

TITLE CONFUSION AND PHYSICAL PROXIMITY IN A SELF ADMINISTERED QUESTIONNAIRE

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Synopsis:

Using an on-line self-administered questionnaire, the study found that contrary to theory and other research, when likely-to-be confused titles were grouped together, larger audiences tended to result than when the titles were presented to the respondent in random order. The study also found that when small numbers of titles were questioned about separately, larger audiences tended to result than when the titles were asked about as part of a much longer list. When questioned about separately, larger audience levels tended to result when these titles were questioned about first rather than last.

Background and Objectives

For some time The Wall Street Journal has been trying to convince the print research community that when surveys are done for the purpose of comparing newspaper with magazine audiences, both groups of publications should be questioned about using the same questioning procedure.

Mediamark Research Inc. (MRI), the principal readership research company in the U. S., uses two quite different procedures. Magazines are measured using a six month screen, and for those titles screening-in respondents are directly asked whether they had read or looked into any issue in the last publishing interval – last month, last week or whatever as appropriate.

Newspapers, on the other hand are measured quite differently. They are questioned about separately and before the magazines. A seven-day rather than a six month screen is employed. For those titles screening-in, respondents are asked for the last time they read any issue, and those volunteering “yesterday” are classified as readers. This is the standard procedure recommended by the U. S. Advertising Research Foundation (ARF) in their Newspaper Research Guidelines [2].

When The Journal published its 1994 study [3] proving that using a seven-day screen for newspapers produces lower average issue newspaper audience estimates than does a six-month screen, MRI considerably changed its procedure. What happened, as a result, was described by The Journal at the 1997 Vancouver symposium [9]: Both The Journal’s and USA Today’s readers-per-copy more than tripled, and MRI did not to publish them.

Later studies by Simmons and by Audits and Surveys [4] suggested that the MRI increases in audience may have been attributable simply to the fact that The Journal, USA Today and The New York Times were placed in the logo deck along with a much larger number of magazines.

The Journal, in an attempt to better understand these results, conducted the following study to explore the implications of the following three modifications in questionnaire construction.

1. Isolating a specific group of publications and measuring them separately, apart from the main group of publications. In this case, the groups that were separated were six newspapers and six business magazines.
2. Looking further at the positioning of the separated publication groups by measuring them before as well as after the main group of publications, and
3. Grouping the titles according to judged similarity of name or content rather than presenting them in strictly random order.

