Final:

The Information Professional as Counselor and
An Analysis of Amazon.com Via Norman’s Theories of Design

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Part A.

Marchionini (1997) defines a personal information infrastructure as being any set of mental models, cognitive skills and knowledge that allow an individual to seek and process information. An individual’s personal information infrastructure allows a user to integrate newly encountered or acquired information into his or her own knowledge and understanding, and in turn use that information to accomplish his or her own goals. It is helpful to understand this concept, as each individual’s personal information infrastructure is unique: no two people process information in the same way. Understanding the many ways in which people process information can enable the information professional to develop different tools that match the various information seeking habits or expectations that exist.

A zone of intervention is “that area in which an information user can do with advice and assistance what he or she cannot do alone or can do only with great difficulty” (Kuhlthau 2004, pp. 129). The zone of intervention allows the librarian or other information professional to augment a user’s personal information infrastructure, by providing a user with information retrieval tools, as needed based on the particular user’s information literacy. The levels of intervention range from none (Z1: the user conducts his or her own search independently), up to providing a single reference (Z2), providing a group of references (Z3), guidance to searching within a group of references (Z4), or guidance through the search process as a whole (Z5).

Kuhlthau has identified the zones with roles that the information professional assumes in assisting the information seeker. The most basic level is that of Organizer (corresponding to level Z1) in which the information professional simply ensures that the resources are available to the user. The Locator (Z2) helps the user find a single, specific source. The Identifier (Z3) assists the user in identifying a group of possible sources. The Advisor (Z4) helps the user
understand how to search the group of possible sources. The Counselor (Z5) takes part in what is known as process intervention, which is a longer-term interaction with the information seeker. The information professional in the role of Counselor guides the user through the process of conducting an information search. In a sense, the information professional becomes a guide to the world of the library, or to a similar system in which searchable records are kept. In many cases, a relationship between the Counselor and information seeker develops over time.

The concept of the various levels of the zone of intervention provides the information professional with an awareness of the different levels and ways that assistance can provided, and thus assists him or her in being able to assess the needs of the user. If a user has a high level of information literacy and can do a search independently, the information professional needs to be able to recognize this and not intervene in the user’s search process, as a user may find this intervention intrusive (Kuhlthau, 2004, p. 128). At the other end of the continuum, the information professional recognizes when the user needs what is known as process intervention. This is the case wherein a user basically does not know where or how to start the information seeking process. It is in this capacity that the role of counselor enters into play.

The role of the Counselor is an example of a zone of intervention being used to design a context that supports information seeking behavior. As a guide to the process of information retrieval, the information professional enables the user to learn, understand, and incorporate the skills necessary to perform information retrieval. This is one scenario wherein the “uncertainty principle” comes into play (Kuhlthau, 2004, p. 127). Kuhlthau looks at process intervention as a holistic process in which both the information seeker and information professional take part. The factor that makes the high level of process intervention (Z5) holistic is that the information professional needs to, in essence, look at the information retrieval process from the perspective
of the user, and intervene accordingly. The importance of correct assessment and appropriate intervention is very important at the Z5 level, as over-estimating a user’s search process abilities will cause the information professional to provide too much knowledge, which can be overwhelming to the user. This may have the unintended consequence of discouraging the user from further attempts at information seeking, thus having the effect of stunting the user’s personal information infrastructure.

By being able to intervene based on a searcher’s ability, the information professional acting as counselor is able to gain an awareness of the user’s perspective. The information professional in a sense is able to incorporate the user’s perspective into his or her own. One way that this could change the counselor’s personal information infrastructure is that it can expand the counselor’s awareness of how users perceive information in general, not just based on one particular user’s perspective. For example, if the counselor is involved in the design of information retrieval systems, he or she will be able to incorporate the perspective gained from various users into creating an information retrieval system that is intuitive and easy to use. The counselor’s perception of information will expand so that the counselor will be aware of how lay people who are not information professionals, and who do therefore do not think of information in a professional manner, perceive and conceptualize information. This will certainly enable the information professional to engage with the user on a more holistic level, as he or she will gain a greater understanding not only of what the user is looking for, but the meaning that the search for information has to the user.

