



FRONT PAGES OF TAIWAN DAILY NEWSPAPERS 1952-1996: HOW ENDING MARTIAL LAW INFLUENCED PUBLICATION DESIGN

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The number of Taiwanese daily newspapers increased tenfold after martial law was lifted in 1988. Increased competition and new technology influenced the adoption of design innovations. This study examined three Taiwanese daily newspapers' use of color, graphics, headline styles, modular design, and number of stories before and after the lifting of martial law.

During the second half of the twentieth century, the appearance of newspapers evolved from vertical, gray pages cluttered with rules and typographical decoration to open, modular, horizontal, and topically organized publications.¹ Publication designers, who introduced these changes, sought to showcase major stories on the front page, grab readers' attention, facilitate organization, and create visual appeal.²

Although international examples of elegant and functional redesigned newspapers have been featured in design collections and textbooks,³ little attention has been paid to changes in design of newspapers printed with Chinese characters. Some experiments evaluating the effectiveness of design elements have been reported by researchers in Taiwan,⁴ but no research has examined the evolution of design characteristics of Taiwan newspaper front pages.

Research findings from U.S. literature indicate that new technology, competition among media, the rise of professionalism, and a growing sophistication among news people about design have all influenced the design trends,⁵ and understanding of such change can be only surmised from the examination of the newspapers themselves. Based upon Chinese literature, the most likely salient forces for Taiwan newspapers' design revolution are the lifting of martial law and new technology.⁶ While professionalism and sophistication among news people are considered two other variables, no research has yet pinpointed their significance.

The purpose of this study is to discover the extent to which the largest daily newspapers in Taiwan have adopted modern graphic techniques. The study also explores influences, like new technology and

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the lifting of martial law, that influenced design changes. Using content analysis, the researchers have identified the design characteristics of a sample of the front pages from three Taiwan dailies published from 1952 to 1996. The forty-five years under study span an era from just three years after the Nationalist government under Chiang Kai-shek retreated to Taiwan, until the present. The three newspapers are the *United Daily News*, the *China Times*, and the *Central Daily News*. All are broadsheets, and all circulate throughout Taiwan.

Taiwan Newspapers

Some of the changes that characterize the change from traditional to contemporary design in Western newspapers are irrelevant in Chinese printing. For example, lowercase headline styles and ragged right line justification found in contemporary Western design are irrelevant in Chinese newspapers because characters have no capitalized forms and each character in a specific typographic style takes up exactly the same horizontal and vertical space. Also, stories never jump from the front page.

Because of Chinese literary tradition, Taiwan newspapers typically flow story text vertically and thus use rows, rather than columns. Body text is separated by horizontal, not vertical, gutters. Moreover, Taiwan newspapers arrange headlines both vertically and horizontally, and the majority of headlines contain multiple decks. The largest type sizes are main headlines. Smaller type to the right of a main headline functions like a kicker in English text. Smaller type to the left of or underneath a larger main headline is comparable to a deck.

In spite of these contrasts, it seems that designers of Taiwan newspapers have changed the appearance of their publications as much as Western designers have. Nameplate redesign, fewer stories on the front page, color, use of photographs, organizing devices like indexes and logotypes all have appeared in contemporary Taiwan newspapers. Such newspaper design elements comprise what Ames has labeled the Total Design Concept,⁷ and Barnhurst calls functionalist.⁸ These views of layout principles emphasize focus, unity, typographical consistency, graphics, and photos; they contrast with the earlier traditionalist approach, which was based on print shop rules and techniques.

Influence of the Newspaper Ban. Following the Communist victory on the mainland in 1949, the Nationalist government retreated to Taiwan and declared martial law. Blaming newsprint shortages, the government imposed a newspaper ban in 1951, prohibiting applications for new newspaper licenses and restricting the number of pages in each issue of newspapers then publishing. Before the lifting of press restrictions in 1988, the number of daily newspapers was kept at thirty-one, and the number of pages allowed in each issue was very limited: six pages in 1951, increased to eight pages in 1957, ten in 1966, twelve after 1971.

