

Evidence-based advertising

An application to persuasion

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Complex phenomena such as advertising are difficult to understand. As a result, extensive and repeated testing of diverse alternative reasonable hypotheses is necessary in order to increase knowledge about advertising. This calls for experimental studies: laboratory, field, and quasi-experimental studies. Fortunately, much useful empirical research of this kind has already been conducted on how to create persuasive advertisements. A literature review, conducted over 16 years, summarised knowledge from 687 sources that drew upon more than 3,000 studies (Armstrong 2010). The review led to the development of 195 principles (condition-action statements) for advertising. We were unable to find any of these principles in a convenience sample of nine advertising textbooks and three practitioner handbooks. The advice in these books ignored conditions for the most part. The books also tended to ignore empirical evidence, which is how we learn about conditions; of the more than 7,200 sources referenced in these books, only 30 overlapped with the 687 used to develop the principles. By using the evidence-based principles, practitioners may be able to increase the persuasiveness of advertisements. Relevant evidence-based papers have been published at the rate of 20 per year from 2000 to 2010. The rate of knowledge development could be increased if journal editors invited papers with evidence-based research findings and if open peer review were provided on a continuing basis.

This paper is concerned with only one aspect of advertising – that being persuasion. I use a broad common-sense definition of persuasive advertising; it is the attempt to use primarily one-way communication to influence attitudes and beliefs. And by influence, I mean to either change or maintain attitudes and behaviour.

Most of the ideas about how to persuade others are due to the efforts of thousands of advertisers and others in the persuasion business who developed and implemented creative approaches. Starting in the early 1900s, advertisers began to conduct experiments to see what worked,

especially on direct mail advertisements. Academic researchers then took up the task of assessing what worked. This experimental research allowed us to determine how advertising is affected by conditions. The advancement of knowledge in advertising depends on this cumulating body of research.

I made a key assumption about evidence-based advertising: advertisers who have access to understandable evidence-based knowledge should be able to produce more persuasive advertising than they would without this knowledge. There are two reasons for this. First, creativity can be greatly enhanced by providing a large variety of persuasive techniques that can be considered in a given situation. And second, the ability of people to evaluate ads can be greatly enhanced if they use a structured approach for evaluating the extent to which ads conform to evidence-based principles for persuasion.

Why evidence-based advertising has been ignored

*If you believe that you can only learn from experience,
how can you learn that you cannot?*

Adapted and revised from Einhorn and Hogarth (1978)

There are a number of explanations why the scientific evidence on persuasive advertising has been ignored. One is that practitioners do not like rules. In-depth interviews with 28 account managers, account planners, and creative people in advertising agencies showed much agreement in the old saying ‘The only rule: there are no rules’ (Nyilasy & Reid 2009).

The Nyilasy and Reid interviews also showed that many advertisers have no interest in scientific findings because they believe that their experience is sufficient. Such feelings are not unique to advertising. They apply to all complex areas that involve uncertainty, especially when feedback is poor. This issue has been widely studied since the 1930s (Armstrong 1980). Research since then has added support. Of particular importance, Tetlock (2005) conducted a 20-year experiment that examined the ability of 284 economics and political experts to predict the outcomes of various events in their area of expertise. The experts did no better than people with little expertise – or than simple rules. Of course, everyone believes

that this finding does not apply to them. Thus, I named it the *Seer-sucker theory* – ‘No matter how much evidence exists that seers do not exist, suckers will pay for the existence of seers.’

Other reasons to ignore experimental evidence are the (1) difficulty of finding useful papers in advertising (my own estimate is that fewer than 5% of papers published in leading academic journals are useful), (2) being able to understand the obtuse writing found in most papers, and (3) the lack of replications for many studies. As a result, it would not be sensible for practitioners to study the academic literature. It is not surprising then that Helgesen (1994), in his survey of 40 respondents from the ten largest advertising agencies in Norway, found that they were largely ignorant of the research literature on advertising. Similar results were found in the US surveys of 40 advertising practitioners by Nyilasy and Reid (2009).

Principles as a way to summarise evidence-based knowledge

In order for findings to be useful, they must be presented as specific operational condition/action steps. These are referred to here as principles.

Books by the great advertisers played an important role in describing the action steps for persuasion. The most important of these was Ogilvy. Here is one of his recommended action steps: ‘Do not put a period at the end of a headline’ (Ogilvy 1985, p. 96).

