Complex example of CWW for Osteosarcoma Online

1 Organize CWW following visuospatial-semantic groupings

The goal of Tutorial C is to apply CWW to identify and repair usability problems for one of the three user groups, the patient user group, assumed to be 10-20 years of age with general reading knowledge at the 6th-grade level or higher. Figure 1 (below) shows the Patients subsite main page. After completing the CWW for the patient user group, we will adapt the CWW to encompass the other two groups: family and friends of patients and health professionals. Family and friends of patients are assumed to be a mixture of adults, young adults, teens, and younger siblings of patients. General reading knowledge of this group probably spans the full gamut from 3rd-grade to college level, but almost all group members can manage material at the 6th-grade.
level. Health professionals are assumed to read at the college level and have unusually high background knowledge of medicine and related sciences.

Ultimately we need to create a set of user goals for each user group of Osteosarcoma Online, and we need text-only documents for each webpage ready to compare to the user goals in a One-to-Many Analysis. For example, in order for patient users to find any of the content webpages written for patients, patient users can start at the home page, navigate to the “Patients” subsite main page (shown in Figure 1), and then, depending on the user’s current goal, click one of four subheadings to navigate to the most appropriate level-three webpage in the “Patients” subsite: “Patient Info about Osteosarcoma,” “Making Treatment Decisions,” “Dealing with Your Disease,” or “Stories about Other Teens & Young Adults.” We need a text-only webpage for each of these six webpages.

Tutorial B already identified the visuospatial-semantic groupings for the webpages of Osteosarcoma Online and argued for processing these groupings starting with site-wide, then subsite-wide, and then other – in sum, organizing the CWW process by visuospatial elements. Tutorial B identified many specific site-wide elements across the three levels of webpages of Osteosarcoma: site logo, top navigation button bar, lefthand navigation column, and footer.

Many of these visuospatial-semantic groupings rely on images or other graphic designs to knit individual pieces together into a single visuospatial-semantic grouping and to facilitate rapid pattern recognition of that grouping. Dissertation experiments by Gail Hinesley (unpublished) in our lab show rapid, reliable recognition of a wide variety of conventional graphic designs for visuospatial-semantic using only graphic designs and no visible words to communicate meaning. It is reasonable to assume that graphic design elements, especially conventional elements, have semantic meaning for users, but LSA only understands words, not images or graphic designs. Thus, to avoid loss of the semantic meanings communicated by graphic designs, one step for the task before us is to find objective methods for translating the graphic design meanings into verbal equivalents (e.g., using the word “patient” for a photograph of a patient) and adding them to the text that appears in the same visuospatial-semantic grouping.

Step two is to complete CWW analyses except for goal-specific heading/link analyses, and to do this for all the visuospatial groupings that appear on each webpage. The researcher may, if desired, build repaired versions of each visuospatial grouping may optionally be built

Step three is to assemble all the parts and compile a full set of elaborated heading and link texts to submit for One-to-Many analyses. This must be done for each of the six webpages selected for analysis in the Patients subsite. If the researcher is also building a repaired version of the webpage to test, then there will be two versions for each of the six webpages.

Step four is to run each of the webpages against the set of user goals, predicting the mean total clicks for each user goal on each webpage. If repaired webpages are being built for experimental testing in comparison with original webpages, then repairs should be made for competing links and competing headings problems that have just been identified by goal-specific competing headings/links analysis.

After completing the four-step analysis of the webpages for the Patients subsite, the analyst is ready to repeat the four-step CWW analysis for the additional pieces required to extend the CWW to the analogous webpages in the Family & Friends and Health Professionals subsites, as well as the News page, Make a Gift page, and Osteosarcoma Facts page. Since these additional

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webpages contain so many common parts, extending CWW to the additional webpages requires only analyzing the new elements not seen for the Patients subsite.