Through the newspaper ban, the government effectively restricted freedom of the press and successfully controlled most of the thirty-one daily newspapers.⁹ The newspaper ban resulted in an oligopolistic market in which two private dailies, the *United Daily News* and the *China Times* garnered two-thirds of Taiwan's newspaper circulation and adver-

tising.¹⁰ The third paper, the *Central Daily News*, is the official voice of the Kuomintang (KMT), Taiwan's only legal, active party before the lifting of martial law in 1987. It was the largest newspaper in Taiwan in the 1950s and was the largest and most influential state-controlled newspaper before the ruling KMT was defeated in the presidential election in March 2000. It is still a powerful political force.

Taiwan is a paradigm not only for an economic miracle, but also for the development of a modern political system and an expanding media. Taiwan has developed into a modern country without its print media reflecting the media imperialism predicted by the dependency model of political development.¹¹ "Chinese officials still speak in terms of selectively borrowing from Western technology and economic practices (technique or practical application). At the same time they seek to retain their existing political and social structure (value or essence)."¹²

Magazines, which often showcase design innovations later adopted by newspapers, were the print medium favored by the public during martial law, and opposition magazines were a strong reforming force.¹³ Part of this resulted from the shrewd technique used by editors in circumventing press restrictions. Because magazines were not required to conform to a strict publishing schedule, editors licensed several titles. When an issue of one title was officially suppressed, the editors published the same message under a different nameplate.¹⁴ As the choice among publications expanded in 1988 when martial law was lifted, eye-catching layout, photos, and graphics became more important in attracting readers to all kinds of print media.¹⁵

This political climate has had an impact on newspaper appearance. Limitations on space contributed to a crowded appearance, little space allotted to art, and less attention to design.¹⁶ The thirty-one newspapers that had licenses during martial law had essentially protected franchises. Under the oligopolistic structure with entry entirely foreclosed, competition among newspapers was kept to a minimum. Previous studies in industrial organization indicated that oligopoly discourages competition¹⁷ and competition fosters innovative effort.¹⁸ With limited competition, Taiwan's largest dailies did not have an incentive to adopt modern design techniques to improve their competitive position while small dailies did not have the financial resources for technological investment. Though some scholars had urged the application of modern design such as increasing headline type sizes and leaving more white space,¹⁹ newspapers—whether because of the tight news hole or because of smugness brought on by secure status—changed little in appearance.

During this period, news stories arranged in modular shapes were rare. Instead, Taiwan newspapers adopted the irregular dog-legged design format, with rules in the horizontal gutters. The rows of each page gradually increased from twelve to twenty, having nine to ten characters in each row. This nonmodular layout had the following characteristics: the length of a story headline occasionally longer than its text, frequent use of borders and double lines, and a variety of typefaces and sizes even within headline decks. Though prevalent, this design format puzzled readers who often had trouble following wrapped paragraphs and text.²⁰

Technology, Competition, and Design Changes. The lifting of newspaper restrictions in 1988 inevitably led to intense competition over market share and advertising. Immediately after the lifting of the newspaper ban, the pages of the *United Daily News* and the *China Times* dramatically expanded from twelve to twenty-four per issue.²¹ In the early 1990s, the number of pages for the largest dailies had increased from thirty-two to forty-eight, and to sixty pages per issue on the weekends.²² The number of newspapers published in Taiwan grew from 31 in 1987 to 361 in 1996. In the face of fierce competition, newspapers began to offer more on sports, finance, lifestyle, travel, food, book reviews, science, and women's interest.²³ Research was showing that photographs, innovative design, modular format, and color were the way to draw the attention of readers and advertisers.²⁴ Although editors still composed their pages primarily by instinct and experience rather than by attention to design theory and research, changes were occurring.²⁵

Another development that deserves attention was the rise of new technologies. Computerized editing became available in the early 1980s and was later adopted by newspapers in Taiwan. The *United Daily News* started to use computing technology for its front page on 15 September 1982. In 1988, the *Central Daily News* became the first newspaper to use pagination. The *China Times* followed in 1989. Also, *USA Today* had begun publishing in 1982 and was soon being distributed internationally; its emphasis on color, new layout styles, and infographics was being widely discussed, if not copied, by newspapers.²⁶

