

**Boldi et al. (2009)**

Used cognitive aspects of searchers issuing the query:

**Generalization:** user wants broader information than was obtained from the current search

**Specialization:** user narrows down the current search

**Mission Change:** user changes the search topic to an entirely different one

**Parallel Move:** user modifies the current query to change the search aspect with the same context Learners are the also knowledge producers, and discerning knowledge discoverers / navigators

**Error Correction:** user’s search intent does not change in the period before and after reformulation; examples are correcting a misspelled term and/or performing a query paraphrase

**Liu et al. (2010)**

Used linguistic properties of two successive queries:

**Generalization:** successive queries contain at least one term in common; second query contains fewer terms than first query

**Specialization:** successive queries contain at least one term in common; second query contains more terms than first query

**Word Substitution:** successive queries contain at least one term in common; second query has same length as first query, but contains some terms that are not in first query

**Repeat:** successive queries contain exactly the same terms, but the format or ordering of these terms may be different

**New:** successive queries do not contain any common terms

*Generalization and Specialization are identical in both taxonomies. Parallel Move can contain Word Substitution, Repeat, or New QRTs. Mission Change will generally have New QRTs. Error Correction will possibly have Repeat or Word Substitution.*