Interim Report for Faculty Development Grant 2d
Amanda Jonas (Martin Dennis, faculty supervisor)
Summer, 2003

This summer, Amanda Jonas began an experiment on inattentional blindness, which is the lack of awareness of stimuli that are presented but not attended to. She had written a review of some of the literature on inattentional blindness in the Spring, 2003, Cognitive Psychology course. Her summer research was an expansion on that literature, involving questions about the extent of partial processing of unattended items. The course of the project moved quickly, until it came time for data collection.

Summer activities:
At the beginning of June, Amanda worked to define a suitable research question in the general area of inattentional blindness. She searched for additional articles on the processing of features in unattended geometric shapes. Of key importance were two articles that showed contradictory priming effects with unattended or ignored shape stimuli. Amanda settled on a question of whether unattended but presented shapes might be processed to the extent that people would show biases in preferences for those shapes.

She then designed an experiment to answer this question, based on a paradigm developed by Arien Mack and Irving Rock. As part of this paradigm, subjects judge which arm of a briefly (200 ms) cross is longer. Following this judgment, subjects indicate their preference for one shape out of a pair. After several trials of alternating cross judgments and shape preference choices, subjects are presented with a trial in which a small shape is presented simultaneously with the cross. Prior research has found that many subjects are unaware of the presence of this additional shape. The key trial comes in the responses on the following shape preference choice, for those subjects who report themselves to have not seen the shape. Inattentional processing of the presented shape may increase preference for the shape over baseline preference. Amanda's experiment is fully counterbalanced in terms of shape pairings and location.

One key issue in designing this experiment is to use shapes with equal levels of preference as the target stimuli on the final trial. Amanda needed four different shapes for the full counterbalancing planned. To determine which shapes would be used on the key trial, she conducted a pilot study at the end of June. Subjects recruited from David Sorenson's Statistics class ranked a set of twenty different shapes; the shapes with mid-level mean rankings were selected as the target stimuli.

Once the target stimuli were chosen, Amanda began programming the experiment in E-Prime, an experiment presentation software package. Because of the complex counterbalancing of the shape pairs, a nontrivial program control issue developed. Amanda devised a work-around and completed the experiment by mid-July. She started running subjects in mid-July, and ran into her first real obstacle to completing the project. Despite ongoing recruitment efforts, she was only able to run three research subjects by the beginning of August (data from one being discarded because of prior knowledge of experimental paradigm). With the dearth of subjects, the time at the end of July was spent

doing additional library research, writing and revising the Introduction and Methods sections of the report, and preparing for the graduate school application process.

Future activities:
As of November 30, only twelve additional subjects have been run, despite the literally hundreds of open slots posted by Amanda and the option for research participation extra credit in PSYC 11 5 and PSYC 125 courses. Amanda should have at least 30 subjects in order to test departures from chance preferences for the unattended items. Mack and Rock reported 50-75% inattentional blindness using a paradigm very similar to Amanda's. Assuming the higher levels of inattentional blindness, Amanda needs to run at least 40 subjects to collect data from 30 who were inattentionally blind on the critical trial. Amanda will continue running subjects into the spring term, until a sufficient amount of data has been collected, or until she runs out of time. If the end of the spring term is approaching without adequate numbers of subjects, Amanda will complete a report and prepare a presentation for the Augustana College Symposium using the data collected up to that point.

Statement relating to goals:
This project relates to question 3 of the Faculty Development Grant: "In what ways have we explored and applied familiar and unfamiliar enhancements of the teacher-student relationship?" Independent student research is a staple in some departments at Augustana College (notably in the Natural Sciences), and is a staple of some Psychology departments at other colleges. Such research is a rarity in Augustana's Psychology Department, though. I found that this summer research project was quite useful to me by providing an opportunity to guide a student through the research process. In particular, the discovery of a mid-summer scarcity of research subjects is a piece of important practical information. Future summer research in the department will have to be planned around this obstacle.