The impact of these changes is significant. Since 1988, Taiwan newspapers have had a larger news hole, allowing editors to apply modern design concepts such as using more graphic items and adding white space while eliminating rules.²⁷ Also, modular design has replaced the irregular dog-legged layout, a format of the letterpress age that became extremely difficult to arrange in the computerized era.²⁸

In 1988, the first horizontal-text newspaper, the *United Evening News*, appeared. Like American newspapers, its lines of text flowed horizontally and used vertical gutters to separate columns. Also, like Western publications, the binding, or in the case of newspapers the folded edge, is on the left. Many newspapers, such as *Min Sheng News* and *China Times Evening News*, have adopted this Western format.

It appears that competition has impelled Taiwan newspapers to adopt modern design innovations, seeking and using them more fully than before the lifting of the newspaper ban. The impact of competition on a newspaper has received considerable scholarly attention. Although early studies indicated that competition had little impact on newspaper content,²⁹ recent studies show that competition does affect the allocation of financial resources and thus influences newspaper content.³⁰ For example, in a study of 101 newspapers in the United States, Litman and Bridges found that competitive newspapers used more wire services and had larger news holes.³¹ Lacy analyzed 114 U.S. newspapers and also found that newspapers under intense competition were more likely to have more reporters, to carry more wire services, and to devote more space to news than comparable newspapers without competition.³²

These research findings formed the basis for what Litman and Bridges called the "financial commitment theory,"³³ which has been supported and expanded by several recent studies.³⁴

However, very little attention has been paid to the relationship between competition and newspaper design. A review of previous research literature found only two studies designed to assess the effects of competition on newspaper design. Weaver and Mullin's content analysis of 46 competing dailies in 23 U.S. cities found that the "trailing" papers were more likely to use modern color photographs, large photographs, smaller headlines, and six-column layout, while the "leading" papers tended to use more traditional format.³⁵ In another content analysis of 114 daily newspapers in the United States, Kenny and Lacy found that as newspaper competition increased, the number of graphics, the percentage of front pages allocated to graphics, and use of color increased.³⁶ According to an economist observing the Russian newspaper industry after the breakup of the USSR, page design became more important there also. Problems of competition, decline in readership, shortages, and an unstable political situation have resulted in increased use of photography, graphics, and color.³⁷

Design Elements. Two principles of publication design are directly related to drawing the eye of the reader to a specific publication. Hodgson's newspaper editing handbook encourages designers to create an attractive visual pattern and give the newspaper a recognizable visual character by the consistent use of typographical style.³⁸ The focus of this study is to examine design innovations that developed in Taiwan during this period of increased competition—when the political opposition voices were becoming bolder and the number of publications was increasing exponentially. This study has identified some elements of contemporary design that have appeared in Taiwan's leading dailies and, using content analysis, traces the changes that have occurred.

Space Devoted to Ads and News on the Front Page. Except for the *New York Times* that has a few classified-type ads at the bottom of the columns on the front page, putting ads on the front page is usually considered unprofessional in the United States. Editors expect certain pages to be open, without ads, and if occasionally an ad is sold on a page that is usually "open" editors often become surly and believe the advertising department has overstepped its boundaries.

In contrast, ads occupy a generous amount of front-page space, often more than half, in Taiwan newspapers. Although scholars have advocated improving front-page design by eliminating or decreasing this space devoted to ads, newspapers continue to sell large amounts of front-page space to their advertisers.³⁹

Number of News Stories. The trend is toward fewer stories on the front page. Sissors describes the front pages of the *New York Herald Tribune*, an early design innovator, as having relatively few stories on the front page, and therefore being always clean and inviting.⁴⁰ Utt and Pasternack's study found that 70 percent of American newspapers' front pages accommodate six to nine stories.⁴¹ No studies were found in current Taiwan literature that examined the number of front-page stories.

