

Protection: Infectious diseases

**Infectious diseases in times of war and poverty.
Biological lessons of prevention and defence.**

**Case study: Wars of history, the human body, and
some important diseases.**

Objectives:

- **Knowledge about the connection between war, socio-economic structures and diseases.**
- **Reflections upon what peace studies can learn from medical science, and vice versa.**

Outline:

I. History/literature

**II. Epidemics: Reciprocal effect epidemics –
development**

III. Scientific thinking about threats

**IV. Can biologic defence against infections give ideas
about human social conflict negotiation and
resolution?**

V. Examples: Tricks and trades of some diseases

VI Human rights and infection

Society



Epidemics

Linear vs. more complex thought

Linear thought:

You push the ball, it rolls (*physics*)

You give antibiotics, you kill bacteria, the patient gets well (*medicine*)

You shoot, you kill, enemy is weakened, you win (*political science*)

More complex (in biology: Darwinist) thought:

The continuous exchange between genes and environment decides reproductive advantage

i.e.:

in biology, when we change the environment, we may favour genes which previously were not favoured

NB! *Descriptive, no normative content!*

Ex from different sciences:

-You push the ball, a wind blows and changes its direction

-You give antibiotics, you kill some germs, but favour survival of resistant mutants

-You shoot, you kill some people, but new persons become angry and put up resistance

-You spray DDT, you kill many mosquitoes, but favour the few with resistant gene mutations

-You give Insulin to diabetics, they survive and multiply diabetics genes

Problems in different sciences:

**Biology: Linear thought usually too simplistic
- predictions are possible, but only when taking into account the interaction between gene and environment. Views from “the outside” possible, value judgment inherent in choice of object**

**Social science: Positivistic approach
problematic, i.e. society is not governed by laws independent of the actors. Value judgment inherent in the scientific process, contribute to shaping outcomes**

What kind of threat?

<u>Infectious threats:</u>	<u>Social threats:</u>
Epidemic in neighbourhood	Neighbour's armament
Symbiosis → virulence	Deceit (fraud, treason)
Invasion, local inflammation -the normal, continuous state!	Invasion, local conflict -the normal, continuous state!
Invasion, generalised inflammation	Invasion, generalised conflict, war

How to deal with threats?

Infectious threats:	Social threats:
Avoidance	Avoidance
Conciliation	Negotiation
Keep in check	Non-violent neutralisation
Split germ and non-human host	"Split and rule"
Favour less virulent germs	Teach doing good through practice
Fight, try to kill or stop multiplication	Fight, try to kill or disarm

Biological defence against infections:

- 1. Epithelium (skin, mucosal linings)**
- 2. Connective tissue (mesenchymal) defence:
connective tissue + blood vessels + blood cells**
- 3. Specific infectious defence, mediated by lymphatic cells**
- 4. Biological control, mediated by competitive agents**

Defence mechanisms

Epithelium: -mechanical barrier -ciliary "brooms" -mucous to avoid attachment to surfaces -cell production of antibiotics, etc.	Social conflict:
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Defence mechanisms

Mesenchymal defence, mediated through large, resting eating cells: -if a few microbes: Wake up and eat them! -if more microbes: Eat and produce chemical signal substances calling for eating/killing cells in the blood	Social conflict:
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Defence mechanisms

Specific infectious defence, mediated by lymphatic cells with “memory”: Previous adaptation necessary Activation through chemical signals Antibody barriers Killing by lymphocytes	Social conflict:
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**Biological control in defence against infection:
Introducing or favouring competitors to organism or
vector**

Probiotic bacteria: -stimulate defences without causing disease -compete with virulent bacteria Local species: -compete with or kill vector	Social conflict:
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Summing up:

- 1. Understanding through both facts and fiction**
- 2. Infections contribute to shaping society, and social conditions influence the emergence and course of infectious disease**
- 3. Science can contribute to understanding threats, and what to do about them**
- 4. Most biological defence mechanisms have their analogy in social science**
- 5. Understanding medicine may throw light on social conflict, and practising medicine may favour conflict resolution**

Epidemics $\longrightarrow$ **Society:**

Society $\longrightarrow$ **Epidemics:**