Procedure

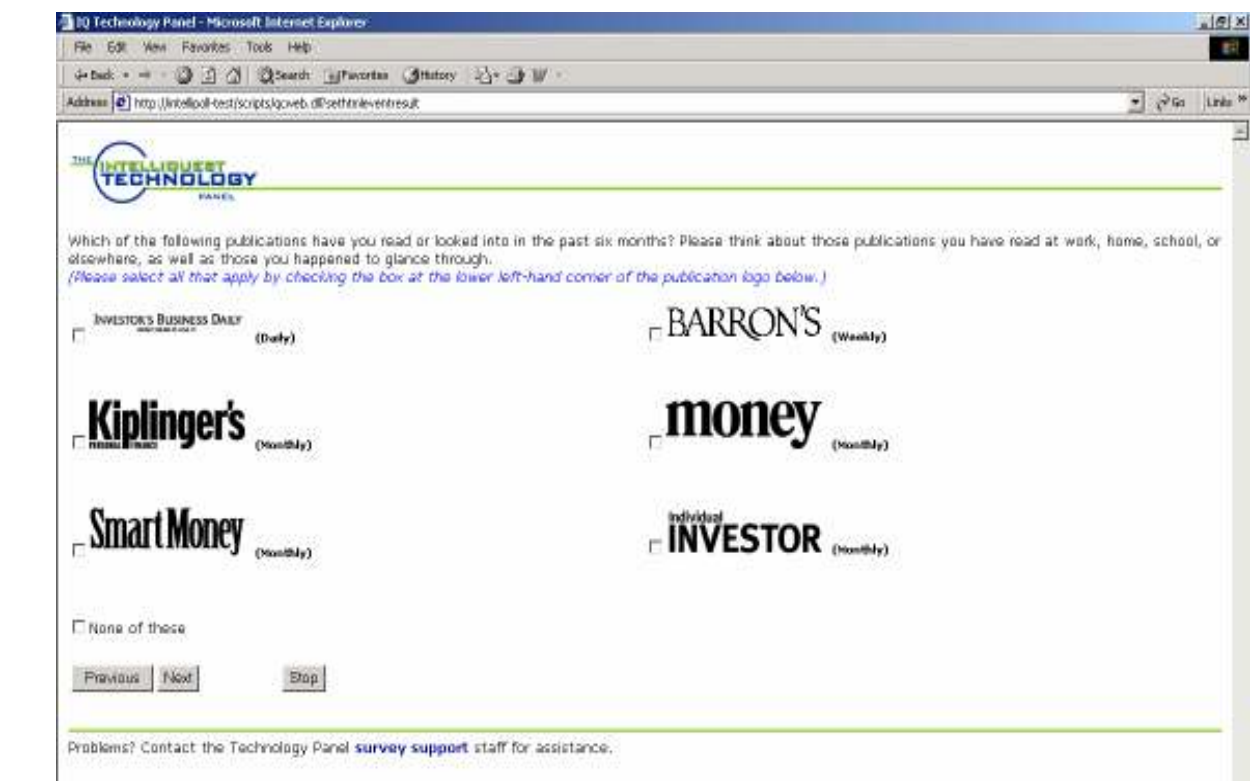
The study was conducted on-line using a sample taken from the IntelliQuest Technology Panel. IntelliQuest is a research company specializing in computer- related surveys. Their Technology Panel consists of computer decision makers who had previously been surveyed and who had agreed to participate in future surveys conducted on-line. The sample drawn from the Panel was limited to those age 25+ and employed. Approximately half of the these prospective respondents had a household income of \$75,000+ and half had a household income below \$75,000.

The study was conducted among 10,000 prospective respondents who were contacted via e-mail, invited to participate in the study and given a pass code directing them to one of nine versions of the questionnaire. Each questionnaire version presented the logos of the same 90 publications. The fieldwork was conducted early in the month of August 2001. This procedure produced an in-tab sample of 4,146.

The survey collected readership data for the 90 titles using a 6-month screening question followed by a frequency of reading question. The 90 titles were questioned about in two parts. One part consisted of six titles and the other one consisted of the 84 others. All titles were presented as black and white logos, six to a display, 15 displays in total. The decision to put six publications on each display was based on the judgement of what would legibly fit. An example of one of the computer displays showing how the screening question looked is shown in Figure 1.

Figure 1

SAMPLE OF SCREEN-IN QUESTION FOR GROUPED FINANCIAL PUBLICATIONS



The sequence in which respondents were shown the two parts is shown in Table 1.