Use of Graphics. According to a survey of news editors, contemporary front page design of American daily newspapers uses more color and graphics including photographs, illustrations, and infographic items.⁴² With respect to photographs, Utt and Pasternack's study in 1989 found that 56.5 percent of American newspapers average two photos on the front page, and 94.6 percent place a dominant one.⁴³

Taiwan newspapers rarely placed photographs on the front page prior to 1988. Editors did not value photos for their ability to convey a message. A senior photographer complained that a photo was used usually not for its value of information but for the need of filling the hole.⁴⁴ Use of photographs and other graphic elements has increased markedly in the past ten years.⁴⁵ Editors acknowledge that illustrations and infographics can attract readers, but many find the creation and use of these graphic elements too complex.⁴⁶

In fact, poor use of graphic items may have a negative effect on newspaper design. Wanta and Remy's study compares how efficiently readers can recall information about four page elements: pullout quotes, index items, story texts, and graphics, and concludes that graphics are the least efficient item for reader recall. This, if not implying a reduction of use of graphics, explores a need for newspapers to improve graphics so that readers can easily process the information presented.⁴⁷

Use of Color. Using color on front pages is another characteristic of modern design. Click and Stempel's study confirms that readers prefer front pages with spot color such as tint blocks and borders.⁴⁸ But using color as a strategy to enhance readability seems unwarranted. Wanta and Gao discovered that their research subjects were indifferent toward color. This, they surmise, could be due to the subjects' lack of exposure to color pages in their previous reading experiences.⁴⁹ Utt and Pasternack find a majority (56.5 percent) of American newspapers regularly use four-color photographs on the front page. Their study, however, concludes the larger the paper's circulation, the less likely it is to use a color photo on the front page.⁵⁰

Taiwan newspapers did not adopt color widely until martial law was lifted. Taiwan's editors are very conservative in the use of full color on the front pages, but still believe it has the potential to attract more readers.⁵¹

Headline Characteristics. As described earlier, Taiwan newspaper headlines are by nature very different from those of Romanized ones. In the research literature, there is no consensus about the proper use of headline typefaces. Some researchers, adopting American layout theory, believe using fewer or even uniform typefaces is better design,⁵² whereas others prefer a variety of typeface combinations among main headlines, side headlines, and decks.⁵³ In general, Taiwan newspapers tended to simplify their headline styles after 1988, having fewer decks and less hodgepodge in typeface style.⁵⁴

Design Format. By 1989, 78 percent of American newspapers had adopted modular format.⁵⁵ Utt and Pasternack also found that 90.9 percent did not use rules after 1984.⁵⁶ Taiwan's newspapers basically have followed the same design trend, abolishing rules and borders and consistently using modular design on the front pages since the late

1980s.⁵⁷ Although some experimental research before the lifting of martial law had suggested modular shape was a better design format, the introduction of new technologies and the adoption of modular design did not occur until 1988.⁵⁸

Based on the above discussion and earlier research on these design topics—percentage of space allotted to ads and news, number of stories, number of photographs, number of illustrations, use of news index and stock and weather information, use of color, and headline characteristics—this study attempts to answer the following research questions, and to test the related hypothesis:

RQ1: What are the design characteristics of Taiwan daily newspaper front pages from 1952 to 1996 with respect to percentage of space allotted to ads and news, number of stories, use of color and graphics, design format, and headline characteristics?

RQ2: When were the modern design innovations—use of color and graphics, decrease in number of stories, modular design—introduced to the front pages of these three leading Taiwan dailies after the lifting of press restrictions?

In this study, we proposed that the modern design innovations would appear more frequently on the front pages of these three large Taiwan dailies after the lifting of the newspaper ban. This expectation is based on previous research findings on newspaper competition and the financial commitment theory. We reasoned that there would be more competition among newspapers after the lifting of the newspaper ban in 1988 because of the sharp increase in the number of newspapers published in Taiwan. As competition increased, the amount of capital or investment for new technologies and facilities increased. In fact, the *China Times* and the *United Daily News* each invested more than US\$100 million for building new printing facilities and hiring new recruits in 1988 and 1989.⁵⁹ Therefore, it is reasonable to assume that the modern design innovations should be used more frequently by these three dailies after the lifting of the newspaper ban. Thus, it is hypothesized:

H1: The modern design innovations—use of color and graphics, decrease in number of stories, modular design—will appear more frequently on the front pages of these three leading Taiwan dailies after the lifting of the newspaper ban.

