



**University of  
Zurich** <sup>UZH</sup>

## Department of Economics – Neuroeconomics Seminar

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### **Risk attitude with a backward-looking reference point**

Ample research demonstrated that past outcomes affect subsequent decisions. We find that these effects are very robust and occur even after pure exposure (without changes to wealth or expected wealth) and even in the absence of learning. Exposure to high-payoff or low-payoff gambles changes people's subsequent reported valuations of gambles in a way consistent with the understanding of how the nervous system encodes payoffs. Using evidence from a laboratory experiment designed to compare the behavior of monkeys and humans, we find that the effect of past wins and losses on risk attitudes is remarkably consistent across species. The remainder of my talk will focus on two projects in which we use the concept of a backward-looking reference point to understand economic disadvantage. Previous work on socioeconomic disadvantage in behavioral economics focused predominantly on the role that time and risk preferences play in perpetuating disadvantage. We hypothesize that socioeconomic status may influence how historical outcomes affect the willingness to take risk, leading to wealth-reducing choices. To test our hypothesis, we analyze a rich data set that includes bet-level data of 10,000 gamblers over one year and confirm that past wager outcomes have a differential effect on behavior for different SES groups. Even though past outcomes do not carry any additional information (all gambles are independent) and therefore should not affect subsequent choices, those residing in low SES neighborhoods are more influenced by previous day outcomes – they stake more, take more risk, and end up losing more following both large cumulative gains and losses. While a lower number of residents from low SES areas participate in online sports betting (contrary to the evidence from land-based gambling), when they do, they experience worse outcomes. Finally, we use a dataset of 853 participants (18-67 years old; Mean = 41.71, Std. Dev. = 14.22) to provide the first evidence of gender differences in reference point estimated from behavior in the divisive normalization framework. Studies have frequently found that women are more risk-averse than men. In this work, we depart from the usual practice in economics that treats risk attitude as a primitive, and instead adopt a neuroeconomic approach where risk attitude is determined by the reference point. We then evaluate whether there is a gender difference in the reference point, explaining the gender difference in risk aversion observed using traditional approaches. We find that women make fewer riskier choices than men. Compared to men, we find that women on average have a significantly lower reference point. By acknowledging reference points as a potential source of economic inequality, we can begin a new discussion on how to address this important issue.