## 15th Alps-Adria Psychology Conference



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## A Mathematical Perspective on Flow and Happiness

Wednesday, 11 September 2024 11:50 (20 minutes)

This study investigates the dynamic properties of hypothetical individuals' automatic operations updating from a mathematical perspective. We focus on the dynamics of how automatic operations of an individual are getting closer to controlled operations. To do this, we adopt a nonlinear complex systems approach based on well-established behavioral theories, as Prospect Theory.

Using stability analysis, we find analytical results that give evidence of considerable heterogeneity in whether individuals converge to state of flow/happiness or not and the dynamics of this process. Specifically, we demonstrate analytically that in some cases individuals will converge to their happiness (mathematically, reach a stable fixed point), while in other cases they will oscillate between a small number of points, happiness/unhappiness. It is suggested that individuals who ascribe less weight to the automatic system are more likely to achieve closeness with themselves.

We suggest an internal work mechanism that enables individuals in the long run to adjust their more automatic processes (such as implicit expectations) to get closer to their deliberate, higher order goals. Our analytical findings also suggest that internal work changes the weight one puts on their controlled operations (vs. automatic operations). Through internal work one can learn to listen to themselves, separate themselves from automatic operations and find their own equilibrium. We discuss the possible empirical tests of the suggested model

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