Table 1
PRESENTATION SCHEME
Nine Matched Samples

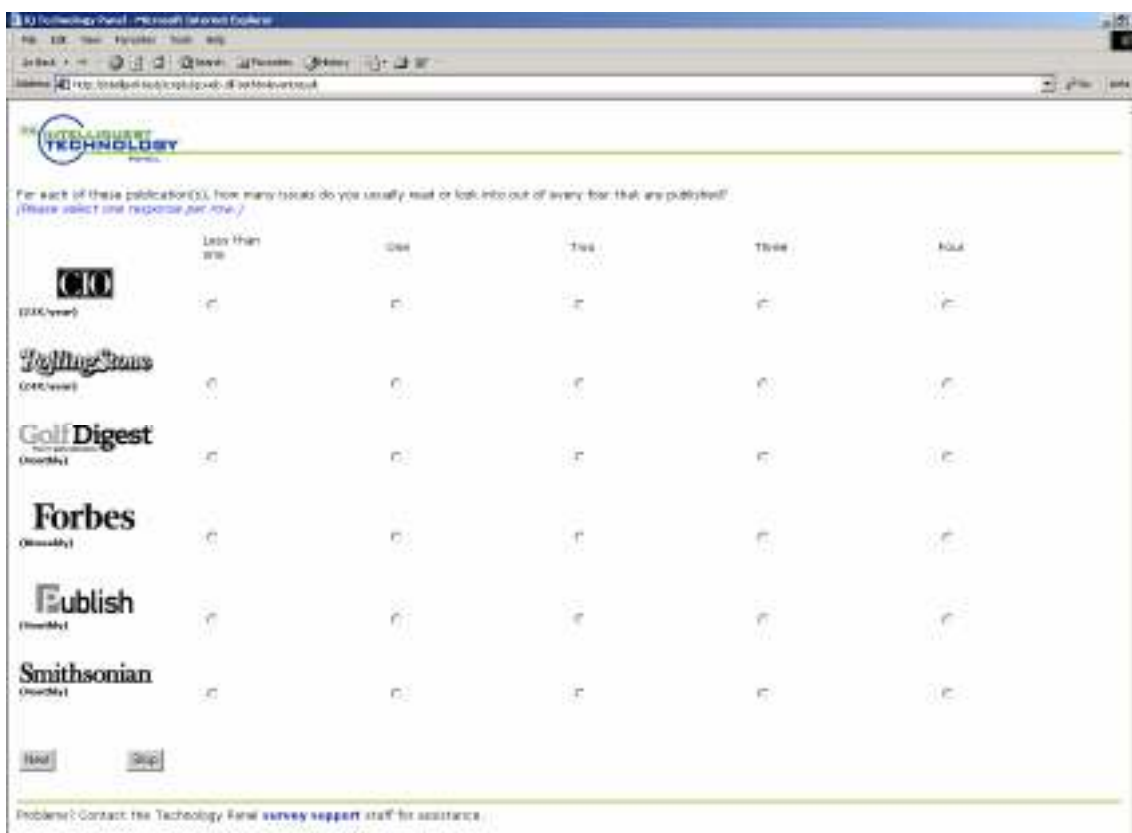
Presentation Order	A (N=450)	B (N=467)	C (N=466)	D (N=455)	E (N=455)	F (N=455)	G (N=451)	H (N=456)	I (N=491)
First	6 News.	6 News.	6 Bus.	6 Bus.	84 R (no News.)	84 G (no News.)	84 R (no Bus.)	84 G (no Bus.)	90 R
Second	84 R (no News.)	84 G (no News.)	84 R (no Bus.)	84 G (no Bus.)	6 News.	6 News.	6 Bus.	6 Bus.	

The caption, 6 News., stands for 6 newspapers and includes: The New York Times, The Wall Street Journal, USA Today, The Financial Times, The Los Angeles Times and The Washington Post. The caption, 6 Bus., stands for the six business magazines and includes: Business Week, Forbes, Fortune, Inc., Entrepreneur and The Economist. The letter R signifies that the titles were screened in strictly random order, six titles per display. The letter G means that the titles were grouped in sets of six according to judged similarity of name or content. The grouping scheme is shown in the Appendix. Each block of six was presented in random order separately for each respondent, as was the order within each block. The choice of an online questionnaire was largely made for its ability to present each publication in truly random order, uniquely so for each respondent. When the study design called for a random presentation of titles, no two questionnaires were exactly alike.

To further clarify, consider Version A of the questionnaire, which appears in the first column of Table 1: In this instance, the logos for the six newspapers were presented first. The frequency of reading question was then asked for those newspaper titles screening-in. The logos for all of the 84 other publications were then presented randomly. Then, after all 84 titles had been screened, the reading frequency questions were asked as appropriate. For all titles the respondent screened in, the computer program asked the frequency of reading question as shown in Figure 2.

