The Interface of HyperPo

Remembering the HyperPo text analysis software by Stéfan Sinclair[1]

Geoffrey Rockwell, 2022

At the turn of the millennium, in January 2000, Stéfan Sinclair presented a thesis on "Une application d'HyperPo, un logiciel d'analyse de texte informatisée à *La Disparition* de Georges Perec". This was presented to the French Studies department at Queen's University in Kingston, Ontario. The title translates roughly as "An application of the text analysis software HyperPo to Georges Perec's *A Void*."[2]

The thesis is in two parts. The first part talks about computer-assisted text analysis which leads up to a discussion of HyperPo (short for Hypertexte Potentiel), the software he created as part of the project. This is followed by a discussion of OuLiPo and computing.[3] Needless to say, OuLiPo inspired the software title, HyperPo, and its playful design.

Then, in the second part, he uses (applies) HyperPo to study the novel by Georges Perec that has been translated as *A Void*. The title refers to the Oulipienne constraint central to the novel that in its 300 pages it contains only words without the letter "e". I have not read the novel, but my understanding is that the missing letter is important to the lipogramatic novel that tracks the tragic events following the disappearance of Anton Voyl (Vowel).

HyperPo was not only described in Stéfan's dissertation. He also presented before the defense at conferences (ACH-ALLC 97 and 99) and then published about it after 2000. (See the References below.) He kept on updating HyperPo and maintaining it until at least 2016 when we mentioned it in our book *Hermeneutica* (2016). From the Wayback Machine it seems that the URL "hyperpo.org" was still operational up to 2020, though the code may not have worked by then.

As happens to many digital humanities tools, knowledge of HyperPo is fading as the documentation becomes harder to find. This document gathers references and screenshots of HyperPo in chronological order so as to remember this important predecessor of Voyant. I've added reflections.

L'HyperPo: Exploration des structures lexicales à l'aide des formes hypertextuelles

The oldest published reference to HyperPo that I can find is the abstract for the poster/software demo in French that Stéfan had accepted for the ACH-ALLC 97 which took place at Queen's in Kingston, Ontario where Stéfan was a PhD student. In the abstract he talks about how he was inspired by OuLiPo and how they pursued the "systematic innovation through contraints on

[1] This document evolved out of the research I did for the panel at *DH Unbound 2022* in honour of Stéfan Sinclair. I wanted to honour him by going back to his dissertation and talking about the genesis of many of his ideas for Voyant in HyperPo. I gathered some screenshots and made a note to myself to get more so as to document HyperPo. This short essay expands on those notes.

[2] You can download the thesis from Theses Canada: https://www.bac-lac.gc.ca/eng/services/theses/Pages/item.aspx?idNumber=1006925305 (Accessed August 2, 2022)

[3] See Wolff 2007 for more on OuLiPo and the digital humanities.

literary production." (my loose paraphrase.) He also talks about the "trinity" of text analysis: the human, the machine, and the text and provides a diagram.

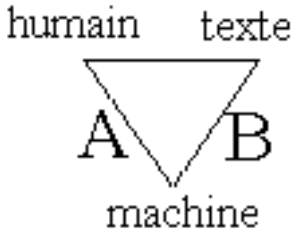

Figure 1: Text Analysis Trinity

I was able to find this reference through The Index of Digital Humanities Conferences site developed by Scott Weingart.[4] He provides a link to the full abstract in the Internet Archive where, alas, not all the graphics have been preserved.

HYPERTEXTE 5 Exercices de Style de Raymond Queneau Dans l'S, à une heure d'affluence. Un type dans les vingt-six ans, chapeau mou avec cordon remplaçant le ruban, cou trop long comme si on lui avait tiré dessus. Les gens descendent. Le type en question s'irrite contre un voisin. Il lui reproche de le bousculer chaque fois qu'il passe quelqu'un. Ton pleurnichard qui se veut méchant. Comme il voit une place libre, se précipite dessus.	**FRÉQUENCES** **Tous les éléments triés** • 5 • ans • avait • avec • [...] **La fréquence de tous les éléments** • 7: . • 4: , • 3: le • 3: de • 2: type • [...] • 85: {TOTAL} **Les suites d'éléments triées** • de • de • de • dessus • dessus • [...] **La fréquence des suites d'éléments** • 3: de • 2: dessus • [...] • 15: {TOTAL}

Figure 2: HTML of two of the framed displays

[4] See https://dh-abstracts.library.cmu.edu/works/7838 (Accessed August 2, 2022)

Stéfan also describes how HyperPo was developed in Perl.

HyperPo: The Next Generation

In 1999, before Stéfan defended his thesis, he gave a second presentation of HyperPo, in this case a paper at the ACH-ALLC 99 in Virginia. The title, "HyperPo: The Next Generation" indicates that he saw it as a next generation of text analysis tool that combines the power of hypertext and a graphical user interface. This abstract has one screenshot that has survived as the web page has also survived on a U of Virginia server.

