Graphemic and graphetic methods in speculative fiction

Frédéric Landragin, Yannis Haralambous and Kenichi Handa
G21C 2020
Graphologistics in the 21st century
Paris, June 2020
Foreword and work context

- *(the point of departure for our collaboration)* How to write to an alien? Linguistics and grapholinguistics in speculative fiction
- A review of the main science fiction novels where science is linguistics

Various methods

- Grapheme creation – Gahan Wilson…
- Graphetic experiments – Alfred Bester, Alain Damasio…
- Eye dialect – Daniel Keyes, Peter Phillips…
- Annotations – Cortazar, Torishima…
- Discussion, classification

Conclusions and future works

- Choices for the final paper
Foreword

How to write to an alien?
Speculative fiction, a laboratory

Experimenting with the ideas from Noam Chomsky
Experimenting with Sapir-Whorf

Sapir-Whorf hypothesis
The structure of a language affects its speakers’ world view or cognition, and thus people’s perceptions are relative to their spoken language.

Interpretation 1 = linguistic relativism
Our language influences the way we perceive the world (colours, for example).

Interpretation 2 = linguistic determinism
Our language determines our mental structures.
When researchers begin to dissect works of speculative fiction, especially when they are linguists, they tend to point out errors and exaggerations. The remarks that we will be led to make do not in any way constitute criticism of the work of writers of speculative fiction. On the contrary, even when we are a little critical, one must not forget that narrative takes precedence over scientific plausibility. What is more, the great majority of our remarks tend to show the accuracy of intuition, and in any case the broad scope of these writers’ imaginations.
Sapir-Whorf illustrations
Totalitarian languages
Various invented languages

Kamazh ār atharan
« Le Livre de l’admiration » (75)

§ 1. Zer atharan zan abben
Ar atharan aw nera zira ak nāz zeba barwa atheran ak nāz xanan aran paeth magaran. Aw sawaran ab jaleph atheran waraɓaɓh thän ak aenæ atha athazaɓh agon ken athar athar ab xarën ek parënt nāz amarza zës ankön athan yemön atha ek ramazh aw wartha bāz athan.

Perazanma ab xanan aw ranan ar wan ab atheran mazum atha ek athar ek athan nāz jemathë.

Awen atharaɓh atha amõn er wërst ak yemön zemö na pant ataɓh bár mabazaɓh athar zemö kemön shëma athan.

§ 1. Analyse de la notion
L’admiration est une émotion qui ressemble à l’étonnement pour sa cause, et qui pour ses effets procure de la joie.
De manière exemplaire, on éprouve de l’admiration au moment où on se trouve à l’extérieur d’un lieu, comme un homme qui, placé devant une porte, est pris du désir d’entrer dans le lieu, mais se trouve retenu par la crainte.

Car il est clair, pour l’étymologie, que les mots « admiration » [atharan], « lieu » [atha], « porte » [athar] et « entrée » [athan] sont voisins.

On admire toujours des lieux ou des choses dans lesquels on veut entrer, mais devant lesquels on hésite à entrer en raison d’un certain respect.
A pictographic novel

Book from the ground
(2013 / 2018)
And the universal language?

In France, research on the origin of languages and on the universal language was banned in 1866 by the “Société Linguistique de Paris”
Arrival – a brilliant synthesis?

Ted Chiang  
Noam Chomsky  
Sapir-Whorf  
Jessica Coon  
others  
=  
A wonderful “linguistic fiction”
Classification of Graphe(m|t)ic Methods in SF

1. **Eye dialect**: Phillips, Keyes, Banks, Damasio, Silverberg
2. **Annotation**: Torishima, Cortázar, Ballard
3. **Grapheme creation**: Wilson, Fusa
4. **Innovative use of pre-existing graphemes**: (this topic will not be addressed)
5. **Variation of typographic parameters**: Ende, Jardin, Mandanipour
6. **Typographical arrangements**: Ollier, Bester, Tō, Damasio, Jardin
Part I

Eye Dialect
Eye Dialect: Rationale

- Traditionally, eye dialect is the representation of regional or dialectal variations by spelling words in nonstandard ways. (term coined by linguist George P. Krapp in The Psychology of Dialect Writing (1926).

☞ Keyes uses eye dialect to denote the intelligence level of the narrator.
☞ Phillips uses eye dialect to denote a robot’s semantic matching inability for specific words.
☞ Banks uses eye dialect to connote the strangeness of the narrator (brain damage? adolescence?).
☞ Damasio uses eye dialect to identify the narrator among six different characters.
☞ Silverberg uses eye dialect to escape censorship.
Keyes uses eye dialect to denote the intelligence level of the narrator.
The novel *Flowers for Algernon* (1966) by Daniel Keyes (1927–2014) is a series of “progress reports” written by a mentally disabled person whose IQ is artificially increased, and then regresses again at the end of the book.

Keyes uses eye dialect to denote the narrator’s IQ and its evolution.

Here is the beginning of the first report (3/3):

Dr Strauss says I shoud rite down what I think and remembir and evrey thing that happins to me from now on. I dont no why but he says its important so they will see if they can use me. I hope they use me becaus Miss Kinnian says mabye they can make me smart. I want to be smart. My name is Charlie Gor­don I werk in Donners bakery where Mr Donner gives me 11 dollers a week and bred or cake if I want.
We are in the process of analyzing the errors of *Flowers for Algernon* in

- English (YH),
- French (YH),
- German (YH),
- Italian (Dalia Gaviglio),
- Spanish (Albeiro Espinal),
- Portuguese (Pedro Quaresma),
- Romanian (?),
- Hungarian (Gábor Bella),
- Turkish (Derya Can),
- Russian (Nataliia Drozhashchikh and Olga Mironenko),
- Japanese (Kenichi Handa),
- Korean (Deok-Hee Kim-Dufor)
- Chinese (students of IMT Atlantique).

