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Online Newspapers: A Substitute for Print Newspapers and Other Information Channels?

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There are reasons to believe that online newspapers are not as good as their printed counterparts in widening the range of topics their audience is aware of. But, should we fear this? Does reading online newspapers actually substitute reading traditional newspapers? And to what extent do online newspaper readers compose another media mix compared to non-users? A recent survey of almost 1,000 respondents, representative for the Dutch adult population, shows that reading online newspapers harms using print newspapers among the young, but does not substitute the use of other media or the time spent on them. On the contrary: Online newspaper readers use some information channels more often and more extensively, even after other plausible reasons for media use are controlled for. And they regard printed newspapers and television as still better suited for their information needs.

Introduction

Printed newspapers seem to be good at improving their readers' knowledge of what is going on around them (see, more recently, Guo & Moy, 1998; McLeod, Scheufele & Moy, 1999; Schulz, 2003): Print newspapers often serve as a "Daily *Us*." In 1995, Nicholas Negroponte had heralded the advent of a "Daily *Me*," an (electronic) newspaper that would quickly "know" what every individual reader really is interested in and would subsequently not bother her or him anymore with other topics. The typical universality of printed newspapers, however, confronts everyone with a wide variety of political or "public affairs" topics, but also with reports on opera performances, sports, celebrities and accidents. And this confrontation is also fairly inevitable, given the nature of that medium. Therefore, printed

newspapers should make their readers also aware of those “other” topics outside the range of their individual interests; they should convey knowledge (and even concern) about a wider array of events and issues that one’s community is or should be aware of. The number of studies supporting this idea by comparing the impact of print newspapers and other media on the diversity of the audience agenda is limited, but provides consistent results. In general, newspapers indeed seem to help create a richer public agenda than other information channels, such as television (Ferguson & Weigold, 1986; Allen & Izcaray, 1988; Culbertson, Everts, Richard, Sandell & Stempel III, 1994; Peter & De Vreese, 2003).

But what if the slow but steady decline of printed newspapers in Western countries (e.g., Lauf, 2001) continues? What if these newspapers are replaced by their online counterparts? Virtually all newspapers in Western developed countries have an online edition (see, e.g., Peng, Tham & Xiaoming, 1999). What if more and more people turn to them and stop reading print papers completely? Not implausible, given the advantages of online newspapers: Online papers are still mostly free of charge, often updated throughout the day, easily accessible for everyone with an Internet connection; and they can be visited while working at one’s PC anyway. No surprise, then, that as early as in 2002, 23 percent of U.S. web users also visited newspapers online at least once a week (Runett, 2002).

There are some differences between online and print newspapers suggesting that it matters whether one reads the one or the other. For instance: It is likely that one encounters fewer articles, and certainly fewer *complete* articles, while surfing an online newspaper compared to paging through a printed paper. Of course, the offer of online papers becomes more extensive with the access to an archive, but this does not necessarily correspond to the wealth of articles that printed newspapers provide daily and without any archival research (Zürn, 2000; d’Haenens, Heuvelman & Jankowski, 2001). In addition, some online newspapers present more leisure information and less news; and editorial content in general is sometimes reduced in favor of services and transactions (Sparks, 2000).

But more important are the differences in the structure of two outlets. The non-linear, layered structure online makes it more difficult to come across ‘all’ articles. Large parts of online newspapers consist of teasers and tables of contents. To access complete articles one has to scroll and use links. Clicking at links may draw readers away from the other articles in the online paper, whereas other stories on a (double unfolded) page in a print paper remain visible for a print reader. In other words, online newspaper readers are encouraged to be more active and selective (Cameron & Curtin, 1995; Peng et al., 1999; Tewksbury & Althaus, 2000; d’Haenens et al., 2001; see also Boczkowski, 2001). In contrast, print newspaper

readers should be more often surprised by articles they would probably not click at when only offered a headline in an online newspaper.

