

## James Hartley

is research professor in psychology at the University of Keele, Staffordshire, United Kingdom and is the author of many papers on text design.

## Matthew Johnson

is a post-graduate student in the department of psychology at Keele, completing his thesis on fatherhood.

# Portrait or

James Hartley & Matthew Johnson

Keele University  
Department of Psychology  
j.hartley@psy.keele.ac.uk  
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Rhode Island School of Design  
Providence, Rhode Island 02903

# Landscape?

*Typographical layouts for patient information leaflets*

*Most text is presented either in a “portrait” style (where the height is greater than the width) or in a “landscape” one (where the width is greater than the height), but no researcher to our knowledge has compared the effects of these different typographic layouts on readers’ comprehension and preferences. The aim of the present study was to assess, in a preliminary way, how patients would respond to a patient information leaflet (PIL) printed in these two formats. The results showed that both leaflet designs were equally effective in conveying their information. However, as the different layouts might support different features within PILS differently, further research is needed to explore the relative virtues of each layout in a variety of different contexts.*

Both the Food and Drug Administration (FDA) in the United States and the European Economic Community (EEC) in Europe require that patient information leaflets (PILS) should be included with all medicines and numerous guidelines have now been published on how to write them, both in the United States and Europe (e.g., Buck, 1998; Hartley, 1999; Kitching, 1990; Newton, et al 1998; Raynor, 1998; van der Waarde, 1998; Wright, 1998; 1999). The task is complex, involving attention to the language, the layout, the purpose and the legal necessities of such texts. (Indeed, when we began our research back in August 1998 the EEC was working on its sixteenth draft of its guidelines on how to do it.)

Patient information leaflets come in a variety of shapes and sizes, as is graphically shown in the Association of the British Pharmaceutical Industry's (1999) *Compendium of Patient Information Leaflets*. However, one major division lies between 'portrait' versions (where the height is greater than the width) and 'landscape' ones (where the width is greater than the height). It appears (see table I) that landscape layouts are used more frequently when there is a need to insert diagrams or pictures and when there is a felt need for two or more columns of print.

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	Portrait style (75 %)	Landscape style (25 %)
1 column	48	0
2 columns	50	83
3 columns	2	5
4 columns	0	10
More than 4	0	2
justified text	74	62
unjustified text	26	38
left-ranging headings	86	65
centered headings	14	35
headings in lower-case	82	48
headings in capitals	18	53
diagrams included	16	35
no diagrams	84	65
photos included	10	8
no photos	90	92
boxed in text	10	15
no boxed in text	90	85

**Table 1.**  
The typographic features of patient information leaflets. The figures are based on sampling from the *Compendium of Patient Information Leaflets, 1999-2000*.

In this study we set out to compare one particular patient information leaflet printed in these two layouts. Surprisingly enough we were unable to find in the literature on text design any previous research contrasting the effects of these major layout styles on readers' comprehension and preferences.

## **Method**

The original source of the text material for our study came from a study by Dickinson (1998). Dickinson had taken a 'model leaflet' presented by the EEC as an illustration of what a PIL should contain. Dickinson had revised this leaflet to show that it could be improved markedly by user-testing.

In the present study we used Dickinson's revised leaflet as the basis for our work. First of all we revised it further in the light of the guidelines mentioned above and then reprinted it in either a landscape or a portrait fashion. Figure 1 outlines the changes we made to Dickinson's text. Figures 2 and 3 show examples of the final text in portrait and landscape style.

Figure 1  
Changes made to Dickinson's leaflet.

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### *Stage 1*

The text was re-sequenced to match user requirement (e.g., *see tables II and III*):

The headings used in the original were: What Burofen does; Before you take Burofen; Taking Burofen; Possible side-effects; Other ingredients; Storing Burofen; and Makers of Burofen. These were followed by a footnote on what to do if you wanted to obtain a large print or audio version of the leaflet.

The headings used in the first revised version were: What Burofen does; Taking Burofen; Before you take Burofen; Possible side-effects; Storing Burofen; and Makers of Burofen. The footnote was placed at the head of the leaflet.

Three 'boxes' were introduced to highlight selected sections of the text (*see figures 2 and 3*).