We kept only the periods 3/3–4/8 and 11/1st–11/21.
Example of distribution of errors in the English version:

and its polynomial fit:
### Flowers for Algernon: Most frequent English errors

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<thead>
<tr>
<th>Error</th>
<th>Correct</th>
<th>Chronology</th>
</tr>
</thead>
<tbody>
<tr>
<td>dont (138)</td>
<td>don’t (2)</td>
<td>3/3</td>
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<tr>
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<td>didn’t (2)</td>
<td>3/4</td>
</tr>
<tr>
<td>tolld (39)</td>
<td>told (43)</td>
<td>3/3 3/7</td>
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<tr>
<td>pepul (37)</td>
<td>people (10)</td>
<td>3/4 3/7</td>
</tr>
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<td>werk (31)</td>
<td>work (11)</td>
<td>3/3 3/21</td>
</tr>
<tr>
<td>operashun (28)</td>
<td>operation (1)</td>
<td>3/7 3/29</td>
</tr>
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<td>remembrir (23)</td>
<td>remember (11)</td>
<td>3/3 3/28</td>
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<td>rite (23)</td>
<td>write (5)</td>
<td>3/3 3/29</td>
</tr>
<tr>
<td>cant (22)</td>
<td>can’t (1)</td>
<td>3/3 11/9</td>
</tr>
<tr>
<td>lern (22)</td>
<td>learn (5)</td>
<td>3/3 4/1</td>
</tr>
<tr>
<td>coud (20)</td>
<td>could (12)</td>
<td>3/3 4/3 4/6</td>
</tr>
<tr>
<td>frends (19)</td>
<td>friends (4)</td>
<td>3/8 4/1</td>
</tr>
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## Flowers for Algernon: Most frequent French errors

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<tr>
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<td>ça (27)</td>
<td>3/6/3/8</td>
</tr>
<tr>
<td>un télijen (12)</td>
<td>intelligent (52)</td>
<td>3/5/3/11</td>
</tr>
<tr>
<td>come (22)</td>
<td>comme (83)</td>
<td>3/8/3/4</td>
</tr>
<tr>
<td>peut être (15)</td>
<td>peut-être (4)</td>
<td>3/3/3/27</td>
</tr>
<tr>
<td>ma (15)</td>
<td>m’a (78)</td>
<td>3/4</td>
</tr>
<tr>
<td>jai (12)</td>
<td>j’ai (95)</td>
<td>3/4</td>
</tr>
<tr>
<td>rapèle (10)</td>
<td>rappelle (9)</td>
<td>3/3/3/28</td>
</tr>
<tr>
<td>ou (14)</td>
<td>où (10)</td>
<td>3/3</td>
</tr>
<tr>
<td>avez (11)</td>
<td>avait (24)</td>
<td>3/4</td>
</tr>
<tr>
<td>quant (13)</td>
<td>quand (52)</td>
<td>3/4</td>
</tr>
<tr>
<td>jens (7)</td>
<td>gens (21)</td>
<td>3/6/3/11</td>
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</table>
Flowers for Algernon: Most frequent German errors

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<td>nicht (43)</td>
<td>3/3 (3/11)</td>
</tr>
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<td>wen (80)</td>
<td>wenn (18)</td>
<td>3/3 (4/1)</td>
</tr>
<tr>
<td>kan (65)</td>
<td>kann (22)</td>
<td>3/3 (4/1)</td>
</tr>
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<td>fon (57)</td>
<td>von (29)</td>
<td>3/3 (3/29)</td>
</tr>
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<td>imer (44)</td>
<td>immer (13)</td>
<td>3/4 (4/4)</td>
</tr>
<tr>
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<td>soll (4)</td>
<td>3/3 (4/1)</td>
</tr>
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<td>weis (38)</td>
<td>weiß (17)</td>
<td>3/3 (4/4)</td>
</tr>
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<td>leute (34)</td>
<td>Leute (4)</td>
<td>3/4 (4/4)</td>
</tr>
<tr>
<td>ser (32)</td>
<td>sehr (8)</td>
<td>3/4 (4/1)</td>
</tr>
<tr>
<td>mer (29)</td>
<td>mehr (17)</td>
<td>3/3 (3/24)</td>
</tr>
<tr>
<td>plos (27)</td>
<td>bloß (2)</td>
<td>3/4 (11/1)</td>
</tr>
<tr>
<td>dan (26)</td>
<td>dann (7)</td>
<td>3/4 (4/4)</td>
</tr>
</tbody>
</table>
### Flowers for Algernon: Most frequent Spanish errors

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<td>a (174)</td>
<td>ha (24)</td>
<td>3/3, 3/7</td>
</tr>
<tr>
<td>e (144)</td>
<td>he (23)</td>
<td>3/3, 3/16</td>
</tr>
<tr>
<td>abia (27)</td>
<td>había (1)</td>
<td>3/4, 4/8</td>
</tr>
<tr>
<td>después (24)</td>
<td>después (1)</td>
<td>3/6, 4/8</td>
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<td>acer (16)</td>
<td>hacer (16)</td>
<td>3/6, 3/15</td>
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<td>asi (25)</td>
<td>así (1)</td>
<td>3/3, 4/7</td>
</tr>
<tr>
<td>mui (24)</td>
<td>muy (38)</td>
<td>3/3, 3/5, 4/7</td>
</tr>
<tr>
<td>tambien (12)</td>
<td>también (4)</td>
<td>3/4, 3/11</td>
</tr>
<tr>
<td>escribir (20)</td>
<td>escribir (12)</td>
<td>3/3, 3/5</td>
</tr>
<tr>
<td>echo (19)</td>
<td>hecho (14)</td>
<td>3/5, 3/16</td>
</tr>
<tr>
<td>an (19)</td>
<td>han (5)</td>
<td>3/5, 3/11</td>
</tr>
<tr>
<td>dige (18)</td>
<td>dije (12)</td>
<td>3/4</td>
</tr>
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</table>
### Flowers for Algernon: Most frequent Russian errors