1.1 Site-wide components of navigation system and their elaborations

1.1.1 Site logo: 1 link

1.1.1.1 Home page version of site logo

The semantic meaning of the site logo visuospatial grouping can be captured in the string: logo name symbol emblem graphic. We compared this particular string to a variety of similar word strings, and compared the near neighbors of each to see which string best captured the role of the site logo in a website. The text that appears on the page is “Osteosarcoma Online Improving the lives of teens and young adults with osteosarcoma.” Translating the zero-frequency word “osteosarcoma” adds the text “(bone cancer).” Elaborating the text that appears on the webpage with the translation added yields the additional words shown in blue font, young adults adult. The entire text for representing the site logo on the home page is shown below:

**logo name symbol emblem graphic** Osteosarcoma Online Improving the lives of teens and young adults with osteosarcoma (bone cancer) young adults adult young bone adults bones

The word string that translates the visuospatial grouping is delineated in boldface font with blue highlighting and is not elaborated. The text that is visible on the webpage appears in black font. The translations of the zero-frequency words in the visible text appear in black font in parentheses. The string of elaborations for the visible text appears in blue font (elaborations use a minimum word frequency of 50 and a minimum cosine of 0.50). This pattern will be followed consistently for tracking the construction of each text, but CWW analysis routines consistently ignore all the formatting and capitalization, and almost always ignore the punctuation (sentence-to-sentence coherence does pay attention to sentence-ending periods).

1.1.1.2 Site-wide version of site logo for all pages except the home page

The site logo that appears on all pages except the home page has additional elements in the right upper corner of the webpage, including three photos and the additional text “IU cancer center: The Future. Together.” The three photos are represented with the same text used to identify them on the home page: “patients,” “family & friends,” and “health professionals.” The resulting text for representing this site-wide version of the site logo appears below:

**logo name symbol emblem graphic** Osteosarcoma Online Improving the lives of teens and young adults with osteosarcoma (bone cancer) young adults adult young bone adults bones IU cancer center: The Future. Together cancer lung smokers smoking cigarette nicotine patients patient surgery nurse surgical physician hospital physicians hospitals nurses nursing surgeon therapists doctors treatments clinic treatment aide therapy medical clinical ward diagnosis family & friends family families relatives friends uncles sisters cousins health professionals health illnesses illness mental mentally

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1.1.2 Top navigation button bar

Like most top navigation button bars, the role of this site-wide visuospatial-semantic unit is to identify main sections of the website: the home page, a section called “Osteosarcoma Facts,” a section titled “Make a Gift” to elicit donations for research and patient care, and a “Contact Us” section. We again compared several strings of words and studied the near neighbors of the strings, deciding that the string that most accurately captures the functionality of this navigation button bar visuospatial-semantic unit is “alternatives links sections.” Each button link text is elaborated after translating the zero frequency word “osteosarcoma” with the equivalent words “(bone cancer).” There is no heading to identify this group of links, just the translation for the visuospatial-semantic unit, so the heading text equals the translation plus the elaborated link texts. Each link is separated from the heading or adjacent link with a blank line, and the full text for this unit is shown below:

```
alternatives links sections  Home  home  Osteosarcoma Facts (bone cancer) facts factual
Make a Gift  make gift making  Contact Us  us ourselves we contact
```

Home  home

Osteosarcoma Facts (bone cancer)  facts factual

Make a Gift  make gift making

Contact Us  us ourselves we contact

1.1.3 Site-wide navigation column (not used on the home page)

The lefthand navigation column is another visuospatial-semantic unit, and the word string selected as best for capturing the functionality of this unit is information contents headings titles sections. The near neighbors for this string are “information listing” but are not used to elaborate the word string. There is no heading text, so the heading text constructed for CWW is simply the sum of all the elaborated link texts, adding the translations “(bone cancer)” for osteosarcoma, “(National Cancer Institute, Children’s Oncology Group)” for NCI/COG, and “(medical researcher in laboratory)” for the image near the bottom left. The example text below is the site-wide common text, separating heading and link texts by empty lines, and section 1.2 describes adaptations of this text for the home page and three subsites.

```
information contents headings titles sections  patients  patient  surgery  nurse  surgical physician  hospital  physicians  hospitals  nurses  nursing  surgeon  therapists  doctors  treatments  clinic  treatment  aid  therapy  medical  clinical  ward  diagnosis  family & friends  family  families  relatives  friends  uncles  sisters  cousins  health  professionals  health  illnesses  illness  mental  mentally  news  news  newspapers  newspaper  editors  reporters  reporter  headline  headlines  editorial  magazines  media  editor  publications  broadcast  television  magazine  press  weekly  About  the  Osteosarcoma  Clinical  Care  &  Research Program  (medical  researcher  in  laboratory)  (bone  cancer)  medical  bone  care  bones  Our Vision  our ourselves we  Research Program  program  programs  NCI/COG  Dog  Project  (National  Cancer  Institute,  Children's  Oncology  Group)  dog  group  Contact  Us  us  we ourselves
```

