



# The Half-life of Missiological Facts

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## Abstract

An obscure field called scientometrics—the study of how rapidly academic research is produced and how quickly it becomes outdated—has recently been popularized by Stephen Arbesman’s (2012) book, *The Half-life of Facts*. This article employs the methods of scientometrics to measure the rate at which new missiological information is being published, and the rate at which this research is going out of date. Mission leaders can use this data to obtain a clearer picture of how the discipline of missiology is reacting to a changing world. This will allow us to concentrate on trends that matter, and on theories and strategies that will have maximum staying power.

## Keywords

Academic research trends, scientometrics, future of missiology

We seldom talk about the “conversion of the heathen” these days, as William Carey did in his *Enquiry* (1792). And few contemporary mission agencies conceptualize the “mission station” as the locus of discipleship and service, as they often did in Roland Allen’s time (Allen, 1962: 152). As with research in all academic disciplines, missiological theories and methods seem to have an expiration date. Has our discipline, which is based on demographics and trends, kept up with globalization? Are we gathering information about missions at the same pace at which the world is changing? And how much of our research will be irrelevant in the future? Samuel Arbesman’s (2012) immensely popular book, *The Half-life of Facts: Why Everything We Know Has an Expiration Date*, is a study of the rapid production, dissemination, and expiration of knowledge in academia. Since missiology is firmly grounded in academia, Arbesman’s thinking-about-thinking can undoubtedly be applied to our

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own discipline. We can measure the rate at which new missiological information is generated, and we can predict, with some accuracy, the rate at which our research is going out of date. With this data, we can get a clearer picture of how our discipline is reacting to a changing world. Ultimately, this should help us focus our attention on trends that matter, and on research that will have maximum staying power.

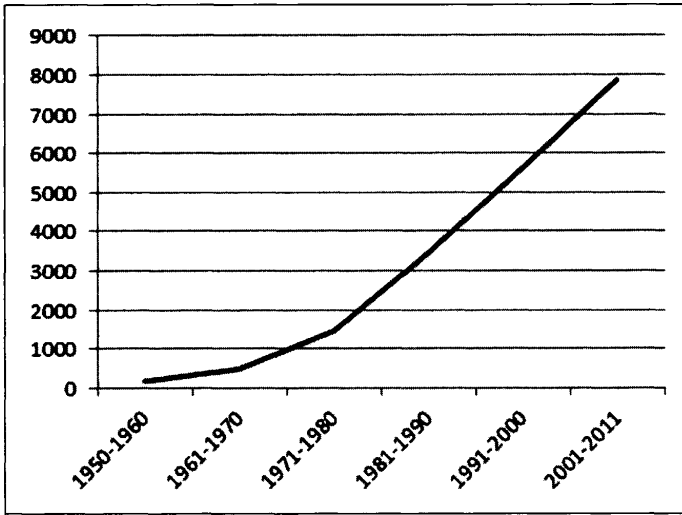
Scientometrics, Arbesman explains, is the study of how rapidly knowledge is produced, and how quickly it becomes irrelevant. Published research in the field of geology, for instance, doubles every 46 years; in medicine and hygiene the number of publications doubles every 87 years; but in the arts (e.g., grand opera) the rate is much quicker: 20 years (Arbesman, 2012: 14). A similar exponential increase will apparently be true in all the social sciences. Of course, Arbesman wasn't addressing the study of missions when he wrote on scientometrics; so in this article, I have attempted to discover the rate at which academic publications in missiology are doubling, and to determine how quickly our research is going out of date.