Typically, print newspapers also consciously want to guide their audience through the content as a whole in an attempt to serve as the “Daily *U.S.*”: Journalists try to convey a rank order of what is socially relevant, suggesting to their readers that these are the topics they *should* be aware of as involved citizens, even if they are not personally interested in them. Cues are used for this purpose, supposed to direct and structure attention (see e.g., Mueller & Kamerer, 1995; Fallows, 1996; Zürn, 2000). Those cues are the position of an article within the paper, within a section and on a page; the use of pictures and graphs; size (of stories, headlines, pictures); the use of paragraphs, typographical elements, colors, etc. Cues are obviously able to lure readers into reading stories that they would not find worth their while if they only knew their mere topic (Garcia & Stark, 1991; Schönbach, 1995; see also McCombs & Mauro, 1977; d’Haenens et al., 2001). Certainly, cues also exist online - such as: icons, the blinking of a headline or the location and order of headlines and teasers on the screen (Fico, Heeter, Soffin & Stanley, 1987). But compared to the print version, online newspaper readers, on average, seem to be exposed to a smaller amount of cues, and thus to less guidance (see, e.g., Thiel, 1998; Tewksbury & Althaus, 2000; Butzelaar, 2001; Eveland, Marton & Seo, 2004).

In sum, online newspapers may not be as good as printed newspapers at conveying public topics of all kinds to their audience. Whereas the printed newspaper serves more often as a “*display* medium,” online papers lend themselves to be used as a “*research* medium” (see Schönbach & Lauf, in press) for more information on issues that one was interested in beforehand (Jankowski & Van Selm, 2000): “it appears online readers are particularly likely to pursue their own interests, and they are less likely to follow the cues of news editors and producers” (Tewksbury, 2003, p. 694). A second online newspaper function may be the one of an “alarm medium,” useful to get breaking news at one quick glance throughout the day. As a consequence of both functions, online users may miss out on whole areas of societal topics if those topics are neither top news nor cater to their individual interests. This is why Tewksbury (2003, p. 694) even is afraid of implications of online reading for “the long-term health of democratic nations” (see also Sunstein, 2002).

In a recent study we found that print newspapers are indeed better in expanding awareness of issues than their online counterparts for some groups in society; especially those with average or below average interests benefit. The online editions only seem to

broaden the horizon of the highest educated, that is, those with a university degree or higher vocational education (De Waal, Schönbach & Lauf, 2003).

In this paper we want to investigate how far reading online newspapers actually substitutes reading traditional newspapers. And, more generally speaking: what does the media “diet” of online readers typically look like? Do other channels, such as television or magazines, suffer or profit from using online papers? The possible danger to one’s knowledge of public affairs would be less worrying, of course, if online readers added other channels to their information diet. And finally, we want to investigate what kind of information it is that online newspaper readers find these papers useful for, compared to printed papers and other traditional channels.

The scarce evidence available so far does not suggest that electronic newspapers have substituted the traditional print equivalent (Schulz, 2001; Chyi & Lasorsa, 1999; Paimans in Jankowski & Van Selm, 2000; Althaus & Tewksbury, 2000; Peng et al., 1999). But any media use pattern of some years ago seems to become outdated quickly. Also, substitution effects may be blurred by differences in *age*: We know that print newspaper reading has lost ground among younger cohorts (e.g., Lauf, 2001). We also know that, at the beginning, the use of every new technology, and consequently also of the Internet, is always more widespread among the young and subsequently gains among the older audience (see, e.g. Rogers, 1995). Specifically, our study will deal with three questions:

RQ 1: How does reading online newspapers relate to the use of other information channels, and among them, in particular, print newspapers? a) In terms of using these media channels at all, and b) in terms of the time spent on them?

RQ2: What are the differences between the media use behaviors of younger and older online newspaper readers?

RQ 3: What kind of information are online newspapers used for, compared to other media channels?

To answer these questions, we will take a closer look at the information behavior of online newspaper readers, and at the different age categories among them. And we will use a large and representative national survey for this purpose - almost a thousand adult persons from the Netherlands.