<table>
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</tr>
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<tr>
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<td>чтобы (11)</td>
<td>3/3</td>
</tr>
<tr>
<td>хочу (36)</td>
<td>хочу (4)</td>
<td>3/3</td>
</tr>
<tr>
<td>мис (29)</td>
<td>мисс (7)</td>
<td>3/3</td>
</tr>
<tr>
<td>кажется (22)</td>
<td>кажется (3)</td>
<td>3/4</td>
</tr>
<tr>
<td>говорит (20)</td>
<td>говорит (5)</td>
<td>3/3</td>
</tr>
<tr>
<td>этого (18)</td>
<td>этого (2)</td>
<td>3/6</td>
</tr>
<tr>
<td>ничего (16)</td>
<td>ничего (5)</td>
<td>3/4</td>
</tr>
<tr>
<td>что-то (10)</td>
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<td>3/4</td>
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<td>хорошо (10)</td>
<td>хорошо (8)</td>
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</tr>
<tr>
<td>Сегодня (10)</td>
<td>Сегодня (2)</td>
<td>3/4</td>
</tr>
<tr>
<td>понял (9)</td>
<td>понял (3)</td>
<td>3/4</td>
</tr>
</tbody>
</table>
Keyes, *Flowers for Algernon*: Plans

- This is work in progress.
- We will analyze:
  - error type (lexical, conjugation, declination, capitalization, diacritics, apostrophe, etc.),
  - word difficulty and educational level,
  - systematicity of error,
  - correlation of erroneous word choice between translations,
  - plausibility of error for a mentally disabled,
  - frequency of error in other corpora,
  - etc.
- We need to gather versions of the book in other languages (it has been translated into 27 languages) and we need volunteers to help us process them.
- We hope to present our results at AWLL13 (if submission accepted).
Phillips uses eye dialect to denote a robot’s semantic matching inability for specific words.
In his short story *Lost Memory* (1952), Peter Phillips (1920–2012) describes a robot civilization the founder of which was a computer that erased all terms referring to humans.

When a human arrives accidentally, biological life is completely unknown, and the lack of knowledge is connoted by eye dialect for specific words, for ex.:

You call me he. Why? You have no seks. You are neuter. You are it it it! I am he, he who made you, sprung from shee, born of wumman. What is wumman, who is silv-ya what is shee that all her swains commend her ogod the bluds flowing again. Remember. Think back, you out there. These words were made by mann, for mann. Hurt, healing, hospitality, horror, deth by loss of blud. Deth. Blud. Do you understand these words?

*Cf.* *Who is Sylvia? What is she, that all the swains commend her?* (The Two Gentlemen of Verona)
Banks uses eye dialect to connote the strangeness of the narrator (brain damage? adolescence?).
Banks: *Feersum Endjinn*

- Every chapter of *Feersum Endjinn* (1994) by Iain M. Banks (1954–2013) is divided in equal parts narrated by four different characters.
- The fourth narrator, Bascule the Teller, uses eye dialect:

  Not 2 bad, I say, witch is tru. My soar hed’s a lot betir thi rest ov me isn’t aykin 2 mutch Ither but if I had 2 pik 1 improovmint abuv ol thi uthirs it wude ½ 2 b thi fact I doan feel like Im juss abowt 2 dy eny moar. (p. 402)

Not too bad, I say, which is true. My sore head is a lot better and the rest of me isn’t aking too much either but if I had to pick one improvement above all the others it would have to be the fact I don’t feel like I’m just about to die any more. (64% nonstd.)
As if Bascule’s eye dialect were not enough, there is Dartlin, a lisping sparrow:

So thare u r Mr Bathcule, ithnt it ol tewwibwy, tewwibwy interethtin? I think tho 2 - o look, i think i juss thaw a flee on yoor leg thare; may I preen u? (p. 122)

So there you are Mr Bascule, isn’t it all terribly, terribly interesting? I think so too - oh look, I think I just saw a flee on your leg there; may I preen you? (56% nonstd.)
And Gaston, a hissing sloth:

I quite understand your anguish, young Bascule, Gaston said. But it's not your fault certain persons are trying to persecute you. (p. 292)
John Corbett (2012) calls Bascule’s eye dialect, an anti-language:

An anti-language is the means of realization of a subjective reality: not merely expressing it, but actively creating and maintaining it. Bascule’s anti-language identifies him as a member of a subculture that stands apart from mainstream society and its linguistic conventions. Ultimately, Bascule’s anti-language constructs him as that most alien of creatures, a young teenager.

Feersum Endjinn was published in Jan. 1994 while the Nokia 2010, first SMS-enabled mobile phone, came out in January 1994. The use of SMS language is premonitory: “½ archilojikil reserch ½ soshil wurk if u want 2 look @ it coldly r happy 2 ignoar”...
Damasio uses eye dialect to identify the narrator among six different characters.
Eye Dialect in Damasio’s *Les furtifs*

- *Les furtifs* (2019) is a novel by Alain Damasio (1969–).
- To distinguish among the six narrators, Damasio uses:
  1. An opening sequence: one or two specific graphs at paragraph begin;
  2. Allographs of Latin letters obtained by applying diacritics to Latin letters or by using similarly shaped Greek or Cyrillic letters.
- In total, 54 allographs are used, with frequencies between 1,457 (for `<ċ>`) and hapax. Out of them three belong to the Greek script: `<ὁ>`, `<τ>`, `<ὖ>` and one to the Cyrillic script: `<ʀ>`. 
## Eye Dialect in Damasio’s *Les furtifs*

<table>
<thead>
<tr>
<th>a</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>f</th>
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<th>h</th>
<th>i</th>
<th>j</th>
<th>k</th>
<th>l</th>
<th>n</th>
<th>o</th>
<th>p</th>
<th>r</th>
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<th>t</th>
<th>u</th>
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<td>475</td>
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</table>
Eye Dialect in Damasio’s *Les furtifs*