Certainly, with the World Wide Web at our fingertips, information about missions is increasing exponentially at a staggering rate! And with the arrival of new journals, both in print (such as the *Great Commission Research Journal*) and online (such as *Global Missiology*), and with the establishment of new schools of world mission all over the globe, the production of missiological "facts"<sup>1</sup> is certainly snowballing. For instance, a Google search for "missions and partnerships" returns 6.9 million results. But most of those search returns are not the sort of information Arbesman is tallying when he talks about the "doubling of knowledge." He is referring to publications of original academic research. While many of Google's search results will be informative, the vast majority are not research-oriented. So in order to quantify the rate at which academic research is increasing in any of missiology's subdisciplines, I have limited my search to four major in-print missiological journals: *Evangelical Missions Quarterly (EMQ)*, *Missiology*, *International Bulletin of Missionary Research (IBMR)*, and *International Journal of Frontier Missiology (IJFM)*.<sup>2</sup>

By quantifying the increase in missiological research, we can see which subdisciplines are getting the most attention, and we can trace when new strategies have emerged. We can also discover key terms that are losing momentum (or which may be ripe for a new infusion of energy). Particularly useful contributions (the ones that have persisted over decades) also become evident.

## The exponential doubling of missiological research

Missiology is dependent on other sciences, such as theology, anthropology, political science, history, and organizational behavior (to name a few); therefore, the rate at which publications double will be faster than the rate of the more basic disciplines. Of the four major journals in this study, *IBMR* is the only one that was publishing before 1960, so by 1961 there were approximately 175 research-based missiological articles in print. *EMQ* dates back to 1964, and by 1971, academic articles on missions totaled around 500. By 1981, after the addition of *Missiology* in 1973, the number reached



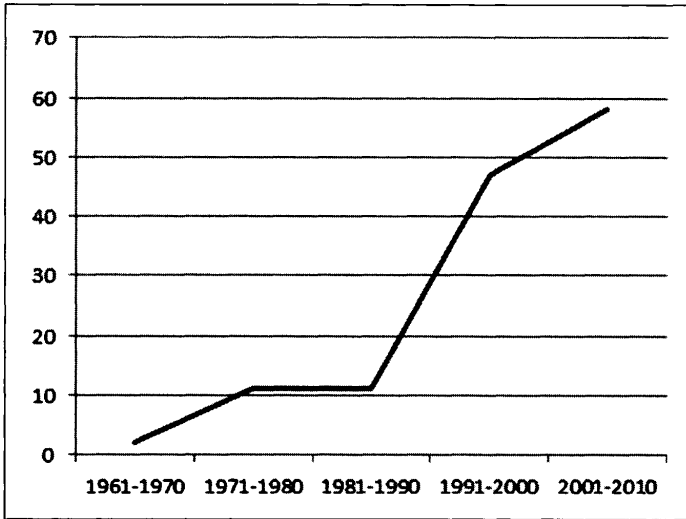
**Figure 1.** Number of missiological articles in print 1950–2011 (in four major journals).

more than 1500; *IJFM* started publishing in 1984, and by 1991 the total of articles available was around 3500. By the start of the third millennium, the figure jumped to 5500, and in 2011 these four journals had a combined total of 7800 articles in print (see Figure 1).

The drastic upward trend suggests that Arbesman’s model can indeed be extended to missiology. We have just seen that the amount of missiological research increased from 175 articles to 7800 between 1961 and 2011, meaning that our information doubled itself five times in less than 40 years. The rate at which it is exponentially increasing is quicker than eight years. This is appropriate, since new mission fields are being harvested, new technologies are being utilized, governments are constantly changing, and more mission organizations are born every decade.

We can also trace the exponential increase of information on certain subfields or “key terms” in missiology, to see how the discipline is changing. From 1961 to 1970, only two articles were published on “contextualization” among the four journals counted in this article. From 1971 to 1980, these journals published 11 articles that specifically focused on the subject of contextualization. The trend remained the same in the 1980s. But from 1991 to 2000, the rate increased to 47, and from 2001 to 2010, there were 58 articles published on the topic (see Figure 2).

We can see how quickly the rate of research on the topic is increasing. But is it increasing exponentially? To increase exponentially, the amount of scholarship on a topic needs to double at a measurable rate. Missiologists had published ten articles on contextualization in four prominent missiological journals up to 1980. They were publishing 20 articles per decade on the subject by 1990, and more than 40 by 2000. So the rate of publication on contextualization has been doubling quicker than every ten years.

