***Memory Schemas***

# Introduction

# A schema is a pattern of thought or behavior based on categories of knowledge. Schemas connect related ideas, pictures, words, sounds, and even certain smells. A single snapshot of a restaurant or an airport activates distinct behaviors and categories of objects related to these different contexts. Remembering what happened last year when you went to the airport is aided by your airport schema, which helps you fill in the blanks with material related to what you recall from your trip. If you have ever traveled by air, then you know about the airport schema, which includes the orderly process from check-in at the terminal counter to passage through security to finding your way to the boarding gate. This lab activity will allow you to explore the role of memory schemas in visual long-term memory.

# Description of Activity

The activity begins with a fixation cross followed by a button press to indicate when you are ready to begin a trial. A trial begins with presentation of a single scene, which you will view for 30 seconds. Thirty seconds is a long time, and it allows you to scan the scene and notice numerous features and objects within the picture. You may also notice that you can quite effortlessly assign a category to each scene with a single word (e.g., kitchen, playground, and office). Following 30 seconds of encoding this picture, you will do some math problems. After that, you will be presented with a matrix of words describing objects or features that may or may not have been in the previous picture. Your job is to choose only those features or objects you think were present.

# Probing Visual Long-Term Not Short-Term Memory

# Following the 30-second inspection of the scene, you will be presented with a number of multiple-step math problems, which you must solve to decide whether the equation is correct or incorrect. This distracting math activity serves an important function: it prevents the visual scene from persisting in your short-term memory. Like some other lab activities that you may have done, doing the math problems prevents rehearsal or maintenance of the scene in your short-term memory so that when questioned about what you saw previously in the scene you must rely on your long-term visual memory. Cognitive psychologists agree that anything remembered beyond 30 seconds (i.e., the time it takes to do these math problems) taps into your long-term not short-term memory.

# Schemas & Your Long-Term Memory

You may be shown a picture of a kitchen. You spend the 30 seconds looking around and noting all the features of this room designed for cooking. Following the math problems, you will be shown a matrix of words describing objects and features of the kitchen you saw. You were distracted by the math problems and now you may have some trouble remembering exactly whether you saw a sink. You are pretty certain that you saw an oven and an island with stools, but you are not sure that you saw a sink. You may be tempted by your kitchen schema to include a sink without even second-guessing yourself because what kitchen does not have a sink? Surely the kitchen you saw had one, right? But was it actually in the picture?

**Memory Schemas in Visual Long-Term Memory: the Good and the Bad**

# Schemas can help memory by cueing actual memories and also by helping us fill in the blanks with material related to what we are recalling. These two aspects of schemas can be incredibly helpful to long-term memory. But a bad aspect of schemas is that they can deceive us into thinking automatically that we experienced something that may not have been present at all during the experience.