

Can Exploratory Search be
Distinguished from Other Kinds of
Information Seeking Behaviors, and
Can a Search Interface Support a
Variety of Such Behaviors?

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The General Problem

- People engage in a wide variety of interactions with information in the course of their information seeking.
- Is it possible, and useful, to distinguish among these different types of interactions?
- Can, and should a single system framework support the variety of such interactions?

The Current Situation

- The most common distinction made is between *searching* and *browsing*, but these are typically understood in an informal sense.
- Some attempts have been made at principled distinction between different types of interactions with information, but are not widely applied.
- Current IR systems generally support only one type of interaction at a time, and at most only two types at all.

One Way to Distinguish Between Types of Interactions with Information

- Take a faceted approach to classification of information interaction behaviors
- Observe actual behaviors in order to identify facets and their possible values
- Define different types of interactions according to the combination of values on the different facets
- Cool & Belkin (2002); Belkin, Marchetti & Cool (1993)

A Proposed Classification of Interactions with Information

- **Communication Behaviors**
 - **Medium, Mode, Mapping**
- **Information Behaviors**
 - **(By Type of Behavior)**
- **Objects Interacted With**
 - **Level, Medium, Quantity**
- **Common Dimensions of Interaction**
 - **Information Object, Systematicity, Degree**
- **Interaction Criteria**
 - **(By Type of Criterion)**

Information Behaviors

Create

Disseminate

Organize

Preserve

Access

Method

scan – search

Mode

recognize - specify

Evaluate

**Comprehend (e.g. read,
listen)**

Modify

Use (e.g. interpret)

Objects Interacted With

Level

information, meta-information

Medium

image, written text, speech,...

Quantity

one object, set of objects, database of objects

Common Dimensions of Interaction

Information Object

part -- whole

Systematicity

random -- systematic

Degree

selective -- exhaustive

Some “Prototypical” Interactions

- Finding a (partially) known information object
- Recognizing useful information objects by scanning through an information resource
- Evaluating the usefulness of information objects
- Determining the content/structure of a set or collection of information objects

Possible Characterization of Exploratory Searching

- Access
 - Method – **Scanning**
 - Mode – **Recognition**
- Objects Interacted With
 - Level - **Meta-information** initially
 - Medium – Specified by the individual situation
 - Quantity – **Database of objects** initially
- Common Dimensions of Interaction
 - Specified by the individual situation

Functions of Such a Classification

- Distinguish between different types of interactions
- Relate different types of interactions to one another
- Identify support techniques relevant to different types of interactions
- Form a basis for integrating different support techniques

Is This Classification Adequate for Characterizing Exploratory Searching?

- Can characterization be accomplished solely on the basis of behavior and other observable elements?
- Is it necessary to include goal as a facet?
- Is it necessary to include individual factors such as degree of uncertainty with respect to the goal, or degree of definition of the problem being addressed?

Should Different Types of Interactions be Supported Within a Single System Framework?

- Pro:
 - In the course of information seeking episodes, people engage in different interactions
 - Consistency of a single framework across multiple information seeking episodes
- Con:
 - Complexity of interacting with different support systems
 - Tuned systems may be more easy to use and more effective

Can Different Types of Interactions be Supported Within a Single System Framework?

- Integrating radically different support techniques within one framework will be difficult
- Designing usable interfaces in this context will be difficult
- The concept of a “space of interactions”, based on a faceted classification, might address both major objections