

From Spirituality to Science: A Corpus Analysis of the *American Journal of Chinese Medicine*
from 1973 to 2013

Abstract

This paper examines the *American Journal of Chinese Medicine* from its founding in 1973 up until 2013. It specifically looks into the shift in the textual features of that journal over a forty-year period as an indication of changes in the broader field of research in traditional Chinese medicine, both how it is perceived and practiced by those in the field. The rhetorical and linguistic features of the *AJCM* that were examined include the introduction, use of headings, IMRD format, article subject matter, and article genre. The results of this research demonstrate and explain that, over the forty-year period covered by this study, the culture of traditional Chinese medicine in the U.S. has become centered on biomedicine and the scientific method, which is a significant change from the early 1970s. Attention to the shift in authorship and readership throughout the 40 year period is a central part of the results of such an analysis.

KEYWORDS: Acupuncture, Discourse Analysis, TCM, AJCM, Corpus Study,
Biomedicalization

1 Introduction

While the genre conventions of the scientific article have been thoroughly historically and conceptually mapped through the work of researchers in the rhetoric of science (Gross et al., 2002; Atkinson, 1999; Myers, 1990; Bazerman, 1988), the discipline of discourse studies has yet to examine the academic texts of medicine on the biomedical fringe. The discipline of traditional Chinese medicine (TCM) is of particular interest because of the rapid growth in numbers of practitioners and acceptance of its value by many western medical practitioners. The emergence of TCM in the West has come with a price (some in the discipline would say), and that price is

the biomedicalization of a practice that was not biomedical when it began in China 3000 years ago. While some would argue that the biomedicalization of TCM has made it successful in the U.S., others argue that this has caused the field to no longer bear much resemblance to the field it once was, even forty years ago. This study is a corpus analysis of the (English Language) flagship journal on traditional Chinese medicine published in America. A random sample of 180 articles (20 articles a year, every five years over its 40-year life span) with the goal of observing when this journal (and by extension the field) of TCM research in the U.S. became a predominantly scientific discipline. This article traces this shift through changes in the text over time. It specifically demonstrates how changes to the introductions, headings, IMRD format, subject matter, and genre reflect a movement by the journal to (eventually) take on the form and content of an experimental scientific research article. While this is an interesting exercise in itself, the analysis throughout gives a certain level of ethos to the interviews that were performed did, which speak of those whose voices were silenced along the way. This study finally shows that the academic world of TCM is currently controlled by a very small segment of the TCM community, a group that largely fails to recognize the value of research outside of herbal medicine. To the best of my knowledge, this is new research into the rhetoric of academic TCM.

1.2 Biomedicalization

The term biomedicalization came out of research on aging, specifically Carroll L. Estes and Elizabeth A. Binney's (1989) publication "The *Biomedicalization* of Aging: Dangers and Dilemmas," in the journal *Gerontologist*. First, they noted that aging is seen now as a biomedical problem and not a reality of existence and that anything related to aging is now thought to be biomedical in nature. Shortly thereafter, articles on the "biomedicalization" of

various areas of concern to gerontology, such as senile dementia by Karen Lyman (1989), were published. Sociologists, including Adele Clarke (2003), have more recently written about technology and biomedicine. The idea that aging is not a part of life, but something to be fought with medical intervention, has been explored by Markens (2012), Fries (2014), and Lafontaine (2015).

The concept of biomedicalization soon moved outside the confines of gerontology, with texts looking at the biomedicalization of psychiatry (Cohen, 1993), alcoholism (Gorman, 2008), menstruation (Mamo, 2009), and sexual dysfunction therapies (Tiefer, 2012). Under this new “biomedicalized” understanding, the idea of health is not at the forefront, but that of illness and how that illness can be seen and understood as having a biomedical basis.

Previous studies examining biomedicalization and Chinese medicine include Linda L. Barnes’s chapter “Chinese Healing in the U.S.” (2005). Here Barnes briefly explained that Traditional Chinese Medicine (TCM) was firmly tied to a spirituality - beyond fixing ailments - in China, and since the opening of China in the 1970s, there has been a Western “medicalization” of the field. Her text “The Acupuncture Wars: The Professionalization of American Acupuncture” also delved into the biomedical link that has been made between Western biomedicine and Chinese medicine as it pertains to the professionalization of acupuncture (Barnes, 2003). “While biomedicalization” is a twenty-five-year-old term, only in the last 15 years has it proliferated into alternative medicine, with journal articles attempting to understand alternative therapies such as Chinese medicine through the lens of biomedicine.

The biomedical transformation which the genre of the TCM articles in academic journals has gone through from the time that they began (around the time China opened itself to the west in the 1970s) has gone undocumented until now. The gap in the research is addressed through

the analysis of a 180 article corpus established from a random selection of articles from the flagship journal on TCM in the United States, *The American Journal of Chinese Medicine* (AJCM). Ken Hyland states that to understand a set of academic discourse is to “learn something of how each discipline views knowledge and defines itself” (2004, p.12). This article will show how researchers in TCM define themselves and that what they hold as valued knowledge has dramatically changed over the last forty years. This can be seen not merely in the topics that are chosen for publication, but more importantly, in the scientific genre which this representative journal takes on in such a short period of time.