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patients patient surgery nurse surgical physician hospital physicians hospitals nurses nursing surgeon therapists doctors treatments clinic treatment aide therapy medical clinical ward diagnosis

family & friends family families relatives friends uncles sisters cousins

health professionals health illnesses illness mental mentally

news news newspapers newspaper editors reporters reporter headline headlines editorial magazines media editor publications broadcast television magazine press weekly

About the Osteosarcoma Clinical Care & Research Program (medical researcher in laboratory) (bone cancer) medical bone care bones Our Vision our ourselves we Research Program program programs NCI/COG Dog Project (National Cancer Institute, Children's Oncology Group) dog group Contact Us us we ourselves

About the Osteosarcoma Clinical Care & Research Program (medical researcher in laboratory) (bone cancer) medical bone care bones

Our Vision our ourselves we

Research Program program programs

NCI/COG Dog Project (National Cancer Institute, Children's Oncology Group) dog group

Contact Us us we ourselves

1.1.4 Bottom navigation bar
The bottom navigation bar provide the date the webpage was modified and two site-wide links, and these texts are treated as shown below, using one heading and two links separated by blank lines:

Date last modified: May 29, 2003 date may last web site disclaimer site web for comments about this site, please contact the webmaster contact

Web Site Disclaimer site web

For comments about this site, please contact the Webmaster contact

1.2 Components of navigation system unique to one webpage

1.2.1 Home page
As mentioned above, the site logo is somewhat different on the home page. In addition, the navigation button bar has reverse colors (white letters on red buttons instead of red letters on white buttons) but no difference in content. Finally there is no lefthand navigation column,
although the major headings that appear in that column are all introduced in a different form in the content are of the home page (see below).

1.2.2 Changes in site-wide navigation column for three subsites
For the Patients subsite pages the navigation column is expanded to include the four subsite-wide links for the Patients subsite nested under the button link for Patients, shaded darker gray to indicate that now “you are here” in the Patients subsite” (see Figure 1). To reflect this change, the link “Patients” is elevated to a subheading and treated like a heading text (elaborated links nested under it are added to the subheading text), as shown below:

patients patient surgery nurse surgical physician hospital physicians hospitals nurses nursing surgeon therapists doctors treatments clinic treatment aide therapy medical clinical ward diagnosis Patient Info about Osteosarcoma (information, bone cancer) patient patients doctor hospital medical operation nurses doctors operate nurse dr hospitals Making Treatment Decisions decisions making decision Dealing with Your Disease disease diseases germs viruses virus Stories about Other Teens & Young Adults young stories

Patient Info about Osteosarcoma (information, bone cancer) patient patients doctor hospital medical operation nurses doctors operate nurse dr hospitals
Making Treatment Decisions decisions making decision
Dealing with Your Disease disease diseases germs viruses virus
Stories about Other Teens & Young Adults young stories

For the Family & Friends subsite the Family & Friends button link is shaded darker gray and the basic navigation column is expanded to nest the five subsite-wide links for the Family & Friends subsite under the Family & Friends button link. Accordingly, the Family & Friends link is elevated to become a subheading and elaborated in the same manner as a heading text. Analogous changes happen also for the Health Professionals subsite and its two site-wide links.

1.3 Content area subregion(s)

1.3.1 Home page
In the content area the home page introduces the information units that are stored in the lefthand navigation column for the remaining webpages in the website. They will be listed in order from top to bottom of the webpage.

1.3.1.1 News headlines (top right)

osteosarcoma program explores new diagnostic tool for osteosarcoma: new equipment and software aid project program programs (bone cancer) new move for advocacy to fund osteosarcoma research research move fund (bone cancer) read more read reading aloud

osteosarcoma program explores new diagnostic tool for osteosarcoma: new equipment and software aid project program programs (bone cancer)
new move for advocacy to fund osteosarcoma research research move fund (bone cancer)

read more read reading aloud

1.3.1.2 Osteosarcoma Clinical Care and Research Program (top content area)

our vision is to improve survival and quality of life for teens and young adults with osteosarcoma through advances in patient care, education and research. nursing nurses patient nurse more about the osteosarcoma clinical care and research program. program programs (bone cancer)

more about the osteosarcoma clinical care and research program. program programs (bone cancer)

