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Prediction of Initial Performance in Rapid Decision Making Situations

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There are a variety of situations in which the decision maker must make decisions within the space of a minute or less. These decisions lie in between two other classes of decisions: the very rapid "Choice reaction time" decisions much studied in experimental psychology, which are made very quickly and are usually measured in milliseconds, and the "timeless" decisions studied in decision theory, where time pressures may be measured in hours, days, or even longer. Our studies focus on individual differences in the ability to handle the minute by minute class of decisions.

We believe that many of these decisions can be described as classification and resource allocation decisions. "Customers" arrive by essentially a Poisson process, and

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request some resource. The requests may differ considerably in their priority. Decision makers must handle requests as quickly as possible, but must not be caught in a situation where no resources are available to handle a high priority request.

We are examining two such situations, Air Traffic Control and Public Safety (911) dispatching. After visiting centers and talking to experts, we pay participants learn to play highly realistic simulations of both Air Traffic Control and Public Safety Dispatching. In addition, our participants take a series of tests of rapid information processing. These tests fall into two broad categories: information processing tests rooted in Psychological theories of information processing, and tests that represent a our cognitive analysis of classification and resource allocation in the abstract. We have found that at least in some situations these tests can be used to identify individuals who have a facility for dealing with simulations of the real world tasks.