The distribution of allographs is as follows:

<table>
<thead>
<tr>
<th>Narrator</th>
<th>Allographs Specific</th>
<th>Common with others</th>
</tr>
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<tbody>
<tr>
<td>Lorca</td>
<td>ĞİōẹỤ</td>
<td>ôÇċègLŁľjọ</td>
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<tr>
<td>Sahar</td>
<td>āĩŋşţũ</td>
<td>çćgLřűjű</td>
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<tr>
<td>Saskia</td>
<td>æĂăĞģḤhȓr</td>
<td>ióÇĆČćègLřŠũọڕڕ</td>
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<tr>
<td>Nèr</td>
<td>ĐđĦħlTtΘeΘP</td>
<td>ŁŚ</td>
</tr>
<tr>
<td>Hernán</td>
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<td>ióLřűjű</td>
</tr>
<tr>
<td>Toni</td>
<td>bĚeĩŎRštȜű</td>
<td>ĨČřľڕ</td>
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</table>
Eye Dialect in Damasio’s *Les furtifs*: Examples

**Saskia, p. 132**

‘Ağ)üero s’ăvančé,) se déçale. Il tire măintenănt sur là porte d’entrée de là măison. Un bruit de boomerâng hăcʰe l’ăir… Où il est ? Une énième seringue părt en missile et çontourne là măison āvănt de filer vers là porte où se tient Nèr))) Nèr ă le réflexe de plonģer) trop tărd) il prend là

**Nèr, p. 142**

‘Słɵughî,‘ il incise / il scie. Đecisif Słoğhî/décisif ! Đőber nôn, Đőber boît/boîte, Đőber là nique, le fif il rit/il lui pique tout, il le déboîte, les incisives, là boîte à molaires, hihi ! La fiłle fiłe-fiłe/se faufiłe/ c’est le fił. Qui dit ? Qui dit ? Θǜ ? Hɵuŋŋu ? Θɵ̀ dŏnc qui dit ?

**Toni, p. 654**

¿Ce est passé ? Au Cŏsmŏndŏ ? I don’t knōw. Enflle le flōu. La flōuille. L’embrōuillâme. Ma peau flume, je m’emplume sōus les brasses, je cōurs plus, je caʝole. Tŏni Tŏut-flōu, ich ! L’hŎmme de brume, hum, ahem, salam aleykŏum, shalŏm !
Silverberg uses eye dialect to escape censorship.
Eye Dialect in Silverberg’s Going Down Smooth

- **Going Down Smooth** (1968) is a novel by Robert Silverberg (1935–).
- The narrator is a robot psychiatrist. After a Shakespearean quote
  Hath not a Jew eyes? Hath not a Jew hands, organs, dimensions, senses, affections, passions? (The Merchant of Venice)
  Silverberg writes
  **FUCK YOU** in ASCII binary code.

```
regard me as obscene? Can a person be considered obscene? Am I a person? I am a person. Hath not a person hands, organs, dimensions, senses, affections, passions? I have all of those things. I have none of those things. I am a person.
1000110
1010101
1000011
1001011
0100000
1011001
1001111
1010101
```

Landragin, Haralambous & Handa
Graphe[mt]ic Methods in Speculative Fiction
Eye Dialect in Silverberg’s *Going Down Smooth*

- Is writing in binary ASCII a case of eye dialect?
- Eye dialect is cyphered written text that needs to be realized phonetically to be decyphered. The correspondence between grapheme groups and phonemes allows phonetic realization.
- A machine stores characters as numbers. To be decyphered it is necessary to have the correspondence between numbers and graphemes, which is given in the encoding.

Silverberg underlines the human properties of the depressed (11 years before Douglas Adams’s Marvin!) robot psychiatrist by having it utter obscenities. Using ASCII was an in-joke.

This short story appeared 2 years after the release of ELIZA.
Part II

Annotation
Annotation: Rationale

- Using Genette’s vocabulary we consider *annotations* as being *paratextual elements*. Their specificity is to take part in semantic or discursive dipoles: annotated text segment → annotation content.

☞ Torishima uses annotation to construct new meanings by the interaction of two levels of morphemes.

☞ Cortázar uses annotation to denote the simultaneity of two discurses, primary (“oral”) and secondary (“mental”).

☞ Ballard uses annotation by footnotes to constrain the reading process.
We consider two kinds of annotation:

1. **interlinear annotation**: the annotated text is a sequence of contiguous words, annotation is placed between lines;

2. **footnotes**: the annotated text is not clearly delimited, annotation is of variable length (up to several pages), the link between the two is a mark.
Torishima uses annotation to construct new meanings by the interaction of two levels of morphemes.
Atejis in Torishima’s *Sisyphean*

- The traditional function of interlinear annotation in Japanese is to provide reading glosses (furigana) to kanji characters.
- *Ateji* in the sense of Mia Lewis (2010), is the “pairing of kanji and furigana that has a different meaning”.
- 皆勤の徒 (*Sisyphean*) by 酉島伝法 Dempow Torishima (1970–).
せいぞうぶつ
製臓物

• If 製臓物 is ABC, then BC 臓物 has the “entrails” meaning.
• せいぞうぶつ /sezoubutsu/ is the phonetic representation of AB’C 製造物 “product”.
• By combining the semantics of AB’C and of BC we get “artificially produced entrails”.
• In the English translation: synthorganic.
Ateji in Torishima’s *Sisyphean*: Examples

れいちょうるい

隷重類

- ABC 隷重類 has the “heavily-burdened slave genus” meaning (A stands for “slave,” B for “heavy” and C for “genus”).
- れいちょうるい /reichourui/ is the phonetic representation of A′B′C 霊長類 “primates” where A′ stands for “superior” and B′ for “leader”.
- By combining the semantics of ABC and of A′B′C we get “slave primate”.
- In the English translation: *subordinape*.
Ateji in Torishima’s *Sisyphean*: Examples