1.3 Chinese Medicine

It is important to know that the Chinese medicine that came to the United States in the 1970s, as it was practiced in China at the time, was not the Chinese medicine of 3000 years ago. Earlier, the historic discipline was banned in China in favor of western medicine. In 1892, under Emperor Zheng Guanying, Chinese medicine was dismissed as “past its prime,” but he consolidated what he thought might be useful from ancient texts, and it was that consolidated knowledge that was widely practiced (Shapiro, 2013). This consolidated version of Chinese medicine would come to be known as TCM, the Chinese folk medicine practiced today and the subject of this study.

With a growing population, communist leader Mao Zedong instituted medical reform in which hospitals were divided into three separate parts (commonly called the “three roads” policy): traditional Chinese medicine, western medicine, and a combination of the two (Unschuld, 1985). Many of the Chinese medical practices that were established in China before the twentieth century are largely lost to both those in China and in the United States because of social and political dynamics within the region. Therefore, all three “roads” were influenced by

Western medicine. The consolidated Chinese folk medicine was labeled “traditional Chinese medicine” (TCM). Thus, even TCM was influenced by western medicine long before Nixon went to China when it went through its consolidation process at the end of the nineteenth century.

The movement of Chinese medicine West to the United States and Europe occurred because of a number of political and social changes. New political relationships between the U.S. and China in the 1970s led to information from the Chinese medical community arriving in the U.S. (Whorton, 2002). In 1972, a symposium on Chinese medicine was held at Stanford University and drew over 1,400 American doctors from across the country (Whorton, 2002). The early practice of Chinese medicine in America was plagued by western doctors with little training, who attempted the practice and failed (Halfner, 2009).

This article will demonstrate that significant changes in the genre of the *AJCM* occurred between 1973 and 2013, which are representative of the changes to the understanding of research of TCM in America. These changes in the genre were uncovered through a process of discourse analysis where certain characteristics of the texts were coded for the following characteristics: the number of Swalesian “moves” each article’s introduction, the existence and types of headings, the genre of each article, and the subject of each article.

2 Methodology

2.1 The Corpus

The Corpus - AJCM History

In 1973 *AJCM* took a broad approach to TCM in its mission statement on the front cover of the journal, declaring that TCM “is defined in its broadest sense possible” and that the *AJCM* publishes “original articles and essays relating to traditional or ethnomedicine of all Asian cultures.” The *AJCM* was founded in 1973 by Frederick Kao, who was editor of the journal for

over 20 years. Following the senior Kao's retirement, the role of editor was first taken over by his son John J. Kao and then by the younger Kao's students. Chun-Su Yuan, professor at Tang Center of Herbal Medicine Research, University of Chicago Medical School, has edited the journal since 2004. Still, the goal of the *AJCM* in 2009, according to Yuan, was to "act as a liaison between professionals in other countries and in the United States who have common interests in the field of Chinese medicine" and to "keep the American professional community abreast of all developments occurring abroad in the study of Chinese medicine and related topics" (*AJCM*, 2009, Back Cover). In 2004, the journal moved to the University of Chicago and was published six times per year, with each issue containing approximately sixteen articles. An editorial note was included in *AJCM* vol. 31.2 stating that there would be "institutional stability" with the change in editorship. This editorial went on to explain that the "institute's trustees will continue to oversee the publication of the journal" and that the organization wanted to have the power to "preserve our traditions" with respect to the *AJCM* (J.J. Kao, 2003, p.v-vi). By 2015, the *AJCM*'s mission statement was no longer broad or ambiguous but stated that "Our mission is to evaluate both benefits and risks of medicinal herbs" (Tang Center, 2013). This was clearly not in line with their 2003 agreement with J.J. Kao and his students to continue to broadly define the nature of what can and should be published in the *AJCM*.

The Corpus - The Study and the Categories

The *AJCM* was initially chosen as the representative journal of TCM for this study over other similar traditional Chinese medical and alternative/complementary medicine journals because its articles were more frequently cited than those of the other journals on TCM. A Journal Citation Report run in 2004 (when this study began) showed an impact score significantly higher than other journals in the field, the journal was (at its founding) open to

discussing a variety of TCM practices (not only acupuncture), and the journal had been published both in America and in English exclusively from its beginning in 1973 (ISI Web of Knowledge, 2004). The other major journals in the field were either not originally written in English, was very specific to one aspect of TCM, or had only been published for a few years by 2004.

2.2 Data Collection

The journal has a forty-year history covering over 1800 articles and is thus a sizable corpus to study. Because of this factor, a random, twenty-article sample was selected from each five-year milestone (1973, 1978, 1983, 1988, 1993, 1998, 2003, 2008, 2013, and 2018). This provided nine groups of twenty articles each to analyze—a total of 200 articles. Roughly 10% of the entire journal was therefore examined using this sample. Although the number of total articles is approximately 2000, most of these come from the last 15 years. During the 1970s-1980s, there were 50 fewer articles published each year. The articles were randomly selected using cutting-edge technology and the web tools at www.random.org (Mads Haahr). This was done by numbering the articles in each sample period and then getting a random set of numbers from the website. The numbers the website selected were then included to make the corpus.

