New Research From Psychological Science

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Read about the latest research published in *Psychological Science*:

Implicit Statistical Learning in Real-World Environments Leads to Ecologically Rational Decision Making

Sonja Perkovic and Jacob Lund Orquin
In this article, the authors suggest that statistical learning may lead to ecologically rational decision making. To examine this, the researchers conducted three studies. In the first study, they examined the correlation between the likelihood that a food is healthful and the likelihood that food is organic. A review of products in supermarkets indicated that the more healthful food categories do contain higher percentages of organic foods. In a second study, participants were asked to estimate the healthfulness of — and the percentage of organic products in — 59 different food categories. Participants were able to accurately estimate the healthfulness of — and percentage of — organic foods in each category, indicating that people do learn the statistical structure of their environment. In a third study, the researchers found that participants were able to apply these learned cues when choosing the healthiest item from an array of different foods. These findings help elucidate the way statistical learning contributes to ecologically rational behavior.

Disentangling the Sources of Mimicry: Social Relations Analyses of the Link Between Mimicry and Liking

Maike Salazar Kämpf, Helén Liebermann, Rudolf Kerschreiter, Sascha Krause, Steffen Nestler, and Stefan C. Schmukle

Although people have a tendency to mimic others during social interactions, the amount of mimicry that occurs during social encounters often varies. The researchers disentangled contributors to mimicry in a study that teased apart the extent to which mimicry is a result of a person’s propensity to mimic others (imitativity), a social partner’s tendency to evoke mimicry (imitatibility), and the unique relationship
between a mimicker and his or her social partner. Unacquainted groups of participants were tested during a single laboratory session. During the session, each person in the group gave liking and metaliking (i.e., the perception of being liked) ratings of the other group members. They then engaged in short videotaped one-on-one interactions with each other group member. After the last conversation, participants again gave linking and metaliking ratings of each group member. The researchers found support for the view that mimicry is a dyadic construct mostly influenced by the unique relationship between two people. They also found evidence for the influence of liking on mimicry in that people tended to mimic partners they liked and people tended to like partners that mimicked them.

**Reward Adaptation and the Mechanisms of Learning: Contrast Changes Reward Value in Rats and Drives Learning**

*Dominic Michael Dwyer, Jaime Figueroa, Patricia Gasalla, and Matías López*

Formal theories of associative learning suggest that the way animals learn the relationship between stimuli is based on internal representations of events and stimuli. This then indicates that learning should depend on perceived values when perceptions differ from objective values. The researchers tested this in two studies in which they exposed rats to sucrose (Study 1) or fructose (Study 2) solutions. The rats were first exposed to a solution of 2% sugar and then a solution of 8% sugar (positive contrast) or a solution of 32% sugar and then a solution of 8% sugar (negative contrast). The 8% sugar solution was given different flavors in the positive- and negative-contrast conditions. After several days of training, the rats were then tested on their preference for the two flavors. The researchers found that rats preferred the flavor used in the positive-contrast condition. This suggests that rats’ learning was influenced by the perceived relationships between stimuli, rather than by the objective value of stimuli, as predicted by formal models of associative learning.

**Lingering Cognitive States Shape Fundamental Mnemonic Abilities**

*Anuya Patil and Katherine Duncan*

Why are we able to remember associations clearly in some instances, but not in others? Neurocomputational models explain this by suggesting that neurochemical states (elicited by familiarity and novelty) that occur prior to cue retrieval affect the ability of the hippocampus to reactivate stored neural patterns. The researchers examined this possibility in two studies. In the first study, participants competed an encoding session in which they saw pictures of objects and scenes paired with a word (i.e., “ancient,” “plain,” “safe”). Participants then completed a recall session in which they were shown previously studied and new images. For each trial, participants had to indicate whether the image was old or new and then, if they could remember the image, indicate the word associated with that image. The researchers found that familiarity in a preceding judgment compared with novelty in a preceding judgment resulted in faster and more accurate retrieval of associations. In a second study, the researchers found this effect decayed over a period of seconds, consistent with the timescale of hippocampal neuromodulation.