Action steps are not sufficient. It is necessary to identify the conditions under which they work. For example, Hopkins (1923, p. 233) concluded that long copy is effective: ‘the more you tell, the more you sell.’ This works well in most situations – but not all. In another example, it has been suggested that sellers should not offer a large number of choices; but research has found that this generalisation is not helpful to advertisers (Scheibehenne *et al.* 2010).

Because of the need to consider conditions and because conditions vary widely, there are many principles – 195 so far. If this seems perplexing, consider an analogy to medicine: what if doctors were to diagnose all patients by using only ten principles?

Types of evidence used

What leads to progress? Chamberlin (1890) raised this question, having noticed that some scientific fields made rapid advances, while others did not. The key to progress, he concluded, lay in the testing of alternative reasonable hypotheses. For fields that study complex phenomena about which there is much uncertainty, experimentation is needed.

For example, agriculture progressed slowly for centuries. Then, in the UK in the early 1700s, wealthy farmers created a revolution by experimenting with alternative ways of growing crops (Kealey 1996, pp. 47–59).

Another example is seen in the Industrial Revolution, which began in the late 1700s by individuals who tested alternative ways to solve problems for customers. Much of this work came from a relatively small number of researchers from Scotland. Adam Smith asked why academics in Scotland were so important to the Industrial Revolution, while England's large number of academicians produced little. His conclusion was that the academics in England were well supported by the state, so they had little need to conduct useful research (Kealey 1996, pp. 60–89).

Medicine offers yet another example. Diseases are so complex that doctors were unable to learn from experience about which treatments would be best for a patient. Advances developed slowly for centuries. However, after 1940, experimentation became common in medicine and doctors began to apply findings reported in scientific journals (Gratzer 2006). Today, evidence-based findings in medicine are easily available on the Internet (e.g. Cochrane.org).

The testing of multiple reasonable hypotheses is not popular in the management sciences. Instead, advocacy dominates whereby researchers posit their favoured approaches and ignore or even try to suppress evidence that favours alternative approaches. A publication audit of over 1,700 empirical papers in six leading marketing journals during 1984–1999, found that 74% used the advocacy approach and 13% the exploratory approach, while only 13% tested alternative hypotheses. Of those studies testing alternative hypotheses, only 14% also examined the effects of conditions (Armstrong *et al.* 2001). Thus, only about 2% of the studies in marketing were well designed to advance knowledge in marketing. As noted above, experimentation is the primary approach

to knowledge development in fields when there is complexity and uncertainty.

Analyses of non-experimental data are useful for simple problems, especially if you have much reliable data. For example, substantial amounts of data are available on professional sports. These have been used successfully in recent years by baseball, hockey, football and basketball teams.

When problems are complex, the analysis of non-experimental data breaks down, even if there are enormous sample sizes. Such non-experimental analyses are commonly reported in the press with respect to health and economics. They lead to speculation, re-analyses, and challenges – and they are often misleading. For example, people who are concerned about their health seek out the latest treatments. As a result, non-experimental data show that those using the latest treatments are healthier than those who are not, even when the treatment has no proven benefits or may even be potentially harmful, as has been alleged in the case of female hormone therapy (Avorn 2004, pp. 23–38).

Despite the development of sophisticated methods of statistical analysis and the development of large data banks with advertisements, non-experimental studies have encountered difficulties in assessing the effects of conditions. This was shown by some excellent large-scale studies (e.g. Stewart & Furse 1986).

There are three types of experimentation: laboratory, field, and quasi-experimental. They each offer advantages and disadvantages. Laboratory experiments allow for the greatest control of the conditions, but also raise the issue of the extent to which the findings are realistic. Field experiments add realism, but also the danger that there may have been unobserved changes in the application of the treatments or in the conditions.

Quasi-experimental studies involve the testing of alternative treatments in situations where many but not all key conditions have been controlled. These experiments can be natural or planned. For example, governments sometimes introduce policy changes in some areas while other areas remain unaffected (e.g. laws related to gun control). This allows for comparisons among the different areas. For a general discussion of quasi-experimental research and a review of prior literature, see Woodside *et al.* (1997).

The validity of field and laboratory experiments was tested by Locke (1986). He asked leading researchers in 11 areas of human and organisational behaviour to compare the findings from field experiments with

those from laboratory experiments. The findings showed close correspondence across the methods. An analysis of 40 studies on sources of communication found similar findings from field and laboratory studies (Wilson & Sherrell 1993).