The Atlas.ti program was chosen to analyze the first 160 articles. The Atlas.ti program codes texts in a fashion that can be numerically analyzed. To make the *AJCM* (a written corpus) completely electronic and capable of being analyzed by the Atlas.ti program, the text was first accessed via the electronic journal catalog (the catalog included the entire *AJCM* through 2008). The articles were downloaded from the library's catalog as PDF files. Once an article was transported as a PDF, it appeared to computer software as a picture - simply put, a mere visual facsimile of pages of text. In order for computers to be able to interpret the content as words,

each article was converted to rich text format (RTF), using Adobe Acrobat Professional for this purpose. Once the article had been converted back into strings of intelligible text, it was saved as a Microsoft Word document. The articles can only be read and coded by the Atlas.ti program once they have been through the PDF/RTF and RTF/Word conversion processes. The 2013 and 2018 sample was selected using the same process as the previous 160 articles but was hand-coded after accessing the articles as PDFs in the library's catalog.

2.3 Data Analysis

The categories for coding of the *AJCM* were determined by researching established practices in the field of discourse analysis of scientific articles and locating established norms of characteristics of western scientific articles over time. If the *AJCM*'s genre characteristics became similar to late 20th century scientific articles, there needed to be existing benchmarks of what these characteristics were. These five genre conventions were chosen by Gross et al. (2002) and Atkinson (1999) in their previous work on the scientific article and, therefore, could be used as benchmarks.

1. Introductions
2. Existence and Types of Headings
3. IMRD Format
4. Subject of the Article
5. Genre of the Article

In understanding the dynamics of the above categories in the development of the *AJCM* such information would help provide a better understanding of how, according to Hyland, texts are "socially produced in particular communities, and they depend on them for their sense" (2014, p.17). In other words, an understanding of these articles and how they are focused would give

more information on the characteristics of the community reading and writing these articles and about any changes that occurred.

3 Results and Discussion

3.1 Introductions and Swalesian Moves

The Swalesian moves of these introductions are from twenty randomly selected articles from every fifth year over the forty-year lifespan of the *AJCM*. The inaugural issue of the journal, published in 1973, contained only one article that had the full three-part introduction that characterizes twentieth-century articles. Approximately half of the articles had only one of these three parts, and four of the twenty articles did not meet the criteria for having any of these parts. As can be seen in Table 1 below, during this period, introductions with only one part dominated. By 1983 (ten years later), over half of the articles had all three parts characteristic of twentieth-century scientific articles. Also, the number of those with just one or two parts of the three-part introduction declined to six and two articles each, respectively. Paradoxically, the number of articles having zero parts of the three-part characteristic introduction increased to seven from four during the period 1973 and 1978.

The last sample was taken from 2013 (forty years after the first published articles), and all twenty of the sampled articles had complete three-part introductions. The hundred-percent level was first achieved in 2003 and was constant thereafter. In Table 1, we can see that the articles with three moves progressively increase. Over this period of forty years, articles with one-, two-, and zero-parts of the traditional three-part introduction disappear. While in 1973, complete three-part article introduction was the least prevalent type of introduction, in the years that follow, the three-part introduction surpasses any other type of introduction, continuing to increase until there are exclusively complete three-part introductions in all the journal articles sampled.

The number of articles with a complete three-part introduction steadily increased over the data study period, while the number of articles with two or fewer introductory parts rapidly decreased and then disappeared in the sampled articles.

The data in Table 1 are consistent with Gross et al.'s work on the 20th-century scientific article, which shows that during the end of the 20th century, the majority of articles Gross et al. sampled had three move introductions, as seen in Table 2. Their research shows that between 1975-1995, 85% of all articles demonstrated a complete 3 "move" introduction, the remaining 15% showed two "moves," and there were no articles that were part of the sample that only had 1 or 0 Swalesian moves.

Gross et al.'s research, when compared to the research done on the AJCM, shows that the AJCM, over its forty-year period, has taken on the characteristics of introductions of the late 20th-century scientific article. Gross et al.'s late 20th-century sample of scientific articles, when compared to the AJCM's sample, show a similar number of three moves in 1993 and 2003. Gross et al.'s sample was taken from 1975-1995, therefore showing that the AJCM over its 40-year history has come to exhibit the same Swalesian 3 move characteristic introductions as Gross et al.'s sample from the late 20th century. This trend indicates over the 40 year period that the article introductions came to take the same form as those of top scientific research articles at the end of the 20th century. This trend shows that the rhetoric of the AJCM's introductions was changing in order to more closely align the documentation of the research that they found acceptable to publish with that of a late 20th century traditional experimental scientific article.

3.2 Headings

In addition to the three-move introduction that is characteristic of the twenty-first-century scientific articles, the use of specific headings is also a characteristic of these scientific articles.

Headings are "titles or subtitles within the body of a document" (Alred et al., 2008, p.182).

Headings announce what is going to happen beneath them; in so doing, they enhance coherence and help to logically structure a document (Markel, 2007). By acting as a document map, headings can help the reader quickly understand the basic outline of a scientific article. The headings in *AJCM* articles were coded, first to ascertain the articles' content and later to compare it with the content of other twentieth-century scientific articles. There are two types of headings in this analysis "general" and "substantive." General refers to headings that are organizational in nature (Introduction, Methods, Materials, Discussion, etc.); "substantive" means that the focus of the heading is on topical aspects of the study, for example, the names of plants studied in a particular article, but not referring to how the article is organized.

The kinds of headings used throughout the *AJCM* have varied over the journal's life span. General headings (headings that intend to organize the article) increased over time, while topical headings and authors' choice to not use headings at all declined over the forty-year period. For example, in 1973, there were only two articles with general headings; four articles had no headings at all, and fourteen articles had substantive headings. It can be seen in Table 3 that by 1993, twenty years later, the number of general headings in the *AJCM* had continued to increase steadily. Of the group, seventeen of twenty articles had general headings. Strangely, articles with substantive headings showed a slight increase (to three), but there were zero articles that used no headings at all. In 2013 (forty years after the first publication of the *AJCM*), of the twenty articles sampled, all articles used headings, nineteen of the articles had general headings, one article had a substantive heading.

