Towards a Theory of Societal Co-evolution: Individualism versus Collectivism

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What is Individualism-Collectivism?

– The degree of interdependence amongst the members of a society

Why is it important?

– Identified as a critical dimension differentiating cultures [Hofstede]
– Critical to social and economic aspects of a society [Hofstede][Roland]

What is the goal?

– Exact nature of impact on population, socio-economic inequality, health (life-time of individuals) not understood!
– This work is an important step towards this goal
Model

– Infinite horizon, continuous time model with continuum of individuals
– Intrinsic ability to do well in life modeled as quality
– Individual is born with a quality \( Q \) which can be good or bad, i.e. \( Q \in \{-1, 1\} \) that is drawn from a fixed distribution
– Degree of collectivism is interdependence amongst the individuals given by a weight \( w \in [0, 1] \)
– Welfare of an individual at time \( t \) is \( X(t) \)
  • Abstract measure of well being, i.e. wealth, resources and health of an individual
Model

– Rate of growth of welfare is

\[ \frac{dX(t)}{dt} = (1 - w).Q + w.\bar{Q}(t) \]

• \((1 - w).Q\) is individual’s contribution to self-growth
• \(w.\bar{Q}(t)\) is contribution of the rest of the society

• Birth process, individuals are born at a rate \(\lambda_b\)
• Natural death process- Poisson arrival process starting at birth with rate \(\lambda_d\)
  • Individual dies at the first Poisson arrival
• Death due to poor welfare level
  • Individual dies if the welfare falls below the threshold \(-r\)

Do not incorporate the effect of important factors-geography, institutions
Results Highlights

Total Population

**Theorem:** Total population increases with an increase in the level of collectivism $\mathcal{W}$

Average welfare

**Theorem:** Average welfare decreases with an increase in the level of collectivism $\mathcal{W}$

Cumulative welfare

**Theorem:** Cumulative welfare decreases with an increase in the level of collectivism $\mathcal{W}$
Conclusion

— First general model of individualism-collectivism
  • Important step towards understanding the force of individualism-collectivism

— Predictions about societal metrics match with empirical studies

— For discussions and questions come see the poster!