Meta-analyses involve the systematic and objective search for all relevant prior research, followed by use of pre-specified rules for selecting and quantifying the findings. It may also be sensible to include analyses of non-experimental data, especially if the data sets are subject to different biases. Meta-analyses provide the gold standard for knowledge creation when they focus primarily on experimental evidence.

Knowledge base for advertising

From 1994 up to 2010, I searched for evidence on persuasive advertising. This involved computer searches, contacting key researchers, posting requests on email lists, and tracking down papers from references in key papers.

The search was difficult because the relevant papers are spread over such areas as law, marketing, mass communications, psychology, and medicine – and each field uses different terms. Quite often the titles gave no clues that the papers related to persuasive advertising. Moreover, computer searches typically yield only a small portion of the studies relevant to a particular topic. For example, in research on forecasting, the computer searches I used led to only about 1/6 of the relevant papers that were eventually found (Armstrong & Pagell 2003). Most of the relevant studies were obtained from citations in other papers, and many were suggested by key researchers.

In all, I read about 2,400 papers and books that looked promising in order to find the 687 sources that were used. Many of these were meta-analyses and reviews that relied on earlier empirical research. By counting the number of studies in the meta-analyses and by estimating the number of sources used for traditional reviews, I concluded that the relevant knowledge base drew upon more than 3,000 studies (Armstrong 2010, p. 3).

This knowledge was derived primarily from academic research although Ipsos-ASI, an advertising research company, provided unpublished studies that they had conducted. As a rough count, 81% of the references in

Persuasive Advertising (Armstrong 2010, hereafter *PA*) were from academic journals or conferences, 17% from books, and 2% from mass media, practitioner-oriented publications, and the Internet. If the analysis is restricted to papers with experimental evidence, nearly all came from academic sources. These research papers were scattered across 159 journals.

There was a lack of evidence for many of the principles. To deal with this, we analysed quasi-experimental data on the print advertisements from *Which Ad Pulled Best* (hereafter *WAPB*) editions five through nine (Burton & Purvis, 1987–2002). Each edition contains 50 pairs of ads (except for the ninth edition, which has 40 pairs). These advertisements, prepared by leading US advertisers, were tested by Gallup & Robinson. The pairs were similar with respect to product, target market, and media. Of the 240 pairs of advertisements, 123 were paired against an ad for the same brand. The ad pairs differed with respect to illustrations, headlines, colours, and text. In addition, the time periods for the showing of the alternative ads differed somewhat.

'*WAPB* analyses' were used for 56 principles. Table 1 presents the ten most important principles from these analyses (assuming sample sizes of at least 20 pairs of ads). They are listed by the gain in day-after recall for ads that followed the given principle. Table 1 shows the average ratio of recall for ads that properly applied the principle divided by the average recall for matched ads that did not. (Note that the short summary of the

Table 1: Most important principles from the analysis of print ads (from *WAPB*)

Principle	Recall gain (pairs)
Communicate a Unique Selling Proposition (not claimed by other brands)	2.04 (45)
Make the first paragraph relevant	1.74 (46)
Include brand and company names (double-branding)	1.71 (21)
Provide news, but only if it is real	1.64 (20)
Use positive arguments	1.60 (24)
Illustrations should support the basic message	1.54 (43)
Use descriptive headlines for high-involvement products	1.52 (24)
Balance the layout	1.50 (36)
Include the brand name in the headline	1.49 (24)
For high-involvement products, the reasons should be strong	1.48 (25)

principles does not typically include the conditions. The full descriptions are provided in *PA*.)

To assess the validity of quasi-experimental data, the findings with respect to direction of effects were compared with findings of other types of experimental evidence. The primary concerns were 1) the *WAPB* data used day-after-recall, whereas the other approaches used many different criteria of effectiveness, and 2) the *WAPB* samples were small (an average of 31 pairs with a range from 6 to 118). Despite the problems, the findings from the quasi-experimental analyses were in agreement with respect to the direction of effects of all seven principles for which there were meta-analyses, all 26 principles for which there were lab experiments, and all seven principles for which there were field experiments. In contrast, non-experimental analyses disagreed on direction of effects with the quasi-experimental findings for eight of the 24 principles that allowed for comparisons (Armstrong & Patnaik 2009), thus emphasising the need for caution when using findings from non-experimental data.

Meta-analyses proved to be extremely important for the development of the persuasion principles. Daniel O'Keefe authored 11 of the 33 meta-analyses.