By being able to engage with an information professional as counselor on a holistic level, the user will perhaps not find the information search to be as daunting as previously thought. By having an information professional acting as a counselor for guidance through the information
seeking process, the user will also be able to gain skills necessary for future information search
and retrieval, which can in turn have the effect of expanding the user’s personal information
infrastructure.

In my current profession, as the Education Coordinator for the UCSF Division of
Geriatrics, I am responsible for maintaining collections of information for use by various users:
faculty, fellows, residents and students (learners), and staff. Each of these users has need of
different kinds of information, which means that information for each purpose has to be
maintained in a different fashion, depending on how it is to be used. For example, the fellowship
director will need to have access to files on the fellows, whereas staff will need to know
information about purchases that have been made. Fellows and learners will need information
about the schedules for their rotations. Fellows will also need human resources information,
such as information about salaries and health benefits.

One way that I have attempted to act in the role of counselor is by devising a new way to
disseminate schedules and syllabi to residents and students who do their rotations within our
division. UCSF has a web-based learning portal known as the Collaborative Learning
Environment (CLE, Center for Instructional Technology, 2008). Through collaboration with the
UCSF Library, I was able to set up a page for our division, wherein I posted syllabi and
schedules for the residents and students, to whom I gave access instructions.

My role as counselor comes into play in providing the learners with the necessary tools to
access the needed information, and also in providing guidance when questions arise as to the use
of the CLE system as well as their particular rotation schedules. By providing them with the
tools not only to retrieve the information, but to also understand the information, I am assisting
them in expanding their personal information infrastructures. In turn, the learners provide me with feedback, such as suggestions on how the system can be improved.

One of the teaching tools that information professionals employ is that of scaffolding, which is “an instructional technique whereby the teacher models the desired learning strategy or task, then gradually shifts responsibility to the students” (North Central Regional Educational Laboratory). Shifting the responsibility of accessing the necessary information to the learners is another way in which their personal information infrastructures can be expanded, as the learners are now have a new tool for accessing information, that they may have not had before.

Another example of scaffolding that we have employed in our division is the creation of a website that is geared towards our fellows. Many of our fellows are new not only to UCSF, but to the Bay Area as well. I created a website of helpful links that is part of our Division website (UCSF Division of Geriatrics, 2008). I receive feedback from many people regarding the construction and content of the site, such as the fellows, the fellowship director, my immediate supervisor, and a staff member who also is responsible for maintaining the Division website. Based on their feedback, further changes to the website are made, which results in turn more feedback. Thus, a feedback loop is created.

The feedback loop is vital to the counselor/searcher relationship, and is indeed the key factor in the relationship being a holistic system. The ability of each member of the partnership to provide feedback serves to expand each party’s awareness of the other member’s perspective. Gaining a new perspective also allows each partner in the process to gain a greater understanding of the nature of the information seeking process as a whole.
References


Part B.

Norman (1988) defines an affordance as being what an object is used for, and adds that in a good design, the affordance is easily determined from the design of the object. Problems arise when an object has multiple uses, such as wood used in a bus shelter as an intended support or structural material, but which also has the affordance of being written on, which leads to problems with graffiti (Norman, 2008, p. 9).

A constraint is a feature of an object that limits the ways in which the object can be used. Norman (1988) gives the example of a pair of scissors whose handle has a large hole and a small hole (p. 12). The large hole is large enough for four fingers to fit into, and the small hole is only large enough to allow one finger, presumably the thumb. The size of the holes and their placement on the handles in relation to the blades of the scissor constrains or limits the uses for these features.

Mapping is the relationship between and object and its action. Norman (1988, p. 23) gives the example of a steering wheel. Turning the steering wheel in a particular direction (left or right) results in the car turning in the same direction. The action of turning the wheel is mapped to the result of the car turning. Natural mapping is a naturally occurring assumption of the correspondence between object and action, or symbol and meaning. For example, volume controls on a computer are often indicated by a horizontal symbol in the shape of an elongated triangle. The thin end indicates lower volume, while the thick end indicates higher volume.