In the 1973 sample of articles, there were only two articles with headings typical of a twentieth-century scientific article. The twentieth-century article, according to Gross et al., only

uses organizational headings, which, as described in the last section, include: Introduction, Methods, Results, Discussion, Analysis, and Conclusion. Examples of substantive headings can be seen in the 1973 article, “Some Insights Concerning the Principles of Acupuncture Anesthesia” by the Staff of the PLA General Hospital used topical headings, including: “Sufficient Stimulation Intensity is the Key to the Success of Acupuncture Anesthesia,” “From the Concept of Stimulation Intensity to Making Suppositions on the Principles of Acupuncture Anesthesia,” and “The Manifestation of ‘Dual Dynamic Forces.’” Another example of substantive headings is from the 1973 article “Chinese Health Foods and Herb Tonics” by James Chen and include “Chinese Health Foods,” “Butter Melon and Butter Squash,” and “Herb Tonics” (Chen, 1973, p. 225). Here it can be seen how the focus of the headings (and therefore article) is taken away from the actual “substance” (as in substantive) of the article and refocused on the style of the scientific experimental article and the scientific method.

3.3 IMRD Format

As seen in Table 4 below, in 1973, only one article, out of twenty sampled, followed the IMRD format. As Table 4 shows, there is a steady rise in the number of articles that are in IMRD format over the forty-year life of the journal. In 1983 Table 4, shows that there are ten articles that have IMRD format and ten that don't. After 1983, the IMRD format becomes the majority format. By 2008, nineteen of the twenty articles have IMRD format, and only one is not in IMRD format.

The qualitative analysis of the IMRD format study is similar to the qualitative study of headings since headings were often used as a first indicator of the format of an article. It is important to note, however, that headings are not absolutely necessary for an article to have an IMRD format. For example, some of the articles did not have "introduction" or "discussion"

headings, but it was clear that the text was introducing the article or discussing the ramifications of the experiment. SOMETHING TYING THIS TO THE REST OF THE PAPER

3.4 Subject

When the *AJCM* was first published in 1973, the variety of subjects covered in each issue was myriad. The inaugural issue included topics as varied as acupuncture, a cure for deafness, and the philosophy of the triple-burner organ in TCM. To apply a term from Charles Bazerman (1998), the *AJCM* had “the protean possibilities” offered by newly emerging fields for “direction-setting innovation” (p.324). In so writing, Bazerman postulated that at the beginnings of a new field lie a vast number of different rhetorical directions, which the field might eventually follow. Generally speaking, after an initially wide assortment, the subjects begin to shrink in number as the new discipline begins to specialize and professionalize. Gross et al. explain that this movement toward greater unity within a new discipline is the result of selection (Gross et al., 2002, p.221). Citing the Vienna Academy as an example, Gross et al. show how “Austrians learned by imitating German models” and that it was the “German models that formed the requisite selection pressure” (Gross et al., 2002, p.220). In this way, Gross et al. put forth the idea that the many subjects of new academic publications are reduced by selection and, therefore, evolution. Eventually, articles become more and more tailored to a specific audience and discipline, based on the selection pressures that surround the publication. The process that Gross et al. explain is similar to what happened to the *AJCM* over the 40 years sampled.

After examining the entire corpus (180 sample articles) and coding each article with a subject (acupuncture, herbs, movement studies, other), the raw data collected from this analysis can be seen in Table 5. There is a drop in the number of acupuncture and “other” articles over the lifetime of the journal. Looking again at Table 5 reveals that there is a general increase in the number of “movement” articles and articles about TCM herbs. Of particular note, in 1978, there

was an increase in the number of "other" articles, although, by the next time the journal was sampled (1983), those numbers had decreased.

Of the 20 articles in each sample period, 15 in 1973 had acupuncture or a related field as their subject. Ten years later, in 1983, there were 5 articles with a focus on acupuncture. In 1993, there were 3, thirty years later, in 2003, there were 2, and there were also 2 in 2013. As can be seen in Table 5, that there was a dramatic and drastic decrease in the number of sampled acupuncture articles over 40 years of the corpus, demonstrating a movement away from acupuncture in the *AJCM* and possibly in TCM research more generally.

Of the 20 articles in each sample period, 2 articles in 1973 were related to herbs or herbal treatments. Ten years later, in 1983, there were 7 articles on herbal medicine in TCM. In 1993 there were 14, thirty years later, in 2003, there were 13, and as seen in Table 5, there were 18 in 2013. This increase in the number of articles on TCM herbal medicine is significant because it indicates a substantial shift in the focus of the journal.

Of the 20 articles in each sample period, zero articles in 1973 were related to tai-chi or physical movement exercises related to TCM. Ten years later, in 1983, there were zero articles, and twenty years later, in 1993, there were 2, as seen in Table 5. In 2003 there were 3 articles in the sample, but in 2013 there were zero articles in the sample that reflected movement-centered research. It is uncertain if this has simply to do with the random sample or if there has been a shift in the last five years away from this in the *AJCM*.

