Interface Critique:  
Stanford Libraries Catalog

The Stanford Libraries interface at:
http://jenson.stanford.edu:9998/uhtbin/cgiisirsli/3eb3y4tCFL/24165062/60/30062
contains many features which violate basic user interface design principles. In this paper
I will focus on two of the most prominent violations that negatively affect usability.
First I will concentrate on the tabs in the card catalog metaphor and then I will discuss the
search command buttons.

This design employs a card catalog metaphor where users click the selection tabs to
reveal either the quick search or the complex search input interface. However, the
metaphor is not complete. The tabs hang in space and visually do not clearly represent a
card from a card catalog or a card file. The use of the metaphor of the card for changing
the entry interface should be carried through the rest of the page with the completion of
the card graphic. Without the card lines it creates confusion and a lack of coherence.
The connection between the tabs and the choice of input interfaces is not articulated in
the interface. The tabs almost seem as though they are tacked on and it is not clear what
will happen when you press them.

Additionally, the placement of the tabs on the far right hand side of the page violates both
the principle of gestalt and the principle of mapping. According to Neilson, “User
interfaces should be simplified as much as possible. …Information that will be used together should be displayed close together.” He describes the gestalt rules for human perception as saying that things are seen as belonging together, as a group, or as a unit, if they are close together, and are enclosed by lines or boxes. The separation of the tabs from the rest of the search interface violates these rules.

The placement of the tabs also violates the principle of mapping. Mapping is the relationship between two things, in this case the cultural mapping of the left hand side of the page to a beginning action. Norman states that “natural mapping is taking advantage of physical analogies and cultural standards, and leads to immediate understanding. The controls are where they are supposed to be.” The first action needed for the initiation of a search is the choice of quick or complex search. In our culture reading is done from left to right so we routinely look to the left of a page when beginning an action. The natural place to find this function is on the left, yet the tabs are on the far right side of the page. In this position a novice user may easily overlook the tabs.

The second design feature that shows problems caused by violations to the principles of user interface design is the search command feature (buttons). This design violates the principle of making things visible. According to Neilson, “Whenever the number of possible actions exceeds the number of controls, there is apt to be difficulty.” The doubling up of functions (choice of type of search and search input) makes it difficult to see and anticipate the nature of the interaction.
This same feature also violates the general principle of visual affordances. According to Norman, “affordances provide strong clues to the operations of things. When affordances are taken advantage of the user knows what to do just by looking.” The graphic for the button looks more like a drop of water than a button and the placement of the text over the top of the circular graphic obscures the image underneath. The graphic does not clearly “afford” pushing.

In my principled redesign of the user interface I tried to address each of the problems with the initial design without completely redesigning it. First, I moved the search tabs and library selection box to the left to join the rest of the search functions. This would follow cultural mapping and gestalt rules. Then, I completed the metaphor for the “catalog card” tabs by adding lines that give the illusion of a card and help “make visible” the function of the tabs. This addition makes it clear which tab is active and which are not. Another benefit of the lines is that they visually draw the elements of the search functions together also following the gestalt principle. By adding the lines to visually join the elements of the search together, it increases the user’s understanding of relationships between dialogue elements.

In redesigning the search input function I started by separating out the choice of type of search and the actual search command. I created check boxes for the choice of the type of search, and added a specific search button to input the search request. This makes the process more visible. I also created buttons that appear to afford pushing, making the physical action more intuitive.
Original Interface:

Buttons do not afford pushing
Use of “Browse” does not accurately convey true type of search.
Combination of functions creates confusion.
Unclear that they are buttons.
Help information unnecessary on main interface if interface is clear and intuitive.

Redesign Interface:

Buttons now “afford” pushing by adding stronger 3D effect, drop shadows and more recognizable button form.
Nielsen: Principles of graphic design can be used to make things stand out. (Used Contrast)
Separated search input and type of search.
Added Search and Clear Buttons to make the interaction clear.
Moved top button to more intuitive location.

Completed the visual metaphor of a card catalog or card file.
Moved Tabs and Library entry dialog box to interact with the other search elements.
Removed help instructions and moved them to another tab, “HELP” for easy access.
Clarified actions for search method.