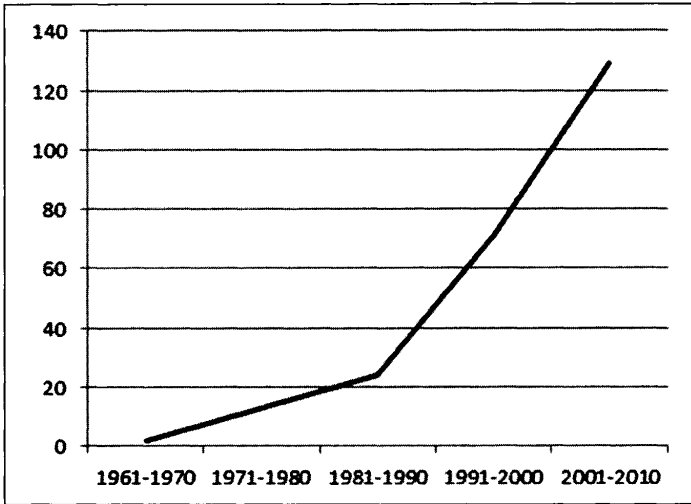


**Figure 2.** Number of missiological articles published by decade, specifically on “contextualization” 1961–2010.

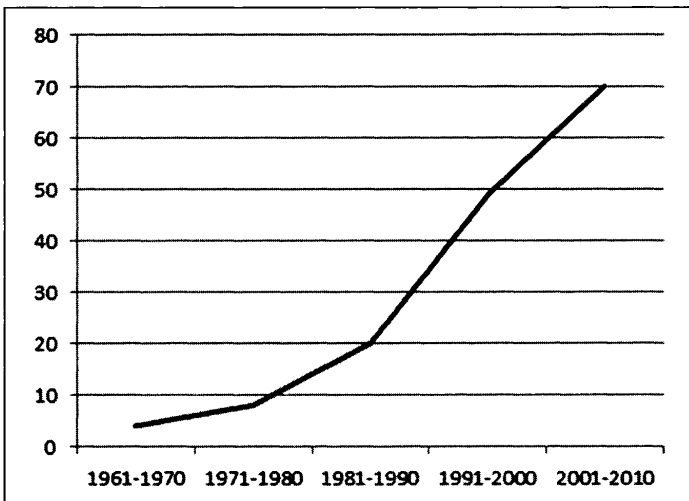
But when Arbesman spoke of the exponential increase of scientific research, he wasn’t actually measuring the rate at which articles are published; he was measuring the aggregate of all articles available on a subject at a given point in history. The sum total includes all the publications in a certain time period *plus* all the previous publications. So in the 1960s, if there were two articles available on a topic, and another 11 contributions were added in the 1970s, the total available becomes 13. If another 11 are published in the 1980s, the total will be 24. With 47 research articles in the 1990s, the total jumps to 71, and the 54 publications in the first decade of the twenty-first century bring the total number of research articles on contextualization up to 125. By this method of reckoning, the amount of information available on contextualization (in four prominent research journals) doubled six times in 40 years, which means it is doubling every 6.7 years (see Figure 3).

If this trend is evident across the board in missiology (in fields such as member care, leadership, theology of mission, cross-cultural communication, etc.), then we are generating research at a staggering rate! It is indeed an exciting time to be studying missions. Of course, the massive amount of research also means that future students of missiology will have more information to wade through (though some of this information will become outdated—a phenomenon I’ll discuss more below).

Indeed, this trend of rapidly increasing the production of research appears in other missiological fields. The topic of “member care” has followed a similar increase (see Figure 4). Scholarly articles available on “member care” increased from 4 to 70 in 40 years, meaning the “knowledge of member care” doubled four times, or on average, every ten years.