To help ensure the summaries were accurate, I read all of the sources that were cited.¹ In addition, I asked the experts who were cited to check whether the summaries of their findings were correct. The vast majority of those who could be located replied, often with important corrections. For many of the principles, there were a number of researchers who commented. Reviewers helped to make the principles accurate and editors helped to make the explanations easy to understand.

The intent was to summarise all evidence relevant to persuasion in advertising. *Persuasive Advertising* provides advice on what types of evidence are most important. The various types of experimental evidence were always in agreement with one another with respect to the directional effects of principles. This is no accident. My intent was to include only principles for which the experimental evidence was, for the most part, consistent. I omitted many potential principles due to a lack of consist-

¹ It is common for scientists to cite studies that they have not read and to cite them incorrectly. See Wright and Armstrong (2008).

ency. For example, prospect theory was dropped in view of large-scale meta-analyses with conflicting results.

Application of evidence-based principles

There are two ways in which the persuasion principles can be used. One is to stimulate creativity and the other is to evaluate and improve ads.

Stimulating creativity

The principles offer a structured checklist for advertisers to use as they create ads. This would increase the amount of time spent on creativity, but in most practical situations, this would represent only a small fraction of the advertising costs.

The checklist should be able to enhance the creativity of any user. It is expected that practice should improve one's ability to use the principles. In addition, creativity can be enhanced by obtaining recommendations from a number of individuals who independently apply the checklist. Contrary to common opinions, such structured techniques have been shown to be vastly superior to unstructured techniques, such as group meetings, when it comes to creativity.

Given that the principles have not previously been available, their use should produce advertising that differs substantially from what is currently being done.

Evaluation and improvement of advertisements

The principles are also useful for evaluating and improving advertisements. Evaluators need to understand the principles and evaluate the extent to which an advertisement adheres to the principles.

The AdPrin Audit software, (available on AdPrin.com), is essentially a principles-orientated checklist to guide the evaluation process. Checklists have been found to yield enormous improvements in decision-making. In life-threatening situations, such as flying an airplane, a pilot who did not use a checklist would be thought to be foolish. An experimental study of eight hospitals in eight cities around the world found that the use of

a 19-item checklist reduced deaths in the month after an operation from 1.5% to 0.8% (Haynes *et al.* 2009).

The evaluation phase calls for people who are good at logical reasoning. Training and practice are expected to lead to gains in the ability to judge whether an ad properly applies the principles. In research that we are currently conducting, we find that people can use a two-hour self-training module, and then rate how well ads conform to the principles. For example, they average about half an hour to rate a print ad. Their ratings lead to substantial improvements in assessing the effectiveness of ads, in comparison with their unaided judgments.

Examples of evidence-based principles

Here are three examples of principles that followed from the above-mentioned procedures. The major conditions are often stated in the principles, but in general, the conditions are mentioned in the text. These are abridged versions from the *PA* book. The numbers in the parentheses correspond to those in the book.

Do not mix rational and emotional appeals (3.1.1)

While many advertising experts have suggested that an emotional component would strengthen almost any ad, the evidence suggests the opposite. Rational and emotional appeals are likely to interfere with each other.

Evidence on the effects of mixing rational and emotional appeals

In an experiment involving donations to Save the Children, a narrative description of a victim's plight led to higher donations than when the description also included statistics about how the donations would help. Apparently, the latter information inhibited the emotional effect and led people to think about how their efforts would help; it also led them to determine that their contributions would be negligible (Small *et al.* 2006).

We analysed 50 pairs of *WAPB* print ads in which one ad had either a rational or emotional appeal while the other ad used both rational and emotional appeals. Recall for ads that did not mix the appeals was 1.24 times better than the ads that mixed them.

An analysis of 80 automobile ads found that recall of those using *either* a rational or emotional appeal yielded better recall than those using both types of appeals (Mehta & Purvis 2006).

Eye-tracking studies of 190 subjects as they watched Dutch TV commercials found that people were overwhelmed when both emotion and information were present, and thus they were more likely to fast-forward through such ads (Elpers *et al.* 2003).

TV commercials containing ‘a balance of rational and emotional appeals’ were lower on comprehension and much below average with respect to persuasion in comparison with commercials that did not contain such a balance (Stewart & Furse 1986, p. 154, item 139).

If resistance is expected, use indirect conclusions when the arguments are strong and obvious (5.9.2)

The direct approach may cause people to feel a loss of freedom when they are not already favourable to the product, especially for high-involvement products.