Method

Research Sample. Three leading Taiwan newspapers, the *Central Daily News*, the *China Times*, and the *United Daily News*, were chosen for this study. Resuming publication in 1949, the *Central Daily News* was the largest newspaper in Taiwan in the 1950s and is still the most influential government-controlled daily newspaper in Taiwan. The *China Times* and the *United Daily News*, respectively established in 1950 and 1952, are the largest and most prestigious newspapers in Taiwan, each with a circulation claimed to be around one million. (No independent auditing

of circulation figures is available in Taiwan). The three newspapers were selected because they were the most influential newspapers in Taiwan, and all circulate throughout the island.⁶⁰

Seven issues of each of the three newspapers were randomly selected from each of the forty-five years. Except that the 1952-1953 copies of the *United Daily News* are missing, researchers coded the front pages of this random sample as well as all the news stories on these front pages. Coding of 931 front pages and 6,713 news stories was completed.

Research Data. For each issue of each newspaper in the sample, the front page was coded for percent of space devoted to news and advertising, number of stories, photographs and illustrations, column rules, use of color, news index, and graphic information (stock/weather information). For each news story on the front page, information coded includes headline and text typography, headline directions (vertical/horizontal), headline and news area, total words of the text as well as the main headline, and the news format (modular/nonmodular).

Researchers divided the 45 years into six periods: (1) 1952-1957, (2) 1958-1966, (3) 1967-1970, (4) 1971-1981, (5) 1982-1987, (6) 1988-1996. The time periods reflect eras of political and technological change. From 1952-1957, Taiwan newspapers could only publish 6 pages. The number of pages permitted was increased to 8 between 1958-1966, and further to 10 between 1967-1970. From 1971 to 1987, the pages for publications were increasing but still limited to 12. Since computerized editing was first adopted in 1982, researchers divided this 12-page publication era into two periods: 1971-1981 and 1982-1987. When martial law was lifted in 1988, computerized editing also started to play a dominant role in newspaper layout and design, thus 1988-1996 is the last period.

Reliability Test. Four students, three undergraduates and one graduate, served as coders in this project. These students are all journalism majors and have taken courses in newspaper editing. Before they started coding formal samples, coders were trained to ensure consistency. A test of inter-coder reliability⁶¹ was performed by using 14 randomly selected front pages for five randomly selected items: headline area, number of headline decks, headline direction, total words of the top story, and number of headline typefaces of the top story. Inter-coder agreements were headline area .86, number of headline decks .95, headline direction 1.00, total words .83, and headline typefaces .95. The reliability was judged to be acceptable for all variables.⁶²

Findings

Answers to Research Questions. The first stage of the analysis was to answer the two research questions. The results are summarized in Table 1 to Table 7. The findings about the design characteristics of Taiwan daily newspaper front pages from 1952 to 1996 are presented below.

Percentage of Space Allotted to Ads and News. Almost every daily newspaper places advertising on the front page. The front page is usually divided horizontally with advertising taking the lower part of the page, leaving the upper part for editorial display.

TABLE 1
Area and Percentage of Ad and News Space

Years	Area of Ads Sq. Centimeters	Percentage of Ads (%)	Area of News Sq. Centimeters	Percentage of News (%)
1952-1957	801(376)	44.3	1,009(147)	55.7
1958-1966	1,148(139)	62.6	686(159)	37.4
1967-1970	1,298(88)	70.5	544(70)	29.5
1971-1981	1,382(104)	74.5	474(62)	25.5
1982-1987	1,407(118)	75.4	460(65)	24.6
1988-1996	1,076(280)	57.5	795(249)	42.5
Average	1,199(280)	64.8	651(236)	35.2
F Value	167.58***		280.99***	

Note: Standard deviations in parentheses.

*** $p < .001$

As shown in Table 1, the mean percentage of space allotted to ads on the front page for the three newspapers increased from a low of 44.3% in 1952-1957 to a high of 75.4% in 1982-1987 and then declined to 57.5% in 1988-1996. Obviously, as space devoted to ads increased, space for news on the front page declined by the same percentage.