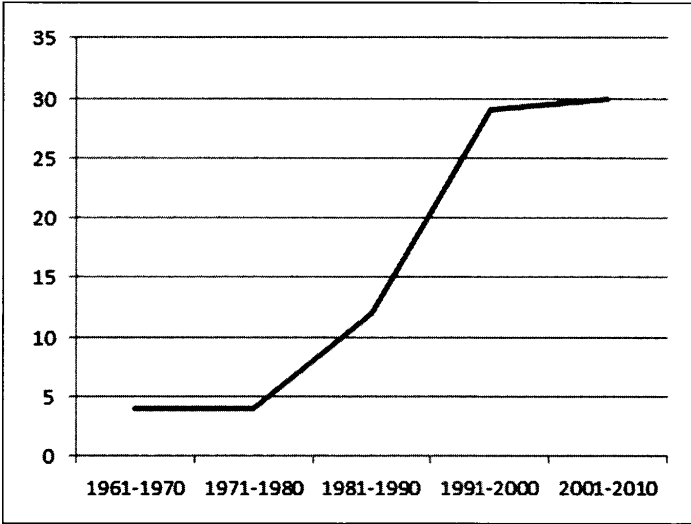


**Figure 3.** Articles available on “contextualization” in four missiological journals 1961–2010.



**Figure 4.** Scholarly articles published on “member care” per decade, from 1961 to 2010.

This is impressive. However, Arbesman’s method for calculating the exponential accumulation of knowledge can be misleading. Since the past research is always available, the line on the graph will always be moving upward, giving the impression that our information is always increasing (and this is fundamental to Arbesman’s model). However, this does not mean that we are always devoting energy to studying a certain



**Figure 5.** Number of missiological articles published on “member care” from 1961 to 2010.

topic. Research on some missiological issues reaches a plateau, and other lines of inquiry even decline. If we plot the research on “member care” by decade, we see a dropping off in the past decade (see Figure 5).

Why the plateau? This “logistic curve” is expected for the diffusion of knowledge in any field, as information about a topic diffuses through the population. The high, plateaued portion of the line is the asymptote: it becomes increasingly difficult to continue producing at the previous rate, as the population becomes saturated with information on a topic.

This is not to suggest that we know all there is to know about member care. This subfield of missiology may be experiencing a paradigm shift, rendering the term “member care” less relevant. Perhaps experts on member care have found other, more specialized journals in which to publish; perhaps missiologists’ energies are being diverted to other fields, and there will be a resurgence later on. Or perhaps there just isn’t enough data from these four missiological journals to find a trend at this point.

### The expiration date of research

Regardless of the reason for the plateau, we know that a portion of our missiological knowledge (Arbesman would argue all our missiological knowledge) has an expiration date. As national borders open up or close, as communities move into diaspora, as the majority world mobilizes for missions, and as Western interest in missions changes (from long term to short term), our missiological strategies change. Sometimes our theology (or how we write about it) even changes. For example, in 2013, evangelicals no longer need to be shy about engaging in social action—as they

were in the last decades of the twentieth century; many evangelicals now see social action as important as proclamation. These are just some examples which show how the issues we were researching so passionately 40 years ago eventually become less relevant, while other topics that were taboo or dormant (as expected) come to the foreground.

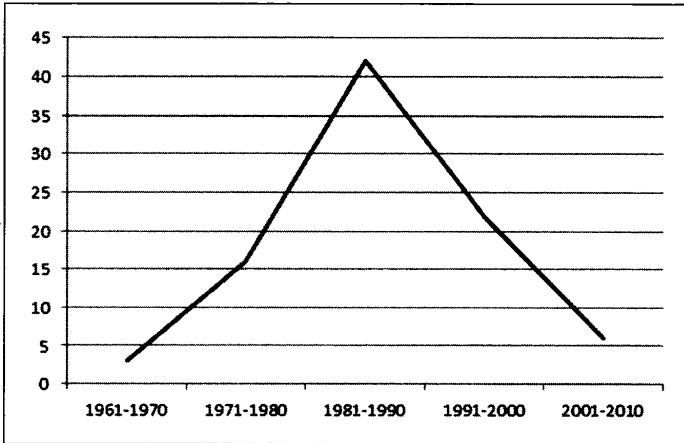
In fact, Arbesman argues, most of what we know in any field has an expiration date. It is especially obvious that as our knowledge of physics and medicine increases exponentially, the earlier research quickly passes out of date. For instance, a hospital in England reported that half of its research on the liver became irrelevant in 50 years. The half-life of research in physics is about 13 years, psychology and history have a half-life of seven years (Arbesman, 2012: 32). This doesn't mean that what we used to think in a particular discipline like missiology is necessarily wrong; it just means that we move on to newer concepts as they appear more useful to us.