New sentences within paragraphs were made to start on a fresh line — making the text more 'open' (see Hartley, 1994).

Some points were emboldened to highlight them — e.g., if you **get worse**...

Some technical wording was simplified — e.g., 'feeling sick' for 'vomiting'; 'use by date' for 'expiry date.'

The word sequence in some phrases was altered to place simpler terms before technical ones — e.g., milk or lactose; nerve pain or neuralgia.

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Some wording was amplified to make the text clearer — e.g., ‘take them back to a pharmacy (the chemist’s)’ became ‘take out-of-date tablets back to your pharmacist.’

Two versions were then produced — one set ‘portrait’ and one set ‘landscape.’ The main body of the text was printed in 12 point Arial on an A4 page. This was then reduced in size to A5.

### Stage 2

The type-size of the original text was increased from 12 to 16 point so that when it was reduced it would approximate 12 point — the minimum recommended typesize for medical leaflets (Hartley, 1999; RNIB, 1998).

The typesize of the main headings was increased to 24 point so that they would be reduced to approximately 18 point.

The main headings were re-written in the form of questions rather than statements — e.g., ‘What Burofen does’ became ‘What does Burofen do?’ Some guidelines suggest that questions are more motivating for users of this kind of information (Raynor, 1998; Osman, 1998).

Some technical/medical text was deleted, and some moved to form a note at the end of the leaflet.

Some of the text was further clarified/simplified — e.g., ‘For adults and children over 12 **the usual dose is 1 or 2 tablets 2 or 3 times a day**’ became ‘For adults and children over 12 **take 1 or 2 tablets with food 2 or 3 times a day.**’

## Burofen

Please read this leaflet carefully before taking any tablets

Phone 0845 123 456(local call) if you need a large print or audio version of this leaflet

Keep this leaflet and read it again if you need to

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### 1. What does Burofen do?

- Burofen is a pain killer. It eases rheumatic, or muscle pain, backache, nerve pain (neuralgia), migraine, headache, tooth ache, period pains, feverishness and symptoms of cold and flu
- It works by damping down inflammation, which is often the cause of pain and fever

### 2. How do I take Burofen?

For adults and children over 12  
**take 1 or 2 tablets with food 2 or 3 times a day**

*Do not take more than 6 tablets in 24 hours  
Leave at least 4 hours between doses*

**Do not give Burofen to children under 12**

**Do not take Burofen during pregnancy**  
It may delay labour, or make it last longer

Figure 2  
A page from the portrait style leaflet  
(original size: 148 X 210 mm.)

**Take Burofen with food or after food**

Burofen tablets are designed to be swallowed whole  
There is no need to cut out any particular food or drink

**If you forget to take Burofen**

it doesn't matter if you miss a dose, but **Do not take a double dose** to make up for it  
If Burofen feels too **strong** or **too weak**, ask your doctor or your pharmacist for advice

**If the tablets don't make you feel better,** or **if you get worse,** talk to your doctor

**Use as little Burofen as you need** to get rid of a pain or to feel better, for as short a time as possible  
This will help you to avoid reactions or side-effects

**If you take too many Burofen tablets** you may

get headaches, feel drowsy, or be sick

**If you or someone else has taken too many tablets, talk to a doctor or a pharmacist at once**

Burofen has no effect on your ability to drive or to use machines

### 3. Take care

**If you are taking any other medicines** tell your pharmacist or doctor.

Burofen may affect:

- **Drugs that thin the blood**  
Burofen may make the blood thinner still
- **Drugs for high blood pressure**  
Burofen may work against them
- **Aspirin** (or other pain killers)  
If you take these at the same time as Burofen, you are more likely to get a bad reaction
- **Water Tablets**  
Burofen may work against these

**Do not take the tablets...**

If you have a stomach ulcer  
(or used to have one)  
If you react badly to milk or lactose  
(If you are lactose)  
If you are or have been allergic to:

- aspirin
  - ibuprofen
  - or other similar pain reducing drugs
- (the reactions may include symptoms of asthma, rash or runny nose)
- If you are allergic to:
- Lactose
  - Magnesium stearate
  - Modified cellulose gum