Number of Stories. The mean number of front-page stories for the three newspapers during the 45 years is 7.93. However, the number of stories on the front page declined gradually from a mean high of 15.29 between 1952-1957 to a mean low of 4.93 between 1988-1996 (Table 2). Because of the increased space allotted to news stories after 1988, the front pages have become less dense, and top stories are given more prominent display.

Number of Photographs and Illustrations. Prior to 1988-1996, most front pages did not have a photograph.⁶³ The mean number of photographs declined from 0.74 per front page in 1952-1957 to a low of 0.13 in 1982-1987 and then increased sharply to a high of 1.44 in 1988-1996 (Table 2).

Table 2 also shows that prior to 1988-1996, most front pages had no illustrations. The mean number of illustrations per front page increased from a low of 0.15 in 1958-1966 to a high of 1.65 in 1988-1996. After 1988, the prominence of illustrations on the front pages increased with more than half of the front pages containing at least one illustration. Overall, there are more photographs and illustrations than formerly.

News Index, Stock Market, and Weather Information. As shown in Table 3, no news index, stock and weather information appeared on the front pages before 1988 with the notable exception of 1952-1957 when

TABLE 2
Count of Stories, Words, Photographs, and Illustrations

Years	Number of News Stories	Average Words in Each Story	Number of Photographs	Number of Illustrations
1952-1957	15.29(3.28)	414(371)	.74(.94)	.49(.55)
1958-1966	9.68(2.60)	461(373)	.63(.75)	.15(.40)
1967-1970	7.58(1.95)	414(307)	.49(.61)	.17(.38)
1971-1981	6.42(1.80)	442(215)	.34(.55)	.31(.47)
1982-1987	6.26(1.65)	447(278)	.13(.42)	.33(.47)
1988-1996	4.93(1.58)	692(298)	1.44(1.06)	1.65(1.33)
Average	7.93(3.82)	475(343)	.88(.03)	.56(.91)
F Value	393.65***	91.61***	61.59***	109.02***

Note: Standard deviations in parentheses.

*** $p < .001$

23.2% of the front pages contained a news index. (After 1988, 91% of the front pages carried a news index, 47.1% had stock information, and 56.6% published the weather.)

Rules. Prior to 1988-1996, most front pages used row rules to separate rows. Since 1988, almost all these rules have been eliminated from the front pages with only 3.7% of the front pages still using them.

Use of Color. Many of the Taiwan newspapers print their nameplates in red.⁶⁴ In our study, the *United Daily News* began to print its nameplate in red in 1952, followed by the *China Times* in 1956. The *Central Daily News* began to use red in its nameplate in 1980. As shown in Table 4, about two-thirds of the front-page nameplates between 1958 and 1987 were printed in color. After 1988, however, 92.6% of the nameplates used red.

Prior to the 1988-1996 period, with the exception of the name plate, only 7.8% of the front pages used color. After 1988, most front pages regularly used color in producing visual elements with 76.5% of the photographs, 25.6% of the illustrations, 41.3% of the news indexes, 34.8% of the stock information, and 29% of the weather reports printed in color.

Headline Characteristics. The mean number of decks of each front page headline for the three newspapers during the 45 years was 2.8. As shown in Table 5, the mean number of decks of each front page headline declined gradually from a high of 3.13 in 1958-1966 to a low of 2.19 in 1988-1996.

The mean number of typefaces used for each front-page headline was 2.08. The mean number of different typefaces for each front-page

TABLE 3
*Front Pages with Rules, Photographs, an Index, Stocks,
and Weather*

Years	Rules	Photographs	Illustrations	News Index	Stocks	Weather
1952-1957	100.0%	45.5%	46.4%	23.2%	0	0
1958-1966	97.9	48.1	13.8	0	0	0
1967-1970	100.0	42.9	16.7	0	0	0
1971-1981	100.0	30.3	30.7	0	0	0
1982-1987	97.6	10.3	33.3	0	0	0
1988-1996	3.7	81.0	69.3	91.0	47.1	56.6

headline declined from a high of 2.19 in 1952-1957 to a low of 1.86 in 1967-1970 and then increased to 2.15 in 1988-1996.