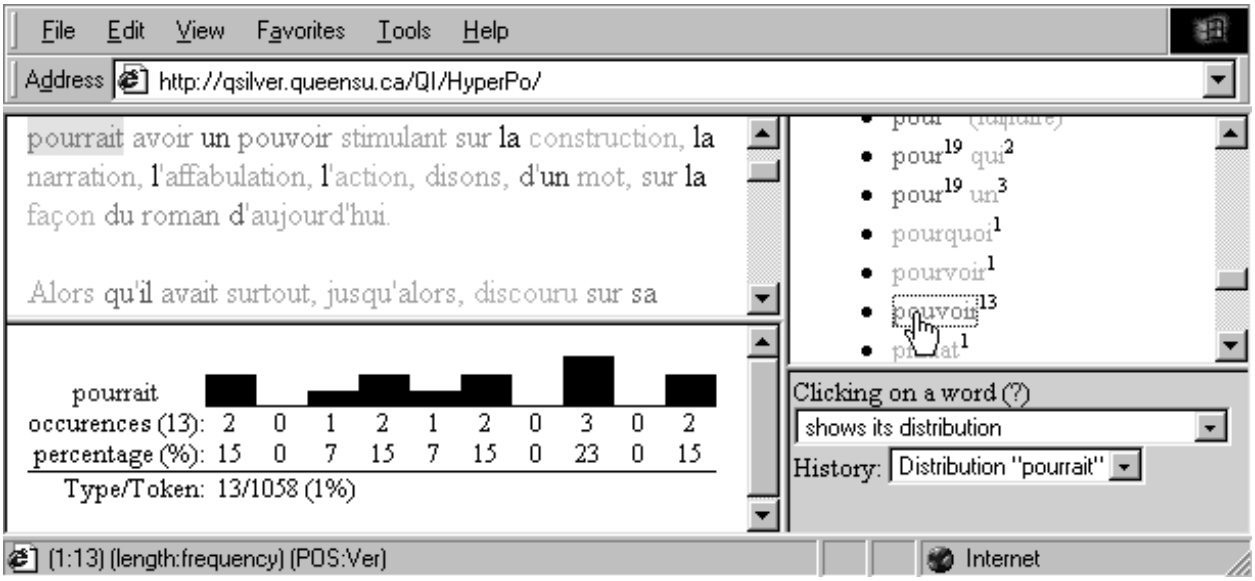

Figure 3: Screenshot from "HyperPo: The Next Generation"

In the screenshot one can see the different types of display and the way Stéfan is using the hypertextuality of the web. He has a full text panel where words are hot. Clicking on them will synchronize a list of words or cooccurences while below the full text there is a distribution graph of the term, in this case "pourrait."

A feature that is interesting to note in HyperPo that disappears in Voyant, is the ability to specify what will happen if you click on something in one of the display panels. This lets you presumably launch different displays in the lower panel. You can see what the choices were in 2003 in Figure 9 below.

An Application of HyperPo

A number of screenshots show up in the dissertation of 2000, though they are of low quality due to the way theses were digitized at the time. They do, however, show us what the experience of using HyperPo would have been like.

Figure 1: écran d'accueil

Figure 4: Entry Screen (Page 90)

In the dissertation, Stéfan describes how one might use HyperPo in Chapter 3, “HyperPo: Logiciel d'analyse et d'exploration de texte” (“HyperPo: Text Analysis and Exploration Software”). He starts with the entry screen where one can choose to use the English or French version.

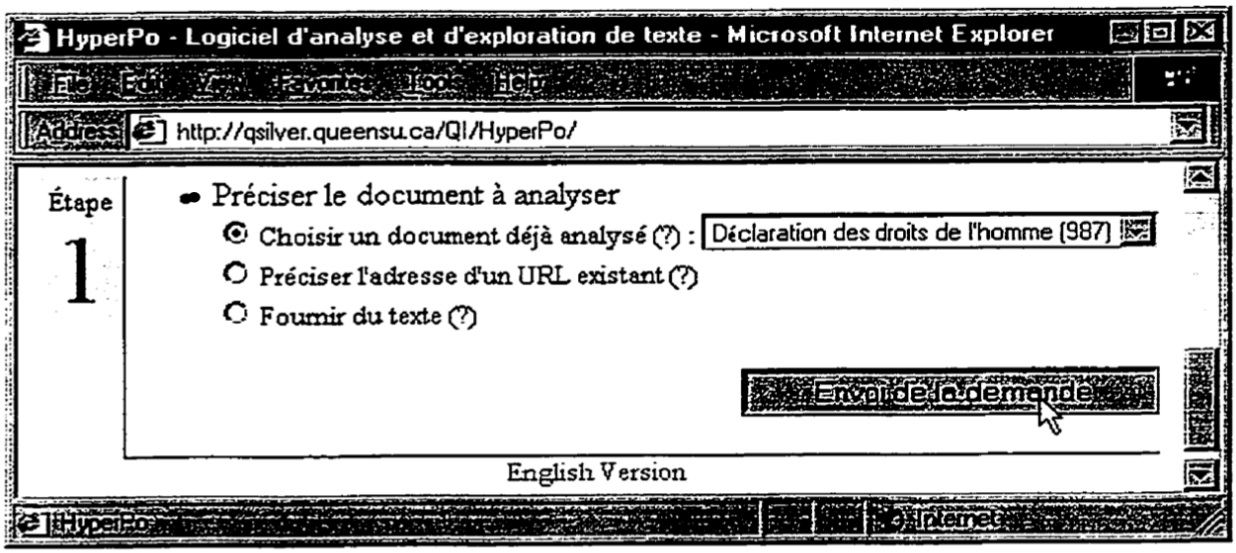

Figure 2: menu simple

Figure 4: Simple Menu (Page 91)

In the second screenshot you see the simple menu for selecting the text to analyze. Much as you can in Voyant, you can choose a prepared text, enter the URL for a text on the net, or provide a text.