The one exception to the scheme shown in Table 1 was the ninth version of the questionnaire in which all 90 titles were shown in strictly random order also six per display – 15 displays in all. Because the ninth version of the questionnaire, where all 90 logos were screened in random order, produced data that were indistinguishable from the version where only the 84 titles were screened in random order, the following findings ignore the ninth version.

Figure 2
THE FREQUENCY OF READING QUESTION



Screen-In Findings

1. Separation

The first thing we examined was the effect of separation for the newspapers and the business magazines. The analysis for the newspapers is shown in Table 2. The relevant data are shown in the middle two columns of the table, labeled “Total Separated” and “Total Non-Separated”, the word “separated” being abbreviated.

Table 2
NEWSPAPER SCREEN-IN PERCENTAGES

	Separated		Not Separated			
	First Block (916)	Last Block (922)	Total Separ. (1,838)	Total Not S. (1,817)	Grouped (907)	Random (910)
<u>Any of these</u>	<u>80.0*</u>	<u>75.3</u>	<u>77.6*</u>	<u>72.8</u>	<u>77.8*</u>	<u>67.8</u>
Wall St. Journal	46.5*	40.0	43.2*	40.6	44.5*	36.6
USA Today	64.3*	59.0	61.6*	58.7	62.8*	54.6
New York Times	27.8	25.3	26.6*	24.0	24.0	24.0
Washington Post	14.1	11.8	13.0	12.7	13.1	12.3
LA Times	8.4	9.4	8.9	8.6	8.7	8.6
Financial Times	5.3	3.6	4.4	3.4	4.3	2.4

*Significantly different (P<.05 two-tailed) from the percentage in the next column to the right.

Note that when the six newspapers were presented separately from the 84 magazines, 77.6% screened in to at least one of the six newspapers compared with 72.8% net screen-ins when they were not separated. This 7% net difference is statistically significant beyond the .05 level as are the differences for The Wall Street Journal, USA Today and The New York Times. A similar pattern is shown in Table 3 for the business magazines.

2. Position

Looking only at the separated portion of the questionnaire (six newspapers or six business magazines up front), we compared the results for those respondents who filled that section out before the 84 other publications and those who filled it out after. The newspaper data are summarized in the two left-most columns labeled First Block and Last Block. Here again we find a statistically significant net difference of 6%, this time in favor of the first block (80.0% vs. 75.3%), as well as significant differences for The Wall Street Journal and USA Today. A similar and more pronounced pattern is observed for the business magazines shown in Table 3.

3. Grouped Vs. Random Presentation

Those completing the non-separated grouped vs. the non-separated random portions of the questionnaire are shown in the two right-most columns. For the newspapers, we find a 15% statistically significant net difference (77.8% vs. 67.8%) in favor of grouping with significant differences for The Wall Street Journal and USA Today. Identification of the 15 magazine groups is shown in the Appendix. Again the business magazine results, shown in Table 3, are essentially similar.

Table 3
BUSINESS MAGAZINE SCREEN-IN PERCENTAGES

	Separated			Not Separated		
	<u>First Block</u> (906) %	<u>Last Block</u> (911) %	<u>Total Separ.</u> (1,817) %	<u>Total Not S.</u> (1,838) %	<u>Grouped</u> (921) %	<u>Random</u> (917) %
(Base)						
<u>Any of these</u>	<u>57.2*</u>	<u>41.8</u>	<u>50.0*</u>	<u>46.1</u>	<u>48.4*</u>	<u>43.8</u>
Business Week	37.5*	20.5	29.0*	24.2	26.4*	22.1
Forbes	23.6*	18.1	20.8	20.6	22.7*	18.6
Fortune	26.5*	15.7	21.1*	17.7	18.1	17.3
Inc.	18.1*	13.2	15.6	13.1	13.7	12.5
Entrepreneur	12.6*	8.9	10.8	9.5	9.4	9.6
The Economist	8.3*	6.1	7.2	7.8	8.3	7.3

*Significantly different ($P < .05$ two-tailed) from the percentage in the next column to the right.