けっかんもどき
皿菅

- No Japanese word can be associated with the reading of 皿菅.
- けっかん /kekkan/ can have the meanings “blood vessel” (血管), “fault” (欠陥) and “missing volume” (欠巻).
- もどき /modoki/ has the meaning of “ersatz” or “imitation”.
- 血管 is graphically close to 皿菅, we can consider the latter as being a “simpler imitation” of the former.
- Therefore we can consider that the first meaning of けっかん is meant and hence we obtain for 皿菅 the semantics of “an imitation of blood vessel”.
- In the English translation: *blood sedge*. 
Cortázar uses annotation to denote the simultaneity of two discourses, primary (“oral”) and secondary (“mental”).
• Interlinear annotation can be used to insert simultaneous thoughts of the narrator using interlinearity as a common temporal scale (in the same way as in musical scores).

• *El libro de Manuel* (1973) is a political novel by Julio Cortázar (1914–1984), called by himself “the worst of his books”.

• 20 interlinear annotations, concentrated in 8 pages, expressing thoughts of the narrator.
Annotaciones en *El libro de Manuel*: Ejemplo

- **p. 130** (*doubt about mentioning the full moon*)
  para que no se le ocurriera soltar un graznido
  ¿Por qué la luna llena?
  telefónicamente inquietante para el alborotado
  Oteiza que en cinco minutos arregló

- **p. 131** (*doubt persists*)
  pensar un poco en eso que estaba esperando en la
  otra punta, ir poniendo desde ya la cara de
  veterinario consciente de su importante misión

- **p. 133** (*f.m. appears in text, thought: “maybe it wasn’t full in the first place”*)
  entre las sombras de una calle llena de agujas y
  lo mejor no había luna, haría mejor en pensar en el discurso
  amenazas, aullando histéricas sin saber de qué, de
  luna llena y carnaval
Ballard uses annotation by footnotes to constrain the reading process.
NOTES TOWARDS A MENTAL BREAKDOWN

A ‘discharged’ Broadmoor patient compiles ‘Notes Towards a Mental Breakdown’, recalling his wife’s murder, his trial and exoneration.

Every word has a footnote attached, so that the entire 2,804-word story is in fact 12 pages long.

The use of the indefinite article encapsulates all the ambiguities that surround the undiscovered document, Notes Towards a Mental Breakdown, of which this 18-word synopsis is the only surviving fragment. Deceptively candid and straightforward, the synopsis is clearly an important clue in our understanding of the events that led to the tragic death of Judith Loughlin in her hotel bedroom at Gatwick Airport. There is no doubt that the role of the still unidentified author was a central one. The self-effacing ‘A’ must be regarded not merely as an overt attempt at evasion, but on the unconscious level, as an early intimation of the author’s desire to proclaim his guilt.

There is no evidence that the patient was discharged. Recent inspection of the in-patients’ records at Springfield Hospital (cf. footnote 2) indicates that Dr Robert Loughlin has been in continuous detention in the Unit of Criminal Psychopathy since his committal at Kingston Crown Court on 18 July 1975. Only one visitor has called, a former colleague at the London Clinic, the neurologist Dr James Douglas, honorary secretary of the Royal College of Physicians Flying Club. It is possible that he may have given Dr Loughlin, with his obsessive interest in man-powered flight, the illusion that he had flown from the hospital on Douglas’s back. Alternatively, ‘discharged’ may be a screen memory of the revolver shot that wounded the Gatwick security guard.

Unconfirmed. Dr Loughlin had at no time in his ten-year career been either a patient or a member of the staff at Broadmoor Hospital. The reference to Broadmoor must therefore be taken as an indirect admission of the author’s criminal motives or a confused plea of diminished responsibility on the grounds of temporary madness. Yet nothing suggests that Dr Loughlin considered himself either guilty of his wife’s death or at any time insane.

From the remaining documents—tape-recordings made in Suite B17 of the Inn on the Park Hotel (part of the floor occupied by the millionaire aviation pioneer Howard Hughes and his entourage during a visit to London) and cine-films taken of the runways at an abandoned USAAF base near Mildenhall—it is clear that Dr Loughlin believed he was taking part in a ritual of profound spiritual significance that would release his wife forever from the tragedy of her inoperable cancer. Indeed, the inspiration for this strange psychodrama may have come from the former Broadmoor laboratory technician and amateur dramatics coach, Leonora Carrington, whom Loughlin met at Elstree Flying Club, and with whom he had a brief but significant affair.

A remarkable feature of Dr Loughlin’s confinement at Springfield is how little he conforms to the stereotype of ‘patient’. Most of his fellow inmates at the Unit of Criminal Psychopathy are under some form of restraint, but Loughlin’s behaviour is closer to that of a member of staff. He has informal access to all the facilities of the Unit, and with his medical training and powerful physique often stands in as an auxiliary nurse, even on occasion diagnosing minor ailments and supervising the administration of drugs. Characteristics of Loughlin is the high level of his general activity. He is forever moving about on errands, many of barely apparent significance, recently, when his attempts to streamline all the furniture in the day-room unsettled the other patients, Dr Grumman unequivocally hired a private investigator to follow him, posing as her lover. Dr R. W. Butterworth of the Advance

The British Pharmacopoeia Codex, particularly those referring to anti-carcinogenetic drugs, have been so...
Part III

Grapheme Creation
Wilson creates a morpheme-representing grapheme without phonetic realization with allographs simulating growth of a living organism.

Fusa Obi, the Japanese translator of Keyes, creates graphemes to connote lack of knowledge of the kanji repertoire.
Wilson creates a morpheme-representing grapheme without phonetic realization with allographs simulating growth of a living organism.
• Gahan Wilson (1930–2019), a cartoonist for *The New Yorker* and *Playboy*, wrote “-pane” (1972), a short story included in Harlan Ellison’s *Again, Dangerous Visions 2*.