**In these situations taking Burofen may make things worse.**

**Please talk first to your doctor or pharmacist**

**Take special care with Burofen tablets...**

- **If you have kidney, liver or heart problems** (or if you used to). If you do have kidney problems and you have to take Burofen, your doctor may test your kidneys before and after you take the tablets
- **If you have asthma** (or used to). Burofen can bring on an attack
- **If you are breastfeeding.** You can take the tablets when you are breastfeeding. A little ibuprofen does get into breast milk, but it is unlikely to do your child any harm
- **If you are over 60.** Older people are more at risk from the serious effects of any reactions. If you are over 60, take just enough Burofen to make you feel better
- **Again, please talk first to your doctor or pharmacist**

## Burofen

Please read this leaflet carefully before taking any tablets

Phone 0845 123 456(local call) if you need a large print or audio version of this leaflet

Keep this leaflet and read it again if you need to

### 1. What does Burofen do?

- Burofen is a pain killer.  
It eases rheumatic, or muscle pain, backache, nerve pain (neuralgia), migraine, headache, tooth ache, period pains, feverishness and symptoms of cold and flu
- It works by damping down inflammation, which is often the cause of pain and fever

### 2. How do I take Burofen?

For adults and children over 12 take 1 or 2 tablets with food 2 or 3 times a day

*Do not take more than 6 tablets in 24 hours  
Leave at least 4 hours between doses*

**Do not give Burofen to children under 12**

**Do not take Burofen during pregnancy**  
It may delay labour or make it last longer

Figure 3

A page from the landscape style leaflet

(original size: 210 X 148 mm.)

## 2. Taking Burofen (continued)

### Take Burofen with food or after food

Burofen tablets are designed to be swallowed whole

There is no need to cut out any particular food or drink

If you forget to take Burofen it doesn't

matter if you miss a dose, but

**Do not take a double dose** to make up for it

If Burofen feels **too strong** or **too weak**, ask your doctor or your pharmacist for advice

If the tablets don't make you feel better, or if you get worse, talk to your doctor

Use as little Burofen as you need to get rid of a pain or to feel better, for as short a time as possible

This will help you to avoid reactions or side-effects

If you take too many Burofen tablets you may get headaches, feel drowsy, or be sick

If you or someone else has taken too many tablets, talk to a doctor or a pharmacist at once

Burofen has no effect on your ability to drive or to use machines

## 3. Take care

If you are taking any other medicines tell your pharmacist or doctor.

Burofen may affect:

- **Drugs that thin the blood**

Burofen may make the blood thinner still

- **Drugs for high blood pressure**

Burofen may work against them

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- **Water Tablets**

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### Do not take the tablets...

- If you have a stomach ulcer (or used to have one)
- If you react badly to milk or lactose (If you are lactose intolerant)
- If you are or have been allergic to:
  - aspirin
  - ibuprofen
  - or other similar pain reducing drugs (the reactions may include symptoms of asthma, rash or runny nose)
- If you are allergic to:
  - Lactose
  - Magnesium stearate
  - Modified cellulose gum

In these situations taking Burofen may make things worse. Please talk first to your doctor or pharmacist

Figure 3 continues

Care was taken to ensure that the type-sizes in the body of the text in both versions were approximately 12 point — as this is the type-size recommended by the United Kingdom's Royal National Institute for the Blind for materials of this kind (RNIB, 1998). This type-size, of course, is much greater than that traditionally used in many PILS. There were five pages of text in the portrait version and six in the landscape one.

Twenty householders (10 men and 10 women) were each assigned in turn to study one or other of the two versions. The participants ranged in age from 19 to 72 years of age. They were all responsible for taking their own medication, they understood the nature of the research and, if they used glasses for reading, they wore them for the study.

Each person was asked, following an initial collection of demographic data, to use their leaflet to answer a series of fifteen test questions about the information contained within them. These fifteen questions used the same format as that used by Dickinson (1998) but they were not exactly the same. (It appeared to us that some of Dickinson's questions could be answered from general knowledge and without reference to the leaflet.) The first three questions we asked followed the sequence of the material presented in the leaflet but, after this, the questions were in random order — the purpose was to make the participants search through their leaflets to find the appropriate answers.