The "other" category was created to solve the problem of a large number of articles in the early years of the *AJCM* that defied categorization. In 1973, one of the articles was a photo essay, in which there were pictures of various herbs, people getting acupuncture, and folks doing tai-chi. Of the 20 articles in each sample period, 3 articles in 1973 did not fit into the three main

categories. Of note, in 1978, there were 12 "other" articles, and this can be attributed to a WHO conference on TCM that took place that year; the journal wanted to get that information out, and much of the information was not bound by subject, but by other concerns. By 1993 there was only one article in the sample that defied categorization, and by 2013 there were none. This demonstrates that the subjects of the articles trended toward certain topics.

These data show that acupuncture was the central subject of study in the *AJCM* during its first years as a journal; over time, however, it became less and less so. Although acupuncture remained as a subject in 2013, it had become a relatively minor subject of study. The decrease in acupuncture as a focus could have come from a variety of causes, not least of which are the inability to scientifically test how acupuncture works and that the philosophy, which underlies the belief in the TCM concept of "chi," is antithetical to Western science. The 2008 increase in acupuncture articles was largely due to the development of new scientific technologies that may eventually satisfactorily explain the workings of acupuncture to the Western scientific community. Some of these technologies measure body temperature at specific places on the body (the acupuncture points), while others compare radiographic brain imagery taken before and after acupuncture treatments.

Conversely, finding the active ingredients of the Chinese herbs, historically used for medical purposes, is something that Western scientists, using the scientific method, have become quite practiced at doing. This factor would explain the sharp rise in the number of articles focusing on herbal medicine. While the possible commercial value of therapeutic herbal research is abundantly clear, the commercial, economic potential of acupuncture is less so. As the importance of formalized biomedical research emerged, non-biomedical articles— those grouped under the heading of "other"— declined. The peak of these "other" articles took place in

1978 because, in that year, the journal was principally devoted to worldwide public health awareness. Articles that year ranged from original studies of alternative medical facilities around the world (1978) to the reprinting of statements previously made by the WHO on a variety of medical issues.

Although the *AJCM* editors claim to strive for an "inclusive" journal, and again despite their stated position of favoring minority subjects, it is plain that by 2013 the quantity of herbal-medicine-oriented articles published in the journal had become disproportionately high. Either a comparatively large number of these articles had been submitted annually for editorial review, or the subject was favored in some way by the editorial board. Among the non-herbal articles, the number of TCM movement exercise articles increased from zero in the years preceding 1998 to two in 2008 but went down to zero in 2013. By 2013 it was clear that the *AJCM* was a journal devoting itself mostly to herbal medical research with the occasional journal article on acupuncture. But what is of even more interest is the genre of these articles. Not only did the subject matter change significantly over the 40 year period, but so did the form these articles took.

3.5 Genre

This study used the theoretical foundations discussed by Berkenkotter and Huckin in their text *Genre Knowledge in Disciplinary Communication* (1995). Berkenkotter and Huckin state that there are five principles that govern genre: "dynamism, situatedness, form and content, the duality of structure, and community ownership" (p.6). The most relevant of their five principles (dynamism, situatedness, and community ownership) will be highlighted and shown how they work in this article on TCM and biomedicalization.

By "dynamism," Berkenkotter and Huckin highlight how genres are "dynamic" and change with time. In this study of the *AJCM*, it will become clear that its genre changed over

time, having gone without any specific genre in which to categorize its articles, to having articles with a few different established genres, to finally falling into a single specific genre in almost all of its articles (p. 4). Concerning the principle of "situatedness," the focus turns to how genres exist as constructions that are part of the very fabric of our daily lives. The mode of thinking that is embodied in the *AJCM* stems from the researchers' own thinking and understanding of the subject (p.4).

Conventions of genre work to first constitute and then indicate the presence of a discursive community while at the same time advancing "community ownership" of the genre. This is similar to Hyland's thoughts about disciplines coming down to relationships and not just the passage of information. When considering the genre shift experienced by the *AJCM*, it is clear that by 2003, the journal possessed a certain community identity and norms that pervaded its articles. This unity is reflected solely in the 1990s and beyond—not before (Hyland, 2004) (Berkenkotter and Hucken, 1995).

Of relevance to the issue of genre in this article are Berkenkotter and Hucken's chapter "Evolution of a Scholarly Forum: *Reader*, 1977-1988." The chapter shows how *Reader*'s genre shifts along with the changes in readership and community which the journal experiences. The changes in the journal are ultimately representative of the changes in the "reader-oriented" community (p.79-96). Similarly, we see how changes in the *AJCM* over its time in publication indicate a change in the community of those reading and publishing in the journal (Hyland, 2004).

Each article from the 180 article sample corpus is coded for the genre over the *AJCM*'s 40-year history. Each sample article was examined and placed into the genre category. Most of these categories were developed over the course of the study of the scientific article by pioneers

in the rhetoric of science, but Gross et al. (2002) was used for the following categories: Experimental Scientific, Scientific Review, Philosophical, and Historical. The “Blurred Genre” category was created in order to account for articles that did not fit into any of the 4 categories and for those that fit into multiple categories.

The experimental scientific genre of articles has the following characteristics: use of the scientific method, having IMRD format, engaging with the natural world, and being experimental in nature. Experimental articles are defined as having a thesis that is supported or rejected after being exposed to scientific tests. Of the 20 articles sampled for 1973, 4 articles met these criteria, ten years later, 11 articles fit these criteria, and for thirty and forty years later, 19 of 20 articles fit this description. The dramatic increase in the number of experimental scientific articles over time, as seen in Table 6, shows the journal’s increasing focus on experimental research.

