

# Microeconomic Analyses of Old Indian Texts

Introduction: Old Indian literature and microeconomics

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# What is this course about

- A course on both Old Indian literature and microeconomics
- No prior knowledge of microeconomics necessary  
Microeconomics needs a bit of mathematics:
  - relations
  - functions
  - derivatives

which will be supplied in the course.

- No prior knowledge of Indian literature necessary  
A survey on Indian literature will be provided (to the best of my knowledge)

# Course overview I

- Chapter I:  
Introduction: Old Indian literature and microeconomics

## **Part A. Decision theory**

- Chapter II:  
Preferences
- Chapter III:  
Decisions
- Chapter IV:  
Decision theory for the Bhagavad Gita
- Chapter V:  
Monopoly theory and Kautilya's market tax

## Part B. Game theory

- Chapter VI:  
Noncooperative games
- Chapter VII:  
Backward induction
- Chapter VIII:  
Ordeals
- Chapter IX:  
Judicial wagers
- Chapter X:  
Indian Principal-Agent Theory

## Part B continued

- Chapter XI:  
The mandala theory
- Chapter XII:  
Language competition [but not covered in the course]
- Chapter XIII:  
The Shapley Value in the Upanishads
- Chapter XIV:  
Brahmanical Theories of the Gift

# Technical stuff

- mixture of lectures and exercises
- manual and slides for download from website  
<http://www.wifa.uni-leipzig.de/itvwl/mikro.html>
- written exam

# Contact

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Problems can often be solved quickly directly after class.

# Chapter I: Introduction: Old Indian literature and microeconomics

- 1 Four aims
- 2 Four life stages
- 3 Survey on Old Indian literature
- 4 Microeconomics



# Four aims

artha (material possessions)

*Artha* is concerned with the achievement of worldly aims.

- *artha-śāstra* = treatise on economics and politics
  - taxation
  - diplomacy
  - warfare
  - management of spies
- fable collections
  - how to win friends
  - how to sow mistrust between friends
  - how to cheat others
  - how to prevent being cheated

# Four aims

kāma (pleasure, love)

*Kāma* deals with

- courting
- love-making
- poetics
- acting

# Four aims

dharma (religious and moral duties)

*Dharma* =

- duty
- caste-related duties
- moral obligation
- religion

Overlap between artha and dharma

# Four aims

mokṣa (liberation)

*Mokṣa* = center of Hindu religious thought

- souls reside in humans (or animals or gods)
- acts (*karma*) undertaken during a lifetime influence the form in the next life
- major aim : release from the cycle of births

Also relevant: heavens and hells

# Four life stages

- 1 *śiṣya* (student)  
study in the four areas (from *artha* to *mokṣa*)
- 2 *gṛhastha* (householder)  
temperate pursuit of
  - material welfare (*artha*)
  - sexual and esthetic pleasure (*kāma*)while being
  - attentive to his respective duties (*dharma*).
- 3 *vanaprastha* (forest dweller)  
retire to the forest for meditation
- 4 *bhikṣu* (wandering sage)  
walk around as a mendicant

# Survey on Old Indian literature

## Rg-veda

- collection of hymns as voluminous as the Bible
- 1000 B.C. or sooner
- three other Vedas exist

This course: “social gods”

- Contract (*Mitra*)
- True-Speech (*Varuṇa*)
- Hospitality (*Aryaman*)

# Survey on Old Indian literature

## Mahābhārata

- the largest Indian epic
- tells about a ruling family whose interior conflicts lead to a deadly battle
- sixteen books
- within the sixth book, the *Bhagavad Gītā*  
the most important religious document for many Hindus

This course: decision theoretic analysis of the *Gītā*

# Survey on Old Indian literature

## Artha-śāstra

- manual on kingship
- ascribed to *Kauṭilya*
- about 2000 years old

This course:

- complicated market tax
- management of war and peace with direct and indirect neighbours



# Survey on Old Indian literature

## Indian fables

- stories with animal and human actors together with
- a specific conclusion or moral summarized in a *subāṣita* (nice saying, word of wisdom, proverb)
- *artha* or *dharma* literature

Two collections of stories are especially important:

- ① *pañca-tantra* = “Five discourses on worldly wisdom”
  - the most influential story collection worldwide
  - originally written in Sanskrit around 300 CE, it has been translated (and retold) into many Indian languages and more than 50 other languages
- ② *hitopadeśa* = “teaching of happiness”
  - builds on the Pañca-tantra
  - five hundred or six hundred years younger

This course: *subāṣitas* and some of the stories in several chapters

# Survey on Old Indian literature

## Buddhist birth-stories

- the Buddha could see his own past lives.
- genre of literature called *jātaka* (literally “birthstory”)
- *Āryaśūra*’s “Garland of the Buddha’s past lives” from the 4th century AD
- In his former lives, the Buddha exhibits extreme forms of
  - ① giving (*dāna*) (giving away his life or family members)
  - ② virtue (*śīla*) (accumulating merit and speaking truthfully)
  - ③ forbearance (*kṣānti*) (not becoming angry when tormented or even cut to pieces)

This course: economic theories of altruism

# Survey on Old Indian literature

## Cārvāka philosophy

- atheistic (*nāstika*, i.e. (god) does not exist)
- non-Vedic (the authority of the Vedas is called into question)
- materialist (the existence of ātman (“soul”) or *para-loka* (“afterworld”) is denied)
- hedonist

No direct sources, but in

- 1 play “Much Ado About Religion” (about 1100 years old)
- 2 play “The Rise of the Wisdom moon” (nearly 1000 years old)
- 3 12. book of the Mahābhārata (a *Cārvāka* philosopher blames *Yudhiṣṭhira* after the *Kurukṣetra* battle)
- 4 Buddha’s birth-stories (a *Cārvāka* king is diverted from his wrong views by the future Buddha)

This course: chapter on altruism, birth-story in chapter on decisions

# Microeconomics

## Important parts I

Microeconomics is concerned with

- the (optimal) decision of actors (households, firms, voters, ...) and
- how these decisions interact.

In particular

- 1 part A: decision theory
- 2 part B: game theory
- 3 part C: others

### part A: decision theory

- monopolistic firms decide on profit-maximizing prices, quantities, budgets for research and development, ...
- households buy the best bundle of goods among those bundles they can afford
- governments set tax rates

### part B: game theory

- several firms decide on prices where the price set by one firm influences the profit of another one
- countries decide whether to attack each other

### part C: Pareto optimality, general equilibrium theory, asymmetric information, altruism

- formal (mathematical models) that allow theoretical predictions.
- three instruments:
  - 1 rationality:

It is assumed that actors know what they want and act accordingly.
  - 2 equilibrium:

Microeconomists look for behaviors (actions, strategies, ...) such that no actor finds changing his behavior profitable.
  - 3 comparative statics:

How do the parameters (input, model description) influence the variables (output, behavior in equilibrium)?