Method and measurements

Our analyses of online newspaper reading and the use of other channels are based on a telephone survey of the Dutch population, 18 years and older, funded by The Netherlands Press Fund (*Bedrijfsfonds van de Pers*). The fieldwork was conducted in December 2002 by NIPO, Amsterdam, a market research institute. In total, 986 respondents were randomly selected for that purpose. We oversampled the readers of online papers 2.22 times, to achieve a proportion of 40 percent of the sample instead of the actual 18 percent of the Dutch adult population. Therefore, 6,725 people were screened first within a daily representative telephone omnibus survey. The criterion for their inclusion into the online newspaper part of the sample was: having visited the website of a Dutch national or local newspaper at least once in the two weeks prior to the interview. The telephone interviews took 16 minutes on average. The response rate was 41%.

To find out about the use of online and print newspapers, as well as of other information channels, the survey contained questions about the frequency and/or the duration of using the following media: printed newspapers, online newspapers, other news sites on the Internet, television, teletext, radio, free sheets/shoppers (free weekly newspapers) and magazines. The *frequency* questions read:

“On average, how many days a week do you read Dutch national or local printed newspapers?” This question was also asked for “visiting websites of Dutch national or local daily newspapers on the Internet” and for “other news sites on the Internet.”

For websites of newspapers and other news sites, questions about the frequency of their use were even more extensive. Respondents were also asked:

“On average, how many times a day do you read websites of Dutch national or local newspapers on the Internet?” And again the same question was asked for “other news sites on the Internet.”

The average *time* spent on specific channels was measured by the following questions:

“On average, how long do you read Dutch national or local printed newspapers a time?” The same question was asked for “reading websites of Dutch national or local

newspapers on the Internet” and for “other news sites.”

“On average, how long do you watch television a day?” The same question was asked for “reading teletext on television or the Internet” and “listening to the radio.”

“On average, how long do you read free sheets (free weekly newspapers) a week?” The same question was asked for “magazines.”

For our analysis we constructed two different kinds of variables from the answers to all these questions: a dichotomous one stating the mere fact that somebody uses a specific medium, and the duration of the use, which indicates the time in minutes per day or week. For this purpose, time (in minutes) was multiplied by the numbers of times the channel is used per day or per week in the case of newspapers and news websites.

In this analysis we are interested in how reading *online newspapers* specifically relates to the use of all other media. But of course, the use of those other channels may not or only partly depend on whether one reads an online newspaper, but (also) on socio-demographic characteristics of the users and on their information interests. A number of those interests were measured by the following question:

”In general, how much are you interested in politics; sports; theater, films and literature; finances and economy; reports on celebrities; reports on accidents and crime; local news: very much, somewhat or not interested?”

Three socio-demographic variables were gauged in our survey: age, gender and education - age by the year of birth and education by the highest school or university degree. We recoded education into two about equally large groups: “higher education” -which is then defined by a higher general secondary or vocational education or even a university degree-, and less than that. For our analysis of possible age differences in online newspaper use we split age into three about equally large groups: 18-37 years, 38-50 and 51 years and older.

Finally, to find out for what types of information online and print newspapers as well as other information channels are considered to be useful, the survey contained the following questions:

“How important are printed newspapers for you personally if you wish to be informed on politics; sports; theater, films and literature; finances and economy; celebrities; accidents and crime; local news: very, somewhat or not important?” This question was also asked for “online newspapers,” “other news sites,” “television,” “teletext,” “radio,” “free sheets,” and “magazines.”

Results

Online newspaper readers in 2002 are still younger, highly educated and male. They are also more interested in finances and economy, politics, and in theater, films and literature than those who do not visit an online newspaper (Table 1).

[Table 1 about here]

So, indeed, already the composition of this group may contribute to their media behavior pattern. The question now is: Is it really reading online newspapers that may substitute using other media, or is it, for instance, the young that show a specific media behavior? This is why we now use partial correlations between online newspaper use, on the one hand, and the use of other channels, on the other - to control for the three demographic variables and all the information interests measured. In addition, the other media use variables, respectively, will be used to control for each other.