One useful idea which has, for some reason, lost valence is finding "functional equivalents" (i.e., Christian substitutes) for autochthonous rites and rituals. The most recent article, among four missiological journals, to employ the term was published in 1981 (Grönblom and Thorgaard, 1981). Since missiology is dependent on anthropology, when trends like functionalism (on which functional equivalence was based) fall out of fashion in academia, their dependent theories are also mentioned less frequently.

Certain missiological topics become outdated as the world situation changes. A stark example would be the prolific reports of cannibalism in missionary literature before the twentieth century, whereas a search for "cannibals" or "cannibalism" through the archives of the four prominent missiological journals from the twentieth century turns up zero results. More recent significant changes include the short-term mission (STM) avalanche (Slimbauch, 2000). Lately, the demand for research on STMs also increased. In fact, a search on the American Theological Library Association (ATLA) database for the term "short term missions" turns up 32 results from ten journals. Thirty-one of these were published in 2000 or later.

Research in any field also shifts dramatically after a major paradigm shift. With the increased capacity of Christians in the majority world, the global missiological discussion has shifted from paternalistic attitudes to partnership. Also, Ralph Winter's contribution of "people groups" forever changed missiological strategy from engaging the world's 200+ nation-states as if they were cohesive units (as William Carey did in his *Enquiry*) to reaching specific people groups.

Arbesman refers to the eventual "expiration date" of certain ideas or terms in academic as the "half-life of facts." Church Growth is a missiological subdiscipline that seems to have had a definite half-life. The bulk of research on "church growth" was published from 1980 to 2000, and there has been a drastic decline in the term "church growth" in *EMQ*, *Missiology*, *IBMR*, and *JJFM* in the past ten years (see Figure 6). Some church growth specialists would say this is a worrisome sign. But it doesn't mean missiologists are thinking less about church growth. We know that church growth researchers are currently publishing in more specialized journals. So it's not that we've exhausted all there is to say about church growth within missiology; what



**Figure 6.** Number of articles published on “church growth” in four missiological journals from 1961 to 2010.

is more likely is that we’re now talking about church planting movements and church multiplication, partnerships, or insider movements (insider movements, by the way, don’t show up in ATLA until 2007).

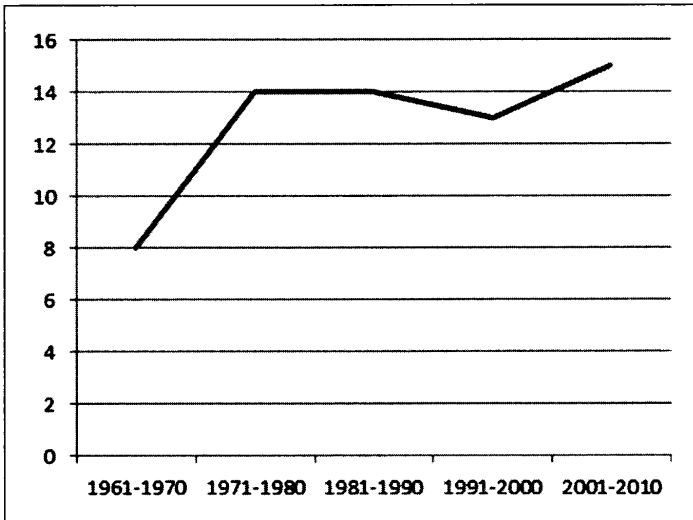
It is important to mention that some subdisciplines in missiology fit neither Arbesman’s exponential doubling model nor his half-life model. For instance, articles which focus on mission agencies (in the four missiological journals in this study) have been published at a rate of 8 to 15 each decade since the 1960s (see Figure 7). Interest is neither waning nor exploding.