Conceptual models are similar to mapping, in that they are ideas that people have of how things are supposed to work. Norman (1998) provides the illustration of Carelman's Tandem "Convergent Bicycle (Model for Fiancés)" (p. 13) which is constructed in such a way that two riders are facing each other yet pedaling in the opposite direction, assuring that they go no where.
We know that this bicycle would never work if it were to be constructed, because our conceptual model of bicycles already includes the manner in which they function. In other words, by having a conceptual model of a bicycle, we can predict how and why Carelman’s model will not work.

Norman (1988) defines paradox of technology as what happens when “added functionality generally comes along at the price of added complexity.” (p. 27). As an object has functions added to it, the design generally becomes more complex to accommodate the extra features and functions. He gives the example of a telephone that has many features but is therefore too complicated to use. This is due to “more features and less feedback” (p. 27). Users do not know if what they are doing on the phone is having the effect intended by the designers, as there is no feedback mechanism. Norman is actually prescient when he reflects that having a display screen on a telephone would actually make it easier for people to use them, as the instructions or menu items could be displayed on the screen.

As these concepts convey information about the ease of use of an object or system, understanding them is helpful in enabling information professionals to design information retrieval systems that are easy to use by people who do not possess a high level of skill in information seeking. Knowing the ease of use of such a system enables information professionals to have an idea of how likely the system will be in not only helping users find the information they are seeking, but also in increasing their information literacy and information seeking skills. If an information retrieval system does not fit into a user’s conceptual model (e.g. it doesn’t match the user’s idea of how such a system normally works), or if it does not match the users natural mapping (e.g. the function does not have the expected result), then it will be less likely that a user will find the system helpful or useful.
I decided to apply these concepts to Amazon.com, as I have first-hand knowledge of the site due to extensive use. The four features I have chosen to examine are homepage, Search, Wishlist and Cart, as I have found that these are the main features I generally use, and in the order listed here.

The homepage (Amazon.com, 2008) is the main portal to Amazon.com, from which all the other features listed in the previous paragraph can be accessed directly. The primary affordance of Amazon.com is for shopping, as is evidenced by the left-hand sidebar labeled “Shop All Departments” directly underneath the Amazon.com logo. From the homepage, there are links to the various departments, the search function, the cart and the user’s Wishlist, and account. The homepage displays featured items in various categories. The bottom of the page lists customer service related links, links to most popular items based on sales, and links to Amazon.com’s international sites (Canada, UK, Germany, Japan, France and China). The secondary affordance of the homepage is that it allows the user to reach any other part of the Amazon.com site from any page.

One major constraint of the homepage is that there are no links to any sites external to Amazon.com. The only way for a user to leave Amazon.com is by navigating to another site via the browser’s search function. This constraint exists throughout all the pages of Amazon.com. Mapping is pretty straightforward, as the clicking on a particular link brings the user directly to the designated webpage (e.g. clicking on the link for cart brings the user directly to the shopping cart, without having to navigate through any intermediary sites).

Whether the site follows natural mapping and conceptual models must be answered with the caveat that the natural mapping and conceptual models for use of websites have only emerged in the past 10-15 years. One way natural mapping is utilized is through the use of
icons. The link for the Cart is labeled with an icon in the shape of a standard super-market shopping cart (as of the date of this writing (12/6/2008), the shopping cart has been rendered as a sleigh, presumably in keeping with the holiday season theme). This can be considered to be “natural” in that consumers readily associate a shopping cart as the place in which items are placed for future purchase. Indeed, the shopping cart icon is fairly ubiquitous on many websites that allow online purchases. For comparison, I looked at the homepages for Radio Shack (RadioShack Corporation, 2008) and Macy’s (Macys.com, Inc, 2008), and noticed that their homepages were set up in manners similar to Amazon.com’s. The fact that these three websites have similar designs (including the logo-icon for the homepage in the upper left-hand corner of the page) would indicate that there is a conceptual model that the designers were aware of when designing these pages.

