

Emotion and Risk Taking in a Casino Game

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Abstract—Risk-taking behaviors are not only dictated by cognitive components, but also involve emotional aspects. Anticipatory emotions, involving both cognitive and affective mechanisms, are involved in decision-making in general, and in risk-taking in particular. Affective reactions are prompted when an expectation or prediction is either validated or invalidated in the achieved result. This study aimed to combine predictions, anticipatory emotions, affective reactions and personality traits in the context of risk-taking behaviors.

An experimental online method Emotion and Prediction In a Casino (EPIC) was used, based on a casino-like roulette game. In a series of choices, the participant is presented with progressively riskier roulette combinations, where the potential sums of wins and losses increase with each choice and the participant is given a choice: to “walk away” with the current sum of money or to “play” the displayed roulette, thus accepting the implicit risk.

Before and after the result is displayed, participants also rate their emotions, using the Self-Assessment Mannequin [Bradley, Lang, 1994], picking a picture, representing the intensity of pleasure, arousal and dominance.

The following personality measures were used: 1) Personal Decision-Making Factors [Kornilova, 2003] assessing risk and rationality; 2) 17 – Impulsivity Questionnaire [Kornilova, 1995] assessing impulsiveness, risk readiness and empathy and 3) Subjective Risk Intelligence Scale [Craparo et al., 2018] assessing negative attitude toward uncertainty, emotional stress vulnerability, imaginative capability and problem solving self-efficacy.

Two groups of participants took part in the study: 1) 98 university students ($M_{age}=19.71$, $SD=3.25$; 72% female) and 2) 94 online participants ($M_{age}=28.25$, $SD=8.25$; 89% female). Online participants were recruited via social media.

Students with high rationality rated their pleasure and dominance before and after choices as lower (ρ from -2.6 to -2.7, $p<0.05$). Those with high levels of impulsivity rated their arousal lower before finding out their result (ρ from 2.5 - 3.7, $p<0.05$), while also rating their dominance as low (ρ from -3 to -3.7, $p<0.05$). Students prone to risk rated their pleasure and arousal before and after higher (ρ from 2.5 - 3.6, $p<0.05$).

High empathy was positively correlated with arousal after learning the result. High emotional stress vulnerability positively correlates with arousal and pleasure after the choice (ρ from 3.9 - 5.7, $p<0.05$).

Negative attitude to uncertainty is correlated with high anticipatory and reactive arousal (ρ from 2.7 - 5.7, $p<0.05$).

High imaginative capability correlates negatively with anticipatory and reactive dominance (ρ from - 3.4 to - 4.3, $p<0.05$). Pleasure (.492), arousal (.590) and dominance (.551) before and after the result were positively correlated. Higher predictions positively correlated with reactive pleasure and arousal. In a riskier scenario (6/8 chances to win) anticipatory arousal was negatively correlated with the pleasure emotion (-.326) and vice versa (-.265). Correlations occur

regardless of the roulette outcome. In conclusion, risk-taking behaviors is linked not only to personality traits, but also to anticipatory emotions and affect in a modeled casino setting.

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Keywords—anticipatory emotions, casino game, risk taking, impulsiveness.

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