There are a variety of indirect approaches. One is simply to present the arguments and then let the customer decide what to do. For example, an advertisement by Saab presented performance attributes for a Saab and a BMW. It then invited customers to ‘compare the value you will get’, followed by ‘and then you make the decision’.

Another indirect approach is to allow the reader or viewer to observe others arguing each side of an issue. This should reduce reader or viewer’s predilection to counter-arguing, because someone else is doing the counter-arguing. This can be done in advertising by showing someone who is being persuaded on-screen by another person.

The indirect approach is advisable when the source is regarded as biased and when the message is directed at an intelligent audience.

Evidence on effects of indirect conclusions when resistance is expected

A review of research, including over 40 studies, found that attempts to restrict people’s freedom by providing direct conclusions often led them to reassert their beliefs (Clee & Wicklund 1980).

Other research reviews suggest that indirect conclusions are most persuasive when the communicator is perceived as biased, presumably

because customers would otherwise be more likely to counter-argue. Indirect conclusions are also more appropriate when the members of the target market are intelligent because they would be more likely to understand the conclusions on their own, and self-persuasion is convincing (Chebat *et al.* 2001). Finally, there is little need for direct conclusions when exposure to the campaign will be frequent.

In a lab experiment, booklets were shown to 211 subjects. They contained ads with either an open-ended conclusion (e.g. 'Now that you know the difference, decide for yourself which disposable razor you should buy') or a closed-ended conclusion ('Now that you know the difference, shave with Edge, the disposable razor that is best for you'). Purchase intentions were higher for the open-ended ads. Similar results were obtained with an ad for compact disk players (Ahearne *et al.* 2000).

In a small-scale lab experiment, 24 Japanese subjects saw online ads for 15 products (e.g. movies). Near the end of each ad, the subjects saw one of two scenes: a life-like agent talking to and looking at the viewer or two life-like agents looking at each other and conversing. In each case, the persuader agent used the same words, e.g. 'You have to watch this movie; it's very interesting.' Purchase intentions for the indirect approach – the overheard conversation – were 31% higher (Suzuki & Yamada 2004).

In another lab experiment, in which 261 students viewed cellular phone ads, indirect conclusions were relatively more effective than direct conclusions when there were strong arguments for the brand than when the arguments were weak (Martin *et al.* 2003/4).

Print ads for CD players were shown to 192 subjects. The ads contained either explicit or implicit conclusions. Highly involved subjects were more likely to infer omitted conclusions, and when they did, they reported more favourable brand attitudes (Kardes 1988).

Do not invite customers to evaluate their satisfaction while using a product. (5.11.3)

A British Airways advertising campaign invited people to try its business class. Consumers who were not satisfied would receive free coach tickets for another trip. Was that a good idea?

When consumers expect to report about their level of satisfaction with a product or service, they adopt a critical attitude and search for

things that are wrong. This leads them to have a less enjoyable experience. Their complaints may also reduce satisfaction for those providing the services.

This principle is widely violated by hotels, automobile dealerships, telephone companies, stock brokers, and other firms that routinely use preannounced satisfaction surveys. Universities have long used them in an attempt to assess student satisfaction; unfortunately, they reduce student and teacher satisfaction, harm learning, and increase administrative costs (Armstrong 2004).

Evidence on the effects of preannounced satisfaction surveys

Experiments were conducted with a computer company, electric utility, supermarket, drug store, magazine, and electronic equipment company. Some customers, randomly assigned, were told that they would be asked later about their satisfaction with the service, while others were not informed about the satisfaction survey. In the long-term follow-up satisfaction survey, those in the pre-announced-survey group were much less satisfied than those who had not expected to receive a satisfaction survey. People in the pre-announced group were looking for reasons to be dissatisfied – and they found them (Ofir & Simonson 2001).

A role-playing experiment of a banking service was used to evaluate responses to a negative situation (rude behaviour by a bank teller). The subjects in a preannounced survey group gave a substantially poorer rating of service quality than did those who were not told there would be a satisfaction survey. They also reported themselves as being more likely to switch banks. In addition, they were less likely to provide details about their complaint because they had already rated their dissatisfaction on the survey – thus, the bank would not have learned *why* they were dissatisfied (Lane & Keaveney 2005).

Usefulness of evidence-based principles

The value of evidence-based principles would depend not only on their validity, but also on the extent to which they lead to advertising procedures that differ from common sense and from current practice.