1.3.1.3 Channeling three user groups to most appropriate content

In the center of the content area there are three featured links with large friendly photos, one each for Patients, (with photo of patient), Family & Friends (with photo of patient and family member), and Health Professionals (with photo of two health professionals). This translates into the following heading and three links:

Patients patient surgery nurse surgical physician hospital physicians hospitals nurses nursing surgeon therapists doctors treatments clinic treatment aide therapy medical clinical ward diagnosis Family & Friends family families relatives friends uncles sisters cousins Health Professionals health illnesses illness mental mentally

Patients patient surgery nurse surgical physician hospital physicians hospitals nurses nursing surgeon therapists doctors treatments clinic treatment aide therapy medical clinical ward diagnosis

Family & Friends family families relatives friends uncles sisters cousins

Health Professionals health illnesses illness mental mentally

1.3.1.4 Accreditation: 4 links

Osteosarcoma Online is a web site of the osteosarcoma clinical care and research program, a program sponsored by the Indiana University Cancer Center. The Indiana University Cancer Center is an NCI-designated clinical cancer center program cancer (bone cancer) Indiana University School of Medicine school college university graduated graduation graduate harvard attended IU cancer center: The Future. Together cancer lung smokers smoking cigarette nicotine National Cancer Institute cancer lung national smokers cigarette smoking nicotine cigarettes HON code we subscribe to the HONcode principles. Verify here we here

Osteosarcoma Online is a web site of the osteosarcoma clinical care and research program, a program sponsored by the Indiana University Cancer Center. The Indiana University Cancer Center is an NCI-designated clinical cancer center program cancer (bone cancer)
Indiana University School of Medicine

IU cancer center: The Future. Together lung smokers smoking cigarette nicotine

National Cancer Institute cancer lung national smokers cigarette smoking nicotine cigarettes

HON code we subscribe to the HONcode principles. Verify here we here

1.3.2 Patients subsite

1.3.3 Family &Friends subsite

1.3.4 Health Professionals subsite
2 Identify and repair insufficient familiarity problems for each visuospatial grouping

The first step towards identifying and repairing insufficient familiarity problems is to discover

Figure 2. Input to AutoCWW “Low Frequency Words Analysis” for 6th-grade semantic space
whether any of the heading/link texts use low frequency words. Figure 2 displays the AutoCWW webpage that appears after clicking “Low Frequency Words Analysis on the home page, and the image captures it ready to submit the four subheadings from the Patients subsite. If low frequency words are identified in the results, these low frequency words should subsequently be submitted to the Frequency Analysis webpage to see if any are zero-frequency words or have very low frequencies of one or two in the semantic space. Zero frequency words have no meaning at all for LSA, so they are simply ignored in any analysis. Usually these words should be translated into meaningful synonyms for LSA. Zero frequency words demand special procedures for LSA.

Figure 3 displays the results output by AutoCWW. The only low frequency words are *Info* and *Osteosarcoma*. Subsequent submission of the low frequency words to AutoCWW “Frequency Analysis page discovers that both *Info* and *osteosarcoma* have zero frequency in the sixth-grade semantic space. Osteosarcoma patients and their families can be assumed to have already learned the word *osteosarcoma* before they ever visit a website devoted exclusively to the rare bone cancer bearing the name *osteosarcoma*, so its zero frequency is not a usability problem, but the term *osteosarcoma* needs to be translated for LSA using “bone cancer” or a similar phrase

![AutoCWW]

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Space is tasa06

The submitted text is displayed below with the words with frequency less than 15 marked in RED

**Patient Info** about **Osteosarcoma**
**Making Treatment Decisions**
**Dealing with Your Disease**
**Stories about Other Teens & Young Adults**

*Figure 3. Results returned by AutoCWW “Low Frequency Words Analysis” for 6th-grade semantic space*

that uses only familiar words.

The second stage finds the term vector length of each link, using the Unfamiliar Heading/Link Analysis of AutoCWW. This is a test of the user’s background knowledge for the topic. Figure 4 shows the four special links from the Patients subsite ready to submit for Unfamiliar Link Analysis, and Figure 5 shows the results returned by AutoCWW. All links are considered sufficiently familiar and do not require repair, but it would, nevertheless, be safer to substitute the word “Information” for the zero-frequency word “Info.”