In the Search function, the affordance is plainly indicated by the use of the word “Search” next to a field similar in form to the search field of a web browser. Located between the word “Search” and the search field is a drop-down menu allowing users to choose from various “Departments” (e.g. categories of products) such as Apparel and Accessories, Books and Electronics. Users can also search all departments. The main constraint of the search field is that it is only intended for searches on products for sale within and by Amazon.com, and no other function. It cannot be used for searching non-Amazon.com websites. The fact that the search field resembles the search field in a web browser indicates that the designers have taken users’ conceptual models of web functionality into account when designing the site. It therefore also accommodates users’ natural mapping of how a website works. The search function acknowledges the paradox of technology, by suggesting possible search results when the user starts entering a search term. I started typing “paradox” into the search bar, and after typing the
first four letters, I was given 10 suggested results, including “paramore”, “paradise lost”,
“parallels” and “parachute”.

The Wishlist is accessible through the drop-down menu labeled “Your Lists”, located
immediately to the right of the Cart icon and link. “Your Lists” includes links for Wishlist,
Shopping List, Gift Organizer, Your Media Library (for downloaded music and books), Wedding
Registry, Baby Registry, and Amazon Remembers (an app for use with the iPhone). For the
purposes of this paper, I will only look at the Wishlist function.

The affordance of the Wishlist is indicated by the title of the page (e.g. “Jonathan E.
Leff’s Wishlist”), and the list of items that the user wishes to purchase, each of which has a
prominent button labeled “Add to Cart” with the previously mentioned Cart icon. The user is
also able to sort items in the list according to whether or not the item has been purchased,
category, date added/title/price, etc. and compact vs. normal view. This functionality is provided
at the top of the page. One constraint is that one can only move to the next or previous page
when navigating among pages within the Wishlist. The user cannot skip from one page to any
other page directly. Additionally, when deleting an item from the list in the Compact mode, the
user cannot delete items that have been selected on multiple pages. I did not feel that
mapping/natural mapping and conceptual models came into play with the Wishlist page, as I
have never encountered any other site that has this feature. From my experience of the page, I
have found as a user that I needed to acquaint myself with the various features of the page before
being able to use it successfully. Having to do this is also a constraint.

The Cart has the same features at the top of the page as all the other pages in the
Amazon.com system, and also has many constraints, one of which is that a user cannot add
multiple items to the Cart at the same time. There is no button for “Add All [Selected Items] to
Cart”. After adding one item to the Cart, I was taken to a page indicating that the Cart had been updated by means of a sidebar on the right-hand side of the page. The rest of the page had links to different items for sale. To go back to my Wishlist, I had to either click on the link for Wishlist in the sidebar, or else navigate back to it via other links on the page. I had to repeat this for each item I wished to put in the Cart. The greatest constraint comes when the user completes a purchase. The process begins when the user clicks on a link for “Proceed to Checkout”, which brings the user through a sequence of screens (log in to account, choose shipping address, choose shipping speed, choose payment) before the user confirms the purchase. The only point at which the user can cancel this process is at the very end (the confirmation screen).

The paradox of technology comes into play on all pages of the site due to the sheer number of links presented to the viewer. On the Wishlist alone, in addition to the functionality at the top of the screen and customer service links at the bottom, which appear on each page, I counted 26 separate links. This is a large amount of information and functionality for a user to be aware of and to have to incorporate in order to use successfully. In my personal experience I estimate that I have used a one or two of these extra links.

My conclusion is that mapping and conceptual models are the strong point of Amazon.com, particularly as the design of the pages are mapped to users expectations of how a website for shopping generally works. The factor that I feel works the least is the paradox of technology, as there are an overwhelming amount of links not only to other features, but also to additional products to be purchased, which could ultimately prove distracting to the user and make the site difficult to navigate.
References