Each person was questioned individually, and their answers to the questions, whether or not they could find the appropriate piece of text to answer them, and how long it took them to answer each question were all recorded. This procedure is based upon that designed by the Communication Research Institute in Australia and is recommended by the EEC (EMEA, 1999).

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## **Results**

Table II summarizes the demographic data obtained. The participants were asked to indicate in which age group out of seven groupings they fell (less than 20 years; 20-29; 30-39; 40-49; 50-59; 60-69; and more than 69 years). It can be seen that people in the Landscape group were slightly younger than those in the Portrait one. However, these age differences were not statistically significant.

Table II also shows the median test scores (i.e., the average number of questions answered correctly out of fifteen) for each group and the median overall times taken by both groups. The data show that the participants had little difficulty with either version of the leaflet, and that the search times recorded (for answering all fifteen questions) were similar for both groups.

An error analysis showed that every participant answered five of the fifteen questions correctly, that most of them made only one or two errors on the remaining questions and that only one person made as many as five errors.

		Portrait group N=10	Landscape group N=10
Age Group	Median Range	40 - 49 20 - 29 - 60 - 69	30 - 39 <20 - >70
Test Score	Median Range	15 8 - 15	14 11 - 15
Search Time (secs)	Median Range	125 77 - 368	132 88 - 223

**Table II.**  
Demographic data and results

At the end of their test session each participant was shown the alternative version of their leaflet and asked which one they thought that they would prefer and why. Table III shows the results. Most participants preferred the version of the leaflet that they had worked with and thus there were no significant differences between the overall preferences obtained. Some typical comments were:

- The landscape version is easier to read. The portrait version has sections which are too long.
- The portrait version is more straightforward. It explains it better.
- The landscape version is more spread out: the information is not squashed up on every page.
- The portrait version is more compact: it is easier to read at a glance.
- The portrait version is easier to handle. The landscape one is too long to hold comfortably.

Worked with:	Leaflet preference		
	Portrait	Landscape	No preference
Portrait	5	2	3
Landscape	2	6	2

**Table III.**  
Preferences for different layouts (classified according to which layout the participant worked with).

## Discussion

The results obtained in this preliminary enquiry are clear. Both of the leaflet designs were equally effective in conveying their information. There was no difference between the accuracy of information retrieval and between the times taken to find the information, and the preferences for the different designs were equally divided.

It would be unwise, of course, to conclude from these results that it does not matter what kind of layout is used for PILS. Several issues must be considered further.

- First of all, the number of people involved in this study was very small — only ten in each group. More needs to be done with larger — and older — samples.
- Second, only one leaflet was used as the basis for comparison. The data shown in table 1 suggest that portrait and landscape styles might suit different sorts of pamphlets in different ways and these need to be explored more systematically.
- Third, both versions were printed in a double-column format and in a readable type-size — unlike many of the leaflets printed today — so it is perhaps not surprising that the participants found them equally easy to use.
- And finally, the idea — that it does not matter what kind of layout is used for PILS — ignores the different costs involved in the preparation of such leaflets. In this study, for instance, both versions of the leaflet took up the same amount of paper after they were folded appropriately, but there was room for additional text in the portrait version. Some layouts, therefore, might be more cost-effective than others.

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These considerations suggest that there is room for further research. Two other particular observations stood out. First of all, despite the fact that the content of the leaflet was supposedly fictitious, it was closely based upon existing leaflets (for Ibuprofen, for example). Thus one or two of the participants relied upon their prior knowledge in this respect when answering the questions. Likewise, when answering some of the later questions in the test sequence, some participants relied upon their memory for what they had read earlier, rather than search the text again.

In applied work of this kind decisions have to be made about the validity of the methods used. These findings suggest that there may be an argument for working with actual PILS rather than fictitious examples, and for accepting that prior knowledge and memory will affect search and retrieval. Whatever the case, more needs to be done to assess some of the more obvious differences in the typographic layouts of PILS. It would be interesting, for example, following George, Waters and George (1987), to compare portrait and landscape versions of one- or two-sided single-page PILS. But best of all would be to explore how different text designs can best suit particular textual features — such as illustrations, diagrams and boxed information. Indeed, further research is needed to explore the relative virtues of portrait and landscape layouts in a variety of different contexts. ■

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