**

- I have never voted for, rated or 'liked' anything online
- I sometimes vote, rate and/or 'like' things online, but do so fewer than 12 times per year
- I vote, rate and/or 'like' things monthly
- I vote, rate and/or 'like' things weekly
- I vote, rate and/or 'like' things daily
- I do not understand this question

Definition: *Commenting* online means giving an online public comment about a product, service, video, picture, or other piece of online information. (Examples include commenting on Facebook, on a news site, on a personal blog, etc.)

**Which of the following best describes your commenting habits?**

- I have never commented online
- I sometimes write comments online, but do so fewer than 12 times per year
- I write comments online monthly
- I write comments online weekly
- I write comments online daily
- I do not understand this question

Definition: *Online health information* is defined as any piece of information pertaining to health, well-being, disease, sickness, treatment or remedy.

Which of the following best describes your online health information seeking habits?

- I have never sought online health information for myself or another person online
- I sometimes seek health information online, but do so fewer than 12 times per year
- I seek online health information monthly
- I seek online health information weekly
- I seek online health information daily
- I do not understand this question

Definition: *Lifestyle and/or Alternative health information* is any health information not typically received through a Medical Doctor (MD). (Examples include exercise, diet, massage, Ayurveda, herbal therapies, homeopathy, mind-body therapies, information among many others.)

Which of the following best describes your online lifestyle and /or alternative health seeking habits?

- I have never sought lifestyle and/or alternative health information online
- I sometimes seek lifestyle and/or alternative online health information, but do so fewer than 12 times per year
- I seek lifestyle and/or alternative health information online monthly
- I seek lifestyle and/or alternative health information online weekly
- I seek lifestyle and/or alternative health information online daily
- I do not understand this question

Submit and Finish

## Page 3 – Thank You and Clarification

### The Web and Online Health Information: A Survey

Thank you for taking the time to take this survey!  
Please read through this final page before leaving the survey site.

**Clarification:**

For clarification's sake, the video you saw was actually created solely for the purpose of this study. Some of you saw a version of the video that claimed the video appears on the American Medical Association's website, and some of you saw a version that claimed the video appeared on YouTube.com. (Some of you saw neither message with your video, thus leaving its origin unspecified.) However, this video does NOT in fact appear on either the American Medical Association's website, nor does it appear on YouTube.com. These versions were created to determine whether *where* the video appears (i.e. on the AMA's website, YouTube.com or of unspecified origin) affects the participants' (your) intended behaviors of engagement with the video's information. The *content* of the video, however, is indeed true; The practitioner highlighted is a Licensed Acupuncturist (LAc) and a Traditional Chinese Medicine practitioner who does in fact treat depressed patients in the methods described.

**Important Contact Information:**

**Survey Creator:** Sarah Showalter, showaltersarah [at] gmail.com

**Chair of the Human Research and Review Committee at the California Institute of Integral Studies:** David Nicol, dnicol [at] ciis.edu

**Traditional Chinese Medicine Practitioner shown in video:** Peter Shark, info [at] woodtigeracupuncture.com (San Francisco, CA)

**One more request:**

Consider posting the following link <http://onlinehealthsurvey.weebly.com> on your **facebook** page\* or sending it in an email to friends who would enjoy taking this survey. Sarah would be grateful for your help in attaining as many survey participants as possible!

\* *Suggested Facebook message: "Help my friend out with her thesis research by taking her online survey. It only takes 10 minutes and is pretty fun! She'd be extremely grateful :-)* <http://onlinehealthsurvey.weebly.com>"

Thank you again! You may now navigate away from this survey.

~ Appendix D ~

Figure 1.

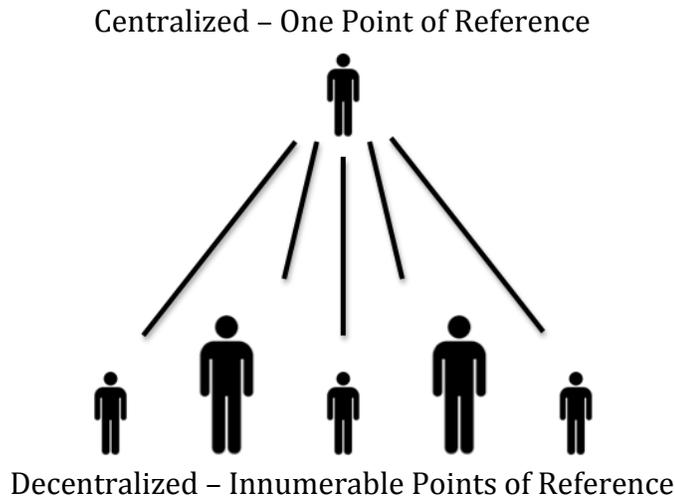


Figure 1. Shows how information has moved from a centralized, singular and hierarchically-placed point of reference, to decentralized and multivariate points existing on the same non-hierarchical level.

Figure 2.