Consider the results from a convenience sample of people who took the ‘Test your advertising IQ’ on AdPrin.com. Guessing would lead to a

score of about 8 out of 20. The median score for the 110 people who took this test online in late October and early November 2010 was 8. Thus, the principles are not based on common sense.

To test whether the principles are being learned in other courses or reading, a 67-item true-false test was administered to 18 Wharton undergraduates on their first session in an upper-level undergraduate advertising class at the Wharton School in January 2011. This was an elective course, so the students had an interest in advertising. As this was a higher-level course, most had taken relevant courses such as consumer behaviour or communications. In addition some had read relevant pop-management books, and a few had relevant work experience. The test was one that had been prepared for the final exam in this course, so the goal was to include as many of the principles as possible via true-false questions. The students were correct on only 53.6% of the items. The scores for those with a more extensive background – based on prior courses, experience, and reading – were marginally lower than those with less relevant backgrounds.

Diffusion of knowledge about evidence-based principles

In some fields such as in engineering and the natural sciences, the basic principles are accessible in textbooks. To see whether some principles have been passed along by advertising textbooks, I, along with two research assistants, examined a convenience sample of nine advertising texts. The number of references was counted, and then we coded which of these were research papers (primarily those published in academic journals). In addition, we examined the overlap between the sources cited in the textbooks and the 687 sources in *PA*. The findings are provided in Table 2.

As noted in the last column, the books drew upon different sources than does *PA*. Few of the 687 sources cited in *PA* were cited, most of these being in the books by Rossiter. Including Rossiter's books, only 30 (0.4%) of the 7,236 references matched those from *PA*. Excluding Rossiter, there were only nine citations to the evidence in *PA*.

We also went through each textbook and handbook page by page to count the number of persuasion principles that were presented. We found

Table 2: References to evidence-based persuasion in leading advertising textbooks

	Total	% research	# in <i>Persuasive Advertising</i>
Textbooks			
Rossiter & Bellman (2005)	658	62	13
Shimp (2000; 5th edn.)	1,133	20	0
Belch & Belch (2009; 8th edn.)	1,271	19	0
Clow & Baack (2010; 4th edn.)	473	15	3
Rossiter & Percy (1997; 2nd edn.)	789	16	8
O'Guinn et al. (2003; 3rd edn.)	698	6	0
Duncan (2005; 2nd edn.)	516	6	0
Wells et al. (2006; 7th edn.)	345	4	0
Lane et al. (2011; 18th edn.)	681	0.3	0
Totals	6,564		24
Handbooks			
Brierley (2002; 2nd edn.)	155	8	0
Dupont (1990)	517	18	6
Lewis & Nelson (1999)	0	0	0
Totals	672		6

no evidence-based principles in these books.² One key issue was that the authors typically ignored conditions when they provided advice. This is not to say that there were no evidence-based principles in these advertising books, only that we were unable to find any. We also contacted the authors of these books to see if they could provide any examples from their books that we might have overlooked. No such principles were reported to us.

Note that Rossiter and Bellman (2005) differs substantially from other textbooks in its number of references to research sources. There were 13 sources that overlapped with *PA*. However, these 13 references were not used to present principles. For example, one reference was summarised as 'glasses added to the impressions of intelligence, industriousness and honesty' (p. 412) without any condition/action statement.

The above analyses of textbooks were limited to persuasion. To be sure, there are other areas of advertising, such as media expenditures. However, the general lack of use of academic research in textbooks and handbooks poses a problem. Is it helpful to simply provide opinions?

² In a related study, based on a sample of leading texts on marketing principles, Armstrong and Schultz (1993) could find no evidence-based principles for marketing.

My original training was in engineering, and I recall no textbooks that provided opinions about such things as how to build safe bridges and highways.

An earlier study on evidence-based findings in communication textbooks provided similar results (Allen & Preiss 1998). That study coded 21 textbooks; two of these were by well-known experts on meta-analysis, so they were excluded from the following analysis. The objective was to assess whether the findings in the books were consistent with the evidence, as determined from earlier meta-analyses. Eleven widely studied areas were included (e.g. fear appeals, distraction). None of the textbooks disagreed with the notion that evidence is persuasive. However, for the remaining ten areas there were 13 cases where the textbooks agreed with the evidence, 15 where they contradicted the evidence, and 13 where their position was not clear. (They also ignored many of the topics.) In short, the textbook writers paid little attention to the prior experimental evidence in presenting generalisations. There was no use of principles.

