Systems factorial technology provides new insights on the perceptual decision-making process

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Human are perceptual decision makers. That is, human beings rely on their percept to make decisions. An incorrect and inefficient decision may result in serious consequences. Usually, a perceptual decision requires human to process multiple sources of information, e.g., locations, features, modalities. The signal detection model has been widely used to account for how human process multiple signals by assuming coactive processing. However, the coactive assumption has been challenged in my studies. In my studies, systems factorial technology (SFT, Townsend & Nozawa, 1995), a useful tool for the diagnosis of information processing properties, was adopted. My results highlight: 1) Decision processes are flexible and can vary according to the relative salience between features; 2) Human can top-down control and select a strategy to optimize decisions; 3) Individual differences in decision strategies are related to one's cognitive ability and past experiences. Theoretical implications will be discussed in my talk.