

How many characters can a short story accommodate?

Introduction

We have all read novels in which entire dynasties of personnel are detailed, each individual with their own plot arc from the tiniest bit player to the central character. The theory goes that a novel has time and space to introduce us to them all, to elaborate them and make their role memorable¹, although some do resort to glossaries which seems to be a tacit acknowledgment that the burden on memory may be a little too great for most.

For short stories – and probably especially flash fiction – there is less time for such elaborations and probably less tolerance of guiding footnotes, never mind appendices, and so the received advice is to have no more than three characters². This is clearly aimed at reducing the potential for confusion and distraction that a greater number might bring but what is the evidence for that?

After being asked to consider losing a character – one that I felt was doing a pretty good job of nipping the story along and whose actions I thought could not easily be given to someone else – I suggested that, since he and another key character operated throughout as a duo, perhaps the strain on memory would be lessened as each would call up the other as a unit and not as separate entities.

I was speculating that a cognitive process called ‘chunking’³ might be taking place whereby information is processed in organised parcels, when these make sense, rather than as individual elements. Thinking of a phone number; once learned, the dialling code becomes a single entity and not the several constituent digits and the remaining string is often mentally broken up by a rhythm that parcels the digits into smaller packages. Similarly, words soon become whole units rather than strings of letters – and if you have come across the, apparently fake, experiment in spelling manipulation⁴ whereby several letters in all the words on the page are changed and the text is still readable, you will appreciate how that economy facilitates reading.

I had no evidence for my theory, I remarked on this during a tutorial and I was challenged to find some. Quite possibly, an experimental methodology was not the one anticipated, but for me here was a hypothesis in need of testing. There follows an account of a very preliminary investigation into whether or not chunking might be operating when characters come as pairs rather than individuals. It is probably the first layer of quite a large cognitive onion.

Method

¹ I have found very little direct evidence or theoretical rationale for this, although it seems to make intuitive sense.

² Again, evidence for a rationale seems to be lacking although there is plenty of repetition of the advice which is occasionally presented as a rule.

³ ‘The recall or [forgetting curve](http://en.wikipedia.org/wiki/Chunking_(psychology)) illustrate that each item in a cluster typically requires about the same amount of time to recall’ [http://en.wikipedia.org/wiki/Chunking_\(psychology\)](http://en.wikipedia.org/wiki/Chunking_(psychology))

⁴ <http://www.dailywritingtips.com/cna-yuo-raed-tihs/>

I found a number of fictional and non-fictional duos⁵ that seemed likely to be recognisable by most people, especially in the UK but possibly also elsewhere: names such as Morecambe and Wise, Mork and Mindy, for instance. Then I found a similar number of names that had corresponding contexts but were not paired: (Han) Solo and (Jean Luc) Picard (star ship captains in sci fi films/programmes), Sherlock and Poirot (detectives)⁶. I designed two very brief tests of memory – recognition and recall – that were, in fact, not testing memory *per se* but the distribution of items remembered.

The Recognition test

Using SurveyMonkey⁷, I presented participants with a list of names drawn from one half of each pair: Morcambe, Mindy, Picard, and Poirot, for instance. I asked participants to read through the list of 28 words twice at most and then go to the next page. I gave them no information about the purpose of the survey, or the nature of the stimuli – that these constituted paired or non-paired names.

On this page, a further list of words was presented, half of which were ones the participants had seen before, the rest being the corresponding item in the pair; for instance, Wise, Mindy, Solo, and Poirot. I asked people then to use the check boxes to show which ones they recognised from the first list.

The hypothesis I was testing is this: there would be more ‘false hits’ or *intrusions* [identification of a name not seen on the first list] among characters normally found in pairs than those of non-pairs because pairs constitute a single item in memory i.e. they would be chunked.

The null hypothesis – and there should always be one – was that there would be no difference in false hits between the two groups of paired and non-paired names.

I asked people to resist the temptation to go back to look at the list. SurveyMonkey is not geared to experimental designs and would allow that function although I had disguised the button that effected this.