Unlike the experimental scientific article, the scientific review article does not create new information but instead synthesizes and critiques work that has already been published. The scientific review article also generally comes to larger conclusions based on the amalgamation of the information reviewed in them. Both the scientific review article and the experimental scientific genres of articles have been well-established in science for at least the last century. Of the 20 articles sampled for 1973, 2 articles met these criteria. Ten years later, 2 articles fit this description. Over the forty years covered in this corpus of the *AJCM*, there are generally one or two scientific review articles per sample. Throughout each issue of the *AJCM*, there is almost always at least one scientific review article. Its absence in some of the samples may have to do with the randomness of the sample. Although review articles make up a small number of articles

in the sample, as well as in the *AJCM* generally, they persist throughout the forty years as a part of the *AJCM*.

Philosophical articles are those in which the author examines the nature of a particular style of thought or attempts to explain the theoretical underpinnings of a certain area of research or a way of thinking. An example of a philosophical article would be one that looks at the theory of the mysterious “triple-burner” organ and how it moves energy in the body. Of the 20 *AJCM* articles sampled for 1973, the number of articles that met the criteria of being a philosophical article was 2. Ten years later, 1 article fits these criteria, and twenty years later, zero articles fit this description. As seen in Table 6, with the exception of 1 article in 1998, the philosophical article disappears entirely from the journal. The *AJCM* after the 1970s takes a turn away from the philosophical to be a journal focused on the science behind TCM.

An article was coded as historical if a pattern of events over time were being analyzed or a series of interrelated events are narrated. Examples of a historical article include the lifetime of Chinese medicine, an account of acupuncture needles through the ages, or the way a certain plant was used overtime to heal the sick. Of the 20 articles sampled for 1973, 4 articles met these criteria. Ten years later, zero articles fit these criteria, and thirty years later, 1 article fit this description. Similar to the philosophical articles, the historical articles all but disappeared after the 1970s. The journal very much went on to support scientific articles, and unlike the review articles that were a part of each year of the journal samples, even if they were not randomly chosen, this was not the case with either the philosophical or historical article.

The blurred category was used to refer to anything that didn't fall into the other four categories or fell into more than one category. Generally, this category was used for the public health reports that occurred early in the journal's history or the photo essay that was in the 1973

sample. Of the 20 articles sampled for 1973, 8 articles met these criteria. Ten years later, 5 articles fit these criteria, thirty years later, zero articles fit this description, and the 2013 sample also had no blurred articles. As the *AJCM* began to define itself as an experimental scientific journal, there was no longer a place for photo essays or public health reports, or any articles that were not scientific in nature.

The experimental genre dominates most professional scientific journal articles in the twenty-first century, and the *AJCM* is no exception. As seen in Table 6, in 2013, 19 of 20 articles were experimental, as were 18 of 20 in 2008. In both of these years, the non-experimental articles were limited to another type of article that is typical of professional, scientific articles—namely, the scientific review article. The data support the premise that in order to be published by the *AJCM* in 2008, writers had to be knowledgeable about the genre of articles then being published by the *AJCM*. “Genre knowledge” (Berkenkotter & Huckin, 1995) had become key to being seen as an author worthy of being published in the *AJCM* by 2008. In previous sample group years, articles that did not have a specific genre were labeled “blurred,” and this general genre immediately started to decline after the first year.

The genre change could have come about in three ways: reviewers, perhaps, demanded that writers write in a specific genre, or, of their own accord, authors began conforming to the kinds of articles that were accepted by editors in the newer editions, and/or an overwhelming number of new writers, with specific conventions in mind, began to submit articles. In any case, by 2003, there were no “blurred” genre articles. The presence of specific, established genres demonstrates that by 2003 the *AJCM* was well on its way to becoming a professionalized journal. With the articles’ subjects having become increasingly focused on herbs and plants used in

TCM, the experimental genre is the logical genre of these particular biomedical studies in the late 20th and early 21st centuries.

This shift in the genre is an indication of the scientific orientation which the *AJCM* has taken on, as evinced in part by the genre realignment in favor of the experimental, as well as the subject-matter movement (increasingly plants and herbs) towards the more bioscientific. Additionally, in order to achieve the credibility and status of being considered a respected scientific journal, the *AJCM* needed to publish mostly experimental articles, which has become the case by the end of the period studied in this research.

The only other articles maintained in the *AJCM* into the 21st century, which are not experimental in the genre, are scientific review articles. This genre of articles is also commonly present in mainstream scientific and medical journals. In fact, the case study is the only genre of an article found in medical journals that have not yet been seen in the *AJCM*. The absence of the case study may be attributed to the bench experiment-centered nature of the journal.

4 Conclusion

After examining this information that has resulted from this corpus study, it is clear that the *AJCM* has gone through a set of dramatic changes between its founding in 1973 until 2013, forty years later. These changes parallel those changes that have taken place in the TCM research community over the same time. In 1973 the *AJCM* would not be recognized by scholars like Gross et al. as having the characteristics of a late 20th-century scientific article. At the same time, in 1973, it is doubtful if anyone (even its founder) would have called it an experimental scientific journal. Certainly, the journal has a clear mission statement in 1973, which declares its purpose of understanding TCM in the "broadest sense" and aspirations to bring these treatments to westerners. However, by 2013 (actually by 2003), the *AJCM* had become an experimental research journal, narrowly focused on pharmaceutical research of traditional herbal plants from

TCM. This can be seen in the corpus study, but also in the mission statement on the website of the Tang Center (University of Chicago) that has published the journal since 2003, which states that “Our mission is to evaluate both benefits and risks of medicinal herbs” (Tang, 2013).