The mean area each headline occupied on the front page is 21.84 square centimeters. The mean area of each headline increased from a low of 14.38 square centimeters in 1952-1957 to a high of 43.11 square centimeters in 1988-1996.

More than 85% of the headlines on the front pages for the three newspapers during the 45 years were vertical. However, the mean percent of horizontal headlines on the front pages increased gradually from a low of 8.2% in 1958-1966 to a high of 37.3% in 1988-1996. It should be noted that after 1988, use of horizontal headlines increased sharply. See Table 7.

Modular Design. Prior to 1988-1996, most headlines were placed on the right side of the accompanying story. After 1988, the tradition of placing a headline to the right of the story appeared to be fading, as more front page headlines (37.2%) were placed on the top of the story. See Table 6.

TABLE 4
*Color on Nameplates, Photographs, Illustrations, Index, Stocks,
and Weather*

Years	Nameplates	Photographs	Illustrations	News Index	Stocks	Weather
1952-1957	37.8%	0	0	0	0	0
1958-1966	66.5	0	0	0	0	0
1967-1970	65.9	15	0	0	0	0
1971-1981	64.9	4.6	0	0	0	0
1982-1987	66.4	0	0	0	0	0
1988-1996	92.6	76.5	25.6	41.3	34.8	29.0

TABLE 5
Means for Headline Characteristics

Years	Number of Decks	Area (sq.cm.)	Number of Typefaces	Characters in Main Headlines
1952-1957	2.98 (1.14)	14.38 (18.03)	2.19 (.89)	9.69 (3.87)
1958-1966	3.13 (1.21)	18.57 (20.86)	2.16 (.95)	10.79 (3.87)
1967-1970	2.75 (.97)	19.60 (21.35)	1.86 (.88)	11.32 (3.89)
1971-1981	2.81 (.97)	20.15 (20.59)	2.02 (.89)	12.14 (3.80)
1982-1987	2.46 (.88)	23.93 (20.92)	1.86 (.74)	14.02 (4.95)
1988-1996	2.19 (.67)	43.11 (25.68)	2.15 (.64)	13.27 (4.38)
Average	2.80 (1.08)	21.84 (22.70)	2.08 (.87)	11.54 (4.32)
F Value	116.49***	231.69***	26.46***	170.39***

Note: standard deviations in parentheses.
*** $p < .001$

Prior to 1988-1996, a majority of the front-page stories were non-modular. After 1988, most front-page stories (62.7%) were modular. Apparently, the three newspapers have adopted a modular format for their front pages (Table 7).

Test of Hypothesis. The second stage of the analysis was to test the research hypothesis that predicted the modern design innovations—use of color and graphics, decrease in number of stories, modular design—would appear more frequently on the front pages of these three leading Taiwan dailies after the lifting of the newspaper ban. A series of one-way

TABLE 6
Headline Placement against News Stories

Years	Placement of headlines against the texts			
	Right	Top	Text Wrap	Others
	%	%	%	%
1952-1957	81.4	15.3	2.2	1.1
1958-1966	85.2	13.1	1.4	0.3
1967-1970	86.5	12.2	1.0	0.2
1971-1981	86.5	13.2	0.2	0.1
1982-1987	83.0	15.9	1.1	0
1988-1996	60.6	37.2	2.1	0.1

TABLE 7
Shape of Headlines and Story Format

Years	Direction		Format	
	Vertical	Horizontal	Modular	Nonmodular
	%	%	%	%
1952-1957	88.1	11.9	38.7	61.3
1958-1966	91.8	8.2	40.5	59.5
1967-1970	91.7	8.3	39.3	60.7
1971-1981	88.4	11.6	33.4	66.6
1982-1987	85.2	14.8	37.6	62.4
1988-1996	62.7	37.3	62.7	37.3

ANOVA, t-tests, and chi square tests revealed that this hypothesis was supported.

As shown in Table 2, the one-way ANOVA revealed that there are significant differences among the mean number of stories ($F=393.65, p < .001$), photographs ($F=61.59, p < .001$) and illustrations ($F=109.02, p < .001$) on the front pages during the six periods. The Scheffe tests indicated that the mean number of stories ($M=4.93, SD=1.58$) between 1988-1996 was significantly smaller than the means for other five periods, while the mean numbers of photographs ($M=1.44, SD=1.06$) and illustrations ($M=1.65, SD=1.33$) between 1988-1996 were significantly greater than the means for the other five periods.