• Ellison, in the Foreword to the story says: “I suggested [Gahan Wilson] invent a whole new kind of story, a combination of words and pictures which one could not survive without the other,” and then coins the term *vieword story*. The <pane> is a grapheme that appears 16 times in the story, and twice in the Afterword. It is represented by 10 allographs growing like a living organism. In 7 cases it behaves like a noun:

   Faulks peered at the pane in bafflement.
Wilson’s

Allograph 1 (p. vii, 11, 12, 23)
Allograph 3 (p. 14)
Allograph 5 (p. 14, 15)
Allograph 6 (p. 17)
Allograph 7 (p. 17, 18)
Wilson’s

Allograph 8 (p. 19, 20)
Wilson’s

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Fusa Obi, the Japanese translator of Keyes creates graphemes to connote lack of knowledge of the kanji repertoire.
Fusa Obi’s invented kanji characters

- 小尾芙佐 Fusa Obi (1932–), translator of Keyes’s *Flowers for Algernon* into Japanese (2015), created two non-existing kanji characters to denote Charly’s linguistic incompetency:

  徚 (14 times) 読 (hapax)

- 徚 stands for 読 (“reeding” in the original) and 読 stands for 誼 (“keep reckerds”).

In both cases,

1. semantic components (left) are erroneous and phonetic components (right) correct,
2. erroneous components are simpler than correct ones.

This method is reminiscent of Xu Bing’s *Book From the Sky* (1988).
Part IV

Variation of typographic parameters
Variation of typographic parameters: Rationale

- We call “variation of typographic parameters,” any change to graphs that does not affect the standard macrotypographic model of rectangular uniform text block.
  - Ende uses color to distinguish two narrative threads.
  - Jardin uses font change to denote psychological transformation.
  - Mandanipour uses bold face and crossed-out text to distinguish between three levels of text with respect to censorship.

Landragin, Haralambous & Handa
Graphe[mt]ic Methods in Speculative Fiction
Variation of typographic parameters

Ende uses color to distinguish two narrative threads.
Ende’s *The Neverending Story*

- The novel *The Neverending Story* (1979) by Michael Ende (1929–1995) is structured as follows: in the first part, the protagonist Bastian reads a book (also called *The Neverending Story*) and gets increasingly involved in the happenings narrated, in the second part he enters the book, lives all kinds of adventures and finally returns to the real world.

- To separate the two worlds (the real world and the imaginary, called Fantasia), but also the two narrative threads (Bastian in the real world, vs. events in Fantasia), Ende uses two colors: green (Fantasia) and red (the real world).
Normally, color changes between paragraphs, without indentation:

At last Ygramul sensed that something was coming toward her. With the speed of lightning, she turned about, confronting Atreyu with an enormous steel-blue face. Her single eye had a vertical pupil, which stared at Atreyu with inconceivable malignancy.

**A cry of fear escaped Bastian.**

A cry of terror passed through the ravine and echoed from side to side. Ygramul turned her eye to left and right, to see if someone else had arrived, for that sound could not have been made by the boy who stood there as though paralyzed with horror.
Ende’s *The Neverending Story*

At the first climax of the book (Bastian’s transition to Fantasia) Ende breaks a sentence referring to wind moving from Fantasia to the real world, into two pieces:

In that moment several things happened at once. The shell of the great egg was dashed to pieces by some overwhelming power. A rumbling of thunder was heard. And then the storm wind came roaring from afar and blew from the pages of the book that Bastian was holding on his knees, and the pages began to flutter wildly. Bastian felt the wind in his hair and face.

Changing color in midst of the same sentence increases the simultaneity effect.

Landragin, Haralambous & Handa  
Graphe[mt]ic Methods in Speculative Fiction
At the grand finale of the book (Bastian’s return to the real world) Ende obtains an even stronger simultaneity effect by repeating the same sentence in two colors:

Bastian [...] flung himself into the empty darkness beyond.

“Father!” he screamed. “Father! I—am—Bastian—Balthazar—Bux!”

“Father! Father! I—am—Bastian—Balthazar—Bux!”

Still screaming, he found himself in the schoolhouse attic, which long, long ago he had left for Fantastica.
Jardin uses font change to denote psychological transformation.
Jardin’s *Le petit sauvage*

- Alexandre Jardin (1965–) wrote *Le petit sauvage* (1992), where an adult entering a cave (metaphor of the maternal womb) during a storm is psychologically transformed:

  “The earth surrounds me and caresses me. I feel that my inner voice is coming of age.” (p. 155)

From that moment and until the end of the book, the type remains sans-serif.
Mandanipour uses bold face and crossed-out text to distinguish between three levels of text with respect to censorship.
• In his novel *Censoring an Iranian Love Story* (2009), Shahriar Mandanipour (1957–) uses three text levels:

1. in roman type, the author is addressing the reader directly, without censorship;
2. in bold type, the author is writing an “Iranian love story,” to be published in Iran;
3. in bold crossed-out type, the reader can see the parts of the “Iranian love story” that would be removed by censorship.

• In this 304-page book, 30% of the text is in bold type. 8% of the bold text is crossed-out, a total of 164 censored segments, the reading of which is reminiscent of the sequence of superimposed kisses from *Cinema Paradiso* (which is mentioned in the novel).
You yourself have read in stories that when some sexual encounter is about to take place the characters’ hearts beat faster ... Read the next sentence and see how Sara fouls things up for Dara.”

Sara says:

“You look like a wolf.”

Dara, a few feet away from Sara, freezes in his place and in a trembling voice says:

“I think I look like a miserable dog.”

“No, I prefer you to look like a wolf. Come!