The Recall test

On the next page I presented participants with a further list of names. These were all the names they had not seen in the earlier lists – just 14 in all – and included Mork and Sherlock, for instance. Again I asked people to read through the list no more than twice and to go on to the next page. Here, I asked people to list all the names they could remember from that list without going back to look. Again, I gave no information about the aims of the study or the paired or non-paired nature of the names. Recall is much more difficult than recognition and so a smaller group of words seemed adequate.

⁵ http://en.wikipedia.org/wiki/Category:Fictional_duos

⁶ http://en.wikipedia.org/wiki/Detective_fiction

⁷ <http://www.surveymonkey.com/home/>

The hypothesis for this test was not the number of names recalled but the nature of them. I expected to see a number of *intrusions* from the corresponding duos with more of these being from the paired than the unpaired category. The null hypothesis was that there would be no difference in the distribution of intrusions.

Results

I was looking for *intrusions* into recognition and recall of unseen items that might have been triggered by associations among items that the participants had seen. I expected there to be more of these in the case of paired items than non-paired items because I believed that well known pairs of names may be stored as a single unit – chunked - not as individual items and so have the cognitive load of one and not two units of memory.

I put out a link to the survey via twitter, Facebook, my blog, and LinkedIn. The target population was likely to include both writers and health scientists. There was a number of re-tweets of the link which potentially widened the catchment population.

After five days, sixty six participants had completed the study. I closed it at this point as a number remarked on what they saw as their ‘appalling short term memory’ and it seemed judicious to remove the temptation to return to the study from a different computer in the hope of a ‘better’ score.

Recognition

The sixty six participants generated a total of 637 responses to the items they saw on the first list, 88 of which (13.8%) were intrusions.

Of the 88 intrusions, 77.27% were of paired items, 23.26% of non-paired items.

As percentages of the total of responses: 10.68% (68) were from the paired category, 3.4% (20) from the non-paired category.

This distribution is in the predicted direction: i.e. there were more intrusions from the paired category than the non-paired category.

To examine the significance of the figures, I applied a t-test for independent measures. This is a way of making sure that the outliers that can affect averages and percentages are put into proper perspective and checked against expected statistical norms⁸.

This gave rise to a *t value* of 1.87 with 12 degrees of freedom. Using one-tail values because my prediction was only concerned with one direction – I did not expect a deleterious effect of paired items on recognition - this is significant at the .05% level, which means that the result could be expected to come about by chance on only 5% of occasions. Put another way, there is a 95% chance the result reflects a real effect.

Recall

⁸ Robson, C. *Experiment, Design & Statistics*. Penguin, 1994. P 71-81.

The sixty six participants reported 217 items, including 20 (9.22%) intrusions. The range of reporting was 0-12 items with most people (15) recalling around three items.

Of the intrusions; 9 (45%) were from the paired category, 2 (10%) were from the non-paired category, 5 (25%) came from the first list and 4 of these were paired, and 4 (20%) were miscellaneous and may or may not have been associated in some way with seen items.

Paired responses, including intrusions, constituted 115 of the total – 7.82%

Non-paired responses, including intrusions, made up 93 of the total – 2.15%

The numbers are too small for statistical analysis but again the distribution is in the predicted direction.

Conclusions

This was a somewhat off-the-cuff study⁹ using item pairs that had not been independently validated, survey software that did not preclude re-visiting of the lists, and an uncontrolled sample with no systematically recorded or required demographic data. For these reasons, the direction in which the results point is probably more valid a platform for discussion than the percentages and statistics. Nevertheless, these support my hypotheses that pairs intrude more often than non-pairs even when the non-pairs are contextually associated and might trigger each other, which may have been the case with *Dobby*, *Porlock*, and *Zippy* [Noddy, Warlock/Gandalf, a *Rainbow* character like Bungle].

This might mean, as I suspect, that they are being chunked and so represent less of a cognitive load, and this might in turn mean that where characters consistently operate together in fiction, you might just get away with exceeding the stated dose.

What this exercise goes no way to answering is whether the premise is valid in the first place – can people really manage only three characters in a short story or flash piece? How closely related/interactive/similar do the characters have to be in order to be chunked? There is, I think, a plethora of dissertations in that.

⁹ A scientific report would necessarily include a greater amount of theoretical background into which findings would be placed for discussion. This is a 'quick and dirty' exploration based on a small component of memory which itself is influenced by many factors not taken account of here.