Overcoming barriers to evidence-based advertising

To encourage the use of evidence-based principles, it is important to make them *easily available* to advertisers and advertising agencies, when they need them. In medicine for example, sites such as Cochrane.org allow patients as well as doctors – and researchers – to access the latest knowledge on the best ways to treat diseases. In addition, the principles should be *understandable*. Finally, they should be *actionable*. These criteria were used for the design of AdPrin.com. Apparently, AdPrin.com is meeting a need for advertisers, agencies, researchers, and students. By mid-2011, visits were running at the rate of 40,000 per month.

Researchers can publish evidence-based findings on AdPrin.com so that others can use them – or test them – immediately. This would also allow researchers to stake a claim for their discovery prior to journal publication, and to obtain feedback from others. To aid in this, a section called ‘Commentaries on evidence-based advertising’ has been established on the site.

Some agencies will try the principles in the hope of gaining a competitive advantage. Others might contribute to the development of principles as a way of advancing the field, even if they share only a portion of the gains. Furthermore, advertisers might ask their agencies to implement these principles or to explain why they did not do so. The AdPrin Audit software will, after some practice, enable them to rate the effectiveness of an advertisement in about an hour per coder – and, most important, to suggest how to improve the ad.

Suggestions for further research

I examined the rate of progress in developing useful evidence-based findings on persuasive advertising. This was assessed by examining the number of papers that contributed to the development of principles over the past decade. Of the sources in *PA* that were published between 2000 and 2010, I identified those that contained evidence related to the principles. This yielded 193 references, or about 19 per year. Given that there are thousands of academicians who are publishing in fields related to persuasion, this productivity seems low.

To examine whether researchers value evidence-based advertising, I examined the 75 ‘most-cited advertising works’ from 1982 through 1995 from Pasadeos *et al.* (1998). Only 15% of these papers were used in formulating the 195 advertising principles.

I looked at the authors (or teams) who were most cited for support on the principles (defined as those cited in the development of the principles on pages 26 through 277 of *PA*) to see whether their papers on principles were on that top papers’ list. Table 3 lists those who contributed to at least six principles. Of these, only Stewart *et al.* (1986) were listed among the authors of the 75 most-cited advertising papers.

Table 3: List of leading researchers who contributed to the development of principles

Authors	Number of principles
Stewart, D.W., Furse, D.H. & Koslow, S.	28
Walker, D.	22
O’Keefe, D.	11
Stanton, J.L. & Burke, J.	10
Cialdini, R.	9
Pieters, R. & Wedel, M.	8
Jacoby, J. & Hoyer, W.	7
Woodside, A.	6

Overcoming barriers to publication of evidence-based papers in advertising

One barrier to journal publication of evidence-based advertising is that the findings often conflict with commonly held views. Journals typically reject such papers. This occurs because the current peer review system allows reviewers to block, or at least delay, papers containing findings with which they disagree. For example, in Mahoney's (1977) experiment, 75 psychologists thought that they were providing reviews of an actual submission; half of the reviewers received a version of the paper that supported existing beliefs, while the other half received one that refuted these beliefs. The reviewers who received the disconfirming version were much more likely to reject the paper, explaining that the methodology was flawed. As it happened, the methodology was the same for both versions of this fictitious submission. For further evidence, see Armstrong (1996 and 1997) and Benda and Engels (2011).

Another explanation is that the use of statistical significance has led researchers to ignore practical significance. Papers with 'null results' are rejected, even if important, such as when a well-regarded treatment is shown to be useless (Hubbard & Armstrong 1992), and those with statistical significance (almost any finding with large sample sizes) are favoured even if they lack practical significance.

Directed research

Invited papers provide the easiest and most common way for journal editors to 'direct' research on advertising principles. For example, the *Journal of Economic Perspectives* invites researchers to publish papers on specified topics, and these authors seek their own peer review. Papers could be invited for important principles that lack strong evidence. Papers could also be invited for replications of important evidence-based papers. Researchers could then focus on the topic without fear of being rejected should their findings challenge existing beliefs. Reviewers would be asked how to improve each paper.

The cost of invited papers is low because all invited papers are accepted, whereas under the traditional approach, about seven papers are reviewed for every one accepted. In addition, invited papers are

expected to have higher impact. In a study involving research on forecasting, papers receiving special treatment (primarily invited) were judged as 20 times more impactful. Impact was based on two factors: the citation rate and whether findings were useful in the development of forecasting principles.