According to Hyland, by analyzing the academic texts of a discipline, we “learn...how each discipline views knowledge and defines itself” (Hyland, 2004, p.12). In forty years, the discipline of TCM research has completely redefined itself, and as the definition of what was considered valuable knowledge has changed, so did those involved. The biomedicalization of this journal has led to a dramatic shift in the people who make up and are part of the U.S. TCM research community. By 2013 most of those from the 1970s and 1980s who contributed to the journal during its early years no longer had enough scientific background content and knowledge of how to communicate in an experimental scientific journal to understand *AJCM* articles, much less contribute articles of their own.

These changes can be seen from the corpus analysis of the *AJCM*. Although, if one talks to many practitioners who have been in the field in the U.S. for some time, particularly those who were trained in Chinese Medicine in the 1970s and/or later at more traditional schools, they have seen this coming for decades. These practitioners spent a lot of time learning the philosophy and the history behind the practice, but the philosophical, historical, and (for some) spiritual underpinnings of the field have been taken away, according to Chris Halfner, OMD. He explained in his interview the frustration he has (and others like him) with western medicine and how it was changing TCM in ways that were neither beneficial to western medicine nor TCM. He asked the question: After TCM goes through the “biomedical gate,” what will be left? Will there be anything worthwhile for either form of medicine (2009)?

Interestingly enough, the last place someone would look for a scientific article would be in a Traditional Chinese Medical Journal. But some TCM researchers realized the future of TCM decades ago. One R1 researcher said in a 2009 personal interview that he had known for decades that for financial reasons, "our medical future is imbedded in TCM herbal therapies" and not in the practice of acupuncture.

The idea of community ownership of a field, established by Berkenkotter and Huckin, can be applied to show how the community of ownership of the field of TCM research has changed, and with that, there are winners and losers. This kind of research is important because those whose ownership was taken from them (slowly at first and then very quickly) mattered, and the loss of the kind of research they were doing over the last 10-15 years has left a void in TCM research.

When these journal articles from a variety of different genres and about a broader selection of topics existed in one journal, the subscribers of the journal would read a variety of articles on TCM. With the shift toward the journal having (generally) one very specific genre and subject, the exposure to the diversity of the discipline was lost to its' readers. This phenomenon led to bench scientists not being exposed to the philosophical underpinnings of what they were working so hard to understand through their research. At the same time, philosophers and historians no longer had easy access to what western science was doing with the objects of their own research. While the community reading and publishing the journal obviously shifted, and it meant for greater economic and academic pay off for some, but this was clearly not the intention of the Kao's (and their students who) started this journal in 1973 and maintained it through 2003 when it was turned over to the Tang Center and the University of Chicago. They worked hard to create a journal that would appeal to a wider audience and would

continue to keep a broad focus with a broad audience in mind. That work is now gone. Instead, there is one economically and academically driven purpose to this journal—the dissemination of information on bench science research being done with TCM herbs. TCM is a subject whose foundation rests on a philosophy that is antithetical to that of western science, but as we have seen in this study, even the least scientific, least biomedical of fields can be forced to conform to the biomedical model.

References

- About the AJCM. (2009). About the American Journal of Chinese Medicine. *The American Journal of Chinese Medicine (AJCM) An International Journal of Comparative Medicine East and West*, 35. Retrieved from <http://www.worldscinet.com/floyd.lib.umn.edu/ajcm/ajcm.shtml>
- AJCM, Back Cover. (2009). *The American Journal of Chinese Medicine (AJCM) An International Journal of Comparative Medicine East and West*, 35, Back Cover.
- Alred, Gerald, et al. (2008). *Handbook of Technical Writing* (9th ed.). Boston: Bedford/St. Martin.
- Atkinson, D. (1999). *Scientific Discourse in Sociohistorical Context the Philosophical Transactions of the Royal Society of London, 1675-1975*. Mahwah: L. Erlbaum Associates.
- Barnes, L. (2003). The Acupuncture Wars: The Professionalizing of American Acupuncture—A View From Massachusetts. *Medical Acupuncture*, 22(3), 261–301.
- Barnes, L. (2005). Chinese Healing in the United States. In S. Sered (Ed.), *Religion and Healing in America*. New York: Oxford UP.
- Bazerman, C. (1988). *Shaping Written Knowledge: The Genre and Activity of the Experimental Article in Science*. Madison: Wisconsin UP.
- Berkenkotter, C., & Huckin, T. (1995). *Genre Knowledge in Disciplinary Communication: Cognition, Culture, Power*. Hillsdale: L. Erlbaum Associates.
- Burke, K. (1966). *Language as Symbolic Action: Essays on Life, Literature, and Method*. Berkeley: University of California Press.
- Clarke, Adele, et al. (2003). Biomedicalization: Technoscientific Transformations of Health, Illness, and U.S. Biomedicine. *American Sociological Review*, 68(2), 161–194.
- Cohen, C. (1993). Biomedicalization of Psychiatry: a Critical Overview. *Community Mental Health Journal*, 29(6).

