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# Asking useful questions: Active learning with rich queries

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**Abstract:** Recently, both psychology and machine learning have explored the ability of learners to ask questions. However, much of this work has focused on a single type of question: a "label query". When making a label query, the learner selects an unfamiliar (unlabeled) item and requests a label for it (e.g., "What is this?"). We hypothesized that people often prefer much richer types of questions (e.g., feature queries: "Is this feature relevant?", demonstration queries: "Can I see an example of a ladybug?", etc.). To study this behavior, we had people play a simple game where they generated natural language questions to determine a hidden configuration of objects. We compute the normative value of these rich questions as measured by model-based analyses (e.g., information gain). A second experiment evaluates the ability of human observers to judge this value when the demands of question generation are removed.