This discussion of out-dating may concern or embarrass scholars, as if it puts our credibility on the line. However, the point of scientometrics is to normalize the notion of half-life in research—especially in sociological research such as missiology. If our strategies are going out of date, this is a good indication that the world is rapidly changing and that we are continually updating our discipline in order to maximize our impact for the Kingdom of God.

### The long “tail life” of research

Even though our knowledge increases exponentially across the board in missiology, certain ideas have a half-life while other ideas persist. Perhaps (should the Lord tarry) we won’t be talking about the 10–40 window in 50 years. Other models will come along to revolutionize our strategy for targeting specific groups—perhaps we won’t even talk about “targeting” specific groups. (I hope we’re not still arguing about social justice versus proclamation in 50 years, as we were 50 years ago!) If the past is any predictor, and given the unpredictability and mutability of human behavior, we will probably still be strategizing on reconciliation and justice, rather than arriving at comprehensive solutions to such problems. But what scientometrics reveals to us is that





**Figure 7.** Number of articles published on “mission agencies” in four missiological journals from 1961 to 2010.

some missiological ideas have much more staying power. Arbesman describes the persistence of such seminal academic ideas as a long “tail life.”

Rufus Anderson and Henry Venn’s “three-self” model for independent indigenous churches (Venn, 1856) is a foundational concept that continues to be cited by mission strategists every year. Venn has been referenced 49 times in the ATLA database, as recently as 2012. Other missiological contributions with long tail lives undoubtedly include “people movements” (McGavran, 1955), Niebuhr’s taxonomy of “Christ in Culture” (1956), as well as Hiebert’s ideas of the “excluded middle” (1982) and “critical contextualization” (1984).

This (quite incomplete) list of missiological contributions with long tail lives suggests that concepts and theologies of mission have more staying power than specific strategies for mission. Strategies, as I mentioned earlier in the discussion on half-life, are *supposed* to go out of date as the world changes. The longest tail lives are conceptual frameworks and theologies which are grounded in data that spans the centuries, often across two or more continents.

## Conclusion

Missiologists are producing research at an increasingly rapid rate, just as scholars in other fields are doing. This is due in part to the nature of academia, which values publication and creativity. As disciples of Christ, our foremost desire to engage in the kind of research that facilitates the Great Commission—whether our own work goes out of date or has a long tail life. Arbesman’s popularization of the field of scientometrics in *The*

*Half-life of Facts* causes us to think about the research topics we select. We may choose to focus on contemporary strategies, knowing they may soon go out of date; or we may develop longer-lasting theoretical models. Both of these endeavors are worthwhile, since both add to the rapidly increasing corpus of missiological “facts.” And by actually quantifying this rapid proliferation in research, we discover that the addition of our own seemingly small contributions is part of a much larger story of exponential increases.

Calculating the “increase in knowledge” raises another important issue regarding how we think about our discipline. It would be important to gather data on research articles being published on all the continents, in multiple languages. This would make us aware of which theories have a longer tail life or shorter half-life in the majority world missiologies that are being developed outside of ATLA databases or in languages other than English. Since missions is a global endeavor, it is important for missiologists to keep track of how the discipline changes *worldwide* in order to remain relevant.

Finally, as we keep track of specific contributions within our discipline—those that have staying power and others that become out of date—we can be apprised of what areas we’re neglecting as missions scholars. We can also use scientometrics to make sure we’re not just running with the herd but are doing truly original research. While the drastic increase in research on missions may be overwhelming, it is immensely encouraging that we are learning more and more every year about how to fulfill the Great Commission, Christ’s last command to his disciples.

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## Notes

1. Arbesman uses the positivist language of “facts” with a bit of irony. If “facts” go out of date, they cannot actually be facts. I employ the same tongue-in-cheek usage of “facts” and “knowledge” here.
2. I’ve limited my search to academic journals that have survived over the decades, and which accept unsolicited manuscripts from missiologists. It is unfortunate that I must limit the query like this, since some issues which have recently risen in prominence in the American social conscience (such as human trafficking) are only recently being addressed in missiological literature, and this research appears much more promptly online.

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