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Select the semantic space: General_Reading_Up_to_6th_Grade

Please enter the heading and links:

- Patient Info about Osteosarcoma
- Making Treatment Decisions
- Dealing with Your Disease
- Stories about Other Teens & Young Adults

Submit  Reset

---

Figure 4. Input to AutoCWW Unfamiliar Link/Heading Analysis
AutoCWW

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<table>
<thead>
<tr>
<th>Links</th>
<th>Term Vector Lengths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stories about Other Teens &amp; Young Adults</td>
<td>2.71</td>
</tr>
<tr>
<td>Dealing with Your Disease</td>
<td>2.46</td>
</tr>
<tr>
<td>Making Treatment Decisions</td>
<td>1.27</td>
</tr>
<tr>
<td>Patient Info about Osteosarcoma</td>
<td>0.84</td>
</tr>
</tbody>
</table>

Below are the unfamiliar links. To find alternative words please press the submit button. This will run a near neighbor analysis.

Submit  
Reset

Figure 5. Results of Unfamiliar Links Analysis returned by AutoCWW.
3 Identify and repair confusable heading/link texts

Home Page >> Confusable headings/links Analysis

Enter the links for confusable headings/links analysis

Select the semantic space General_Reading_Up_to_6th_Grade

Enter the links below. Please leave an empty line to separate each link from the next link on your list

Patient Info about Osteosarcoma
Making Treatment Decisions
Dealing with Your Disease
Stories about Other Teens & Young Adults

Submit

Figure 6. Input to AutoCWW Confusable headings/links analysis

F
AutoCWW
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Space is text06

<table>
<thead>
<tr>
<th>Text</th>
<th>Patient Info about Osteosarcoma</th>
<th>Making Treatment Decisions</th>
<th>Dealing with Your Disease</th>
<th>Stories about Other Teens &amp; Young Adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text0</td>
<td>1.00</td>
<td>0.12</td>
<td>0.08</td>
<td>0.09</td>
</tr>
<tr>
<td>Text1</td>
<td>0.12</td>
<td>1.00</td>
<td>0.09</td>
<td>0.01</td>
</tr>
<tr>
<td>Text2</td>
<td>0.08</td>
<td>0.09</td>
<td>1.00</td>
<td>0.04</td>
</tr>
<tr>
<td>Text3</td>
<td>0.09</td>
<td>0.01</td>
<td>0.04</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*Figure 7. Results returned by AutoCWW*
4 Optimize semantic coherence within visuospatial groupings

**AutoCWW**

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[Home Page >> Confusable headings/links Analysis]

Enter the links for confusable headings/links analysis

Select the semantic space [General_Reading_Up_to_6th_Grade]

Enter the links below. Please leave an empty line to separate each link from the next link on your list:

Patients.
Patient Info about Osteosarcoma.
Making Treatment Decisions.
Dealing with Your Disease.
Stories about Other Teens & Young Adults.

Submit  [Reset]

*Figure 8. Input to AutoCWW*
Only one of the four links nested under the Patients heading is highly similar to the heading text “Patients.” “Making Treatment Decisions,” “Dealing with Your Disease,” and “Stories about Other Teens and Young Adults” are not sufficiently similar to the heading “Patients.”

**Figure 9. Results returned by AutoCWW**
Enter the texts for elaboration using near neighbors.

Select the semantic space: General_Reading_Up_to_6th_Grade

Enter the Frequency: 50

Enter the minimum cosine value: 0.50

Enter the links below. Please leave an empty line to separate each link from the next link on your list:

- Patients
- Patient Info about Osteosarcoma
- Making Treatment Decisions
- Dealing with Your Disease
- Stories about Other Teens & Young Adults

Figure 10. Input to AutoCWW
Frequency is 50
Cut-off cosine is 0.50
Space is tasa06

The link is: patients
The elaboration is:
patients patients patient hospital doctors medical operation doctor nurses hospitals dr operate nurse

The link is: patient info about osteosarcoma
The elaboration is:
patient info about osteosarcoma patient patients doctor hospital medical operation nurses doctors operate nurse dr hospitals

The link is: making treatment decisions
The elaboration is:
making treatment decisions decisions making decision

The link is: dealing with your disease
The elaboration is:
dealing with your disease diseases germs viruses virus

The link is: stories about other teens & young adults
The elaboration is:
stories about other teens & young adults young stories

These are the elaborations for copying
patients patients patient hospital doctors medical operation doctor nurses hospitals dr operate nurse
patient info about osteosarcoma patient patients doctor hospital medical operation nurses doctors operate nurse dr hospitals
making treatment decisions decisions making decision
dealing with your disease diseases germs viruses virus
stories about other teens & young adults young stories

Figure 11. Results returned by AutoCWW

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6 Identify and repair goal-specific competing headings and links

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Enter the texts for one-to-many comparison.