- Ede, L., & Lundsford, A. (1999). Audience Addressed/Audience Invoked: The Role of Audience in Composition Theory and Pedagogy. In L. Ede (Ed.), *On Writing Research: The Braddock Essays, 1975-1998* (pp. 156–70). Boston: Bedford/St. Martin's.
- Estes, C., & Binney, E. (1989). The Biomedicalization of Aging: Dangers and Dilemmas. *Gerontologist*, 29(5), 587–596.
- Fries, C. J. (2014). Older adults' use of complementary and alternative medical therapies to resist biomedicalization of aging. *Journal of Aging Studies*, 28, 1.
- Gross, A. (1996). *The Rhetoric of Science*. New York: Harvard UP.
- Gross, Alan, et al. (2002). *Communicating Science: The Scientific Article from the 17th century to the Present*. New York: Oxford UP.
- Halfner, C. (2009, February 12). Personal Interview.
- Hyland, K. (2004). *Disciplinary Discourses: Social Interactions in Academic Writing*. New York: Longman.
- ISI Web of Knowledge. (2004). *Journal Citation Reports Science Edition*.
- Kao, F. (1973). China, Chinese Medicine, and the Chinese Medical System. *American Journal of Chinese Medicine*, 1(1), 1–59.
- Kao, J. J. (n.d.). Editorial. *American Journal of Chinese Medicine*, 31(2), v.
- Kaptchuk, T. (1983). *The Web That Has No Weaver: Understanding Chinese Medicine*. Chicago: Congdon & Weed.
- Lafontaine, Cé. 2015. Aging in the era of regenerative medicine: Analysis of aging-related representations among Canadian researchers. *Sociological Quarterly* 56, (1) (Winter): 62-79.
- Lyman, K. (1989). Bringing the Social Back in: a Critique of the Biomedicalization of Dementia. *Gerontologist*, 29(5), 597–605.

- Mads Haahr. (2009). *Random Sequence Generator*. Retrieved from <www.random.org/sequences>
- Mamo, L. (2009). Scripting the Body: Pharmaceuticals and the (Re)Making of Menstruation. *Signs: Journal of Women in Culture & Society*, 34(4), 925–949.
- Markens, S. (2012). Biomedicalization: Technoscience, health, and illness in the U.S. *Contemporary Sociology*, 41(2), 188-190.
- Markel, M. (2007). *Technical Communication*. Boston: Bedford/St. Martin.
- Myers, G. (1990). *Writing Biology: Texts in the Social Construction of Scientific Knowledge*.
Madison: Wisconsin UP.
- Shapiro, H. (2003). “How Different are Western and Chinese Medicine? The Case of Nerves.” In H. Selin (Ed.), *Medicine Across Cultures: History and Practice of Medicine in Non- Western Cultures*. (pp. 351–375). New York: Kluwer.
- Swales, J. (1990). *Genre Analysis: English in Academic and Research Settings*. Cambridge:
Cambridge UP.
- Tiefer, L. (2012). Medicalizations and demedicalizations of sexuality therapies. *The Journal of Sex Research* 49, (4): 311.
- Unschuld, P. (1985). *Medicine in China: A History of Ideas*. Berkeley: University of California Press.
- Waring, B. (2009). Nuland Speaks on Chinese Medicine, Western Science, Acupuncture. *NIH Record*, 61(7).
- Wharton, J. (2002). *Nature Cures: The History of Alternative Medicine in America*. New York:
Oxford UP.

Appendix A

Table 1: Change in Three-Part Swalesian Introductions in the *AJCM* over Time

	1973	1978	1983	1988	1993	1998	2003	2008	2013
zero moves	4	7	0	1	0	0	0	0	0
one move	9	4	6	2	3	1	0	0	0
two moves	6	1	2	3	1	1	0	0	0
three moves	1	8	12	14	16	18	20	20	20

Table 2: Gross et al.'s 20th Century Swalesian Moves Compared to the *AJCM* Over Time

	Gross et al. late 20 th c.	AJCM 1973	AJCM 1983	AJCM 1993	AJCM 2003	AJCM 2013
3 moves	85%	5%	60%	80%	100%	100%
2 moves	15%	30%	10%	5%	0%	0%
1 move	0%	45%	30%	15%	0%	0%
0 moves	0%	20%	0%	0%	0%	0%

Table 3: Change in *AJCM* Headings over Time

	1973	1978	1983	1988	1993	1998	2003	2008	2013
General	2	8	11	15	17	17	18	19	19
Substantive	14	10	6	2	3	3	2	1	1
None	4	2	3	3	0	0	0	0	0

Table 4: IMRD Format of the *AJCM* over Time

	1973	1978	1983	1988	1993	1998	2003	2008	2013
IMRD	1	8	10	15	18	17	18	19	19
Non-IMRD	19	12	10	5	2	3	2	1	1

Table 5: Subject of the *AJCM* over Time

	1973	1978	1983	1988	1993	1998	2003	2008	2013
Acupuncture	15	3	5	5	3	4	2	5	2
Herbs	2	5	7	11	14	13	13	12	18
Other	3	12	8	4	1	2	2	1	0
Movement Studies	0	0	0	0	2	1	3	2	0

Table 6: Genre of the *AJCM* over Time

	1973	1978	1983	1988	1993	1998	2003	2008	2013
Experimental	4	8	11	17	16	16	19	18	19
Review	2	0	2	0	0	1	1	2	1
Philosophical	2	2	1	2	0	1	0	0	0
Historical	4	3	1	0	1	1	0	0	0
Blurred	8	7	5	1	3	1	0	0	0