Moreover, a series of t-tests⁶⁵ indicated that after 1988 color was used more frequently on the front pages in photographs ($t=11.60, p < .001$), illustrations ($t=6.07, p < .001$), news index ($t=10.64, p < .001$), stock information ($t=6.07, p < .001$) and weather reports ($t=5.13, p < .001$). Finally, as shown in Table 7, a majority of the front page stories prior to 1988-1996 were nonmodular. After 1988, most front page stories were modular ($X^2 = 25.80, p < .001$).

Conclusions

This study confirms that the largest daily newspapers in Taiwan, despite their graphic differences from Romanized text, have adopted modern design practices and therefore changed the appearance of their front pages. Color is now the rule; the number of news stories decreased; photos, illustrations, and other infographics appear regularly; modular format has been widely adopted.

Although the characteristics of modern design have been incorporated into Taiwan newspaper front pages, many traditional design concepts still prevail. For example, the front-page ads, though given moderately less space after 1988, still take more than half a page, and headlines still tend to use a variety of typefaces.

More important, the results of this study show that the legal and political environment is an important factor influencing newspaper

appearance. The lifting of martial law and the newspaper ban led to dramatic increase in the number of pages and the number of newspapers published in Taiwan. As competition increased, the modern formats were adopted. Such a finding contributes to the growing literature on newspaper competition and is consistent with the financial commitment theory proposed by Litman and Bridges.⁶⁶

New technology has had its impact on the changes. But without the lifting of martial law, change would likely not be so significant. Computerized editing was first adopted in 1982. Also, it seems that the moderate increase in pages for publication before 1988 did not contribute to newspapers' modern design. Perhaps newspaper publishers never felt they had enough space for publication under martial law, offering publishers and editors an excellent excuse to resist change. After 1988, when martial law was lifted, page and paper restrictions were gone, and when technology was fully adopted, a design revolution followed.

Further research should focus on how functional various design elements are for readers. Their comprehension and preference should also be examined. Academic research reviewed for this paper often mentioned that editors admitted making design decisions based on their own personal preferences or for purely arbitrary reasons. To evaluate proposed design changes, legibility and readability studies should be supported by newspapers. Taiwan editors and designers should be challenged to focus on the needs and preferences of their readers. It is a mistake to assume that conclusions from Western readability and aesthetic preferences studies are universal. It is also a mistake to permit technology or tradition to drive design. Because Chinese characters are so different from Roman text, it cannot be assumed that what works best in Western publications should be blindly adopted. Attention to design theory and principles in workshops and seminars could also build awareness of aesthetic and functional style, as could professional recognition of well-designed pages.

Chinese versions of popular desktop publishing software like QuarkXPress and Pagemaker exist. Therefore, all the design flexibility that these software packages deliver is available to those who publish with characters rather than letters. Chinese is the native language of more of the world's population than any other language.⁶⁷ Although Mandarin, Cantonese, and Taiwanese, for example, are different spoken languages, they share essentially the same written language. Differences between simplified and traditional Chinese characters can be changed with a computer stroke, in an operation similar to changing the typeface with the font function when word processing, and these differences do not affect design layout. As literacy and press freedom expand among those whose native language is Chinese, understanding all design elements necessary for producing the most informative and attractive publications in Chinese will be imperative.

NOTES

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62. According to Daniel Riffe, Stephen Lacy, and Frederick G. Fico, research usually reports reliability figures in the .80 to .90 range. See *Analyzing Media Messages: Using Quantitative Content Analysis in Research* (Mahwah, NJ: Lawrence Erlbaum Associates, 1999), 131.
63. Before the lifting of the newspaper ban, editors never felt they had enough space for stories. As a result, little space was allotted to photographs or illustrations.
64. Before the invention of process color technology, Taiwan's newspapers could only print spot color on the front pages. Red was chosen because it made a good contrast to black, and red is considered a joyful color in Chinese culture.
65. In order to perform t-tests, color used on photographs, illustra-

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