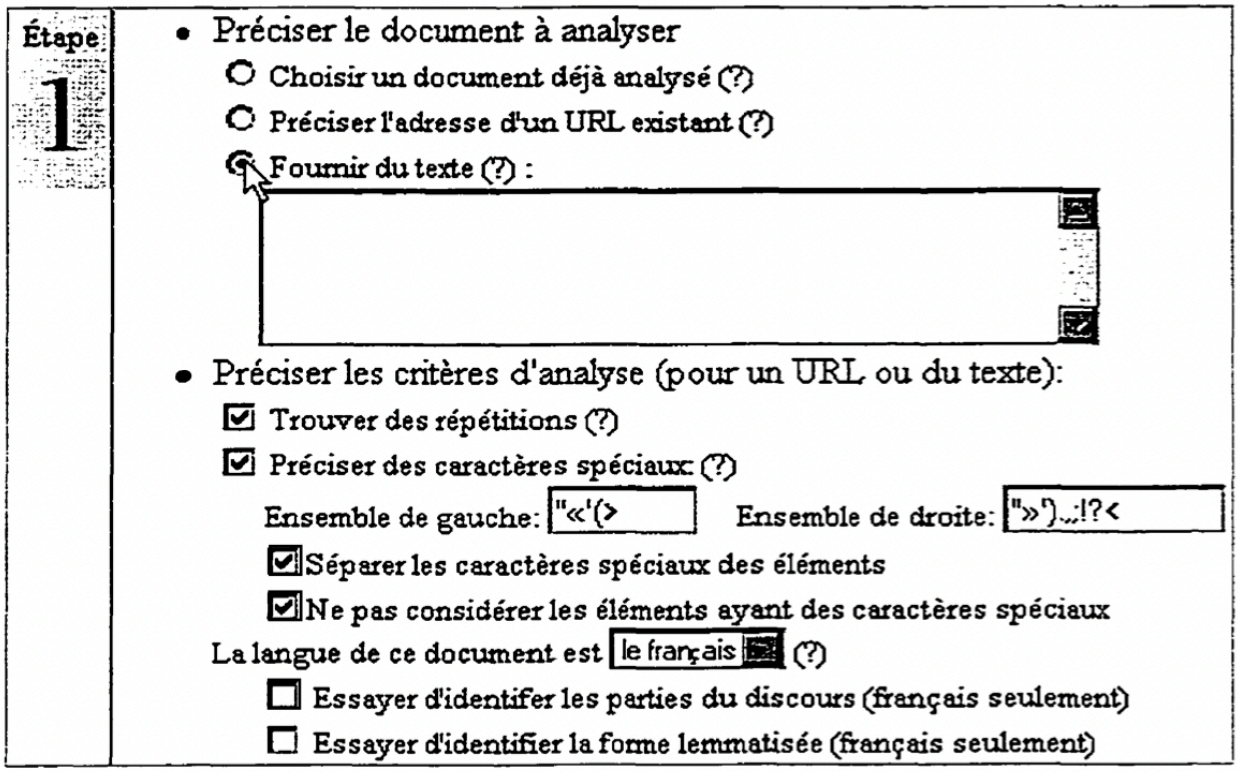

Figure 3: menu avancé

Figure 5: Advanced Menu (Page 92)

In the third figure you see the more advanced menu that lets you specify what HyperPo should do should either specify a URL or upload a text. You can specify language and ask French parts of speech to be identified. Most of these features exist in Voyant, but are automatically invoked or are set in the Options.

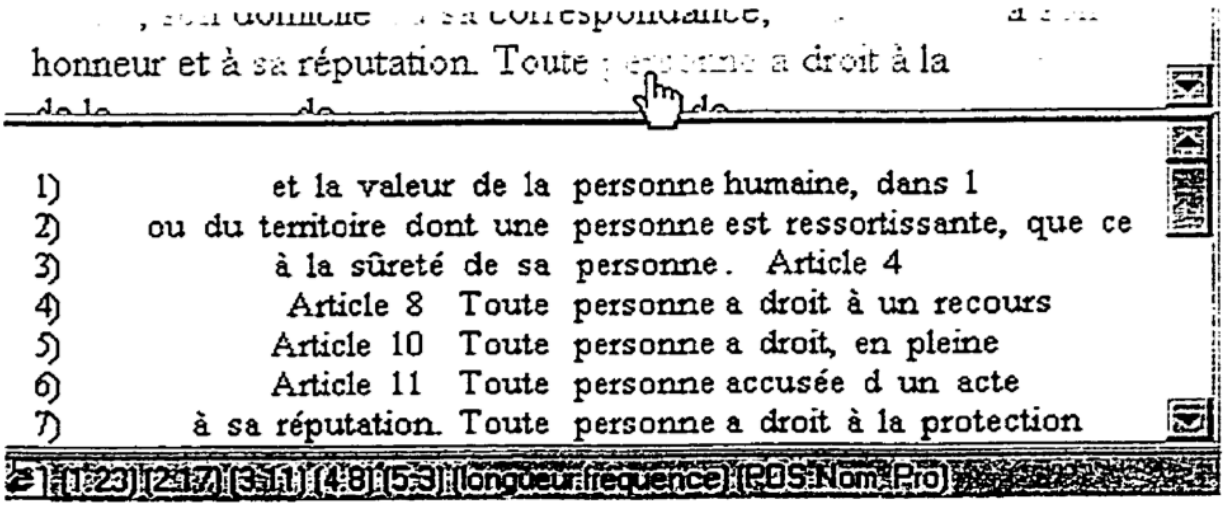

Figure 4: liste KWIC (*Keyword in context*)

Figure 6: KWIC display (Page 97)

Stéfan then shows the different types of displays HyperPo lets you select. Firs is a standard display, the KWIC or KeyWord In Context.