Select the semantic space: General_Reading_Up_to_6th_Grade

Enter the Goal below:

How can I talk to my friends about osteosarcoma?
"Talking about osteosarcoma to my friends was not too difficult for me...Many times after making a joke about...

Enter the elaborated links below. Please leave an empty line to separate each link from the next link on your list.

<table>
<thead>
<tr>
<th>links</th>
</tr>
</thead>
<tbody>
<tr>
<td>patients patients patient hospital doctors medical operation doctor nurses hospitals dr operate nurse patients patient info about osteosarcoma patient patients doctor hospital medical operation nurses doctors operate nurse or hospitals making treatment decisions decisions making decision dealing with your disease disease diseases germs viruses virus stories about other teens young adults young stories patients patients patient hospital doctors medical operation doctor nurses hospitals dr operate nurse patients patient info about osteosarcoma patient patients doctor hospital medical operation nurses doctors operate nurse or hospitals making treatment decisions decisions making decision dealing with your disease disease diseases germs viruses virus stories about other teens young adults young stories</td>
</tr>
</tbody>
</table>

Submit

Figure 12. Input to AutoCWW

July, 2004
Goal: How can I talk to my friends about osteosarcoma? "Talking about osteosarcoma to my friends was not too difficult for me... Many times after making a joke about having no hair, someone would ask me why I didn't have hair and that was a good opportunity for me to tell them about what I was going through." - Written by Nina in May 2003 (age 18 when diagnosed with osteosarcoma in her knee) Read more When you are ready to talk to your friends, you may need to make the first move. You should tell them as much as you want and are able about osteosarcoma. You may want to tell more information to closer friends. You may be afraid how your friends will react to your disease. Be prepared that your friends may have many questions. They may know very little about osteosarcoma and may not be sure what to say to you. You may want to explain some of the physical changes that may result from your treatment and what they can do or say to make you feel better. Usually once you answer their questions, your friends will realize you are still the same person inside. Your friends can be very helpful. They can remind you that there is life beyond hospitals and doctors and give you a break from dealing with your illness. After you have been in treatment for a while, you may also realize that you have good days and bad days. It may be best to do things with your friends on the good days. Also, if there is something you really want to do with your friends, you may ask your doctor to reschedule your treatment so that it doesn't interfere with your fun. You may find that teenagers with osteosarcoma or cancer may become some of your closest friends since you share some similar feelings and experiences. If you would like to meet other osteosarcoma patients, the social worker at your treatment center may be able to help you contact these patients. Your treatment center or community may also have support groups where you can talk to other young cancer patients. For more information on how to socialize and deal with friendships, visit the "Social Circles" section of 2beME.

<table>
<thead>
<tr>
<th>Text</th>
<th>Cosine</th>
</tr>
</thead>
<tbody>
<tr>
<td>patients patients patient hospital doctors medical operation doctor nurses hospitals dr operate nurse patient info about osteosarcoma patient patients doctor hospital medical operation nurses doctors operate nurse dr hospitals making treatment decisions decisions making decision dealing with your disease disease diseases germs viruses virus stories about other teens young adults young stories nurses hospitals dr operate nurse</td>
<td>0.33</td>
</tr>
<tr>
<td>patient info about osteosarcoma patient patients doctor hospital medical operation nurses doctors operate nurse dr hospitals making treatment decisions decisions making decision dealing with your disease disease diseases germs viruses virus stories about other teens young adults young stories</td>
<td>0.18</td>
</tr>
<tr>
<td>making treatment decisions decisions making decision dealing with your disease disease diseases germs viruses virus stories about other teens young adults young stories</td>
<td>0.25</td>
</tr>
<tr>
<td>making treatment decisions decisions making decision dealing with your disease disease diseases germs viruses virus stories about other teens young adults young stories</td>
<td>0.21</td>
</tr>
<tr>
<td>making treatment decisions decisions making decision dealing with your disease disease diseases germs viruses virus stories about other teens young adults young stories</td>
<td>0.16</td>
</tr>
</tbody>
</table>
Enter the texts for elaboration using near neighbors.