The Other 78 Magazines

For each respondent, we counted the number of non-newspaper, non-business magazine titles screened-in (read or looked into in the past 6 months) and we calculated the mean number of screen-ins.

We did so for the four questionnaire versions in which these 78 titles were presented in random order and for the four versions where they were grouped on the basis of judged likelihood of confusion. We did the same thing for those versions in which these titles were shown first and when they were shown following the six separated titles. These data are shown in Table 4.

There was not a significant difference attributable to whether these titles were shown first or last. However, as was true in the case of the newspapers and business magazines, when the 78 other magazines were shown grouped, higher mean screen-ins resulted than when the titles were presented in random order: 12.6 titles vs. 11.6. This 9% difference is statistically significant with the probability that it is truly zero being only two in 10,000.

Table 4
NUMBER OF SCREEN-INS*

	<u>Random</u>	<u>Grouped</u>	<u>First 14 Blocks</u>	<u>Last 14 Blocks</u>
(Base)	(1,827)	(1,828)	(1,822)	(1,833)
Mean	11.6	12.6	12.4	11.9
Standard Deviation	7.8	8.5	8.3	8.1
t value	3.75		1.73	
P <	.0002		N. S.	

* 78 Non-separated, non-newspaper, non-business magazine titles

Coverage Percentage Findings

For each title, average-issue coverage percentages were calculated as follows: The decimal equivalents of each frequency claim (e.g. ¾ = 0.75) were simply summed and divided by the number of respondents. The resulting coverage percentages are shown in Table 5 for the newspapers. Note the significant differences for The Journal and The New York Times favoring those who saw them separated from the 84 magazines compared with those who did not. None of the other differences shown in the table are statistically significant.

Table 5
NEWSPAPER COVERAGE PERCENTAGES

(Base)	<u>Separated</u>			<u>Not Separated</u>		
	<u>First Block</u> (916) %	<u>Last Block</u> (922) %	<u>Total Separ.</u> (1838) %	<u>Total Not S.</u> (1817) %	<u>Grouped</u> (907) %	<u>Random</u> (910) %
Wall St. Journal	18.2	18.4	18.3*	16.5	17.7	15.3
USA Today	19.7	19.3	19.5	19.0	20.0	18.1
New York Times	10.9	11.4	11.2*	9.6	9.1	10.0
Washington Post	4.8	5.2	5.0	5.4	5.3	5.4
LA Times	3.5	4.2	3.8	3.4	3.2	3.7
Financial Times	1.9	1.1	1.5	1.0	1.2	0.9

*Significantly different (P<.05 two-tailed) from the percentage in the next column to the right

The coverage percentages for the business magazines are shown in Table 6. Business Week had a significantly higher coverage percentage when it was shown separated, Business Week and Fortune were significantly higher when they were shown in the first block of six titles rather than in the last. Forbes was significantly higher when it was shown grouped.

Table 6
BUSINESS MAGAZINE COVERAGE PERCENTAGES

(Base)	<u>Separated</u>			<u>Not Separated</u>		
	<u>First Block</u> (906) %	<u>Last Block</u> (911) %	<u>Total Separ.</u> (1817) %	<u>Total Not S.</u> (1838) %	<u>Grouped</u> (921) %	<u>Random</u> (917) %
Business Week	16.1*	9.7	12.9*	10.0	11.0	9.0
Forbes	9.3	7.9	8.6	8.1	9.1*	7.1
Fortune	9.9*	6.5	8.2	7.0	7.2	6.7
Inc.	7.4	5.7	6.6	5.1	5.6	4.6
Entrepreneur	5.0	3.9	4.4	3.4	3.4	3.3
The Economist	3.1	2.4	2.8	3.2	3.7	2.8

*Significantly different (P<.05 two-tailed) from the percentage in the next column to the right.