Advertisers could help to direct research by doing research on principles and sharing the findings, providing funding for research on principles, or providing data for testing principles.

One idea is to direct researchers to areas that currently lack experimental evidence. Many of the persuasion principles require more evidence. Of the 195 persuasion principles, three rested on common sense and thus required no testing. Based on my codings for each principle, ample experimental evidence was available for only 22% of the principles that required testing. A summary of the amount of evidence for the principles is provided in Table 4. (My codings for the principles are provided on AdPrin.com.)

Table 4: Strength of evidence for the principles

Number	%	Evidence (listed by strength of evidence)
42	22	Much experimental evidence
33	17	Some experimental evidence plus non-experimental evidence
59	31	Some experimental evidence
18	9.5	One experiment plus non-experimental evidence
22	11.5	One experiment
8	4	Non-experimental evidence
6	3	Received wisdom
4	2	Speculative (no evidence)
192	100	

To determine which principles are in need of research, I focused on the 58 principles that were based on, at most, a single experiment; of these, I looked for those that seemed to be violated often. (A listing of these areas is provided on the Research repository on AdPrin.com.) Some of the more important principles in need of study are listed in Table 5 (again using the short-form of the principles with conditions omitted).

Table 5: Ten principles in need of experimental research (principle # in *Persuasive Advertising*)

Principle	# in <i>PA</i>
Provoke customers only when it attracts attention to a selling point	(3.6.1)
Focus on benefits or features rather than choices	(5.2.2)
When the target market has an opposing viewpoint, consider using a story	(5.3.1)
Include brand and company names (double-branding)	(5.5.2)
Alert the target market early and prominently	(8.1.1)
Keep the headline short for low-involvement goods only	(9.1.4)
Use clear and readable captions for pictures	(9.2.3)
Repeat the main message at the end of the ad	(9.3.3)
Squeeze inter-letter spacing gently	(9.4.6)
Avoid large pictures in informative ads	(9.6.2)

Alternatives to journal publication

Books can serve a useful function by reporting new findings. However, there are long time lags associated with publishing in books.

The Internet offers a faster alternative. This should be especially appealing to researchers who have important findings and who prefer to seek their own peer review. Those with new discoveries on advertising principles can stake their claim by publishing on the Internet. AdPrin.com welcomes such papers.

Overcoming barriers to practice

The evidence-based principles differ markedly from practitioners' current beliefs and practices. As a result, the use of these evidence-based principles should lead to more effective advertising. But how could this occur given a presumption that 'the best rules are no rules'?

In my review of the evidence, I found *rules* that were not useful. All actions were dependent upon the conditions. So I am proposing a third way, the use of principles. Given that there are many agencies and advertisers, I expect that some of them will use the principles. Why, for example, would one insist on putting a period at the end of a headline for a high-involvement product with good arguments?

Another force for the use of evidence-based principles is that clients can question why certain seemingly relevant principles have been violated in ads proposed by their agency. They will have the same power that we now have as medical patients. For example, by reviewing the evidence, I have declined the advice of my doctor on many of his recommendations (such as his suggestion on Lipitor). I am better qualified to draw conclusions from experimental evidence than most doctors. Similarly, all large organisations will have people who are capable of understanding and using experimental evidence on advertising principles.

Continuing with the example of medicine, the adoption of the principles has been aided there by the fact that doctors who fail to use evidence-based treatments face possible lawsuits when patients suffer undesirable outcomes.

The transition to evidence-based advertising will be slow. However, it will occur because there is money to be made by improving the effectiveness of advertising. I suspect that implementation will be driven by clients who are concerned whether their advertising investments are profitable, and who will ask advertising agencies why seemingly relevant principles are being violated or ignored. I expect that these client needs will eventually be met by new advertising research firms.

Conclusions

Over the past century, experts and researchers have produced a valuable and remarkable storehouse of knowledge on how to persuade via advertising. Given the complexity of advertising, experimentation provided the key to the formulation of the principles; one could not learn about the effects of conditions from their experience. This knowledge has now been converted to operational principles that are, in effect, new to the field. They conflict with common practice. The principles are freely available. This should lead to substantial gains in the effectiveness of advertising.

Evidence-based advertising is in its infancy. I expect that there will continue to be improvements in the current principles and that new principles will be added. Directed research, spurred on by invited papers and by Internet publication, would speed advances. The Internet will lead to faster dissemination of new findings. Open peer review on the Internet will help to ensure that the findings are useful.

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