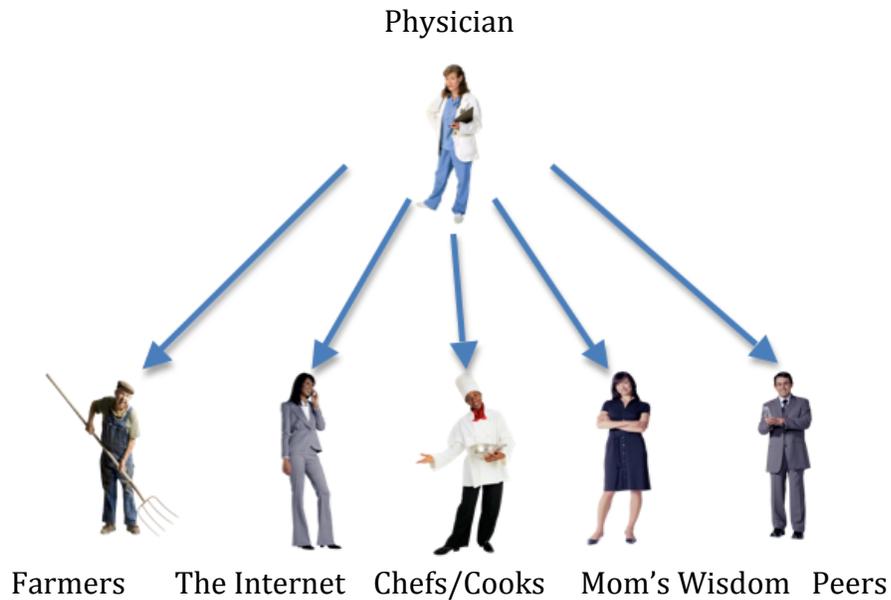


Figure 2. Shows the same process of information dissemination, but specifically represents the shift in sought health information; In this figure, centralized information at the top is represented by a physician, where decentralized is represented by farmers (those who grow our food), the Internet, chefs and cooks (those who prepare our food), mom's anecdotal health knowledge, and our peers. Of course, these are merely examples of the many possible decentralized points of reference.

~ Appendix E ~

Original Research (Retrieved from:

<http://www.fergusonreport.com/articles/fr039905.htm>)

**E—Patients Prefer eGroups to Doctors for 10 of 12 Aspects of Health Care**

**The Most Useful Resource for 12 Dimensions of Medical Care—As Rated by the Members of an Online Support Community.**

1. Most Cost Effective  
Online Groups—82.68 percent  
Specialist MD—8.38  
Primary Care MD—8.94
2. Best In–depth Information on My Condition  
Online Groups—76.92  
Specialist MD—20.88  
Primary Care MD—2.20
3. Best Help with Emotional Issues  
Online Groups—74.73  
Specialist MD—9.89  
Primary Care MD—15.38
4. Most Convenient  
Online Groups—72.68  
Specialist MD—14.21  
Primary Care MD—13.11
5. Best for Helping Me Find Other Medical Resources  
Online Groups—68.68  
Specialist MD—14.29  
Primary Care MD—17.03
6. Best Practical Knowledge of My Condition  
Online Groups—68.48  
Specialist MD—23.37  
Primary Care MD—8.15
7. Best Help with Issues of Death and Dying  
Online Groups—57.50  
Specialist MD—15.00  
Primary Care MD—27.50
8. Most Compassion and Empathy  
Online Groups—52.46  
Specialist MD—17.49  
Primary Care MD—30.05
9. Most Likely to be There for Me in the Long Run  
Online Groups—49.43  
Specialist MD—21.02  
Primary Care MD—29.55
10. Best Technical Knowledge of My Condition  
Online Groups—47.54  
Specialist MD—44.81  
Primary Care MD—7.65
11. Best Help and Advice on Management After Diagnosis  
Online Groups—34.59  
Specialist MD—42.70  
Primary Care MD—22.70
12. Best Help to Diagnose My Problem Correctly  
Online Groups—11.35  
Specialist MD—73.51  
Primary Care MD—15.14

~ Appendix F ~

Small/Tall Illusion – Full Text  
A Poem by Sarah Showalter

*The grandest site the forest sees;  
The stately, old, the wise oak trees  
For it is they alone who stand  
So tall, surveying all the land.*

*But when a swarm approached the tall,  
The grandest, largest Oak of all,  
Then said the leader of the flies  
“So how is it you got so wise?”*

*He said, “I’m wise because of YOU,  
And all the work that you all do  
You see, dear fly, I do not stand  
On stagnant, solo, detached land*

*I grow because my roots they toil,  
To pull me nutrients from soil  
And soil’s made rich from waste of ants,  
Who eat the sun through leaves of plants,*

*And plants they grow from sun and rain,  
Who stretch, and bend, and bloom and  
strain,  
And all this work feeds birds and prey  
Who scurry ‘round throughout the day*

*And then who hide throughout the night  
Averting predators’ delight  
I see it all, from up so high,  
But unlike you, I cannot fly*

*So though I may be stately tall,  
Some things I’ll never know at all:  
The feeling of an ocean’s breeze,  
Or what it’s like to fly with bees*

*Or how to swarm with fellow friends  
Who’ll fly o’er to horizon’s end  
Who’ll feel with me the wind that’s  
blown  
You see, I stand here all alone.*

*So when you think “he’s up so high!”  
Remember dear, my little fly  
That though I survey all the land  
It’s on your shoulders that I stand.”*

*So though it’s true that trees stand tall,  
It’s only due to life that’s small  
Who toil the forest’s floor below  
And make it so these trees can grow*