Dara at last crosses *The Longest Yard* and sitting next to Sara leans against the wall. Now their bare forearms touch. Sara strokes Dara’s cheek with her fingertip.
Part V

Typographical Arrangements
We call “typographical arrangements,” macrotypographical transformations that escape the standard macrotypographic model of rectangular uniform text block. Special cases of typographical arrangements are Mallarmé-like arrangements, calligrams (Apollinaire) and visual poetry/typoetry (Blanchard).
Typographical Arrangements: Rationale

☞ Ollier uses typographical arrangements to transcend the *nouveau roman*’s lack of plot and action, and sublime the reading experience.

☞ Bester uses typographical arrangements to denote simultaneity in a (telepathic) communication mode based on graphemes.

☞ Damasio and Tō use typographical arrangements as a “text is universe” metaphor.

☞ Jardin uses typographical arrangements to denote mental obsession.
Typographical arrangements

Ollier uses typographical arrangements to transcend the *nouveau roman*'s lack of plot and action, and sublime the reading experience.
Claude Ollier’s Fuzzy Sets

- A French *nouveau roman* author.
- After 24 lines of leaders, the incipit of the book is:
  
  « *Suis-je dans le livre?* »
  (“Am I in the book?”)

It contains 181 pages with various typographical arrangements.
Claude Ollier’s *Fuzzy Sets*

- **Three types of pages:**
  1. **(T1)** Continuous text (full width) interrupted by five-line vertical spaces: 101 pages (56%) [green]
     - Variant (T1a): short texts inserted in the vertical space (14 pages, 14%)
     - Variant (T1b): white space is diagonal (3 pages, 3%)
     - Variant (T1c): white space is filled with leaders (9 pages, 9%, all at the end: 175–183)
  2. **(T2)** Calligrams on single or double pages: 56 pages (31%)
     - Sub-type (T2a): Mallarmé-like word arrangements (22 pages, 39%)
     - Sub-type (T2b): filled forms (11 pages, 20%)
     - Sub-type (T2c): text blocks with holes (23 pages, 41%, all at the end: 175–183)
  3. **(T3)** Narrow text blocs with disappearing parts: 24 pages (13%)
Claude Ollier’s *Fuzzy Sets*

- **(T1)** Continuous text (full width) interrupted by five-line vertical spaces, in green.

- **(T2)** Calligrams on single or double pages, in red.

- **(T3)** Narrow text blocs with disappearing parts, in blue.
Fuzzy Sets (T1) Example

- (T1) Continuous text (full width) interrupted by five-line vertical spaces.
- Sometimes blank space is combined with word hyphenation.

d’outil mais non de cap, mutation d’infrastructure, l’occuper, l’apaiser, recyclage éclair, le huitième jour est celui du repos, premiers feux de l’aube, soleil dans le vaisseau, H4 les filme, quelques heures encore, tourner la tête... de Crac bouffon fait signe, trois doigts liés, état d’alerte, rouge, épargner... ne pas voir : il

danse, quasiment, comme tenant en sa paume le faisceau des lignes, arpentant des yeux, planifiant, au centre, planant, une main à plat sur la matière transparente, tapotant, comptant sur ses doigts, juvénile, égayé, la nuit s’efface et le décalque des étoiles, la Terre est de nouveau visible, strates et nuées, épopées océanes et le récit des fleuves, fumées, tirets liant les îles, sillages, jour plein de huit révolutions sur orbite impromptu corrigée de chic par inductive en sourdine, il te suffit de gagner les lucarnes à babord pour lire les chiffres en contrebas, graphes, syl-

labes et fers de lance, la nef luxueuse s’ordonne en ses cabines fonctionnelles, l’air dilué anime les cellules, vitalise le circuit de possibles monté sur les données brouillées de base : arpone, construis le lieu géométrique du secret, dessine le cache des textes dérobés, découpe, épure, isole les fluides et les dose, produit le révélateur et l’épands sur la page, sympathique labeur humectant les jambages et renaît l’encre vive, dissous les miasmes et les grains de pelure, épelle, plie les contours à ton savoir, ébranle la machine, éprouve et sonde les matières, l’empan de tes doigts bleus les lisse et celui du gamin là-bas dans la grotte de sable, sournois et mut, soumis, double de qui l’épie, Nabou le dieu-enfant enfoui sous les feuillots, traitre ou complice, enfui des lieux sous terre et volatisé, scripteur des

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(T1a) Continuous text (full width) interrupted by five-line vertical spaces with short text inserted in the vertical space.

<Fe6>: chess notation for “Bishop on e6, excellent move”.

Les pulsateurs se contracteraient à ce stade et regagneraient leur matrice et l’état du système retourneraient rapidement au « sommeil » qui nous requiert présentement. » La voix décroît petit à petit, aspirée par le tissu d’irisations courbes et « shuntée » dans la coiffe au fond du trou. Un écho de son timbre parvient encore par instants, comme si le disque était remis sur le plateau et que l’aiguille retraçant les sillons en renouvelait la musique. Puis on n’entend plus rien, l’effet d’opale annihille l’ouïe, la parole. Il faut que tout — ou rien — s’éteigne pour que les silhouettes tressailient, et que la porte se rouvrant dans leur dos leur livre passage. C’est sans échanger un mot qu’ils retraversent l’orangé du réfectoire, et l’itinéraire à suivre ne faisant pas problème, gravissent les huit degrés menant au niveau supérieur. C’est le Nouveau qui est en tête. Comme il approche du plafond, la trappe s’ouvre d’elle-même et un cercle d’aimantelle se découpe là-haut, le grésillement tenu se fait entendre. Un pas de plus, et le regard du « premier venu », balayant verticalement l’espace, tombe sur un écran de babord, où un énoncé en lettres et chiffres rouges s’imprime, linéaire, qu’il lit d’ici sans peine et articulerait à claire voix même.