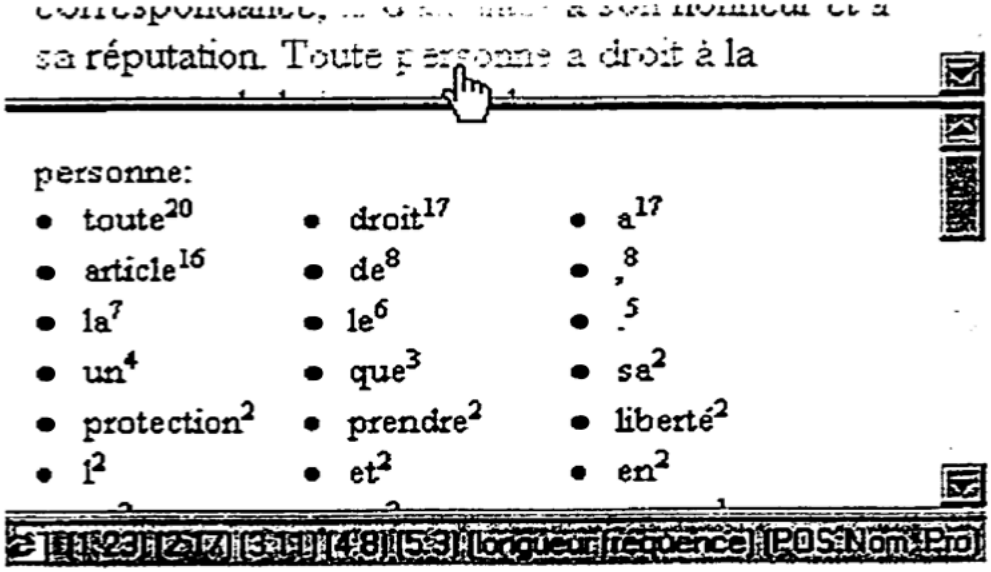

Figure 5: liste de cooccurrence

Figure 7: Coocurrence List (Page 98)

The we see an example of a word list, in this case the words that cooccur near the word selected.

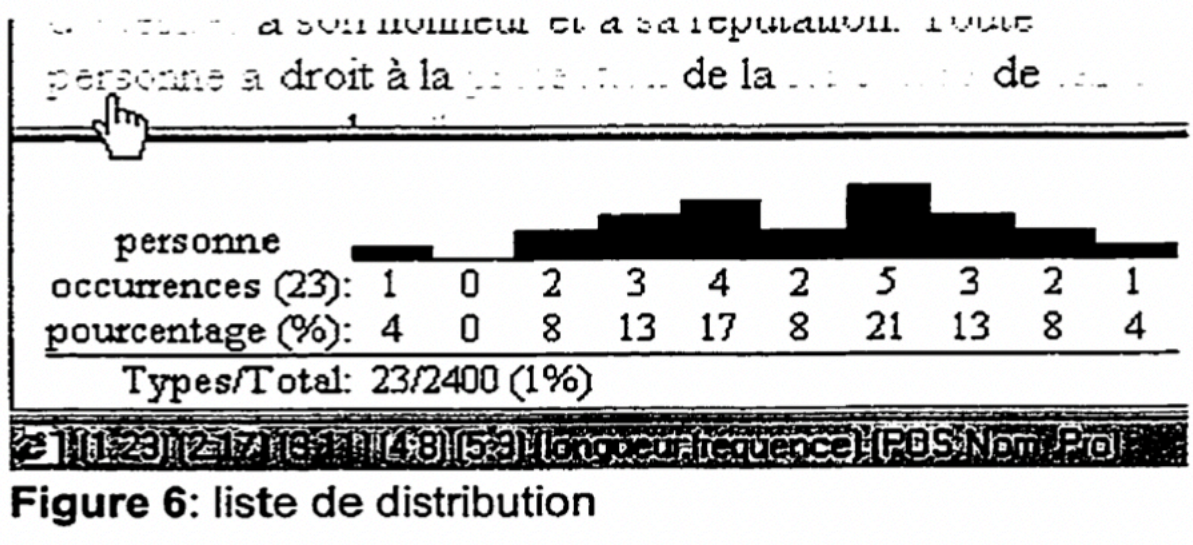

Figure 6: liste de distribution

Figure 8: Distribution Graph (Page 98)

Finally there is a distribution graph of the selected word over 10% sections of the text.

From Reconceiving Text Analysis

In 2003 Stéfan published "Computer-Assisted Reading: Reconceiving Text Analysis" in *Literary and Linguistic Computing.* This article includes a screenshot that shows Clicking Actions available in the full text display.