Select the semantic space General_Reading_Up_to_6th_Grade

Enter the Frequency 50

Enter the minimum cosine value 0.50

Enter the Goal below

How can I talk to my friends about osteosarcoma? "Talking about osteosarcoma to my friends was not too difficult for me...Many times after making a joke about having no hair, someone would ask me why I didn't have hair and that was a good opportunity for me to tell them about what I was going through." -Written by Nina in

Enter the links below. Please leave an empty line to separate each link from the next link on your list

Home
Osteosarcoma Facts
Make a Gift
Contact Us
Patients
Friends and Family
Health Professionals
News
About the Osteosarcoma Clinical Care & Research Program
Our Vision

Submit Reset

Figure 14. Input to AutoCWW
Frequency: 50
Cut-off cosine: 0.50
Space: tasa06

blackmon1.txt

Goal: How can I talk to my friends about osteosarcoma? "Talking about osteosarcoma to my friends was not too difficult for me...Many times after making a joke about having no hair, someone would ask me why I didn't have hair and that was a good opportunity for me to tell them about what I was going through." - Written by Nana in May 2003 (age 18 when diagnosed with osteosarcoma in her knee) Read more When you are ready to talk to your friends, you may need to make the first move. You should tell them as much as you want and are able about osteosarcoma. You may want to tell more information to closer friends. You may be afraid how your friends will react to your disease. Be prepared that your friends may have many questions. They may know very little about osteosarcoma and may not be sure what to say to you. You may want to explain some of the physical changes that may result from your treatment and what they can do or say to make you feel better. Usually once you answer their questions, your friends will realize you are still the same person inside. Your friends can be very helpful. They can remind you that there is life beyond hospitals and doctors and give you a break from dealing with your illness. After you have been in treatment for a while, you may also realize that you have good days and bad days. It may be best to do things with your friends on the good days. Also, if there is something you really want to do with your friends, you may ask your doctor to reschedule your treatment so that it doesn't interfere with your fun. You may find that teenagers with osteosarcoma or cancer may become some of your closest friends since your share some similar feelings and experiences. If you would like to meet other osteosarcoma patients, the social worker at your treatment center may be able to help you contact these patients. Your treatment center or community may also have support groups where you can talk to other young cancer patients. For more information on how to socialize and deal with friendships, visit the "Social Circles" section of 2bcME.

Link: Home
Elaboration:
Home home

Link: Osteosarcoma Facts
Elaboration:
Osteosarcoma Facts facts information encyclopedia

Link: Make a Gift
Elaboration:
Make a Gift gift make
Comparison of elaborations of the links with the goal

<table>
<thead>
<tr>
<th>Link</th>
<th>Cosine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>0.010</td>
</tr>
<tr>
<td>Osteosarcoma Facts</td>
<td>0.135</td>
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These are the elaborations for copying

| Home home                                    |        |
| Osteosarcoma Facts facts information encyclopedia |      |
| Make a Gift gift make                        |        |
| Contact Us us we ourselves                   |        |
| Patients patients patient hospital doctors medical operation doctor nurses hospitals dr operate nurse |      |
| Friends and Family family friends families relatives |    |
| Health Professionals health attitudes mental practices healthy illness |    |
| News news newspaper reporter                 |        |
| About the Osteosarcoma Clinical Care & Research Program care |    |
| Our Vision our ourselves we                 |        |
| Research Program program programs           |        |

**Figure 16. Results returned by AutoCWW, part 2**
8 Compile to-do list consequential changes for other webpages

9 Appendix A: Home page heading/link texts

10 Appendix B: Patient subsite heading/link texts

11 Appendix C: Family and Friends subsite heading/link texts
what is my loved one going through? my
parents parents parent grandparents
siblings & friends friends friend
teachers teachers teacher school
stories from other friends & families friends stories tales families
patient information about osteosarcoma information facts lists

12 Appendix D: Health Professionals subsite heading/link texts

13 Appendix E: Sample user goals for young teen patients

14 Appendix F: Sample user goals for family and friends of patients

15 Appendix G: Sample user goals for health professionals

July, 2004