2. Fe6 !

s’il s’agissait de contrôler sa vue. Mais de quoi s’agit-il, au fait ? Ils sont là tous les trois — les trois autres de l’équipe A — assis devant l’écran en proue sur des tabourets à dossier surgis du sol — vus de dos, par conséquent — impasses (ils ne l’ont pas entendu monter) et attendant — un signal à coup sûr. La première idée est que la formule au tableau « est » le signal. L’autre formule, hier (hier ?), était un signal aussi, c’est ce moment-là que l’autre chef d’équipe a choisi... Le signal s’efface. Alors il s’aperçoit que tous les hublots sont tendus de noir et que la lumière azurée éclairant la grande salle est artificielle, phosphorée ou luciane, paraissant sourdre des parois mêmes... Elle
Fuzzy Sets (T1b) Example

- (T1b) Continuous text (full width) interrupted by five-line diagonal spaces.
- The hybrid hyphenation method: <meu-ble>, <sor-tiront>, <é-clusée>, <lé-ger>, <cô-té> (with hyphen) vs. <g râce> (no hyphen).
- Right part does not take part in narrative thread.
(T1c) Continuous text (full width) interrupted by five-line vertical spaces, filled with leaders.
(T2a) Calligrams on single or double pages, Mallarmé-like word arrangements

Fuzzy Sets (T2a) Example

• (T2a) Calligrams on single or double pages, Mallarmé-like word arrangements
• (T2b) Calligrams on single or double pages, filled forms
• (T2b) **Calligrams on single or double pages, text blocs with holes**

On the left: hole pushes text, on the right: hole covers text (notice hybrid hyphenation)
(T2)-type page transitions: (T2a) → (T2b)
• (T2)-type page transitions: (T2c) → (T2b) → (T2a?)
Fuzzy Sets

Intercalligrammatic Transitions

- (T2)-type page transitions: (T2c) → (T2b) → (T2a)

Graphe\[mt\]ic Methods in Speculative Fiction

Landragin, Haralambous & Handa
• (T3) Narrow text blocs with disappearing parts (right block is systematically disrupted)
• (T3) Narrow text blocs with disappearing parts, italics and chess, leaders replace blank until the end of the book.
Bester uses typographical arrangements to denote simultaneity in a (telepathic) communication mode based on graphemes.
• In *The Demolished Man* (1953) by Alfred Bester (1913–1987), telepaths communicate graphemically.

• Typographical arrangements illustrate communicative threads, with time heading downwards.
In *The Demolished Man* (1953) by Alfred Bester (1913–1987), telepaths communicate graphemically. Typographical arrangements illustrate communicative threads, with time heading downwards.

Landragin, Haralambous & Handa

**Graphe[mt]ic Methods in Speculative Fiction**
• Bester’s typographical arrangements can be subtle:

—— Étouffe ça, Linc. Ne fuse pas comme ça. Tu es gêné. Voyons si je n’arriverai pas à me faufiler à travers son écran mental.
—— Écoute...

‘Choke it, Linc. Don’t jet off like that. You’re embarrassed. Let’s see if I can’t maybe thread a needle through that mind block.’
‘Listen——’
Damasio and Tō use typographical arrangements as a “text is universe” metaphor.
In *La horde du contrevent* (2004), Alain Damasio uses the metaphor “text is universe”. In the first page of the book, the same sentence (starting with a Biblical “In the beginning...”) is repeated five times.

- The first time only punctuation appears (cosmic dust?), then the sentence is progressively completed.

Letters appearing are chosen so that they form words and syntagms.
In Enjō Tō’s (1972–) short story Ø (2015), a narrator experiences eir world shrinking.

It consists of 150 paragraphs of lengths decreasing by 1.

The final paragraphs are:

I’m lost now.
Hey, laugh.
Thank you.
Goodbye.
Help.
∞.
Ø.
!

もうわからない。
ねえ、笑って。
ありがとう。
さよなら。
助けて。
無限。
無。
!

Help.

測定の結果によると、宇宙の増大速度は無事、Nの二乗のオーダーに乗ったようだ。この過程が無限に続くかどうかはわからない。続かないと考えるのが妥当だろう。今のこの存在様態は、ほとんど言い抜けに近いのだ。そう言い張っているだけにすぎないのだから。

宇宙が収縮を開始したのは、宇宙自体がゆっくりと崩壊しているせいなのかも知れない。端から欠けていくようにして。でもその場合、宇宙の破片はどこへ落ちていくのだろうか。宇宙の外へか。それともその

偽

たい

たい

悟りは他人に伝えることができない。

畏る

さと

忘れてしまう前にお礼を言っておくべきだった。

忘れて下さい。

今、生まれていくところ。

忘れないで下さい。

この宇宙で最大の数。

何かを感じている。

もうわからない。

ねえ、笑って。

ありがとう。

さよなら。

助けて。

無限。

無。
!

陸

助けて。

無限。

無。
!

助けて。

よう始めるのに、無限。

次の数は複数の理由から、この宇宙に存在しうる最大の数ではありえない。 「99999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999」。　

Landragin, Haralambous & Handa

Graphe[mt]ic Methods in Speculative Fiction
Jardin uses typographical arrangements to denote mental obsession.
Again in *Le petit sauvage* (1992), the protagonist, Alexandre is in love with Manon. Between the two sentences

Early in the morning I went to the cellar, opened the vase and smelled Manon’s perfume

and

it contained Manon’s presence,

the typographical arrangement illustrates the form his thoughts and experiences are taking.
Conclusion: Ὁ βίος βραχύς, ἡ δὲ τέχνη μακρά

- Because of lack of time we presented only a small selection of works.
- We didn’t mention at all two notorious literary experiments: Danielewski’s *Book of Leaves* and Abrams & Dorst’s *S*.
- We had no time to deal with *innovative use of pre-existing graphemes*.
- But we can firmly state that:

More than in any other literary domain, SF authors have innovated in the art of communication through graphemes and graphs, to *boldly go where no man has gone before*...