

Modelling the Behavior of Happiness Values

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There remains an explanatory ‘gap’ about how high-order cognition, specifically the ability one has to organize and reach goals, interacts between individuals. We treat such ability to be ‘happiness’ as per a segment of Immanuel Kant’s conception of happiness – happiness is an activity that a person can achieve. Current approaches to modelling happiness (e.g. the Sprott model, the 3P model, and other computational/neural models of happiness) have limitations (specifically, the proposed way in which they conceive of ‘happiness’). In our project, we bridge the work of core philosophers who have formed worldviews around the concept of happiness (and its influence on human behavior on a society-wide level) to mathematical models that serve as probabilistic guidelines. We begin by forming our interpretation of happiness by drawing from Kantian theory - happiness is when an individual achieves their ends or partakes in an interaction which brings them closer to their goal. Through this, we incorporate a psychological theory - the hedonic treadmill - to focus on the *change* in happiness levels, instead of an instantaneous ‘point’ of happiness for an individual, termed as hedonic adaptation. Using the Kantian foundation and the hedonic theory of happiness, we introduce variables required for a function for happiness and formulate a new probabilistic function using a Markov Chain to compute the probability of actualization, $P(A)$. $P(A)$ serves as a measure of the subjective distance between one’s current progress and their final goal. This is computed using 2 variables: Level of Conflict (we process the effect of a pair-interaction using sentiment analysis) and Rational/Instinct score (Kant claims in the *Groundwork* that it is impossible for a “determinate concept of what [one] really wills” thus we assign a R/I weight to one’s goals). $P(A)$ influences the baseline level of happiness, b_0 , in each iteration of a pair-interaction. We posit this to be the change in well-being $\frac{dw}{dt}$ – the measure of happiness.