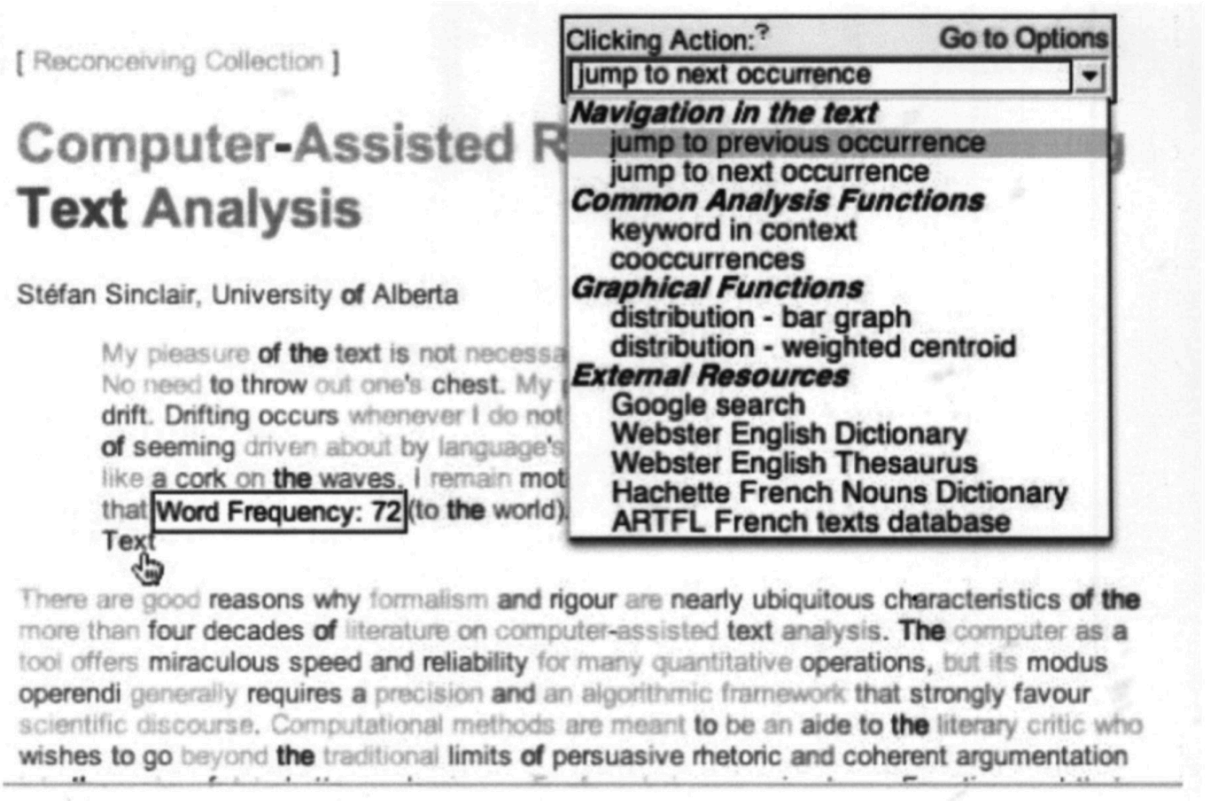

Figure 9: Clicking Actions (Page 179 of Sinclair 2003)

The focus on clicking actions builds on the hypertextual theorization of reading that inspired HyperPo. Stéfan was thinking through how he could build a radically richer reader experience where clicking on words could trigger all sorts of different perspectives.

From Hermeneutica

In our book *Hermeneutica: Computer-Assisted Text Analysis* (MIT Press, 2016) we also talk briefly about HyperPo in Chapter 6 where we discuss different approaches to text analysis. HyperPo is discussed as a reading tool following Stéfan's 2003 paper about "reconceiving text analysis" as "computer-assisted reading."

