Food, medicine and philosophy – some main study fields:
The function of meals?

- **Nutrition** (energy and essential body elements)
  - Dietary guidelines

- **Health** (functional foods medicated diets)
  - Health food market

- **Universal Dualism: Keep Mind and Matter separate!**

- **Social function** (meal-based relaxation, fellowship, interactions)

- **Art and aesthetics** (sensational, colours, odors, texture and presentation)

- **Matter** (Physical)

- **Mind** (Meta-physical)

- **Family gathering**

- **Dining out**
Western natural science

Cell metabolic pathways

Mechanistic machinery?

Particularity → Reductionism → Linearity → Less philosophy?
Different types of meals (West):

- **Cerals/rice**: Starch
- **Fruit**: Fructose-Fiber
- **Vegetable**: Fiber-Starch
- **Hot meal**: Protein-Fat
- **Sweets**: Sucrose-Glucose
- **Cakes**: Sucrose-Fat

Per Sangild, 2007
Chinese food & medicine – can we understand?
5 food traditions in China:

North-west (Muslim): Beef, lam, mongol

Beijing (north): Dumpl./jaozi, cabbage

Sichuan (midt-vest): Chili, tofu, bambus

Guandong (south): Texture, oil, variety

Shanghai (east): Vegetable, oil, redfried Chili, tofu, bambus
All that can walk, can be eaten...
Pick your own fresh (living) food

- not the standard supermarket long lasting preserved foods
Diet focus on **food differences** - not **nutrient differences** (carb., protein, fat, minerals, vitamins)
Functional foods unlimited!
Food ↔ Medicine
Food-based – more than nutrients
(carbohydrates, protein, fat, minerals, vitamins, bioactives)
Functional foods unlimited!
Natural "science" in East and West

Nature
Nutrition
Medicine

Western science

Focus on cell molecular pathways

Linear
Dualistic
Short-term
Chemistry
Synthetic
Experimental

Circular
Holistic
Long-term
Immaterial
Natural
Experiental

Focus on holistic, harmonic unity

Eastern science
Scientific discovery in Medicine and Nutrition:

Chinese Medicine
- Intuitive, holistic
- Aesthetic, creative
- Preventive, experiential
- Revealing the "truth" by beauty and experience

Western Medicine
- Inductive, reductionistic
- Analytical, reasonable
- Curative, experimental
- Revealing the "truth" by facts and experiments

Chinese Nutrition
- Warm versus cold
- Yin versus Yang
- "Nourishing Qi"
- Whole body
- Holistic - qualitative
- Energy flow
- Long term, long life
- Experience, mystical

Western Nutrition
- Carbohydrate
- Fat, Proteins
- Minerals, Vitamins
- Organs, cells, molecules
- Mechanistic, quantitative
- Chemical metabolism
- Short term, keep alive
- Experiment, rational
Eastern “natural science” – holistic art work

Man and Nature as one
Man, organs and cells as micro-cosmos
TCM = Traditional Chinese Medicine
Food as Medicine + a lot more...

The older the better....
Key symbols in Chinese traditional natural categorization systems

Healthy Sheng and Ke cycles. Lines in the opposite direction form the unhealthy Cheng and Wu cycles (Maciocia, 1995)
Traditional Chinese Medicine

Figure 1.
The I-Ching itemizes 64 combinatorics of Yin and Yang. Source: www.theory.org/~strthrwr/retired/iching.html.

Yin and Yang, and symbolized by a broken (---) and a solid (---) line, respectively
# 5-element pattern recognition system

<table>
<thead>
<tr>
<th>Element</th>
<th>Water</th>
<th>Wood</th>
<th>Fire</th>
<th>Earth</th>
<th>Metal</th>
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<tbody>
<tr>
<td>Direction</td>
<td>North</td>
<td>East</td>
<td>South</td>
<td>Centre</td>
<td>West</td>
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<td>Spring</td>
<td>Summer</td>
<td>Late Summer</td>
<td>Autumn</td>
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<td>Black</td>
<td>Green</td>
<td>Red</td>
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<td>Sour</td>
<td>Bitter</td>
<td>Sweet</td>
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<td>Fear</td>
<td>Anger</td>
<td>Joy</td>
<td>Pensive</td>
<td>Grief</td>
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<td>Yin Organ</td>
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<td>Liver</td>
<td>Heart</td>
<td>Spleen</td>
<td>Lung</td>
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<tr>
<td>Sensory Organs</td>
<td>Ears</td>
<td>Eyes</td>
<td>Tongue</td>
<td>Mouth</td>
<td>Nose</td>
</tr>
</tbody>
</table>

**Table 1.** The Chinese five-fold discretization and dependency-relationships (Maciocia, 1995)
Bioinformatics in modern biology versus "pattern-recognition models" in Traditional Chinese Medicine

East:
Function/effect-based:
- Yin-Yang combinations
- Five-element pattern recognition system
- Qi, Dao….

West:
Structure-based:
- Genomics
- Transcriptomics
- Proteomics
- Metabolomics

System biology pattern recognition
Bioinformatics

Traditional functional picture
Mathematical structural network

Experiential-historical, intuitive-philosophical verification
Experimental rational, logical verification

Optimal diet and health
Food=molecules, body=machine

Food and body as natural art

Fast

Preparation
Intake
Digestion
Metabolism

Slow

Fast

Depends on diet+body

Slow

Depends on culture
Effects of fast food on the human body:

Fast:
- Preparation
- Intake
- Digestion
- Metabolism

Quick energy, but no art, aesthetics & appreciation

Short stomach retention, less fiber, forced motility

Quick filling & digestion, low motility & secretion

Rapid blood glucose-insulin, temporary satiety, quick heat, stress physiology, catabolism

Problem: Fast food and/or fast living?
Effects of slow food on the human body:

- Slow: Preparation
  - Intake
  - Digestion
  - Metabolism

Aim: Slow food and/or slow living?

- Slow energy, time for art, aesthetics & appreciation
- Long stomach retention, more fiber, timely motility
- Slow filling, digestion, high motility, secretion
- Gradual blood glucose-insulin, gradual satiety & food heating, relaxation physiology-anabolism
WEST: Physical exercise for the chemical machine

Cell biochemical pathways + Nutrition and fitness council = HAPPY LIFE
FITNESS:
1) Physical exercise for the chemical machine?
2) +Life-giving contact with the natural/spiritual world?

Body, Food, Nature, HARMONY (?)
FITNESS:
1) Physical exercise for the chemical machine?
2) Life-giving contact with the natural/supernatural world