Our first, and still fairly rough, analysis shows which other media the readers of online newspapers are also in touch with, compared to those who do not read online newspapers. On the one hand, print newspaper reading is slightly negatively related to the use of online newspapers. On the other hand, and not surprisingly, online newspaper readers often visit other news websites. But there are also more radio listeners among them. As far as all the other media behaviors are concerned, this group does not differ significantly from people who do not read online newspapers.

Once we split our respondents into the three age groups, the partial correlation between online newspaper reading and visiting other news sites becomes stronger with age. The negative relationship between reading online and printed newspapers is no longer significant in the two oldest age categories, but becomes stronger in the youngest category: Print newspaper reading among the 18-37 year olds seems to be harmed by reading newspapers online. The positive link with radio listening shows the same pattern: It becomes stronger among the younger online newspaper readers and is no longer significant in the two

older groups. And a positive relationship also appears between reading online newspapers and watching television among the 18-37 year olds (Table 2).

[Table 2 about here]

In a next step, we investigate the relations between the time spent on reading online newspapers and the duration of use of the other information channels. Therefore only those who read an online newspaper at all are analyzed further. Does the reading of online newspapers take away time from the time spent on other media behaviors? The answer is simple: on average, no. On the contrary, the time spent on reading online newspapers does not significantly relate to the time spent on any of the other information channels, except for other news sites - but this is a positive correlation. Once we separate the three age groups again, this seems to be especially true for the youngest and oldest age groups: The more time they spend on reading online papers, the longer they also use other news sites on the Internet. Interestingly, the time for print newspaper reading does not show any special relationship with the time for online newspaper reading in any of the three age groups. Thus, the negative impact of online newspaper reading on reading the printed edition is limited to reading them at all among 'the young,' but does not affect the time spent on reading the m.

[Table 3 about here]

Do online newspapers substitute other channels if not generally, then specifically for one or the other area of information? To answer this question we investigate for what type of information online newspaper readers find online papers and other information channels useful - politics; sports; theater, films and literature; finances and economy; celebrities; reports on accidents and crime; and local news. There is of course the possibility that people may not find a specific medium important for learning, e.g., about politics because they are simply not interested in politics. This is why we look at the perceived usefulness of a specific media channel only among those respondents who are at least somewhat interested in the respective area of information.

What catches the eye is that online newspaper readers believe that the printed newspaper always fulfills the need for information better than the online version, in all domains. Neither can online newspapers compete with television. For information on theater, films and

literature, and on finances and economy we find the smallest distance between the usefulness of online newspapers and television and print papers - but even there, printed newspapers and television are perceived considerably more useful. Sometimes also other channels are regarded more useful than online newspapers, or at least equally valuable. Magazines are judged as good as online newspapers for information on theater, films and literature. For local news, online newspaper readers rather use free sheets too. For information on celebrities magazines are considered a better source as well. And when it comes to sports, teletext is regarded equally suitable as online newspapers.

[Table 4 about here]

Conclusions

Dutch Online newspaper readers in late 2002 still have the characteristics of the early adopters of new technologies (Rogers, 1995): They are younger, male and better educated. Online newspapers seem to harm the use of print newspapers among the young. In contrast, online newspaper reading is more often accompanied by using other news sites on the Internet and, specifically among younger readers, by listening to the radio and watching television. In terms of the time spent on them, online newspaper use does not seem to supplant other media behaviors. The positive relationship with using other news sites, however, only partly remains: for the youngest and the oldest age groups.

Surprisingly, the older our online readers are, the more often they are also users of other news sites. A tentative explanation is that the older generation may be somehow polarized in their online use: The older one is, the more reading online papers is connected to using other information offers on the Internet. Among the younger variations the relationship is not as strong: They may show a more leisurely, even playful, media behavior, with a greater variety of use. As far as the time spent on news sites is concerned, this pattern does not seem to hold, however. It is only the generation of the 38 to 50 year olds that does not spend more time on use news sites as well. Again a possible explanation could be that for this age group it may be more difficult to find the time.

Once we compare the usefulness of online newspapers for specific areas of information with print newspapers and the other information channels, online papers cannot compete with printed newspapers or television: Both are considered more suitable for all kinds of information.