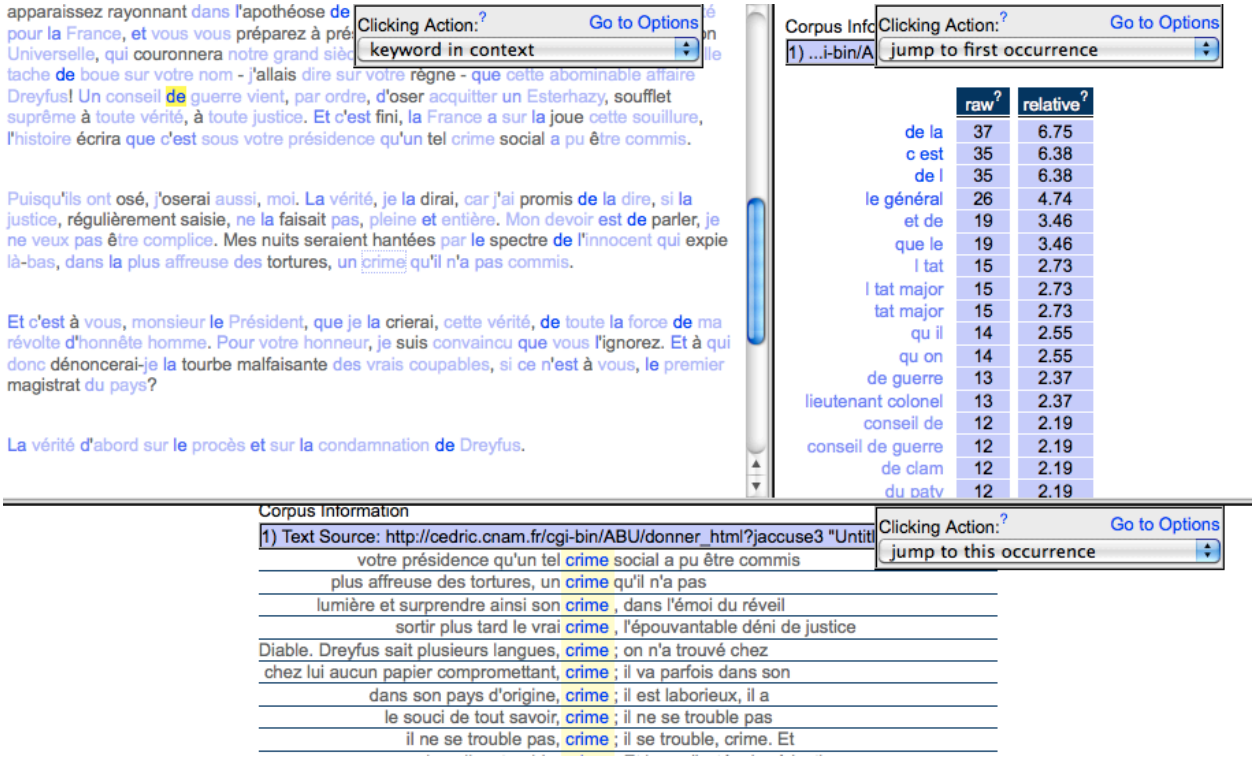

Figure 9: HyperPo Coordinated Displays

The screenshot from *Hermeneutica* included above shows the later version of HyperPo that now has floating menus for deciding what Clicking Actions do for each panel. You also see a different display that shows repeated phrases of two or more words.

It should also be noted that in a footnote Stéfan discusses how Voyant was totally rebuilt on top of a different text engine called Trombone. It was called "Trombone" to extend that it could scale up to larger text collections.

Text Analysis Tools from Urs Henning

A blog by Urs Henning has a series of entries on text analysis tools, one of which mentions HyperPo.[5]

[5] See https://web2-unterricht.ch/uncategorized/textanalyse-mit-linguistischen-tools/ (Accessed August 2, 2022)

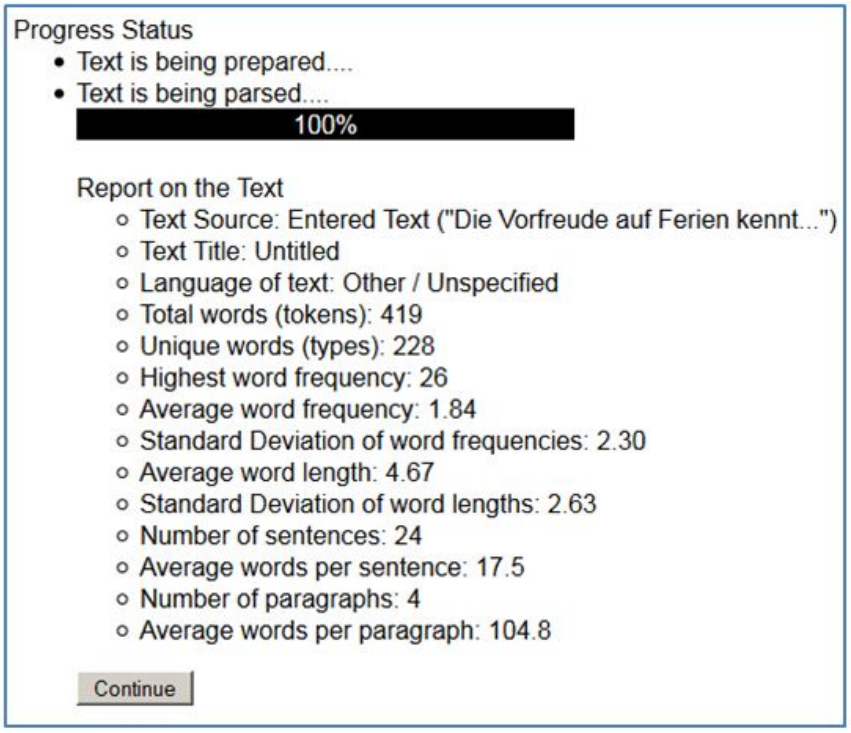

Figure 10: Progress Status

The entry from 2013 shows an intermediate screen that is shown after you choose the text to analyze and before you get the reading displays. The screen tracks progress as the text is parsed. When parsing is completed it then shows you textual statistics for your text. Such statistics show up in Voyant in the Summary panel.