Table 7 contains the mean coverage percentages for the 78 other magazines, and like Table 4 it compares the random vs. grouped series of titles and whether the 84 non-separated titles were shown first or last. Just as was true for the screen-in percentages, when the titles were grouped a significantly higher mean coverage percentage was the result than when the titles were presented in random order. Placing the 84 non-separated titles first or last made no difference, however.

Table 7
COVERAGE PERCENTAGES*

	<u>Random</u>	<u>Grouped</u>	<u>First 14 Blocks</u>	<u>Last 14 Blocks</u>
(Base)	(1827)	(1828)	(1822)	(1833)
	%	%	%	%
Mean	7.5	8.1	7.9	7.7
Standard Deviation	6.9	7.4	7.3	7.0
t value	2.72		0.60	
P<	.01		N.S.	

*For each respondent a mean coverage percentage was first calculated by summing the decimal equivalents of each frequency claim and dividing the sum by 78. Then, from these individual respondent data, coverage percentage means and standard deviations were calculated across respondents.

Conclusion

Separating small numbers of titles and questioning about them before questioning about a much larger list of publications, as MRI does, appears to increase audience levels, not reduce them. Such a finding is not difficult to accept.

What is difficult to accept is the finding that, when likely-to-be confused titles are grouped and shown in proximity, larger audience levels tend to result than when the titles are shown in random order also as MRI does.

What perplexes us, is that this finding conflicts not only with theory, but with other research as well. Theoretically, if likely-to-be confused titles are shown in proximity, title confusion should be reduced producing lower, not higher, audience estimates. Witness the 1980 ARF Comparability Study [1], the McGlathery 1992 Lysacker prize-winning paper [8], the British development of their extended media list [5 and 6] and the paper by Healey [6] at the 1997 Vancouver Symposium.

When we first became aware of these perplexing findings, we were tempted to withdraw the paper. However, after double-checking to make sure there were no tabulating errors, we decided not to. After all, failure to replicate the finding of others can sometimes be more important than replicating them.

But why our findings have failed to replicate the work of others is a puzzlement. We're pretty sure it wasn't a statistical fluke. Perhaps it was because it was done on-line and the logos were presented six to a display rather than individually on cards as is the case with MRI, or in a large list as is true in self-administered paper and pencil studies. We're hopeful, given that more and more studies are now being conducted on-line, that the present study will serve as a useful learning device.

References

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Appendix

The Fifteen Publication Groups

The Wall Street Journal
The New York Times
USA Today
Financial Times
Washington Post
Los Angeles Times

Business Week
Forbes
Fortune
Inc.
Entrepreneur
The Economist

National Enquirer
Entertainment Weekly
People
Premiere
Rolling Stone
Vanity Fair

Barrons
Individual Investor
Investor's Business Daily
Kiplinger's Personal Finance
Money
Smart Money

American Way
Attache' (US Airways)
Continental
Hemispheres (United)
Northwest Airlines W.T.
Sky Magazine (Delta)

Discover
National Geographic
Popular Mechanics
Popular Science
Scientific American
Smithsonian

Esquire
GQ
Men's Health
Men's Journal
Golf Digest
Golf Magazine

E-Week
PC Magazine
PC World
Computer World
Family PC
Maximum PC

Smart Computing
Home Office Computing
Small Business Computing
MobileComputing and Comm ...
Federal Computer Week
Government Computer News

Interactive Week
Internet Week
Internet World
Network Computing
Network Magazine
Network World

CIO
Communications News
Dr. Dobb's Journal
Information Week
Info World
Intelligent Enterprise

Windows 2000
Web Techniques
Yahoo! Internet Life
MacWorld
Software Development
Publish

Business 2.0
Fast Company
The Industry Standard
Red Herring
Upside
Wired

Black Enterprise
CFO
Harvard Business Review
Industry Week
Working Woman
Smart Business

Newsweek
Time
U.S. News & World Report
Sports Illustrated
Atlantic Monthly
The New Yorker