Design Patterns (for web applications)

Search engines like Google apply strong reduction techniques to navigation of the web. For example, one common way this reduction pattern is implemented is by assuming the behaviour of the current user is similar to the behaviour of other users in similar situations. This is often seen in recommendation engines, e.g., Amazon. The principle applied by Google is to ‘make it easy’ for the user (<http://www.google.com/policies/technologies/>), by assuming that users form search queries similarly, and returning similar results to those users.

As we have seen in the introduction, users with Autism behave in different ways to typical users when navigating search. Users with Autism do not use the same key phrases when looking for documents with several attributes, i.e., queries that would be best formulated using several iterations of search, or multiple search parameters. This leads to an ineffective search; one that requires users to sift through results which are in large-part irrelevant, and a bad user experience. Given the research findings observed in the current study, the parametric search pattern appears to be a better choice for the user group in question.

Parametric search queries allow users to define parameters in an increasingly logical and structured way. As an example, consider the experience of searching for flights to a particular holiday destination, or for a person. This requires high cognitive ‘load’ (remembering and manipulating arrival, departure, destination, timings, airlines, seat preferences etc.) so searches are often structured using fixed options (see Expedia image {Example of parametric search query}).

For typical users, parametric search is more structured, and in some circumstances seems more natural than a free – keyword search. It makes search queries easier to formulate in situations where there is a high cognitive load. We can apply this idea to web search for people with Autism, by asking them to enter criteria that can be applied to subgroups of search queries. Parametric search can assist the user with capturing the search parameters that are useful for a query it does not ultimately reduce the number of search results returned; the possibility of a large result set is most definitely true. However, when used in addition to the original search query itself, the parametric search will refine the user’s search results in line with their search query, ultimately leading to a higher precision for the search enginei.

One of the aims of the study is to reduce the amount of textual information on the webpage presented to the user, so the solution implemented here tries to find a balance between these two aims.