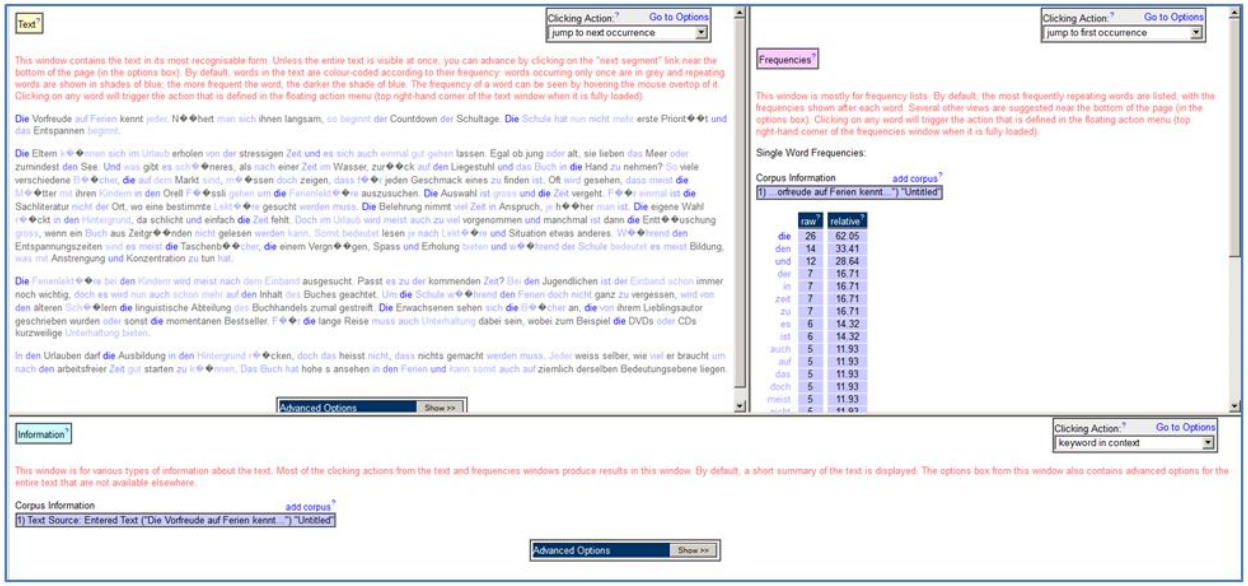

Figure 11: Coordinated Displays with Instructions

In the blog entry Henning also shows the three-part coordinated displays, but this time with the red text which explains the window or display and the options available. This is useful for understanding

It should be noted that one of the obvious things that changed between HyperPo and Voyant is that while HyperPo has three panels or windows, in Voyant there are five in the standard skin. This may be due to the increased size of screens by the time Voyant is developed.

HyperPo 6.0

Susan Brown and Stan Ruecker created a PDF course document for DHSI 2012 titled "DHSI 2012: Online Tools for Literary Analysis" presumably for a course with that name that they ran.[6] The document includes descriptions of tools written also by Teresa Dobson and Daniel Sondheim. Dobson wrote the description of HyperPo. She describes it thus,

> HyperPo is an online tool described on the HyperPo 6.0 site as a "user-friendly text exploration and analysis program" designed to "close the gap, created by traditional text analysis tools, between an original text and data generated about that text. It accomplishes this by creating hypertextual links between different representations of the text." HyperPo allows one to input for analysis text documents from on the web or from a local drive. Some of its key features are as follows: it creates frequency, KWIC, co-occurrence and distribution lists; it colour codes words to reflect repetition information; it allows for the simultaneous comparison of data from multiple texts; and it allows for the use of external resources such as Google and ARTFL. (Page 16)

Note that HyperPo is not given a version number, in this case "6.0". The description also mentions that allows the use of resources like ARTFL, though it is not clear what is mean by that.

[6] See https://blogs.ubc.ca/visualization/files/2012/07/Brown_and_Ruecker_tool_summary_pages_v14.pdf (Accessed August 2, 2022)

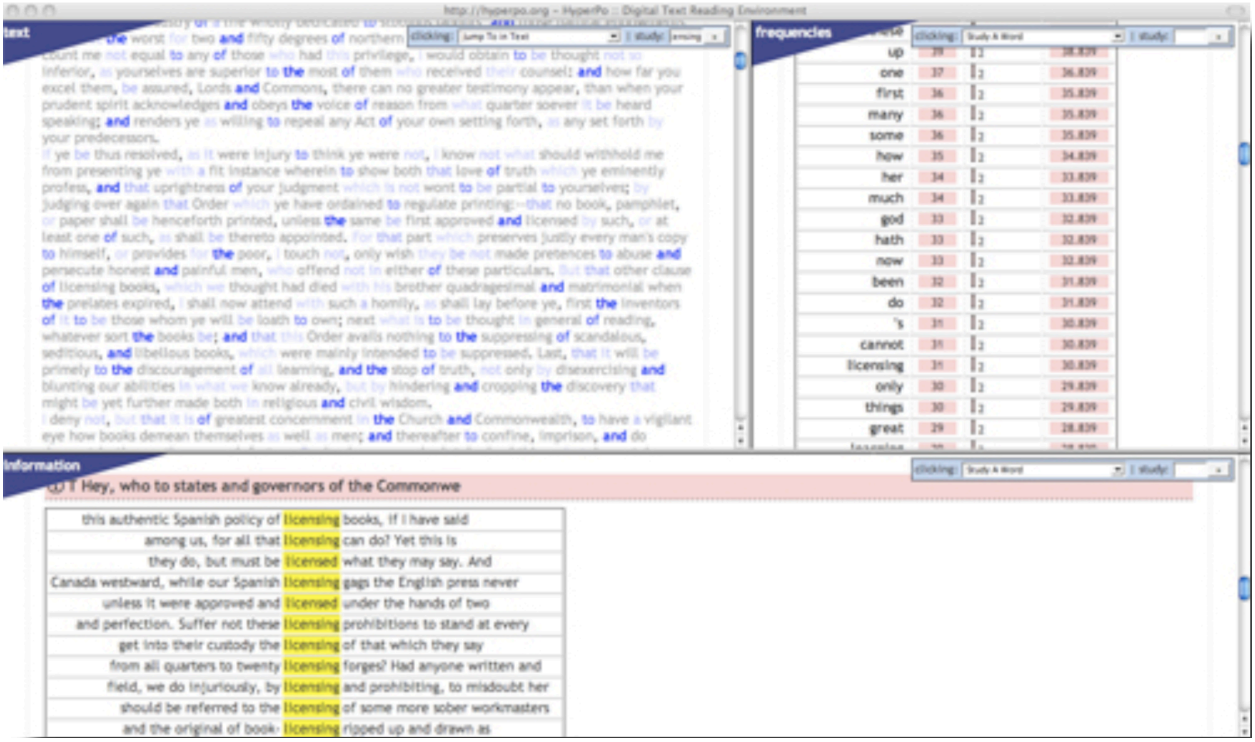

Figure 11: HyperPo 6.0

The screenshot included now shows a blue triangle in the upper left of each display panel with a label. The three displays are “text”, “frequencies”, and “information”.