So, in sum, online newspapers only partly seem to substitute print newspaper reading, and to a small extent, but they do not reduce other media behaviors. And, if they harm printed newspapers they do so in terms of mere contact, not in terms of the time spent on them once they are read at all. In addition, online newspapers do not seem to be capable of substituting a whole range of information functions of printed newspapers or television.

So, do we have to worry about the important functions of printed newspapers for society? We have at least to be on our guard for a possible negative impact of online newspapers on print newspaper use, especially among the younger – particularly, because online newspapers so far have not replaced the information functions of the printed editions. But online readers also regard *television* as a more suitable source of all kinds of information. So, in that group, television may compete with printed newspapers more than online newspapers do. In other words, print newspapers, as information sources, are not solely important. Nevertheless, there are signs that print newspapers as a source of information are threatened. Their steady decline since the 1970s may have begun long before there were online newspapers, but online newspapers may give it an extra push downward. The fact that some online newspapers readers, especially the younger readers, do not read the printed edition *at all* should keep us alert. And finally, we have to be aware of the fact that our study is another, albeit more recent and extensive, snapshot of an ongoing process of changes in media behavior.

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Table 1**Differences between online newspaper readers and all other respondents**

	Online newspaper reader		Significance t-test
	Yes %	No %	
Interest (at least “some”) in:			
Politics	93	85	**
Sports	71	67	n.s.
Theater, films and literature	79	71	**
Finances and economy	79	67	**
Reports on celebrities	39	40	n.s.
Reports on accidents and crime	76	78	n.s.
Local news	93	95	n.s.
Demographics			
18-37 years	41	26	**
38-50 years	38	30	**
51 years and older	21	44	**
Female	39	56	**
Finished school of higher education or a university degree	65	38	**
N (at least)	419	567	

Note. Column percentages are reported; * $p < .05$; ** $p < .01$

Table 2**Relationships between online newspaper reading and using other media**

	All respondents	18-37 years	38-50 years	50 years and older
N	981	319	326	336
Printed newspapers	-.06*	-.12*	-.08	-.01
Other news sites	.42**	.37**	.44**	.51**
Television	.06	.13*	.01	-.02
Teletext	.05	-.04	.08	.08
Radio	.07*	.14*	.04	.05
Free sheets	-.01	.02	-.04	.04
Magazines	.03	-.03	.06	.07

Note. Cell entries are partial correlation coefficients, controlled for age (only for all respondents), gender, education and interests, and use of 'other' media channels; * $p < .05$; ** $p < .01$

Table 3**Relationships between the time spent on online newspaper reading and duration of using other media**

	All online newspaper readers	18-37 years	38-50 years	50 years and older
N	401	133	139	129
Printed newspapers	-.01	-.04	-.04	-.10
Other news sites	.29**	.55**	.14	.61**
Television	-.09	-.13	-.00	-.17
Teletext	-.05	.00	-.02	.04
Radio	.04	.03	.03	.10
Free sheets	.03	.00	.09	.06
Magazines	.05	.03	.07	.04

Note. Cell entries are partial correlation coefficients, controlled for age (only for all respondents), gender, education and interests, and time spent on 'other' media channels; * $p < .05$; ** $p < .01$

Table 4**Usefulness of online newspapers and other media channels, for online newspaper readers**

Media channels		Online newspapers	Printed newspapers	Other news sites	Television	Teletext	Radio	Free Sheets	Magazines
Usefulness for (at least somewhat important)	N								
Politics	390	67	83	39	91	42	59	43	50
Finances and economy	330	61	78	37	76	38	46	24	52
Sports	297	58	74	40	90	58	52	42	49
Theater, films and literature	331	57	73	37	67	27	41	50	58
Reports on accidents and crime	320	48	72	30	72	34	45	47	28
Local news	390	48	79	29	59	33	41	72	21
Reports on celebrities	164	42	52	27	71	20	36	21	52

Note. Cell entries are percentages, reported for online newspaper readers that are at least somewhat interested in the respective field.