It should also be noted that HyperPo now has its own URL: http://hyperpo.org (which is no longer functional.)

It should also be noted that the course document also has a long section on the beta of Voyant (which at that time, 2012, was at the http://voyeurtools.org URL.) Stéfan was maintaining HyperPo as he was developing Voyant.

HyperPo 7.0

Finally, there is a screenshot of a beta version 7.0 included in the TAPoR directory of tools.[7] This probably came from the HyperPo site while it was still functional right into 2016 and possibly up to 2020.[8]

[7] See https://tapor.ca/tools/316 (Accessed August 2, 2022)

[8] The most recent version of the hyperpo.org/ index page available through the Wayback Machine dates to Feb. 11, 2020. The page lists directories for versions from 1.0, 5.0, 6.0, and then a bunch of versions 7 and finally a Current version. There is also a compressed archive “archives.tar.gz” which can be downloaded.

Figure 12: HyperPo 7.0

The barely readable text mentions a choice to use "Stand-Along HyperPoets" which I'm guessing are individual processes similar to what we developed in TAPoRware.

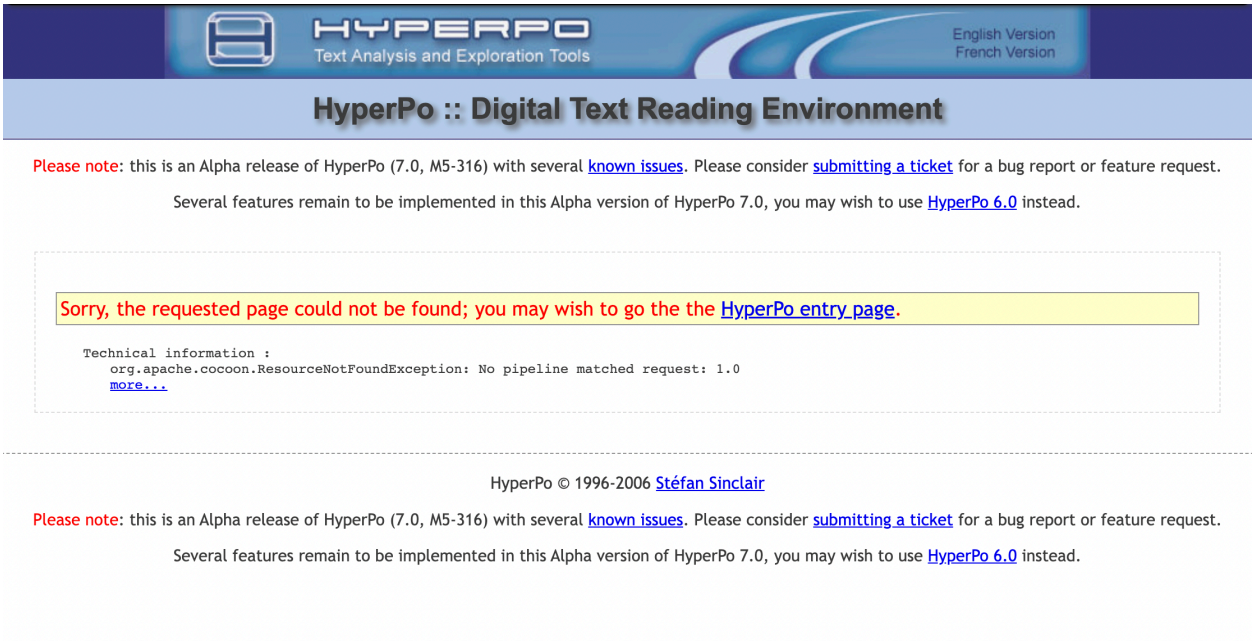

Figure 13: HyperPo 7.0 from Wayback Machine

Figure 13 shows version 7.0 retrieved from the Wayback Machine from August 22nd 2007.[9] You can see that there is an outer frame captured by the Internet Archive, but the Entry Page of the tool is not loading as it needs to be generated.

[9] See http://web.archive.org/web/20070822000012/http://hyperpo.org/1.0 (Accessed August 2, 2022)

Figure 14: HyperPo Logo From Archive

Figure 14 shows the HyperPo logo image found in the archives of HyperPo available through the Wayback Machine image of the hyperpo.org domain.[10] The archives file contain the code and associated files for versions 1.0, 5.0, and 6.0. It should be possible, in theory, to reconstitute a working version of HyperPo.

References

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[10] See http://web.archive.org/web/20200211111354/http://hyperpo.org/ The image came from the "archives.tar.gz" file (Accessed August 2, 2022).

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Wolff, M. (2007). "Reading Potential: The Oulipo and the Meaning of Algorithms." *Digital Humanities Quarterly.* 1:1. http://digitalhumanities.org:8081/dhq/vol/1/1/000005/000005.html (Accessed August 2, 2022)